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Use of the application program

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

Name: N 502/02 Combi Switching Actuator
Order no.: 5WG1 502-1AB02

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1. Functional description

The N 502/02 combi switching actuator is an extremely versatile device for DIN-rail mounting with N-system dimensions, with 8 inputs for AC/DC 12-230V and 8 switching outputs (relay contacts) for AC 230V, 16A (with a resistive load). The electronics of the device are powered by the mains.
In the state as delivered, the inputs act directly via a toggling function on the outputs, i.e. input a acts directly on output A, input b directly on output B, etc. To be able to switch an output via the corresponding input, this must be connected to a conventional pushbutton, which switches, for example, the AC 230V to the input when pressed. If an output is to be switched from several points, then a number of pushbuttons can be connected to the corresponding input in parallel.
Because of this, the combi switching actuator N 502/02 can be used in its delivered state without connected bus line and without initial parameter setting with the Engineering Tool Software (ETS, up from version ETS3) e.g. instead of 8 remote-control switches. The mode of every output can also be changed from "remote-control switch" to "timing relay" without use of the ETS3.

Switching an output in direct mode
Every output can be switched on or off in "direct mode" via the corresponding button on the front of the device via a toggle function. To do this, this mode first needs to be switched on by pushing the "direct mode" button. The yellow light-emitting diode (LED) for the display of direct mode then lights up. If the button allocated to the output to be switched is pushed, then the output is switched on. If it is pushed again, then it is switched off again. The red LED integrated into each button shows the switching status of the respective output. If after the direct switching of an output the direct mode is not ended by pushing the "direct mode" button again, then this takes place automatically 15 minutes after the last time the button on the front plate is pushed.

Change from remote-control switch to timing relay (without ETS3)
If an output operated as a "remote-control switch" is to be operated as a "timing relay", then direct mode is to be switched on first by pushing the "direct mode" button. After this, the button for direct switching of the output is to be pushed for approx. 5s, until the LED integrated in the button flashes slowly (at approx. 0.5 Hz). If the button is then released and not pushed again within the next 3s, then the LED will go out, and the output works as a "timing relay" with an on-time of 5 minutes. If an on-time other than 5 minutes is desired, then the button

must be pushed again within 3s after being released. Pushing the button again results in an on-time of 1 minute. Every additional push of the button within 3s after the previous time it is pushed leads to an extension of the on-time by 1 additional minute, i.e. the sum of the times the button is pushed corresponds to the on-time in minutes (max. 60 minutes possible). The first push of the button that follows while the LED flashes ends the flashing. Instead, the LED is then respectively switched on for the duration of each push of the button. If within 3s after the end of a push of the button no additional push of the button takes place, then the on-time parameter setting is ended.

Change from timing relay to remote-control switch (without ETS3)
If on the other hand an output operated as a "timing relay" is to be switched to being operated as a "remote-control switch", then after switching on the direct mode the button for direct switching of the output is to be pushed for approx. 8s, until the LED integrated in the button flashes slowly (at approx. 1 Hz). After 3s, the flashing of the LED is ended and the output is then switched to "remote control switch" operation.

Bus mode
With an N 502/02 combi switching actuator connected to the bus cable, the behavior of every input and output can be set with the help of the ETS3. An output of the N 502/02 can then not only be directly switched via the input of the connected button(s) of the N 502/02, but also via bus-buttons connected to the bus. A button connected to an input of the N 502/02 can not only switch the respective output of the N 502/02, but via the bus it can also be used for the switching of the outputs of other actuators.
In bus mode, inputs and outputs can then also be used completely independently (uncoupled) from each other. Every input can be parameterized and used as with a binary input device, and every output can be used and parameterized as with a switching actuator.

Behavior on failure / recovery of bus / mains voltage
Behavior of the outputs
The behavior of the outputs at mains / bus voltage failure / recovery can be set by parameters.
Behavior of the inputs
If the mains voltage fails, no input statuses are stored.
At mains voltage recovery the signal status of the inputs is queried and stored. If subsequently a signal status will change the corresponding object will be sent according to the parameterization.
If the signal status at an input will change once or several times during a bus voltage failure the corresponding new respectively the last changed object value will be sent after bus voltage recovery.
However, if the function "Send switching status, binary value" is assigned to an input and the corresponding parameter "Send current binary value after mains / bus voltage recovery" is set to "Yes", then the current input status is sent both after mains and after bus voltage recovery.

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2. Communication objects

Maximum number of group addresses: 120
Maximum number of allocations: 120

Note

With bus mode type and number of the available objects are specified by the parameter settings with the ETS, i.e. the views can vary. Especially the type and number of objects up from object 34 are specified through the functions that are allocated to the inputs a...h with the ETS.

Number	Name	Object Function	Length	C	R	W	T
0	Status direct mode	On / Off	1 bit	C	R	-	T
1	8-bit scene	recall / program	1 Byte	C	R	W	T
2	Output A, Night mode	On / Off	1 bit	C	R	W	T
3	Output A, Switching	On / Off	1 bit	C	R	W	T
4	Output A, Logic operation	On / Off	1 bit	C	R	W	T
5	Output A, Status switching	On / Off	1 bit	C	R	-	T
6	Output B, Night mode	On / Off	1 bit	C	R	W	T
7	Output B, Switching	On / Off	1 bit	C	R	W	T
8	Output B, Logic operation	On / Off	1 bit	C	R	W	T
9	Output B, Status switching	On / Off	1 bit	C	R	-	T
10	Output C, Night mode	On / Off	1 bit	C	R	W	T
11	Output C, Switching	On / Off	1 bit	C	R	W	T
12	Output C, Logic operation	On / Off	1 bit	C	R	W	T
13	Output C, Status switching	On / Off	1 bit	C	R	-	T
14	Output D, Night mode	On / Off	1 bit	C	R	W	T
15	Output D, Switching	On / Off	1 bit	C	R	W	T
16	Output D, Logic operation	On / Off	1 bit	C	R	W	T
17	Output D, Status switching	On / Off	1 bit	C	R	-	T
18	Output E, Night mode	On / Off	1 bit	C	R	W	T
19	Output E, Switching	On / Off	1 bit	C	R	W	T
20	Output E, Logic operation	On / Off	1 bit	C	R	W	T
21	Output E, Status switching	On / Off	1 bit	C	R	-	T
22	Output F, Night mode	On / Off	1 bit	C	R	W	T
23	Output F, Switching	On / Off	1 bit	C	R	W	T
24	Output F, Logic operation	On / Off	1 bit	C	R	W	T
25	Output F, Status switching	On / Off	1 bit	C	R	-	T
26	Output G, Night mode	On / Off	1 bit	C	R	W	T
27	Output G, Switching	On / Off	1 bit	C	R	W	T
28	Output G, Logic operation	On / Off	1 bit	C	R	W	T
29	Output G, Status switching	On / Off	1 bit	C	R	-	T
30	Output H, Night mode	On / Off	1 bit	C	R	W	T
31	Output H, Switching	On / Off	1 bit	C	R	W	T
32	Output H, Logic operation	On / Off	1 bit	C	R	W	T
33	Output H, Status switching	On / Off	1 bit	C	R	-	T
34	Inputs a+b, Switching	On / Off / Toggle	1 bit	C	R	W	T
35	Inputs a+b, Dimming	brighter / darker	4 bit	C	R	W	T
37	Inputs a+b	disable / enable	1 bit	C	R	W	T
42	Inputs c+d, Switching	On / Off / Toggle	1 bit	C	R	W	T
43	Inputs c+d, Dimming	brighter / darker	4 bit	C	R	W	T
45	Inputs c+d	disable / enable	1 bit	C	R	W	T
50	Inputs e+f, Switching	On / Off / Toggle	1 bit	C	R	W	T
51	Inputs e+f, Dimming	brighter / darker	4 bit	C	R	W	T
53	Inputs e+f	disable / enable	1 bit	C	R	W	T
58	Inputs g+h, Slats	Stop / Open / Close	1 bit	C	R	W	T
59	Inputs g+h, Solar protection	Up / Down	1 bit	C	R	W	T
61	Inputs g+h	disable / enable	1 bit	C	R	W	T

Obj. no.	Object name	Function	Type	Flag
0	Status direct mode	On / Off	1 bit	CRT

This object is used to report that the combi switching actuator was switched from bus mode to direct operation using the "direct operation" button on its top (direct operation = On) or that it was switched back from direct operation to bus mode (direct operation = Off). With direct operation switched on (the respective yellow LED on top of the actuator lights up) the direct switching of the outputs via the TOGGLE function using the corresponding button on top of the device is released.

