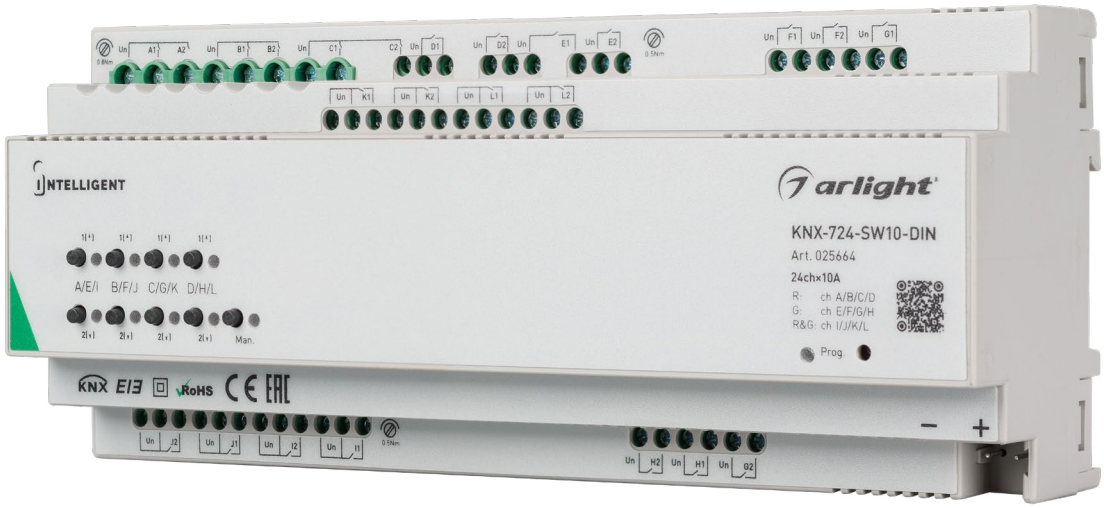
ATTACHMENT
SWITCH BLIND ACTUATOR
KNX-724-SW10-DIN



CONTENTS

1. PARAMETER SETTING DESCRIPTION IN ETS

The parameters will be described in the form of the function interfaces.

1.1. PARAMETER WINDOW "GENERAL"

Parameter window "General" can be shown in fig. 1.1. Here set some general parameters, that applies to the curtain output, also applies to the switch output.

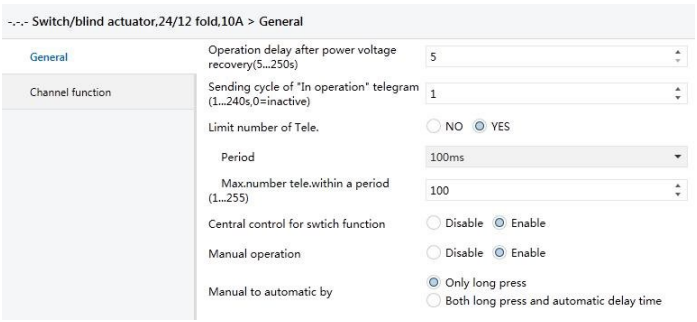


Fig. 1.1 Parameter Window "General"

Parameter "Operation delay after power voltage recovery [5...250s]"
The parameter defined the delay time that scan and relay operation after bus voltage recovery. No operation will be executed before the scan and relay operation delay finished, the operation during this process will be recorded and executed after the delay over. Meanwhile, telegrams sent during the scan delay will be recorded and executed after the delay.
The delay time here does not include the initiation time of the device, normally it will take 3 seconds to re-initiate the device after power voltage recovery. I.e the delay will start counter after the initiation time.
Note: During delay, the programming LED is on green , and the device can not be operated. After delay over, the LED will flash green, and the device can be operated.

Parameter "Sending cycle of 'in operation' telegram (1...240s, 0 = inactive):"
The parameter determines the time interval to send the telegram which shows the actuator is working normally or not via the bus. With the setting "0", the actuator doesn't send the telegram; if the setting is not "0", a telegram with the value "1" will be sent cyclically according to the setting to the bus.

Options: 0...240s, 0=cyclical send inactive

It is suggested to select the maximum time interval according to the application to keep the bus load as low as possible.

Note: it is starting to count the time after power up, instead of the operation delay after recovery of bus voltage.

Parameter "Limit number of send telegram"
This parameter is used to set the number limit of sending telegrams sent to the bus in order to decrease the load of bus,

Options: Yes
No

When select "Yes", the parameter "Period" and "Max. Number of send telegram within a period [1...255]" will be visible.

Parameter "Period"
This is to set the limit time of sending telegrams.

Options: 100ms
500ms
.....
10min

After bus voltage recovery, when the initialization time and the scan and relay operation delay have been completed, the set period begins and counting the telegrams also begins. Once the max. number of telegrams has reached during the set period, the device will not send telegram to the bus until the next set period start, and the telegrams that have not been sent will be stored in buffer and send in the next set period. The buffer can store up to 20 telegrams, if there are repetitive telegrams, the telegrams will be only sent once in the next set period.

Parameter "Max. Number telegram within a period [1...255]"
This is to set the Max. number of telegrams being sent within the setting monitored period.

Option: 1...255

Note: the above two parameters only affect the telegrams sent to the bus, they don't affect the operation action.

Parameter "Central control for switch function"
This parameter sets the central control for switch function.

Options: Disable
Enable

If enable, the object"Central control for all of switch"is visible, all channels with central control enabled can be switched together via the object.

Parameter "Manual operation"
The parameter defines whether the manual operation enables.

Options: Disable
Enable

If the enable is selected, the Man. /Auto Button has been enabled. And the follow parameter is visible.

Parameter "Manual to automatic by"

Options: Only long press
Both long press and automatic delay time

If set "only long press, the manual/auto". Operation only can be switched via long press the Man. Button.
If set "both long press and automatic delay time", the manual/auto. Operation can be switched via long press the Man. Button. or the set time for the manual to automatic has elapsed.

Parameter "Delay time *1s [10...60000]"
The parameter appears when "both long press and automatic delay time" is selected in the parameter "manual to automatic by". It is used for setting the time for an automatic reset from the "manual operation" to "automatic operation" state after the last push button operation.

Options: 10.....60000s

Note: The operation buttons that are located at the front of the device is invalid in the safety functions.

1.2. PARAMETER WINDOW "CHANNEL FUNCTION"

Parameter window "Channel function" can be shown in fig. 1.2. Here set channel function, as switch outputs or curtain output, one channel can be used as two switch outputs or a curtain output. Whether it is switch output or curtain output, Each switch or curtain output can be set separately, and parameters and objects which are assigned to each output are the same. The follow using a output as an example described the switch output and curtain output.

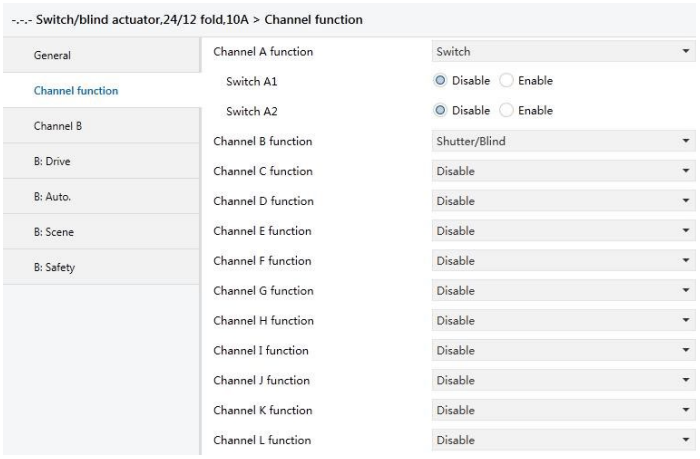


Fig. 1.2 Parameter Window"Channel function"

When the channel is enabled, the corresponding parameters can be set.

1.3. SWITCH OUTPUTS (A~L)

There are max. 24 outputs. Each output can be set separately, and parameters and objects which are assigned to each output are the same. Using output A1 as an example described.

1.3.1. PARAMETER WINDOW "CHANNEL $X_{1,2}$"

Parameter window "Channel $X_{1,2}$" can be shown in fig. 1.3. which applies to a whole output. In addition to setting general switching function, but also set position of switch on the bus power on and power down, reports of switch status, etc..