Switch or scene commands received via the bus are not carried out by the combi switching actuator in direct mode; instead they are stored as the desired target state. After switching back to bus mode (the yellow LED to indicate direct operation on top of the device is switched off again) the combi switching actuator compares the actual conditions of the outputs with the stored target conditions and automatically eliminates deviations of the actual conditions from the target conditions.

After mains voltage recovery, the direct operation status is transmitted automatically.

1	8-bit scene	recall/ program	1 byte	CRWT

This parameter window is only visible if the "8-bit scene control" parameter in the "Functions, Objects" parameter window is set to "Yes".

This object is used to recall (restore) or program (store) the 8-bit scene with the number x. Bits 0...5 here contain the scene number. If bit 7 = log. 1, then the scene is programmed, if bit 7 = log. 0, then it is recalled. Bit 6 currently has no significance and must be set to log. 0.

2 (6, 10, 14, 18, 22, 26, 30)	Output A (B, C, D, E, F, G, H), Night mode	On / Off	1 bit	CRWT

These communication objects are only visible if the "Night mode" parameter in the "Output X" parameter window is set to "Yes".
This object can be used to activate or deactivate the operating mode "Night mode" for output X via the bus. If a logical one is received, the output switches to night mode.
In "Night mode" the output can no longer be switched on permanently but only for a limited time (base lighting for e.g. 30 minutes). If the "Blinking before OFF in night mode" parameter (see "Output X" parameter) is set to "Yes", then by a triple switching off and back on again of the lighting in night or timer mode before expiration of the set on-time, the user of the room will be warned that approx. 30 s after the first brief switching off the output will be switched off permanently. This makes it possible to detect the end of the on-time and to switch on the lighting for e.g. an additional 30 minutes by pushing the light switch again.
If the "Night mode" object is not used, then the output can be switched on permanently at any time.

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Obj. no.	Object name	Function	Type	Flag
3 (7, 11, 15, 19, 23, 27, 31)	Output A (B, C, D, E, F, G, H), Switching	On / Off	1 bit	CRWT
This object is used to receive the switching telegrams that may be forwarded to the output via the time function. If a logic operation is parameterized, then the result of the time function provides the value for the 1st input for this operation.				
4 (8, 12, 16, 20, 24, 28, 32)	Output A (B, C, D, E, F, G, H), Logic operation	On / Off	1 bit	CRWT
These communication objects are only visible if the "Logic operation" parameter in the "Output X" parameter window is not set to "no logic operation". This object is used to receive the switching information for the 2nd input of an AND or OR logic operation for the respective output.				
5 (9, 13, 17, 21, 25, 29, 33)	Output A (B, C, D, E, F, G, H), Status switching	On / Off	1 bit	CRT
This parameter window is only visible if the "Status object Switching" parameter in the "Functions, Objects" parameter window is set to "Yes". The current switching status of the output is stored in the status object and can be queried via a read request or sent automatically after every object value change if parameterized accordingly.				

Objects for "Switching edge" or "Switching short / long"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), Switching	On / Off / Toggle	1 bit	CRWT
These objects with this name and function are only visible if either the "Switching edge" or the "Switching short / long" or "1-button dimming" function was allocated to the respective input.				

Objects for "Switching status, send binary value"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), Switching status / Binary value	On / Off	1 bit	CRWT
These objects with this name and function are only visible if the "Send switching status, binary value" function was allocated to the respective input.				

Objects for "1-button group control"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), Switching Group 1	On / Off	1 bit	CRWT
These objects with this name and function are only visible if the "1-button group control" function was allocated to the respective input.				
35 (39, 43, 47, 51, 55, 59, 63)	Input a (b, c, d, e, f, g, h), Switching Group 2	On / Off	1 bit	CRWT
These objects with this name and function are only visible if the "1-button group control" function was allocated to the respective input.				
36 (40, 44, 48, 52, 56, 60, 64)	Input a (b, c, d, e, f, g, h), Switching Group 3	On / Off	1 bit	CRWT
These objects with this name and function are only visible if the "1-button group control" function was allocated to the respective input.				

Objects for "1-button dimming"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), Switching	On / Off / Toggle	1 bit	CRWT
These objects with this name and function are only visible if the "1-button dimming" function was allocated to the respective input.				
35 (39, 43, 47, 51, 55, 59, 63)	Input a (b, c, d, e, f, g, h), Dimming	brighter / darker	4 bit	CRWT
These objects with this name and function are only visible if the "1-button dimming" function was allocated to the respective input.				
36 (40, 44, 48, 52, 56, 60, 64)	Input a (b, c, d, e, f, g, h), Dimming	Status	1 byte	CRWT U
These objects with this name and function are only visible if the "1-button dimming" function was allocated to the respective input.				

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Objects for "1-button solar protection control"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), Solar protection	Up / Down	1 bit	CRWT
These objects with this name and function are only visible if the "1-button solar protection control" function was allocated to the respective input.				
35 (39, 43, 47, 51, 55, 59, 63)	Input a (b, c, d, e, f, g, h), Slats	Stop / Open / Close	1 bit	CRWT
These objects with this name and function are only visible if the "1-button solar protection control" function was allocated to the respective input.				

Objects for "8-bit Value Edge" or "8-bit Value Short / Long"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), 8-bit Value	send value	1 Byte	CRWT
These objects with this name and function are only visible if either the "8-bit Value Edge" function or the "8-bit Value Short / Long" function was allocated to the respective input.				

Objects for „16 bit value, edge-triggered" or „16 bit value, short/long operation"

Obj. no.	Object name	Function	Type	Flags
77 (81, 85, 89, 93, 97, 101, 105)	Input a (b, c, d, e, f, g, h), 16 bit value	send	2 Bytes	CRWT
These objects with this name and function are only visible if either the "16 bit value, edge-triggered" function or the "16 bit value, short/long operation" function was allocated to the respective input.				

Objects for "16-bit Floating Point Value Edge" or "16-bit Floating Point Value Short / Long"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), 16-bit value	Send value	2 Bytes	CRWT
These objects with this name and function are only visible if either the "These objects with this name and function are only visible if 16-bit Floating Point Value Edge" function or the "16-bit Floating Point Value Short / Long" function was allocated to the respective input.				

Objects for "1-bit scene control"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), Scene 1/2	recall	1 bit	CRWT
These objects with this name and function are only visible if the "1-bit scene" function was allocated to the respective input.				
35 (39, 43, 47, 51, 55, 59, 63)	Input a (b, c, d, e, f, g, h), Scene ½	program	1 bit	CRWT
These objects with this name and function are only visible if the "1-bit scene control" function was allocated to the respective input.				

Objects for "8-bit scene control"

Obj. no.	Object name	Function	Type	Flag
34 (38, 42, 46, 50, 54, 58, 62)	Input a (b, c, d, e, f, g, h), 8-bit scene	recall / program	8 bit	CRWT
These objects with this name and function are only visible if the "8-bit scene control" function was allocated to the respective input.				

Objects for "2-button dimming"

Obj. no.	Object name	Function	Type	Flag
34 (42, 50, 58)	Inputs a+b (c+d, e+f, g+h), Switching	On / Off / Toggle	1 bit	CRWT
These objects with this name and function are only visible if either the "2-button dimming with stop telegram" function or the "2-button dimming with cyclical sending" function was allocated to the respective input pair.				
35 (43, 51, 59)	Inputs a+b (c+d, e+f, g+h), Dimming	brighter / darker	4 bit	CRWT
These objects with this name and function are only visible if either the "2-button dimming with stop telegram" function or the "2-button dimming with cyclical sending" function was allocated to the respective input pair.				

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Objects for "2-button solar protection control"

Obj. no.	Object name	Function	Type	Flag
34 (42, 50, 58)	Inputs a+b (c+d, e+f, g+h), Slats	Stop / Open / Close	1 bit	CRWT
These objects with this name and function are only visible if the "2-button solar protection control" function was allocated to the respective input pair.				
35 (43, 51, 59)	Inputs a+b (c+d, e+f, g+h), Solar protection	Up / Down	1 bit	CRWT
These objects with this name and function are only visible if the "2-button solar protection control" function was allocated to the respective input pair.				

Objects for "Insert blocking object"

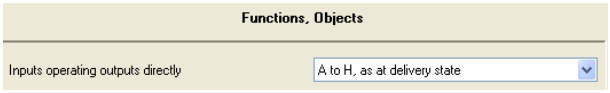
Obj. no.	Object name	Function	Type	Flag
37 (41, 45, 49, 53, 57, 61, 65)	Input a (b, c, d, e, f, g, h)	disable / enable	1 bit	CRWT
These objects with this name and function are only visible if the "Insert blocking object" parameter was set to "Yes" for the respective input.				

Objects for 2-button function and "Insert blocking object"

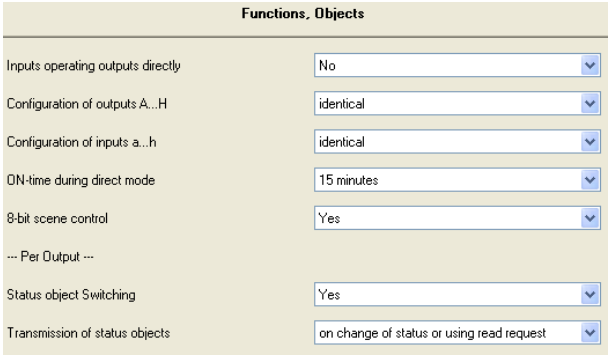
Obj. no.	Object name	Function	Type	Flag
37 (45, 53, 61)	Inputs a+b (c+d, e+f, g+h)	disable / enable	1 bit	CRWT
These objects with this name and function are only visible if the "Insert blocking object" parameter was set to "Yes" for the respective input pair with a 2-button function.				

3. Parameter windows

3.1 "Functions, Objects"



Parameter window in state at delivery



Parameter window with all parameters

Parameter	Settings
Inputs operating outputs directly	**A to H** A to F A to D A to B A to H, as at delivery state No
This parameter can be used to set whether and which binary inputs are to have a direct effect on the respective outputs. With the direct effect of an input on the output of the same name, every signal change from log. 0 to log. 1 at the input leads to a switching condition change at the output if this is set to "remote-control switch" mode. If for example a button is connected to an input in such a way that if the button is pushed, AC 230V is present at the input, then every push of the button results in a change of the switching condition of the output of the same name. If the output on the other hand is set to "timing relay", then a push of the button connected to the input results in the output being switched on for the set on-time (staircase lighting function). For the setting "No" or for all inputs not directly affecting an output, for each input and output the respective function is adjustable via the respective parameter window. If the parameter is set to "A to H, as at delivery state", then no additional parameters are shown. The behavior of the outputs can then be set via the respective button to switch in direct mode.	

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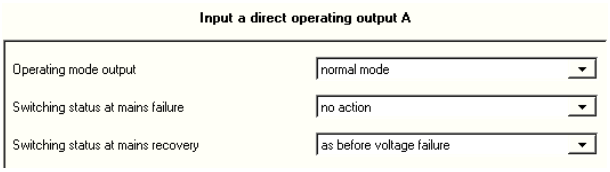
Parameter	Settings
Configuration of outputs A...H	**identical** individual
This parameter is visible only if the "Inputs operating outputs directly" parameter is set to "No". This parameter is used to set whether only one parameter window is shown for the joint and identical parameter setting of the outputs A...H or one parameter window per output for the individual parameter setting of every output.	
Configuration of inputs a...h	**identical** individual
This parameter is visible only if the "Inputs operating outputs directly" parameter is set to "No". This parameter is used to set whether only one parameter window is shown for the joint and identical parameter setting of the inputs a...h or one parameter window for any two inputs for the individual parameter setting of every input pair.	
ON-time during direct mode	unlimited, 5 minutes, 10 minutes, **15 minutes**, 20 minutes, 30 minutes, 45 minutes, 60 minutes
This parameter is not visible only if the preceding "Inputs operating outputs directly" parameter is set to "A to H, as at delivery state". This parameter is used to set whether the direct operating mode is switched on permanently via the button for switching the operating modes and needs to be switched off again through a second push of the button ("unlimited"), or whether it is switched on for a limited time and is switched off automatically again after the expiration of the set on-time. The limited switching of the direct operating mode ensures that the bus mode can not be blocked permanently through the direct operation. Every push of the button in direct operation always leads to an extension of direct operation by the set on-time. After the expiration of the on-time without an additional push of the button, the direct operation is switched off automatically and thus the "bus mode" is activated again (as far as a communication via the bus is possible). The beginning and end of the direct operation are reported via the respective communication object "Status direct mode" via the bus.	
8-bit scene control	**No** Yes
This parameter is used to set whether the outputs that can be freely set are to be integrated in an 8-bit scene control. If yes, then the respective communication object and the parameter windows "8-bit Scenes Output X" for the allocation of up to 8 scene numbers per output are shown.	
Status object Switching	No **Yes**
This parameter is used to set whether a "Output X, Status switching" communication object is to be available per output. The status object can be used, for example, to display the current switching status of the outputs on a display or a PC with visualization software. If status objects are desired, then the subsequent parameter "Transmission of status objects" is shown.	

Parameter	Settings
Transmission of status objects	**using read request only**; on change of status or using read request
Depending on parameter setting, the status objects are sent automatically for every status change or on read request.	

3.2 Setting the Output Parameters

3.2.1 "Input x direct operating output X"

These parameter windows are visible only if in the "Functions, Objects" parameter window the "Inputs operating outputs directly" parameter is set to "A to H".



Parameter	Settings
Operating mode output	**normal mode** timer mode
This parameter is used to set whether the output is to operate as a "normal" switching output which at every push of a button connected to the respective input changes its condition or as a time switch that restarts the on-time at every push of a button and switches the output off automatically after the expiration of the on-time.	
ON-time during timer mode	1 minute, 3 minutes, **5 minutes**, 10 minutes, 15 minutes, 20 minutes, 30 minutes, 45 minutes, 60 minutes
This parameter is visible only if the previous "Operating mode output" parameter is set to "timer mode". This parameter is used to set the desired on-time. If with the on-time running the connected button is pushed again, then the time is set back to the starting value, and the on-time is extended correspondingly.	
Switching status at mains failure	Off On **no action**
This parameter is visible only if the previous "Operating mode output" parameter is set to "normal mode". This parameter can be used to set the desired switching status of the output in case of a mains failure. Note: In case of a mains failure, the current switching status (as the case may be after the set switching operation) is stored in such a way that it cannot be lost.	

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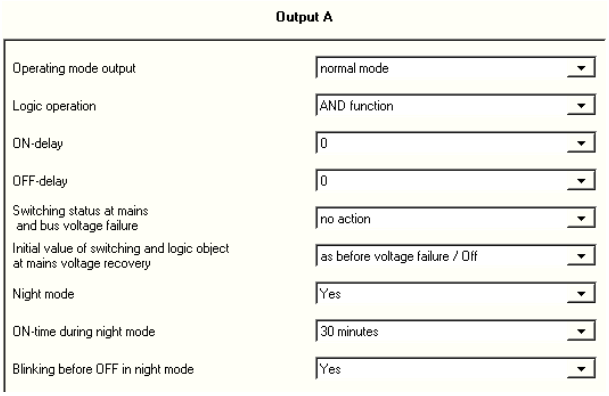
Parameter	Settings
Switching status at mains recovery	Off; On **as before voltage failure**;
This parameter is visible only if the previous "Operating mode output" parameter is set to "normal mode". This parameter can be used to set the desired switching status of the output in case of the mains recovery.	

3.2.2 "Output X" or "Outputs A to H"



Parameter	Settings
Operating mode output	**normal mode** timer mode
This parameter is used to set whether the output is to operate as a "normal" switching output on which an input or output delay and a logic operation may have an effect, or whether it should operate as a pure time switch that is switched on via an On-command or a logic operation and is switched off automatically after the expiration of the set on-time.	
Logic operation	**no logic operation** AND function OR function
This parameter can, if required, be used to switch the output via a logic operation of the switching object with an additional object "Output X, Logic operation". The logic operation object is not subject to any time delay, i.e. the logic operation is always immediately effective.	