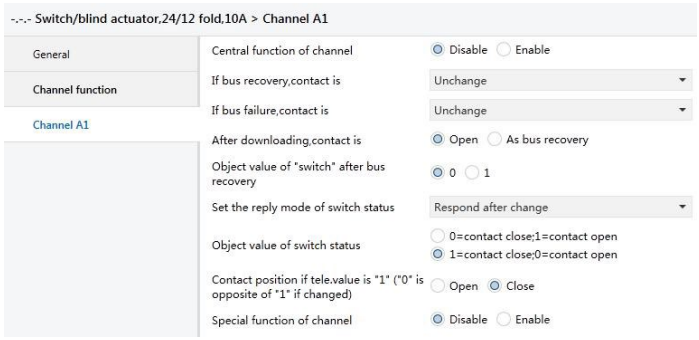


Fig. 1.3 parameter window "Channel $X_{1,2}$"

Parameter "Central control of channel"
The parameter sets whether the central control of the channel is enabled.

Options: Disable
Enable

If enable, the channel can be controlled via the object "Central control for all of switch".

Parameter "If bus recovery, contact is"
The output can adopt a defined status on bus voltage recovery via this parameter.

Options: unchange
Open
Closed
As before as bus fail

When selecting "Unchanged", the contact of the relay will remain the same as the last status on the power on.
When selecting "open", the contact will be open; while it is closed when selecting "closed".
The contact position after voltage recovery is the same as that before power off with "As before bus voltage fail".

Parameter "If bus fail, contact is"
The output can adopt a defined status after the bus voltage failure via this parameter.

Options: Unchange
open
closed

When selecting "Unchange", the contact of the relay will remain the same as the last status before power off; when selecting "open", the contact will be open; while it is closed when selecting "closed".

Parameter "After downloading, contact is"
This parameter set the contact position of the output after downloading.

Options: Open
As bus recovery

If "open", the output is open after downloading.
If "As bus recovery", the output adopts the defined status of the parameter "If bus recovery, contact is".

Parameter "Object Value of "Switch" after bus recovery"
This parameter will be used when enabling the logic function "input 0" to define the default value of the communication object "Switch" after bus voltage recovery, which can be "0" or "1".

Options: 0
1

Parameter "Set the reply mode of switch status"
This parameter defines how to respond the current switch status to the bus. There are three options to select.

Options: Respond after read only
respond after change
respond always

If selecting "respond after read only", the status telegram will not be sent out until receiving a read request telegrams via the object "reply switch status" from the bus.
If selecting "respond after change", it will send the status immediately via the object "reply switch status" when there are any changes on the output.
If selecting "respond always", no matter it's reading, or there is change for the status, as long as the controlling telegram can be received, the object will send the current status to the BUS.

Parameter "Object value of switch status :"

Options: 0=contact close; 1=contact open
0=contact open; 1=contact close

It means the contact of the relay will be closed when the value of the communication object "reply switch status" is 0 when setting "0=contact close; 1=contact open", while it is open when the value is "1".
It means the opposite with setting "0=contact open; 1=contact close".

Parameter "Contact position if tele. Value is '1' ('0' is opposite of '1' if changed)"
This parameter defines the contact position when switch on the switch, which will be triggered by the communication object "switch, X". When enabling "input 0" in the logic function, it will use the communication object "switch, X" to modify the value of "input 0", rather than triggering the switch operation. In this case, this parameter is no significance to the switch.

Options: Open
Close

The parameter only works after the object "Switch x" receiving value, and defines the direction of the contact after receiving it. The details can be found in the below form:

Parameter options	"Switch, X" object value =1	"Switch, X" object value =0
Open	Contact open(OFF)	Contact close (ON)
close	Contact close (ON)	Contact open(OFF)

Since the switch and logic functions share the same object "switch, X", thus need to understand the relationship between them, the control sequence shown below (the logic functions, please refer to the following chapter describe):

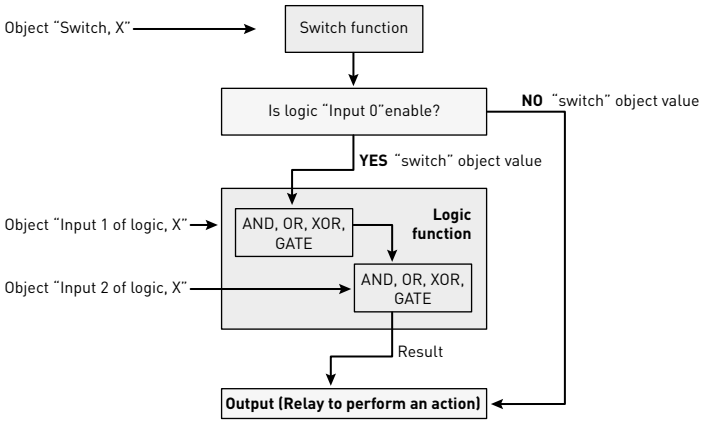


Fig. 1.4 switch and logical function diagram

When the logic function "input 0" enables, the object "switch, X" used as input of "input 0", the operation of general switch will become invalid.

Parameter "Special functions of switch actuator mode"
This parameter defines whether enable the special functions of the switch actuator. The parameter window "$X_{1,2}$: Function" will be seen with "enable", and able to set the special functions individually in Fig. 1.5. Enable or disable the special function in "$X_{1,2}$: Function".

Options: Disable
Enable

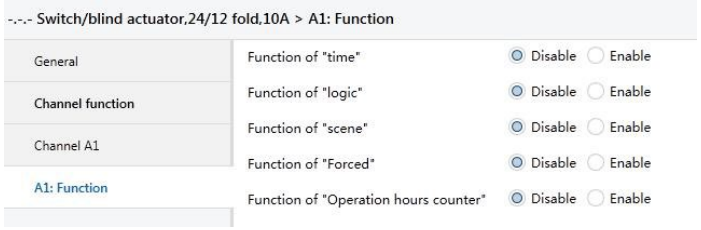


Fig. 1.5 the special function enable window "$X_{1,2}$: Function"

1.3.2.PARAMETER WINDOW "X1,2: TIME"

This parameter window will become visible when selecting "enable" in the parameter "Function of "time"" in the window "X: Function" shown in Fig. 1.5. See Fig. 1.6. And the object "enable time function" will be also visible, which is used to disable the time function. After disabled, previous operation is still carried out completely. Such as delay switch on, the function is disabled during delay, and then the switch is still switched on once the delay has been finished.

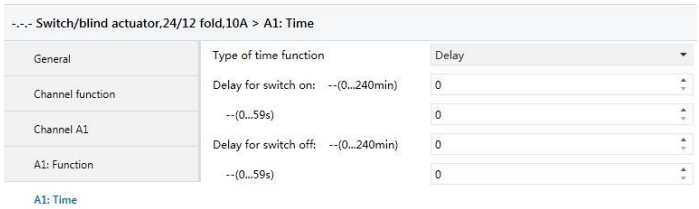


Fig. 1.6 parameter window "X1,2: Time-Delay "

Parameter "Type of time function"
The parameter defines the type of the time function, there are three options for the mode of work.

Options: Delay
Flashing
Staircase

1.3.2.1. SELECTION "DELAY"

The parameter window of the delay switch in Fig. 1.6 will be shown when selecting "Delay". The delay switch can be started via the object "Delay function".

Parameter "Delay for switch on: (0...240 min)/(0...59 s)"
This parameter defines the delay time of switching on.

Options: 0...240 min
0...59s

After receiving the delay ON telegram, the switch is on once the delay over.

Parameter "Delay for switch off: (0...240 min)/(0...59 s)"
This parameter defines the delay time of switching off.

Options: 0...240 min
0...59 s

After receiving the delay off telegram, the switch is off once the delay over.
If receiving the relevant telegram again during delay, the delay will be reset.

1.3.2.2. SELECTION "FLASHING"

The parameter window in Fig. 1.7 "X: Time-flashing" will be shown up when selecting "flashing" in the parameter "Type of time function". The flashing switch function is mainly used for lamp aging test.

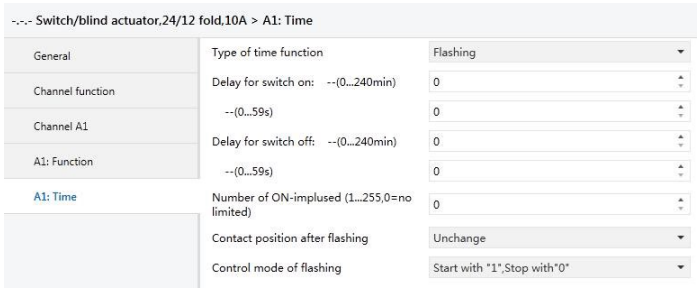


Fig. 1.7 parameter window "X1,2: Time-flashing"

The flashing switch can be started via the object "Flashing function". It is able to set the flashing time in "Delay for switch on" or "Delay for switch off", which will restart the flashing when receiving the start flashing telegram, and define the contact position after flashing.

Parameter "Delay for switch on: (0...240Min), (0...59s)"
The parameter defines the duration time of switch on the output when flashing.

Options: 0...240 min
0...59 s

Note: it will not be executed unless the time is lower than the relay threshold switch frequency. Since there will be not sufficient energy to do it because of the frequent relay switching, and it may cause the time delay. The same situation will happen after the bus voltage recovery.

Parameter "Delay for switch off: (0...240Min), (0...59s)"
The parameter defines the duration time of switch off the output when flashing.

Options: 0...240 min
0...59 s

Note: it will not be executed unless the time is lower than the relay threshold switch frequency. Since there will be not sufficient energy to do it because of the frequent relay switching, and it may cause the time delay. The same situation will happen after the bus voltage recovery.

Parameter "Number of ON-impulses (1...255, 0=no limited)"
This parameter sets the flashing times.0 means no limited. A flashing includes an on and an off actions.

Options: 0...255

Parameter "Contact position after flashing"
This parameter defines the relay contact position after flashing.

Options: Unchanged
Open
Close

Parameter"Control mode of flashing"
The parameter is used to select the control mode of the flashing output.

Options: Start with"1", stop with "0"
Start with "0", stop with "1"
Startwith "1/0", can not be stopped

It will start flashing with value "1" when selecting "star with "1", stop with "0" "; it will stop flashing with "0". The stop position is defined via last parameter.
It will start flashing with value "0" when selecting "star with "0", stop with "1" "; it will stop flashing with "1". The stop position is defined via last parameter.
It will start flashing with either "1" or "0" when selecting "star with "1/0", can not be stopped"; Under this circumstance it cannot terminate the flashing by value until operation over or it is blocked by other operation.

1.3.2.3. SELECTION "STAIRCASE"

The parameter window of the staircase lighting function in Fig. 1.8 will be visible when selecting "Staircase" in the parameter "Type of time function".

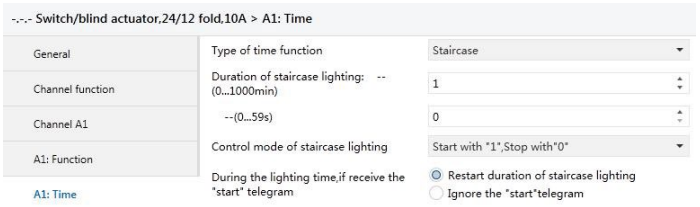


Fig. 1.8 parameter window "X1,2: Time-staircase"

The staircase lighting can be started via the object "staircase function". The value that switches on the staircase lighting can be set via a parameter. The duration time of the lighting on is also set via a parameter.

Parameter "Duration of staircase lighting--(0...1000 min) --(0...59 s)"
This parameter describes the duration time when switching on the staircase lighting.

Options: 0...1000min
0...59s

Parameter "Control mode of staircase lighting"
This parameter defines the control mode on/off of the staircase lighting.Choose suitable control mode according to the needs.

Options: Start with "1", stop with "0"
Start with "1", no action with "0"
Start with "0/1", cannot be stop
Start with "1", Off with "0"

When selecting "Start with "1", stop with "0"", it will switch on the staircase lights with the value "1"; it will stop the time counting operation with "0" and don't change the contact position until changed by other operations.
When selecting "Start with "1", no action with "0"", it will switch on the staircase lights with the value "1" and no reaction with "0".
When selecting "Start with "0/1", cannot be stopped", it will switch on the staircase lights either with "0" or "1" but cannot stop it until the duration time finished or changed by other operation.
When selecting "Start with '1', off with '0'", it will switch on the staircase lights with the value "1", and off with "0".

Parameter "During the lighting time ,if receive the 'start' telegram"

Options: restart duration of staircase lighting
Ignored the "switch on" telegram

If selecting "restart duration of staircase lighting", if the object "Staircase function" again receive the telegram of starting staircase lighting during the duration time, then the staircase lighting will restart and the duration time will be restart.
If selecting "Ignored the 'switch on' telegram", then it will ignore the receiving telegram of the object "Staircase function" during the duration time.

1.3.3. PARAMETER WINDOW "$X_{1,2}$: LOGIC"

Parameter window of logic function shown in Fig. 1.9, it will shown up in Fig. 1.5 "X: Function" when selecting "enable" in "Function of "logic"".

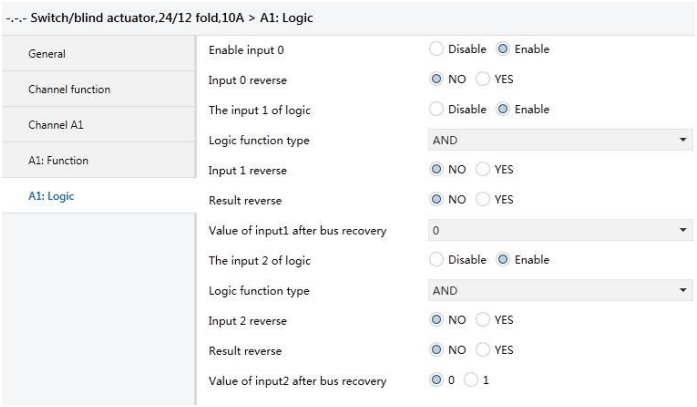


Fig. 1.9 parameter window "$X_{1,2}$: Logic"

There are 2 logic communication objects to decide the status of each output, which are related to the "Switch", as shown in fig. 1.4.
It will re-operate when receiving a new object value as the final output status (close the contact with "1", open it with "0"). The values of the communication object "Input 1 of logic" makes logic operation with "Switch" firstly, and then the result after that will makes operations with the value of "Input 2 of logic". This operation will ignore the objects which are unable, and continue to the next step with the ones who are enabled.

Parameter "Enable input 0"
This parameter is used to enable the function of logic operation of "input 0", whose values are wrote by the object "Switch".

Options: Disable
Enable

In the both cases of input 0 enabled and not enabled, there are a little different parameters. All parameters of logic function have described in the following. If input0 is disabled, the parameters will be less. If there are not certain parameters in the case, then it is also not available with the function of these parameters.

Parameter "Input 0/1/2 reverse"
This parameter defines whether negate the input value. Negate it with "yes", don't with "no".

Options: No
Yes

Parameter "Input x of Logic" (x = 1, 2)"
This parameter is used to enable input1 and input 2. If enable, their communication objects "logic 1" and "logic 2" will be also visible.

Options: Disable
Enable

Parameter "Logic function type"
This parameter set logic function type, provided three standard logic operations: AND, OR ,XOR, and a GATE function. Explanation of gate function: it will use the next logic value as the enable mark of the previous logic. If the enable mark of the next logic is "1", that means it is able to use the previous logic value as the operation result. E.g. the value of input 1 is 1, that means the value of input 0 can be used as the operation result; if the value of input 2 is 1, that means the operation value of input 0/1 can be used as the result.

Options: AND
OR
XOR
Gate function

Below result of logic operation is possible:

Logic function	Object values					Description
	Input0 (Switch)	Input1	Result of Input 0/1	Input2	Output	
AND	0 0 1 1	0 1 0 1	0 0 0 1	0 1 0 1	0 0 0 1	The result is 1 if both input values are 1.
OR	0 0 1 1	0 1 0 1	0 1 1 1	0 1 0 1	0 1 1 1	The result is 1 if one of both input values is 1.
XOR	0 0 1 1	0 1 0 1	0 1 1 0	0 1 0 1	0 0 1 1	The result is 1 if both input values have a different value.
GATE	0 0 1 1	Closed Open Closed Open	0 1	Closed Open Closed Open	0 1	The input0 of value is only allowed through if the GATE (input 1 and input 2) is open. Otherwise the input 0 of value is ignored.

Note:
1. The values of the communication object "Input 1" makes logic operation with "Switch" firstly, and then the result will makes operations with the value of "Input 2", and the final operation result as the final output (close the contact with "1", open it with "0").
2. If an input is not enabled, this input is ignored.
3. If logic result needs to be negated, the first negated, then the next step.
4. The signal can be passed if the GATE is open, otherwise it is ignored. For example, the input 0 of value is ignored when the GATE of input1 is closed, and the output is directly determined by the input2.

Parameter "Result reverse"
This parameter defines whether negate the logical operation results. Negate it with "yes", don't with "no".