Parameter	Settings
ON-delay	**0**, 0.1s, 0.3s, 0.5s, 1s, 3s, 5s, 10s, 15s, 30s, 1Min, 3Min, 5Min, 10Min, 15Min, 30Min, 60Min
This parameter is used to set the desired ON-delay. The preset value 0 means that ON-commands are carried out immediately. A set ON-delay only affects the "Output x, switching" object and not a potential accompanying logic operation object.	
OFF-delay	**0**, 0.1s, 0.3s, 0.5s, 1s, 3s, 5s, 10s, 15s, 30s, 1Min, 3Min, 5Min, 10Min, 15Min, 30Min, 60Min
This parameter is used to set the desired OFF-delay. The preset value 0 means that OFF-commands are carried out immediately. A set OFF-delay only affects the "Output x, switching" object and not a potential accompanying linking object.	
Switching status at mains and bus voltage failure	Off On **no action**
This parameter can be used to set the desired switching status of the output in case of a bus voltage or mains failure. Bus voltage failure: If "no action" is selected, then no object changes are carried out in case of bus voltage failure, i.e. the object values remain preserved in the state they were in at the time of the bus voltage failure. The status may be updated under certain circumstances. If night mode is active and runs out, then all affected objects are updated and the output is switched into the resulting state. If "Off" is selected, then the switching object and the input object of an OR logic operation are additionally set to "Off". If "On" is selected, then the switching object and the input object of an AND logic operation are additionally set to "On". In case of a bus voltage recovery, the conditions of the objects result in the start behavior given by the setting "as before voltage failure". Mains voltage failure: In case of mains voltage failure, the switching object (as the case may be after the set switching operation) and the logic operation object are stored in such a way that it cannot be lost, if no night mode was active. If night mode is active, then the switching object and an active OR logic operation is first set to Off and then stored. (In case of mains voltage recovery, night mode fundamentally counts as having expired.)	

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Parameter	Settings
Switching status at mains and bus voltage recovery	Off On **as before voltage failure**
This parameter is visible only if no logic operation has been parameterized. If the output in the "Logic operation" parameter is allocated to a logic operation, then instead of this parameter the parameter "Initial value of switching and logic object at mains voltage recovery" is shown. This parameter can be used to set the desired switching status of the output in case of a bus voltage or mains recovery. For the parameter values "Off" or "On", the switching status is corrected accordingly under certain circumstances. The object of night mode is independently set from the parameter setting of delays to "Off" during this. Bus voltage recovery: Given the parameter setting "as before voltage failure" there is no change of the current output, since the objects were updated in case of a bus voltage failure (or during the bus voltage failure). This causes the output to behave as if no bus voltage failure had taken place, i.e. the status of the objects is taken over as it was before the bus voltage failure or, if an active night mode had expired, the status present at that time. Mains voltage recovery: A mains voltage recovery fundamentally takes place before a bus voltage recovery, i.e. no bus voltage recovery can be analyzed before a mains voltage recovery. In case of a mains voltage recovery the object values are also updated under certain circumstances, so that no further actions result in case of a subsequent bus voltage recovery. If the parameter is set to "as before voltage failure", then the output is set to the object status stored during the bus / mains voltage failure.	

Parameter	Settings
Initial value of switching and logic object at mains voltage recovery	as before voltage failure / as bef. voltage Failure**; as before voltage failure / Off**; as before voltage failure / On; Off / as before voltage failure; Off / Off; Off / On; On / as before voltage failure; On / Off; On / On
This parameter is visible only if a logic operation has been set. The start value for the switching and the logic operation object in case of a bus or mains voltage recovery are jointly established via this parameter.	
Night mode	No **Yes**
This parameter is used to set whether an additional "Output X, Night mode" communication object is to be supplemented for this output. If yes, then the following "ON-time during night mode" parameter is also supplemented to set the desired on-time.	
ON-time during night mode	1 minute, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 20 minutes, **30 minutes**, 45 minutes, 60 minutes
This parameter is used to select how long an output is to remain switched on given a "night mode" object that is switched on. If with the ON-time running an ON-command is received, then the time is set back to the starting value, and the ON-time is extended correspondingly. If the night mode is ended with on-going ON-time, then a switched-on output is only switched off after the on-time has run out.	
Blinking before OFF in night mode	No **Yes**
This parameter can be used to set that after the expiration of the timed ON-time in night mode the output is not immediately switched off permanently, but initially is only switched off for 1s and then switched on again for 10s. This is repeated two more times before the output is then switched off permanently. If the output is used for lighting control, then a user is warned in advance and has sufficient time to switch on the lighting again.	

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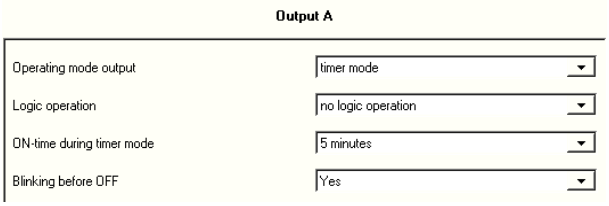
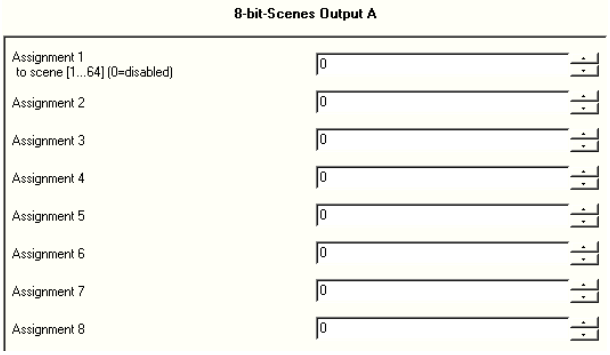
3.2.3 "Output X" or "Outputs A to H" in timer mode



Parameter	Settings
Operating mode output	normal mode **timer mode**
The following parameters are shown if this "Operating mode output" parameter is set to "timer mode".	
Logic operation	**no logic operation** AND function OR function
This parameter can, if required, be used to switch the output via a logic operation of the switching object with an additionally inserted logic operation object for the current output. The logic operation object is not subject to any time delay, i.e. the logic operation is always immediately effective.	
ON-time during timer mode	1 minute, 3 minutes, **5 minutes**, 10 minutes, 15 minutes, 20 minutes, 30 minutes, 45 minutes, 60 minutes
This parameter is used to set the desired ON-time if "timer mode" was selected as the operating mode. If with the ON-time running an ON-command is received, then the time is set back to the starting value, and the ON-time is extended correspondingly.	
Blinking before OFF	No **Yes**
This parameter can be used to set that after the expiration of the ON-time the output is not immediately switched off permanently, but initially is only switched off for approx. 1s and then switched on again for approx. 10s. This is repeated two more times before the output is then switched off permanently. If the output is used for lighting control, then a user is warned in advance and has sufficient time to switch on the lighting again. If a "timer mode" is activated together with an OR logic operation and a "Blinking before OFF", then the output flashes at the end of the set ON-time even if the result of the OR operation is a logical 1. This shows the user that the ON-time has run out. However, the output remains switched on after the blinking for as long as there is a logical 1 present at the input of the OR operation.	

3.3 "8-bit scenes output X"



Parameter	Settings
Assignment 1 to scene [1...64] (0=disabled)	0-64, **0**
This parameter can be used to link the output X with a scene number in the range from 1 to 64. 0 in this case means "no scene allocated" (link not used). Note: If a scene was recalled before a switching status was programmed for this scene, then there is no reaction to the scene being recalled.	
Assignment 2	0-64, **0**
This parameter can be used to link the output X with a scene number in the range from 1 to 64. 0 in this case means "no scene allocated" (link not used). Note: If a scene was recalled before a switching status was programmed for this scene, then there is no reaction to the scene being recalled.	

and so on until

Parameter	Settings
Assignment 8	0-64, **0**
This parameter can be used to link the output X with a scene number in the range from 1 to 64. 0 in this case means "no scene allocated" (link not used). Note: If a scene was recalled before a switching status was programmed for this scene, then there is no reaction to the scene being recalled.	

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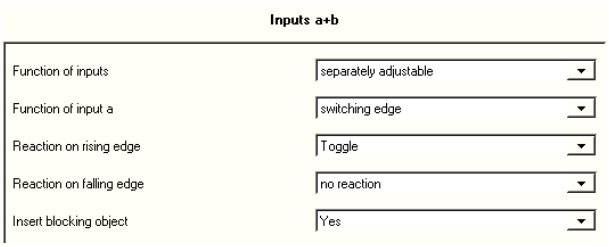
3.4 Parameterization of "Inputs a+b" or "Inputs a to h"

The number and type of the parameters shown in this parameter window are both determined by the "Function of inputs" parameter (i.e. whether two inputs are adjustable separately or adjustable jointly for a 2-button function) as well as especially by the parameter "Function input x" or "Function inputs x+y".