Options: No
Yes

Parameter "Value of input 1 after bus recovery"
This parameter defines the default value of the object "Logic1" after bus voltage recovery.

Options: 0
1
Value before power off

Parameter "Value of input 2 after bus recovery"
This parameter defines the default value of the communication object "Logic 2" after bus voltage recovery, "1" or "0" is optional.

Options: 0
1

1.3.4. PARAMETER WINDOW "$X_{1,2}$: SCENE"

The parameter window shown in Fig. 1.10 will be visible when selecting "enable" in "Function of "scene" " in Fig. 1.5. Here can set 8 scenes.

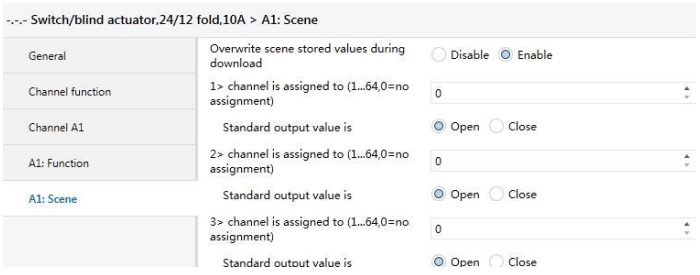


Fig. 1.10 parameter window "$X_{1,2}$:Scene"

Parameter "Overwrite scene stored values during download"

Options: Disable
Enable

If selecting "Disable",the stored values before the download can be not overwritten by the parameterized scene value.
If selecting "Enable",the stored values will be overwritten by the parameterized scene value during the download .

Parameter "channel is assigned to (1...64 ,0= no assignment)"
It is able to allocate 64 different scene numbers to every output. There are 8 various scenes can be set per output.

Options: Scene 1... Scene 64, 0=no assignment

Note: 1-64 in the parameter setup corresponds to the scene number 0-63 received by the communication object "Scene". If a scene is modified, the new scene will be stored when power off.

Parameter "--Standard output value is"
This parameter defines the switch output status when recall the scene.

Options: Open
Close

1.3.5. PARAMETER WINDOW "X1,2: FORCED"

The window of the function "forced" in Fig. 1.11 "X: Function" will be visible with "enable" in the parameter "Function of "forced" " in Fig. 1.5.

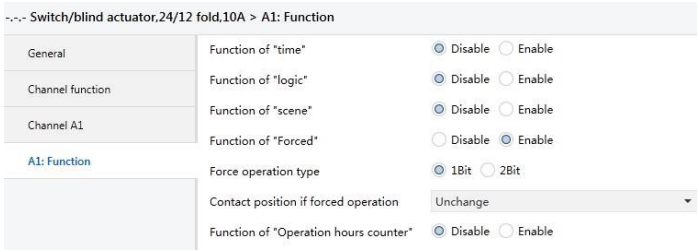


Fig. 1.11 parameter window "X1,2: Forced"

This function will be used in some special situation such as emergency, and are activated by the object "Forced output" with the highest priority in the system, which means only "forced operation" are valid in this case.

Parameter "Force operation type"
The parameter defines the control type of force operation.

Options: 1bit
2bit

If selecting"1bit", object "Forced output" receives telegram "1" to activate force operation, telegram "0" to cancel the force operation.
If selecting"2bit", when the object "Forced output" receives a telegram value, the action as follow:

Value of object "Forced output, X"	Action
00b (0), 01b (1)	Cancel force operation, other operation can be performed.
10b (2)	Force switch off
11b (3)	Force switch on

When cancel the forced operation, the position of relay contact is unchanged.

Parameter "Contact position if forced operation"
The parameter is visible if the option "1bit" is selected via last parameter, which defines the contact position of force operation.

Option: Unchange
Open
Close

The forced operation has the highest priority, and all the other operations are ignored during the forced operation.

1.3.6. PARAMETER WINDOW "X1,2:OPERATION HOURS COUNTER"

The window of the function "Operation hours counter" in Fig. 1.12 will be visible with "enable" in the parameter "Function of "Operation hours counter"" in Fig. 1.5. The function is use for counting the time of relay on.

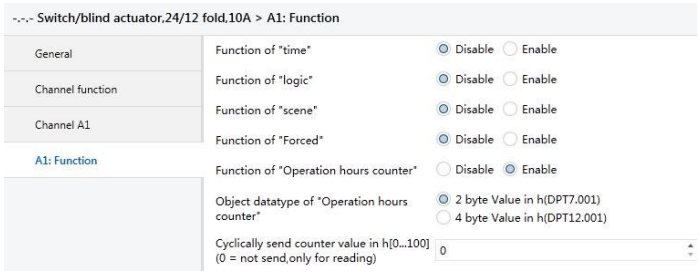


Fig. 1.12 parameter window "X1,2: Operation hours counter"

Parameter "Object datatype of " Operation hours counter"
This parameter is used to select data type of the operation hours counter.

Options: 2 byte Value (DPT 7.001)
4 byte Value (DPT 12.001)

Parameter "Cyclically send counter value in h[0..100] (0=not send, only for reading)"
The parameter determines the time interval to send the telegram which is used for counting the time of relay on .

Option: 0-100
"0"means do not send. "1-100"means 1 hours to 100 hours cyclically send the value.

1.4. SHUTTER OUTPUTS (A~L)

There are max. 12 outputs. Each output can be set separately, and parameters and objects which are assigned to each output are the same. Using one of outputs as an example described.

1.4.1. PARAMETER WINDOW "CHANNEL X: SHUTTER"

Parameter window "Channel X: Shutter" can be shown in fig. 1.13. Here set the general parameters of Shutter actuator.

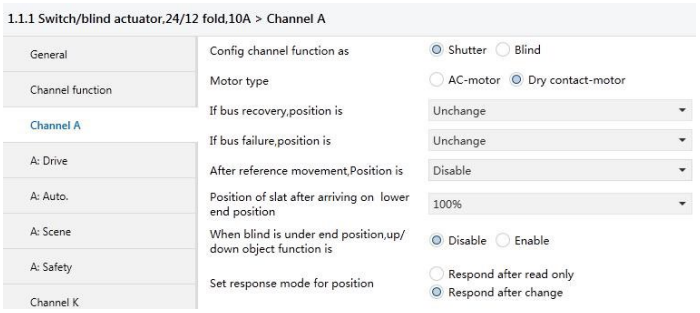


Fig. 1.13 parameter window "Channel X"

Parameter "Config channel function as:"
This parameter is used to define the output mode. Different output modes have different parameters and communications.

Options: Shutter
Blinds

If selecting "Shutter", the output is for the Shutter operation mode, which can operate the curtain with louvres.
If selecting "Blind", the output is similar with the Shutter operation mode, except that it cannot adjust louvres.
The section details the parameters and communication objects for the "Shutter" mode.

Parameter "Motor type"
This parameter is used to set the mode of shutter drive.

Options: AC-motor
Dry contact-motor

The option "AC-motor", is applied to driver of AC power.
The option "Dry contact-motor", is applied to driver of dry contact control.

Parameter "If bus recovery, position is"
The parameter is used to set the position where shutter moves, after the output on bus recovery.

Options: Unchang
Up
Down
Stop

If the option "Unchange" is set, the output contacts remain in their current position.
If the option "up" is set, the Shutter is moved to the top after bus voltage recovery.
If the option "down" is set, the Shutter is moved to the bottom after bus voltage recovery.
If the option "stop" is set, if the shutter is moving, it will be stopped after bus recovery.
All output contacts are opened after bus voltage recovery.

Note: If after programming or bus voltage recovery, the Shutter actuator does not detect the current position of the Shutter. The communication objects "Shutter position [0...100%]" and "Louvre position [0...100%]" have the default value "130" and are not sent on the bus.
If after programming or bus voltage recovery a defined position of the Shutter is required for the first time, it is first of all raised to the top or dropped to the bottom (toward near the target location moving) to determine the current position and then into the target position. Only the Shutter finish a full running can confirm position.

Parameter "If bus failure, position is"
The parameter is used to set the position where shutter moves after on bus voltage failure.

Options: Unchang
Up
Down
Stop

If the option "Unchange" is set, the output contacts remain in their current position.
If the option "up" is set, the Shutter is moved to the top after bus voltage failure.
If the option "down" is set, the Shutter is moved to the bottom after bus voltage failure.
If the option "stop" is set, if the shutter is moving, it will be stopped after bus voltage failure.

Note: Before the power-down, the curtain is running, and in power-down it is required to perform a reverse operation, then this operation will not be implemented, but to maintain the current running state.

Parameter "After reference movement, Position is"
This parameter specifies how the Shutter actuator behaves after a reference movement.

Options: Disable
No reaction
Move to save position

If the option "disable" is selected, the reference movement is deactivated, other option is selected, and the communication object "reference movement" appears. If the option "no reaction" is selected, the object receives a telegram "0", the Shutter is moved to the top; the object receives a telegram "1", the Shutter is moved to the bottom. If the option "move to save position" is selected, the object receives a telegram "0", the Shutter is moved to the top, then back to its original position; the object receives a telegram "1", the Shutter is moved to the bottom, then back to its original position.
The Shutter actuator continually determines the current position of the Shutter as well as the angle position of the slat using the duration of individual movements. Over longer periods, slight inaccuracies may occur when determining the position due to temperature variations and aging processes. Therefore the Shutter actuator uses the upper and lower limit positions to clearly define the current position of the Shutter. Each time that the Shutter is in the upper or lower limit position, the position is updated in the memory of the Shutter actuator.
If the limit positions have not been reached during normal operation, a reference movement can be triggered via a bus telegram to move the Shutter right to the top or right to the bottom. Depending on the parameter settings, the Shutter either remains in the reference position after the reference movement or moves back into the saved position.

Parameter "position of slat after arriving on lower end position"
The parameter can set the slat positions of slat after the lower end position is reached.

Options: 0%/10%/.../90%/100%

For example, if select "40%", when the object "Shutter UP/DOWN" receives a telegram "1", the shutter will move to the lower end position, then the slat positions are adjusted to 40%.

Note: the parameter only relates to the "Down"reaction (the parameter option with"Down"), the safety operation and the percentage value control way are not affected for the parameter.

Parameter "When blind is under end position, up/down object function is"
The parameter defines whether the blind still can be moved via the object "shutter/blind up/down" when the blind is under end position.

Options: Disable
Enable

If select "disable", It can not be moved.
If select "enable", It can be moved, and the running time is the total move time.

Parameter"Set response mode for position"
The parameter defines the response mode for shutter position.

Options: Respond after read only
respond after change

If select"Respond after read only",only when the device receive the current shutter position from other bus devices or the bus read the current shutter position,object "Shutter position status/slat position status"send the information of shutter position to the bus.
If select"Respond after change", when the shutter position changes, object "Shutter position status/slat position status"send the telegram to the bus,so as to report the shutter position.

1.4.1.1. PARAMETER WINDOW "X: DRIVE"

Parameter window "X: Drive" is shown in fig. 1.14. Here set the relevant parameters with the Shutter drive. The current position of the Shutter can be usually calculated based on the total move time. The duration of slat adjustment and total move time of slat can calculate the current position of slat. The technical data and running time are different for different Shutter. It is therefore important to know its technical data and running time before using the Shutter. It is the only way that the relevant parameters can be set precisely for the Shutter actuator.

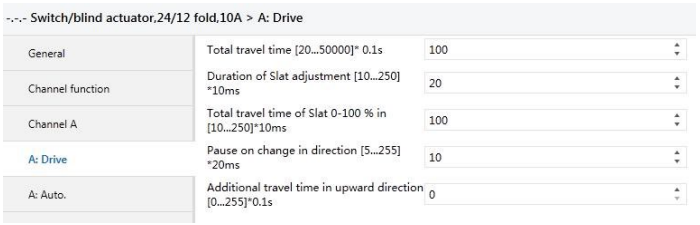
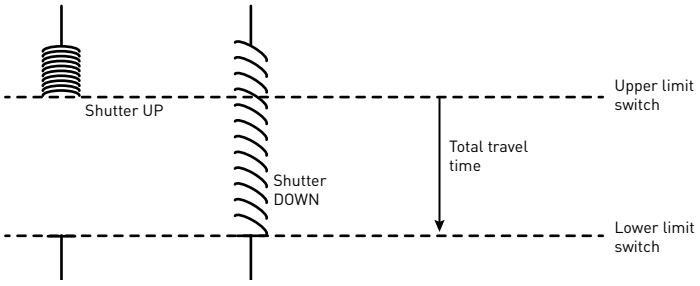


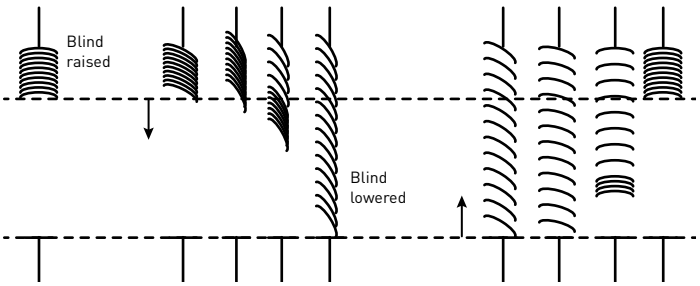
Fig. 1.14 parameter window "X: Drive"

Parameter "Total move time [20...50000]*0.1s"
The parameter is used for setting the total move time in seconds.
The total move time is the period that the Shutter requires to travel from the upper limit position to the lower limit position (see following Diagram). If the Shutter actuator receives an UP or DOWN movement command, the corresponding output is switched and the Shutter is moved in this direction until the Shutter actuator receives a STOP command, or until the upper or lower limit position has been reached and then the motor is switched off via the limit switch. If the Shutter is switch off via the limit switch, the corresponding output contact of the Shutter actuator remains closed until the set total move time has elapsed, only then the output contact will be disconnected.



Note: The current position of the Shutter during operation can also be determined with the help of the total move time. It is therefore important to measure and set the total move time as accurately as possible, particularly if the functions "Move to position via a 1byte value" and "Status response" are used. Only then is it possible to calculate the current position of the Shutter precisely.

Parameter "duration of slat adjustments [10...250]*10ms"
The parameter is used for setting the duration of slat adjustment in milliseconds. The shorter the time, the more precise angle adjustment of slats.
After an upward movement of the Shutter, the slat normally are open (horizontal slat position). If the Shutter is now lowered, the slat are closed first of all (vertical slat position) and the Shutter moves downwards. If the Shutter is now raised again, the slat are opened again first (horizontal slat position) and then raised. (See following Diagram)



Parameter "Total travel time of slat 0...100% in [10...250]*10ms"
The parameter is used for setting the total move time of slat adjustments from fully closed to fully open. It determines the current position of the slat during operation. It is therefore important to measure and set the total move time of slat as accurately as possible, particularly if the functions "adjust to position via a 1byte value" and "Status response" are used. Only then is it possible to calculate the current position of the slat precisely.
The parameter is used together with above parameter. The max. number of slat adjustment that the slat is adjusted from fully closed to fully open is divide the total move time of slat by the duration of slat adjustment.

Parameter "pause on change in direction [5...255]*20ms"
The parameter is used for setting the pause on change in direction in milliseconds. The technical data supplied by the drive manufacturer must be taken into account, to enter a suitable value in the parameter. The function can prevent the motor to damage on change suddenly in direction, and extend the service life of the motor.

Parameter "Additional travel time in upward direction [0..255]*0.1s"
The parameter set a additional travel time in upward direction. When the Shutter reach the completely up position , the output is disconnected after a delay time. If the position does not reach completely up, the output will be disconnected without delay. Other case is, after reached the completely up position the output also has a delay time, and then turned to move to the target location.

Note: The completely up position here refers to the position of shutter are in 0%, just go to this up position, there will be delay.

1.4.1.2. PARAMETER WINDOW "X: AUTO."

The Parameter window "X: Auto." is shown in fig. 1.15. Here can set the automatic sun protection operation. Depending on the strength of induction light for the brightness sensor, the Shutter actuator moves the shutter/blind into a set position. For example, the shutter/blind can be raised if the sun is very weak or is not shining on the window at all. As much light as possible is thereby let into the room. If there is blazing sun on the window, the shutter/blind can be lowered and the slat can be adjusted to the extent that direct sunlight cannot penetrate the room. Meanwhile, the residual opening in the shutter lets in a sufficient level of diffuse light into the room.

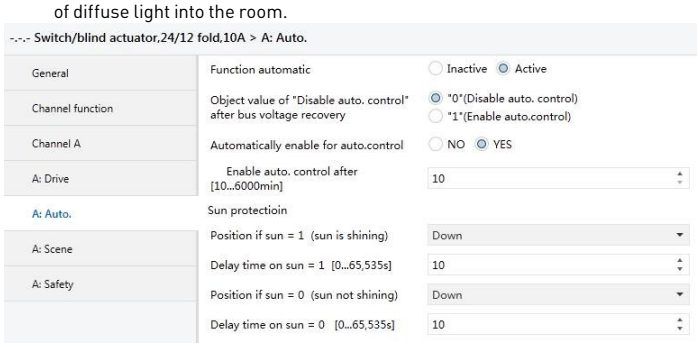


Fig. 1.15 Parameter window"X: Auto."