Parameter	Settings
Function of inputs	**separately adjustable** jointly adjustable (dimming, solar protection)
This parameter is used to set whether a joint 2-button function should be allocated to an input pair (dimming or solar protection) or whether it should be possible for each of the two inputs to be parameterized separately.	
Function of input a (b, c, d, e, f, g, h) (or function of inputs a, c, e, g)	**switching edge;** switching short / long; send switching status, binary value; 1-button group control; 1-button dimming; 1-button solar protection control; 8-bit value edge; 8-bit value short / long; 16-bit value edge; 16-bit value short / long; 16-bit floating point value edge; 16-bit floating point value short / long; 1-bit scene control; 8-bit scene control
This parameter is used to allocate the desired function to an input. Depending on the selected function, the following parameters that are shown will change.	
Function of inputs a+b (c+d, e+f, g+h)	**2-button dimming with stop command**; (2-button dimming with cyclical sending); 2-button solar protection control
This parameter is only visible if a joint 2-button function is to be allocated to an input pair. Depending on the selected function, the following parameters that are shown will change.	

3.4.1 Switching edge

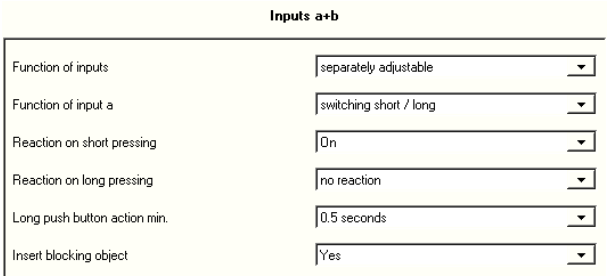
For inputs to which a switch or a button is connected, this function serves to send a switching telegram (ON, OFF or TOGGLE) as a reaction to a rising and / or falling signal edge on this input (i.e. when pushing and / or releasing the button or closing and / or opening the switch, a telegram is sent).



Parameter	Settings
Reaction on rising edge	no reaction; On; Off; **Toggle**
This parameter is used to set which switching value should be sent after a rising edge of the input signal. The rising edge corresponds to a change of the signal state on the input from logical "0" to "1". "no reaction": An edge change on the input does not result in a telegram being sent. "On": In case of a rising edge, an "ON" is sent. "Off": In case of a rising edge, an "OFF" is sent. "Toggle": In case of a rising edge, the last switching value sent / received is inverted and the new value is sent.	
Reaction on falling edge	**no reaction**; On; Off; Toggle
This parameter is used to set which switching value should be sent after a falling edge of the input signal. The falling edge corresponds to a change of the signal state on the input from logical "1" to "0". "no reaction": An edge change on the input does not result in a telegram being sent. "On": In case of a falling edge, an "ON" is sent. "Off": In case of a falling edge, an "OFF" is sent. "Toggle": In case of a falling edge, the last switching value sent / received is inverted and the new value is sent.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input or two functionally related inputs are to be blocked/released via an additional blocking object or not. If an input or two functionally related inputs are blocked (blocking object = 1), then condition changes on this input or these inputs are no longer transmitted.	

3.4.2 Switching short / long

For inputs to which a button is connected, this function serves to send a switching telegram (ON, OFF or TOGGLE) as a reaction to a short or long pressing of the button.

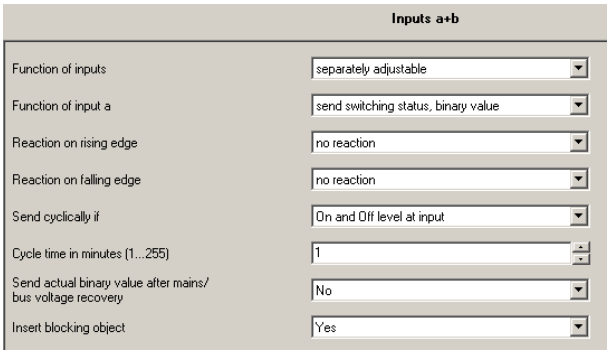


Parameter	Settings
Reaction on short pressing	**no reaction**; On; Off; Toggle
This parameter is used to set which switching value should be sent after a short pressing of the button connected to the input. "no reaction": A short pressing of the button does not result in a telegram being sent. "On": After a short pressing of the button, an "ON" is sent. "Off": After a short pressing of the button, an "OFF" is sent. "Toggle": After a short pressing of the button, the last switching value sent / received is inverted and the new value is sent.	
Reaction on long pressing	**no reaction**; On; Off; Toggle
This parameter is used to set which switching value should be sent after a long pressing of the button connected to the input. From which point on a button push is to be interpreted as "long" can be adjusted in the subsequent "Long push button action min" parameter. "no reaction": A long pressing of the button does not result in a telegram being sent. "On": After a long pressing of the button, an "ON" is sent. "Off": After a long pressing of the button, an "OFF" is sent. "Toggle": After a long pressing of the button, the last switching value sent / received is inverted and the new value is sent.	

Parameter	Settings
Long push button action min	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.3 Send switching status, binary value

This function serves, for example, to query and transmit the switching status of a contact or the voltage level present at this input. Parameters can be used to adjust which binary value is to be sent after a status change and whether the switching status / binary value is to be sent cyclically in addition.



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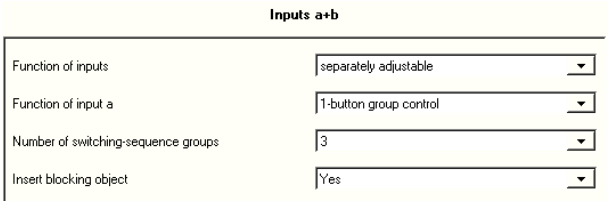
Parameter	Settings
Reaction on rising edge	**no reaction**; On; Off
This parameter is used to set which switching value should be sent after a rising edge of the input signal. The rising edge corresponds to a change of the signal state on the input from logical "0" to "1". "no reaction": An edge change on the input does not result in a telegram being sent. "On": In case of a rising edge, the switching value "ON" is sent. "Off": In case of a rising edge, the switching value "OFF" is sent.	
Reaction on falling edge	**no reaction**; On; Off
This parameter is used to set which switching value should be sent after a falling edge of the input signal. The falling edge corresponds to a change of the signal state on the input from logical "1" to "0". "no reaction": An edge change on the input does not result in a telegram being sent. "On": In case of a falling edge, the switching value "ON" is sent. "Off": In case of a falling edge, the switching value "OFF" is sent.	
Send cyclically if	On level at input; Off level at input; **On and Off level at input**
This parameter is used to set whether the communication object belonging to the input should be sent cyclically in addition to the spontaneous sending of a condition change: as long as an On-level (Uin > 9 V = log. 1) is present at the input, as long as an Off-level (Uin < 2 V = log. 0) is present at the input or whether it should always be sent cyclically.	
Cycle time in minutes (1...255)	**1** ... 255
This parameter is used to set the desired cycle time in minutes.	
Send current binary value after mains/bus voltage recovery	**No**; Yes
This parameter sets whether the current status (logical 0 or logical 1) of the signal level at the input is to be sent after mains and bus voltage recovery (logical 0 for V_{in} < 2 V; logical 1 for V_{in} > 9 V).	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.4 1-button group control

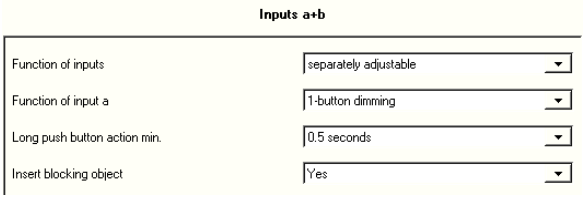
The "1-button group control" function makes it possible, for example, to use a single button to switch the lamps of a luminaire with two or three lamp groups on and off again in groups by multiple pushes of the button. The number of switchable groups is set via a parameter. The switching sequence is fixed and cannot be changed by the user. If the same groups are controlled by several buttons with group control, then this takes place by each button independently of the other buttons, i.e. every button only remembers which switching command combination it sent last, and when pushed again it sends the next switching command combination that follows for that button.