Parameter "Function automatic "
The parameter is used to set whether the Auto. Control operation is activated, i.e. the Automatic sun protection function.

Options: Inactive
Active

If the option " Active " is selected, the following three parameters will be visible. The communication objects "Enable auto. control", "Sun operation", "Sun: Shutter position [0...100%]" and "Sun: slat adj. [0...100%]" also will be visible.
When the object "Enable auto. control" receives a telegram "1", the Auto. Operation is activated. When the object "Enable auto. control" receives a telegram "0" or the user sends a direct movement command (e.g. UP/DOWN, move to position etc.), the Auto. Operation is deactivated. If the command is not belong to the direct movement command (e.g. store scene etc.), the Auto. Operation is still activated.
The priority of direct operation and automatic operation is the same, but they cannot occur at the same time.

Note: After the automatic operation is deactivated, only when the object "Enable auto. control" receives a telegram "1"or the set time for the direct operation to automatic has elapsed (see parameter "Enable auto. Control after [10...6000min]"), it can be activated again.

Parameter"Object value of "Disable auto. Control"after bus voltage recovery"
The parameter defines the initial value of the communication object "Enable auto. control" after bus voltage recovery.

Options: "0" (disable auto. control)
"1" (enable auto. control)

If select "0", the initial value is 0, indicate that the auto. Operation is deactivated after bus voltage recovery.
If select "1", the initial value is 1, indicate that the auto. Operation is activated after bus voltage recovery.

Parameter"Automatically Enable for auto. control"
The parameter defines whether the auto. Operation can be automatically reactivated after it has been deactivated for the direct operation or the object "Dis. Auto. Control".

Options: No
Yes

Select "yes", the following parameter appears:
-- Parameter "Enable auto. Control after [10...6000min]"
Using the parameter, the duration for the automatic reactivation of the automatic Operation is defined. I.e. after the automatic operation has been deactivated for the direct operation or the object "Enable auto. control", it can be automatically reactivated when the set time has elapsed.
If the automatic operation is interrupted during the set time by a direct operation or object " Enable auto. control", the time will re-timing.

Note: the safety operations have the higher priority. It is therefore the automatic operation can be not activated automatically if the safety operation is active. The duration time will be begun to time until the safety operation is cancelled.

Parameter"Sun protection:"
-- Parameter"Position if sun= 1 (Sun is shining) "
This parameter is used to set the position that the shutter is moved into when there is blazing sun, i.e. when the object "Sun operation" receives a telegram "1", the shutter is moved into the position.

Options: No reaction
Up
Down
Stop
Receive 1 byte value

If the option "no reaction" is set, the output contacts remain in their current position when the object "Sun operation" receives a telegram "1".
If the option "receive 1 byte value" is set, when the object "Sun operation" receives a telegram "1", the position depending on the values that the objects "Sun: slat adj. [0...100%]" and "Sun: Shutter position [0...100%]" received. After programming or bus voltage recovery, the two objects values are uncertain, and then their values are "130" by default. Only when the two objects receive the values, the position is confirmed. In any operating status, the values that the two objects receive can be stored, including the safety operation of the higher priority.
-- Parameter"Delay time on sun= 1 [0...65535s]"
This parameter defines the delay time, i.e. the time that the Shutter actuator delays executing action when the object "Sun operation" received a telegram "1". Mainly to prevent component damage or affect the motor life due to light frequent fluctuations lead to the Shutter actuator frequent action.

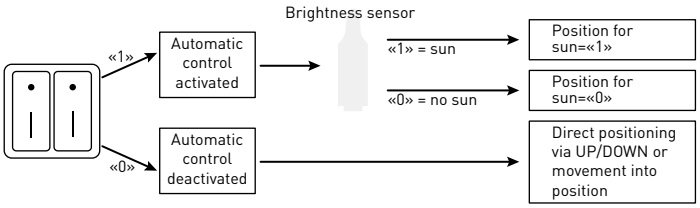
Option: 0...65535 s

-- Parameter"Position if sun= 0 (Sun is not shining) "
This parameter is similar with last parameter. The difference is that here defined the position that the shutter is moved into when the object "Sun operation" receives a telegram "0".

-- Parameter "Delay time on sun= 0 [0...65535]"
This parameter defines the delay time, i.e. the time that the Shutter actuator delays executing action when the object "Sun operation" received a telegram "0". Mainly to prevent component damage or affect the motor life due to light frequent fluctuations lead to the Shutter actuator frequent action.

Option: 0...65535 s

The follow is a simple automatic sun protection system:



The brightness sensor is used to sense the light intensity. The push button can be connected with the universal interface or substitute for other switch sensor on the bus.
With the help of the second switch sensor, the user can specify whether to enable the automatic sun protection or to control the shutters/blinds manually. If the automatic sun protection is activated via a switch sensor, the shutter/blind moves automatically until either the automatic sun protection is deactivated via the same switch sensor or the user sends a direct movement command and the automatic function is thus also deactivated.
The Shutter actuator receives the information via the brightness sensor as to whether there is direct sunlight on the window. Once the delay period has elapsed, the Shutter actuator positions the shutter/blind according to the set Position for sun= "1" (sun) or Position for sun= "0" (no sun).

1.4.1.3. PARAMETER WINDOW"X: SCENE"

The Parameter window"X: Scene" is shown in fig. 1.16. Here can set 8 scenes for per output.

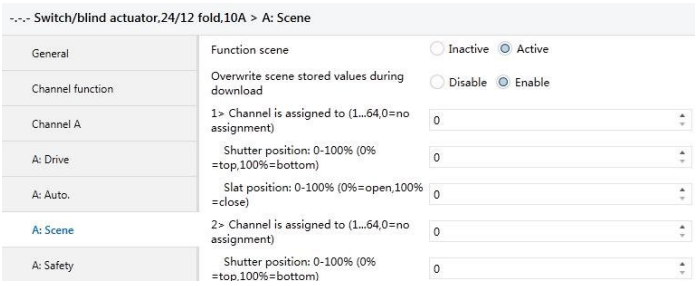


Fig. 1.16 Parameter window "X: Scene"

Parameter "Overwrite scene stored values during download"

Options: Disable
Enable

If selecting "Disable",the stored values before the download can be not overwritten by the parameterized scene value.
If selecting "Enable",the stored values will be overwritten by the parameterized scene value during the download .

Parameter "channel is assigned to (1...64 , 0= no assignment)"
There are 8 various scenes can be set for per output. It is able to allocate 64 different scene numbers for per scene. Options: Scene 1... Scene 64 , 0=no assignment

Note: 1-64 in the parameter setting corresponds to the telegram 0-63 received. On bus voltage failure, the modified scene value is not stored.

Parameter "--Shutter position 0...100%(0%=top,100%=bottom)"
This parameter is used to set the preset position of Shutter for a scene: 0...100%,0%=top, 100%=bottom

Parameter "--slat position 0...100%(0%=opened,100%=closed)"
This parameter is used to set the preset position of slat for a scene: 0...100%,0%=opened, 100%=closed

1.4.1.4. PARAMETER WINDOW "X: SAFETY"

The Parameter window "X: Safety" is shown in fig. 1.17. Here can set safety operation of shutter actuator.

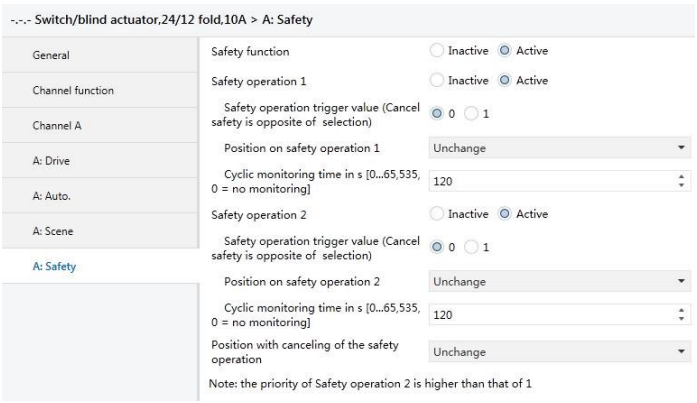


Fig. 1.17 Parameter window "X: Safety"

Here define the action that the shutter should be carried out when the safety operation is triggered of every channel. Every channel is independent and non-influential from each other.

Parameter "Safety operation 1/2"
The parameter defines whether enable the safety operation of shutter.

Options: Inactive
Active

When select "Inactive", the safety operation will be disabled;
When select "active", the follow parameters will become visible, you are able to set conditions to trigger safety operation and relevant communication object "Safety operation 1/2" will be enabled.

Parameter "safety operation trigger value (Cancel safety is opposite of selection)"
This parameter is used to set the safety operation object trigger value.

Options: 0
1

If it's set "0 ", When the communication object "Safety operation 1/2" receives telegraph with logic value "0" , the safety operation will be activated. When receives telegram "1", the safety operation is cancelled and the monitoring circle time of safety operation will be reset.
If set "1", it is the opposite with set "0".

Parameter "position on safety operation 1/2"
It defines the shutter action after triggering "Safety operation x" (x=1, 2).

Options: Unchanged
Up
Down
Stop

Parameter "cyclic monitoring time in s [0...65535,0=no monitoring]"
The parameter defines the monitoring time, at which the safety operation is monitored. The monitoring time in the Shutter actuator should be at least twice as long as the cyclical sending time of the sensor so that the Shutter is not immediately moved to the protected position due to the negligible omission of a signal, e.g. due to a high bus load. If the value of this parameter is set to "0", the monitoring of the safety operation will be deactivated, and then the safety operation can be controlled directly via its object.
If the object "Safety operation x" doesn't receive a corresponding telegram after the monitoring time, the Safety operation will be activated, and the shutter will be moved to a safety position that is defined in the above parameter.

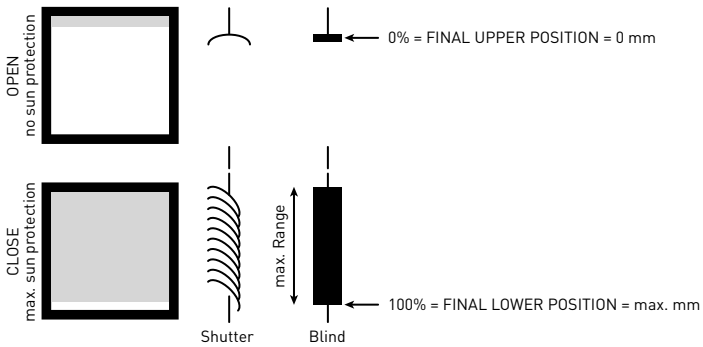
Parameter "position with canceling of the safety operation"
It defines the shutter action in cancelling all Safety operations.

Options: Unchanged
Up
Down
Stop

The cancel action is performed only if a safe operation has been entered.
The priority of the safety operations is higher than other operation, if the safety operation is activated, other operation will be ignored. And the priority of safety operation 2 is higher than that of 1.

1.4.2. PARAMETER WINDOW "CHANNEL X: BLIND"

The "Blind" operation mode is similar with the "Shutter" operation mode in the parameters and the objects, and their function is also almost the same. The only difference is that there is no slat adjustment function in the "Blind" operating mode.
"Shutter" and "Blind" difference as shown:



The functions described for the "Shutter" operating mode also apply to the "Blind" operating mode (with the exception of the slat adjustment function).

2. COMMUNICATION OBJECTS DESCRIPTION

Communication object is the media of devices on the bus communicate with other device, that is, just communication object can communicate with the bus. The role of each communication objects as following.

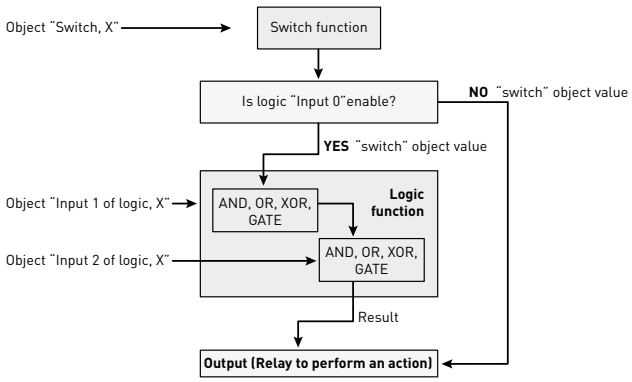
Note: "C" in "Flag" column in the below table means that the object has a normal link to the bus; "W" means the object value can be modified via the bus; "R" means the value of the object can be read via the bus; "T" means that a telegram is transmitted when the object value has been modified; "U" means that value response telegrams are interpreted as a write command, the value of the object is updated.

2.1. COMMUNICATION OBJECTS OF SWITCH OUTPUTS

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
0	General	In operation			1 bit	C	-	-	T	-	switch	Low
1	General	Central control for all switch			1 bit	C	-	W	-	-	switch	Low
2	Output A1	Switch			1 bit	C	-	W	-	-	switch	Low
3	Output A1	Switch status			1 bit	C	R	-	T	-	switch	Low
4	Output A1	Enable time function			1 bit	C	-	W	-	-	enable	Low
5	Output A1	Delay function			1 bit	C	-	W	-	-	switch	Low
6	Output A1	Operation hours counter			2 bytes	C	R	W	T	U	pulses	Low
7	Output A1	Scene			1 byte	C	-	W	-	-		Low
8	Output A1	Forced output			1 bit	C	-	W	-	-	enable	Low
9	Output A1	Logic 1			1 bit	C	-	W	-	-	boolean	Low
10	Output A1	Logic 2			1 bit	C	-	W	-	-	boolean	Low

2.1 Communication objects of switch outputs

No.	Function	Object name	Data type	Flags	DPT
0	General	In operation	1bit	C,T	1.001 DPT_Switch
This object is always visible, used to send telegram "1" to the bus periodically to proof the device is under normal working condition.					
1	General	Central control for all switch	1bit	C,W	1.001 DPT_Switch
This object is used for the central control for all switch outputs if the central control of output is enabled. Telegram value 0 ——off 1 —— on					
2	Output X	Switch	1bit	C,W	1.001 DPT_Switch
This object is used to trigger the switch operation. It will start the switch operation with "1", and end with "0". When enabling "input 0" in the logic function, the object "Switch, X" will be subject to logic functions, rather than trigger the switch operation directly. For details, please refer to the following flowchart:					



3	Output X	Switch status	1bit	C,R,T	1.001 DPT_Switch
This object indicates the contact status (details will be defined by parameter "Object value of switch status:" in "Channel $X_{1,2}$: Switch"). If selecting "respond, after read only", the status telegram will not be sent out until receiving a read request telegrams from the bus via the object. If selecting "respond after change", it will send the status automatically via the object when there are any changes on the output. If selecting"respond always"The object will not send current status to the bus, until the device received the request of reading the switch status from the other bus device operation or the bus.					
4	Output X	Enable time function	1bit	C,W	1.003 DPT_Enable
This object will be enabled only when enabling the time function, it can be used to enable and disable the time function. It will enable the timing function when receiving the value "1"; will disable it when receiving "0". The operation before disabled it is still carried out completely. Enable is a default setting after bus voltage recovery if the time function is set.					
5	Output X	Delay function	1bit	C,W	1.001 DPT_Switch
When select "delay " in the parameter "Type of time function", the object will be activated, then the delay switch function will be activated via the object.					
5	Output X	Flashing function	1bit	C,W	1.001 DPT_Switch
When select "flashing " in the parameter "Type of time function", the object will be activated, then the flashing switch function will be activated via the object.					
5	Output X	Staircase function	1 bit	C,W	1.001 DPT_Switch
When select "staircase " in the parameter "Type of time function", the object will be activated, then the staircase lighting function will be activated via the object.					
6	Output X	Operation hours counter	2 byte/ 4 byte	C,R,W, T,U	7.001 pulses/12.001 counter pulses
This communication object is used to report load working time, it displays when the parameter "function of " operation hours counter" select "enable" ,the data type of report value can be set in the parameter "Object datatype of "operation hours counter".					
7	Output X	Scene	1byte	C,W	18.001 DPT_SceneControl
It is able to recall or save the scene when sending an 8-bit command by this object, which will be enabled when enabling the scene function. The definition of the 8-bit command will be described below: Assuming an 8-bit command (binary coding) as: FXNNNNNN F: recall the scene with "0"; save the scene with "1"; X: 0 NNNNNN: scene number (0-63). 1-64 in the parameter setup corresponds to the scene number 0-63 received by the communication object "Scene". For example, scene 1 in the parameter setup has the same output result as scene 0 in the communication object "Scene". As follow:					

Object value	Description
0 1 2 ... 63	Recall scene 1 Recall scene 2 Recall scene 3 ... Recall scene 64
128 129 130 ... 191	Store scene 1 Store scene 2 Store scene 3 ... Store scene 64

8	Output X	Forced output	1bit/2bit	C,W	1.003 DPT_Enable /2.001 DPT_Switch
This object will be enabled after enabling the forced function. If 1bit, Enable the forced operation with "1", and the device behaviors will be ignored except the forced function; cancel the forced operation with "0". The contact position of force operation can be set via a parameter. If 2bit, the contact is forced closed when receiving telegram "3"; the contact is forced opened when receiving telegram "2"; cancel the force operation with telegram "1" or "0".					
9	Output X	Logic 1	1bit	C,W	1.003 DPT_Enable
This object will be enabled when selecting "enable" in the parameter "The input 1 of logic", which is used to modify logic value of input 1.					
10	Output X	Logic 2	1bit	C,W	1.001 DPT_Switch
This object will be enabled when selecting "enable" in the parameter "The input 2 of logic", which is used to modify logic value of input 2.					