Parameter	Settings
Number of switching-sequence groups	2, **3**
The number of switchable groups is set via this parameter. "2": 2 groups are controlled via 2 switching command telegrams per button push, generating the following switching sequence (0=group switched off, 1=group switched on): 00-01-11-10-00 "3": 3 groups are controlled via 3 switching command telegrams per button push, generating the following switching sequence (0=group switched off, 1=group switched on): 000-001-010-011-111-110-101-100-000 After mains voltage recovery, the procedure always starts with the switching telegrams Off / On for object B / A or Off / Off / On for object C / B / A.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

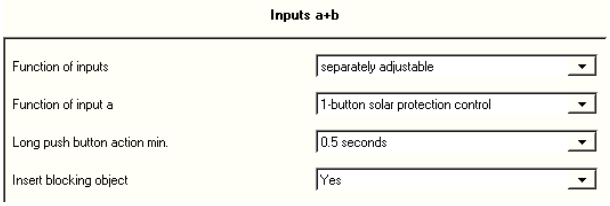
3.4.5 1-button dimming

This function makes it possible, to switch On / Off as well as dim brighter/darker a luminaire / group of luminaires with only one button. A differentiation is made here between a short push of the button and a long push of the button.
- Switching TOGGLE (short press of the button)
In case of a short push of the button, the value that is in the switching object (switch TOGGLE) is inverted and the ON- or OFF-telegram is sent when the button is released (=falling edge).
- Dimming brighter / darker (long push of the button)
In case of a long push of the button (the duration can be set via the "Long push button action min." parameter), the lamp is dimmed brighter or darker depending on the object value and the dimming direction that was controlled last. If the dimming actuator was switched off, then a long push of the button results in the light being switched on and dimmed brighter. If the actuator was previously switched on with a short push of the button, then it is dimmed darker by the first long push of the button. If the dimming actuator is set to a dimming value of 1 to 99%, the last dimming direction used is inverted and the light dimmed in the new direction. In case of a long push of the button, the command "100 % dimming" is sent via the dimming object and when the button is released (=falling edge), the command "Stop" is sent. To receive the current dimming value of the dimming actuator the dimming status objects of the actuator and the input must be connected.



Parameter	Settings
Long push button action min.	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No;** Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.6 1-button solar protection control



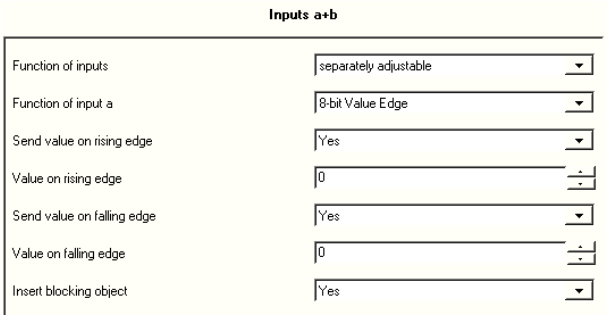
This function makes it possible to move the solar protection up and down with only one button, to stop the movement and to open and close slats. A differentiation is made here between a short push of the button and a long push of the button.
- Solar protection Up / Down (long button push)
In case of a long push of the button (the duration can be set via the "Long push button action min." parameter), depending of the last direction stored in the "Solar protection Up / Down" object, this is inverted and the solar protection moved up or down until the respective limit position is reached and the actuator is switched off via the limit switch.
If a stop command is received before a limit position is reached and the limit switch responds, then the movement is ended immediately, the attained position is maintained and the last movement direction stored.
- Stop or slats Open / Closed (short button push)

In case of a short push of the button, a telegram is sent that leads to the actuator being stopped if the solar protection is moving and that leads to short movement opposite the previous movement direction (which is stored in the movement object) in case of a resting solar protection. In case of closed blinds, this would lead, for example, to the opening of the slats by one step. The STOP- or OPEN- or CLOSE slats telegram is only generated when the button is released (=falling edge). With every additional short push of the button an additional "Open / Close slats" telegram is sent, in which the movement direction is not changed. The software of the solar protection actuator determines whether and how several successive "Open / Close slats" telegrams can be interpreted and carried out.

Parameter	Settings
Long push button action min	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No;** Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.7 8-bit value edge

This function serves to send 8-bit integer values (EIS 6) in the range of 0...255. It can be adjusted whether a value telegram is sent either as a reaction to a rising and / or falling signal edge on the output (e.g. when pushing and / or releasing a button). With this function it is possible, for example, to allocate a dimming value to a button to dim the connected lights to the parameterized value with the push of a button, or one can assign different values to several buttons to make it possible to control, for example, the rotational speed of a fan with these buttons.



Parameter	Settings
Send value on rising edge	No **Yes**
This parameter is used to set whether the parameterized 8-bit value is to be written and sent into the memory cell of the communication object or not after a rising edge of the signal state at the input. The rising edge corresponds to a change of the signal state on the input from logical "0" to "1".	
Value on rising edge	**0** (0...255)
This parameter is used to set which value (0...255) is to be written and sent into the memory cell of the communication object after a rising edge of the signal state at the input. The rising edge corresponds to a change of the signal state on the input from logical "0" to "1".	
Send value on falling edge	No **Yes**
This parameter is used to set whether the parameterized 8-bit value is to be written and sent into the memory cell of the communication object or not after a falling edge of the signal state at the input. The falling edge corresponds to a change of the signal state on the input from logical "1" to "0".	
Value on falling edge	**0** (0...255)
This parameter is used to set which value (0...255) is to be written and sent into the memory cell of the communication object after a falling edge of the signal state at the input. The falling edge corresponds to a change of the signal state on the input from logical "1" to "0".	
Insert blocking object	**No;** Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

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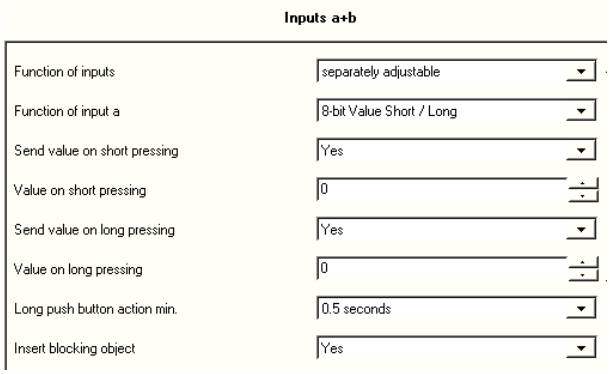
3.4.8 8-bit value short / long

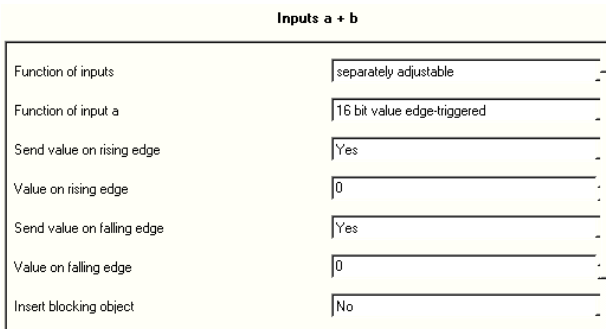
This function serves to send 8-bit integer values (EIS 6) in the range of 0...255. It can be adjusted whether a value telegram is sent either as a reaction to a short and / or long push of a button.



Parameter	Settings
Send value on short pressing	No **Yes**
This parameter is used to set whether the parameterised 8-bit value is to be written and sent into the memory cell of the communication object or not after a short push of the button connected to the input.	
Value on short pressing	**0** (0...255)
This parameter is used to set which value (0...255) is to be written and sent into the memory cell of the communication object after a short push of the button connected to the input.	
Send value on long pressing	No **Yes**
This parameter is used to set whether the parameterised 8-bit value is to be written and sent into the memory cell of the communication object or not after a long push of the button connected to the input.	
Value on long pressing	**0** (0...255)
This parameter is used to set which value (0...255) is to be written and sent into the memory cell of the communication object after a long push of the button connected to the input.	
Long push button action min.	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No;** Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.9 16 bit value, edge-triggered

This function serves to send 16-bit integer values in the range of 0... 65535. It can be adjusted whether a value telegram is sent either as a reaction to a rising and/or falling signal edge on the output (e.g. when pushing and/or releasing a button).

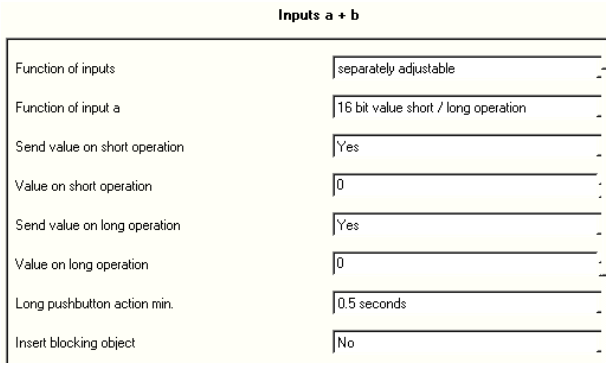


Parameter	Settings
Send value on leading edge	No **Yes**
This parameter is used to set whether the configured 16-bit value is to be written into the memory cell of the communication object and to be sent or not after a leading edge of the signal state at the input. The leading edge corresponds to a change of the signal state on the input from logical "0" to "1".	

Parameter	Settings
Value on leading edge	**0** (0...65535)
This parameter is used to set which value (0...65535) is to be written into the memory cell of the communication object and to be sent after a leading edge of the signal state at the input. The leading edge corresponds to a change of the signal state on the input from logical "0" to "1".	
Send value on trailing edge	No **Yes**
This parameter is used to set whether the configured 16-bit value is to be written into the memory cell of the communication object and to be sent or not after a trailing edge of the signal state at the input. The trailing edge corresponds to a change of the signal state on the input from logical "1" to "0".	
Value on trailing edge	**0** (0...65535)
This parameter is used to set which value (0...65535) is to be written into the memory cell of the communication object and to be sent after a trailing edge of the signal state at the input. The trailing edge corresponds to a change of the signal state on the input from logical "1" to "0".	

3.4.10 16 bit value, short/long operation

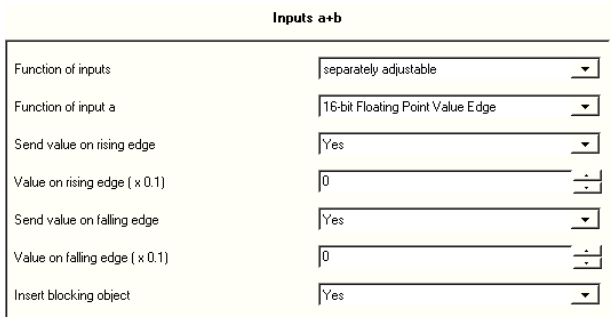
This function serves to send 16-bit integer values in the range of 0... 65535. It can be adjusted whether a value telegram is sent either as a reaction to a short and/or long push of a button.



Parameter	Settings
Send value on short operation	No **Yes**
This parameter is used to set whether the configured 16-bit value is to be written into the memory cell of the communication object and to be sent or not after a short push of the button connected to the input.	

Parameter	Settings
Value on short operation	**0** (0...65535)
This parameter is used to set which value (0...65535) is to be written into the memory cell of the communication object and to be sent after a short push of the button connected to the input.	
Send value on long operation	No **Yes**
This parameter is used to set whether the configured 16-bit value is to be written into the memory cell of the communication object and to be sent or not after a long push of the button connected to the input.	
Value on long operation	**0** (0...65535)
This parameter is used to set which value (0...65535) is to be written into the memory cell of the communication object and to be sent after a long push of the button connected to the input.	
Long pushbutton action min.	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 seconds 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	

3.4.11 16-bit floating point value edge



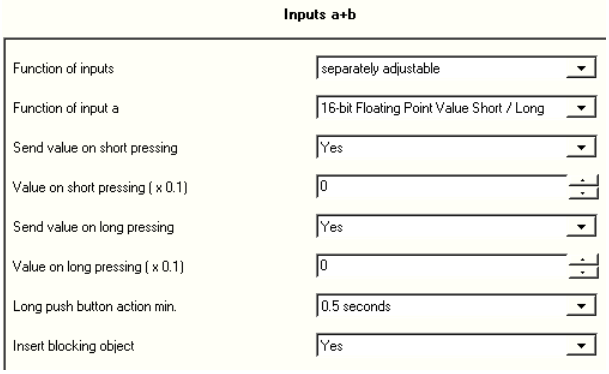
This function serves to send 16-bit floating point values (floating point value as EIS 5) in the range of -3276.8 to +3276.7 (with one decimal place). The exponent of the 16-bit floating point value is set automatically during

this. It can be adjusted whether a value telegram is sent either as a reaction to a rising and / or falling signal edge on the output (e.g. when pushing and / or releasing a button).
With this function it is possible, for example, to toggle between a daytime and a night-time target value for the room temperature control using a switch.

Parameter	Settings
Send value on rising edge	No **Yes**
This parameter is used to set whether the parameterised 16-bit floating point value is to be written and sent into the memory cell of the communication object after a rising edge of the signal state at the input. The rising edge corresponds to a change of the signal state on the input from logical "0" to "1".	
Value on rising edge (x 0.1)	**0** (-32768...+32767)
This parameter is used to set which floating point value is to be written and sent into the memory cell of the communication object after a rising edge of the signal state at the input. The floating point value to be sent is to be entered (possibly with prefix) as ten times the desired floating point value (i.e. including the decimal place but without comma or point). The rising edge corresponds to a change of the signal state on the input from logical "0" to "1".	
Send value on falling edge	No **Yes**
This parameter is used to set whether the parameterised 16-bit floating point value is to be written and sent into the memory cell of the communication object after a falling edge of the signal state at the input. The falling edge corresponds to a change of the signal state on the input from logical "1" to "0".	
Value on falling edge (x0.1)	**0** (-32768...+32767)
This parameter is used to set which floating point value is to be written and sent into the memory cell of the communication object after a falling edge of the signal state at the input. The floating point value to be sent is to be entered (possibly with prefix) as ten times the desired floating point value (i.e. including the decimal place but without comma or point). The falling edge corresponds to a change of the signal state on the input from logical "1" to "0".	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.12 16-bit floating point value short / long

This function serves to send 16-bit floating point values (floating point value as EIS 5) in the range of -3276.8 to +3276.7 (with one decimal place). The exponent of the 16-bit floating point value is set automatically during this. It can be adjusted whether a value telegram is sent either as a reaction to a short and / or long push of a button.



Parameter	Settings
Send value on short pressing	No **Yes**
This parameter is used to set whether the 16-bit floating point parameter value is to be written and sent into the memory cell of the communication object or not after a short push of the button connected to the input.	
Value on short pressing (x 0.1)	**0** (-32768...+32767)
This parameter is used to set which floating point value is to be written and sent into the memory cell of the communication object after a short push of the button connected to the input. The floating point value to be sent is to be entered (possibly with prefix) as ten times the desired floating point value (i.e. including the decimal place but without comma or point).	
Send value on long pressing	No **Yes**
This parameter is used to set whether the 16-bit floating point parameter value is to be written and sent into the memory cell of the communication object or not after a long push of the button connected to the input.	
Value on long pressing (x 0.1)	**0** (-32768...+32767)
This parameter is used to set which floating point value is to be written and sent into the memory cell of the communication object after a long push of the button connected to the input. The floating point value to be sent is to be entered (possibly with prefix) as ten times the desired floating point value (i.e. including the decimal place but without comma or point).	

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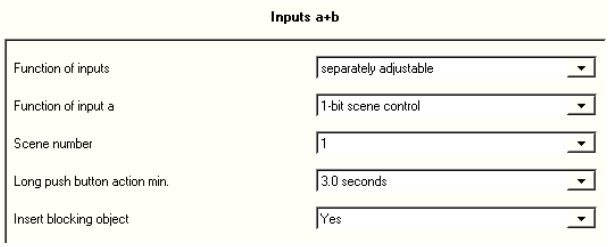
Parameter	Settings
Long push button action min	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No;** Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer transmitted.	

3.4.13 1-bit scene control

The "1-bit scene control" function makes it possible for the user him- or herself to reprogram a scene controller to the 1-bit scene control without using the ETS to change the project planning, i.e. other brightness values or switching states are allocated to the individual groups of the respective scene. A scene can be recalled with a short push of the button and programmed with a long push of the button, with a communication object serving to program a scene and a second to recall a programmed scene. A parameter setting determines whether a telegram with the value "0" programs or recalls scene 1 and a telegram with the value "1" programs or recalls scene 2.
Before programming a scene, the affected actuators have to be set for the desired brightness values or switching states via the buttons / sensors provided for the purpose. The reception of a "program" telegram results in the addressed scene controllers being requested to query the current values and status information on the actuators integrated in the scene and to store them in the corresponding scene.
So as not to accidentally trigger a scene being programmed with the touch of a button that is only marginally longer than a short touch of a button, programming a scene should only be initiated with an "extra long" push of a button.



Parameter	Settings
Scene number	**1** 2
This parameter specifies which scene should be programmed or recalled. "1": a short push of the button sends a telegram with the value "0", so that scene 1 is recalled by the addressed scene controllers. A long push of the button results in the addressed scene controllers being requested to query the currently set values and conditions on the actuators integrated in the scene and to store them under the scene with the number 1. "2": With this setting, scene 2 is stored and restored.	
Long push button action min.	1.0 second 2.0 seconds **3.0 seconds** 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used for scene control to set the duration from which a button counts as being pressed long to initiate the programming of a scene via this long push of a button.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer evaluated and transmitted.	

3.4.14 8-bit scene control

The "8-bit scene control" function makes it possible for the user to recall 8-bit scenes and to "program" a scene controller with 8-bit scene control or actuators with integrated 8-bit scene control without using the ETS to change the project planning, i.e. current values or switching states are allocated to the respective scene.
The scene with the set number (1...64) can be recalled with a short push of the button and programmed with a long push of the button, with a single communication object as well as the command to program a scene as well as the command to recall a stored scene and the number of the desired scene being transmitted.

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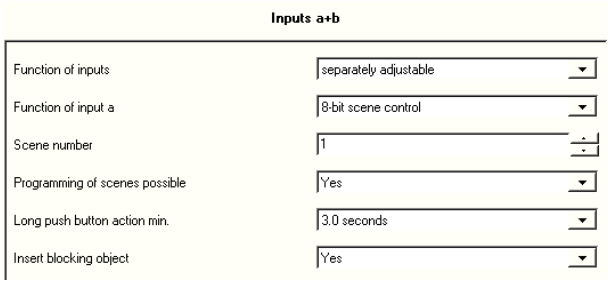
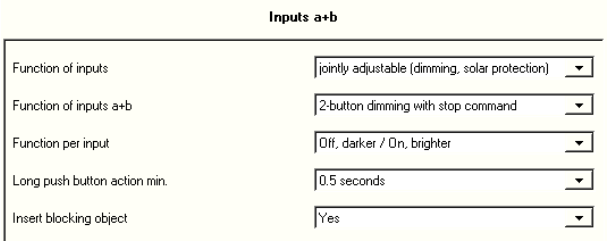
Before programming a scene, the affected actuators have to be set to the desired brightness values or switching states with the buttons / sensors provided for the purpose. The reception of a telegram to program a scene results in the addressed scene controllers or actuators with an integrated scene control function being requested to query the current values and status information on the actuators integrated in the scene and to store them in the corresponding scene.
A parameter setting determines whether the button should only serve to recall a scene (telegrams to program a scene are not sent) or whether one can also initiate the programming of a scene with the button. So as not to accidentally trigger a scene being programmed with the touch of a button that is only marginally longer than a short touch of a button, programming a scene should only be initiated with an "extra long" push of a button.



Parameter	Settings
Scene number (1...64)	**1**
This parameter specifies which scene (1...64) should be programmed or recalled.	
Programming of scenes possible	No; **Yes**
This parameter is used to set whether telegrams are only sent to recall a scene or whether telegrams are also sent to program a scene.	
Long push button action min.	1.0 second 2.0 seconds **3.0 seconds** 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used for scene control to set the duration from which a button counts as being pressed long to initiate the storing of a scene via this long push of a button.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the input is to be blocked/released via an additional blocking object or not. If an input is blocked (blocking object = 1), then condition changes on this input are no longer evaluated and transmitted.	

3.4.15 2-button dimming with stop telegram

With the pair of buttons connected to the two inputs, a short push of the button can switch the light on / off and a long push of the button can dim the light brighter or darker. It is possible to adjust with which button (or via which input) the light is to be switched off and dimmed darker or switched on and dimmed brighter.
With "2-button dimming with stop telegram", as soon as a long push of a button is detected, a "100% brighter" or "100% darker" dimming telegram is sent, and as soon as the button is released, a stop-telegram is sent.



Parameter	Settings
Function per input	**Off, darker / On, brighter** On, brighter / Off, darker; Toggle, darker / Toggle, brighter; Toggle, brighter / Toggle, darker
This parameter is used to set which bus telegram is sent for a short or long push of the respective button.	
Long push button action min	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	

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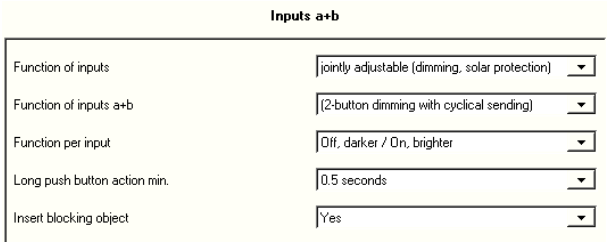
Parameter	Settings
Insert blocking object	**No;** Yes
This parameter is used to set whether the two functionally related inputs are to be jointly blocked/released via an additional blocking object or not. If both inputs are blocked (blocking object = 1), then condition changes on these inputs are no longer evaluated and transmitted.	

3.4.16 2-button dimming with cyclical sending

With the pair of buttons connected to the two inputs, a short push of the button can switch the light on / off and a long push of the button can dim the light brighter or darker. It is possible to adjust with which button (or via which input) the light is to be switched off and dimmed darker or switched on and dimmed brighter.
With "2-button dimming with cyclical sending", as soon as a long push of a button is detected, a Brighter or Darker dimming telegram with a step of 1/8 is sent every 0.5 seconds as long as the button continues to be pushed (this means that it is possible to dim from 0% to 100% and vice versa in 4 seconds).
Note: Instead of the "2-button dimming with cyclical sending", the "2-button dimming with stop telegram" should be used if possible (lower bus load due to significantly fewer telegrams).



Parameter	Settings
Function per input	**Off, darker / On, brighter;** On, brighter / Off, darker; Toggle, darker / Toggle, brighter Toggle, brighter / Toggle, darker
This parameter is used to set which bus telegram is sent for a short or long push of the respective button.	

Parameter	Settings
Long push button action min	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the two functionally related inputs are to be jointly blocked/released via an additional blocking object or not. If both inputs are blocked (blocking object = 1), then condition changes on these inputs are no longer evaluated and transmitted.	

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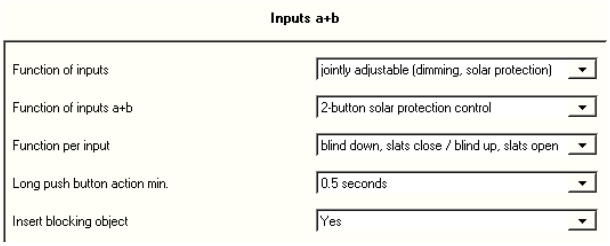
3.4.17 2-button solar protection control

With a pair of buttons it is possible, with a long push, to move the solar protection up or down to the respective limit position as well as stop the movement or move the slats by one step with a short push of a button. It is possible to adjust with which button (or via which input) the solar protection is moved down and the slats may be closed by one step or the solar protection is moved up and the slats may be opened by one step.



Parameter	Settings
Function per input	**blind down, slats close / blind up, slats open;** blind up, slats open / blind down, slats close
This parameter is used to set which bus telegram is sent for a short or long push of the respective button.	
Long push button action min.	0.3 seconds 0.4 seconds **0.5 seconds** 0.6 seconds 0.8 seconds 1.0 second 1.2 seconds 1.5 seconds 2.0 seconds 2.5 seconds 3.0 seconds 4.0 seconds 5.0 seconds 6.0 seconds 7.0 seconds
This parameter is used to set the duration from which a button counts as being pressed long.	
Insert blocking object	**No**; Yes
This parameter is used to set whether the two functionally related inputs are to be jointly blocked/released via an additional blocking object or not. If both inputs are blocked (blocking object = 1), then condition changes on these inputs are no longer evaluated and transmitted.	

Space for notes