Table 2.1 Communication objects table "Switch output"

2.2. COMMUNICATION OBJECTS OF SHUTTER OUTPUTS

Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U	Data Type	Priority
0	General	In operation			1 bit	C	-	-	T	-	switch	Low
1	General	Central control for al...			1 bit	C	-	W	-	-	switch	Low
2	Output A	Shutter UP/DOWN			1 bit	C	-	W	-	-	up/down	Low
3	Output A	Slat adj/stop			1 bit	C	-	W	-	-		Low
4	Output A	Reference movement			1 bit	C	-	W	-	-	up/down	Low
5	Output A	Shutter position[0...1...			1 byte	C	-	W	-	-	percentag...	Low
6	Output A	Slat position[0...100%]			1 byte	C	-	W	-	-	percentag...	Low
7	Output A	Scene			1 byte	C	-	W	-	-		Low
8	Output A	Shutter position status			1 byte	C	R	-	T	-	percentag...	Low
9	Output A	Slat position status			1 byte	C	R	-	T	-	percentag...	Low
10	Output A	Sun operation			1 bit	C	-	W	-	-		Low
11	Output A	Enable auto.control			1 bit	C	-	W	-	-	enable	Low
12	Output A	Sun:shutter position[...			1 byte	C	-	W	-	-	percentag...	Low
13	Output A	Sun:slat adj.[0...100%]			1 byte	C	-	W	-	-	percentag...	Low
14	Output A	Safety operation 1			1 bit	C	-	W	-	-		Low
15	Output A	Safety operation 2			1 bit	C	-	W	-	-		Low
16	Output A	Status of operation			1 byte	C	R	-	T	-		Low

Fig. 2.2 Communication objects of shutter outputs

No.	Function	Object name	Data type	Flags	DPT
0	General	In operation	1bit	C,T	1.001 DPT_Switch
As above.					
1	General	Central control for all switch	1bit	C,W	1.001 DPT_Switch
As above, the object is not apply to the shutter/blind output.					
2	Output X	Shutter/Blind UP/DOWN	1bit	C,W	1.008 DPT_UpDown
If this communication object receives a telegram with the value "0", the Shutter/Blind is raised. If the object receives a telegram with the value "1", the Shutter/Blind is lowered. Telegram value 0 —— UP 1 —— DOWN					
3	Output X	Slat adj./Stop	1bit	C,W	1.007 DPT_Step
If the Shutter/Blind is in motion, the movement is stopped on this communication object receiving a telegram value "0" or "1". "Shutter" operating mode: if the Blind is idle, it is raised for the slat adjustment on the communication object receiving a telegram value "0"; it is lowered for the slat adjustment on the communication object receiving a telegram value "1". "Blind" operating mode: if the Shutter is idle, no action is carried out on the communication object receiving any telegram value. Telegram value 0 ——slat adj./ stop UP 1 —— slat adj. /stop DOWN					
4	Output X	Reference movement	1bit	C,W	1.008 DPT_UpDown
The communication object is enabled when the "disable" option is not selected in the parameter "After reference movement, position is". If the object receives a telegram value, the Shutter/Blind is carried out a reference movement that makes sure its location exactly. Telegram value 0—first the Shutter/Blind is fully raised, then move to the target position 1—first the Shutter/Blind is fully lowered, then move to the target position The detail process is described in relevant parameter chapter.					
5	Output X	Shutter/Blinds position [0...100%]	1byte	C,W	5.001 DPT_Scaling
If this communication object receives a telegram value, the Shutter/Blind moves to the corresponding position for the received value. In the "Shutter" operation mode, after the Shutter reaching the target position, the slat are positioned as before. Only the object "slat position [0...100%]" receives a telegram value, the slat will be positioned accordingly. Telegram value 0% —— top ..... —— intermediate position 100% —— bottom					
6	Output X	Slat position [0...100%]	1byte	C,W	5.001 DPT_Scaling
Only in the "Shutter" operation mode, the communication is visible. If the object receives a telegram value, the slat are positioned according to the received value. Telegram value 0% —— slat opened to maximum ..... —— intermediate position 100% ——slat closed to maximum					
7	Output X	Scene	1byte	C,W	18.001 DPT_SceneControl
It is able to recall or store the scene when sending an 8-bit command by this object. The definition of the 8-bit command will be described below: Assuming an 8-bit command (binary coding) as: FXNNNNNN F: recall scene with "0"; store scene with "1"; X: 0 NNNNNN: scene number (0-63). 1-64 in the parameter setting corresponds to the scene number 0-63 received by the communication object "Scene". For example, scene 1 in the parameter setting has the same output result as scene 0 in the communication object "Scene". As follow:					

Object value	Description
0	Recall scene 1
1	Recall scene 2
2	Recall scene 3
...	...
63	Recall scene 64
128	Store scene 1
129	Store scene 2
130	Store scene 3
...	...
191	Store scene 64

No.	Function	Object name	Data type	Flags	DPT
8	Output X	Shutter/Blinds position status	1byte	C,R,T	5.001 DPT_Scaling
The object is used for sending the position of the Shutter/Blind to bus when reaching the target position. Telegram value 0% —— top ..... —— intermediate position 100% —— bottom					
9	Output X	Slat position status	1byte	C,R,T	5.001 DPT_Scaling
The object is used for sending the position of the slat to bus when reaching the target position. It is only visible in shutter mode. Telegram value 0% —— slat opened to maximum ..... —— intermediate position 100% ——slat closed to maximum					
10	Output X	Sun operation	1bit	C,W	1.001 DPT_Switch
If the communication object receives a telegram "0" or "1", the shutter/blind is moved into a predefined position, see the parameter chapter description.					
11	Output X	Enable auto. control	1bit	C,W	1.003 DPT_Enable
The communication object is used to disable and enable the Auto. Operation. If the object receives a telegram "0", the Auto. Operation is deactivated; if the object receives a telegram "1", the Auto. Operation is activated. Telegram value 0 —— disable the Auto. Operation 1—— enable the Auto. Operation					
12	Output X	Sun: shutter/blind position [0...100%]	1byte	C,W	5.001 DPT_Scaling
In Auto. Operation status, if this communication object receives a telegram value, the Shutter/Blind moves to the corresponding position for the received value. In the "Shutter" operation mode, after the Shutter reaching the target position, the slat are positioned as before. Only the object "Sun: slat adj. [0...100%]" receives a telegram value, the slat will be positioned accordingly. Telegram value 0 —— top ..... —— intermediate position 100%—— bottom					
13	Output X	Sun: slat adj.[0...100%]	1byte	C,W	5.001 DPT_Scaling
In Auto. Operation status, the communication is visible only in the "Shutter" operation mode. If the object receives a telegram value, the salt are positioned according to the received value. Telegram value 0 —— slat opened to maximum ..... —— intermediate position 100%—— slat closed to maximum					
14/ 15	Output X	Safety operation1/2	1bit	C,W	1.005 DPT_Alarm
The communication object is used to receive a special 1bit telegram from some sensors sending cyclically. Such as the cancel safety operation of telegram is "1" , if the object doesn't receive the telegram "1" from the sensor during the monitor period, the actuator will think that the sensor malfunctions, and then triggered the safety operation and make the shutter move to a safety position. When the actuator receives a telegram "1" again, the monitor period will re-timing, and exit the safety operation, other operations can be carried out. The priority of safety operation 2 is higher than that of 1.					
16	Output X	Status of operation	1byte	C,R,T	No DPT
The communication object is used to send the information about the current operating status of the output for the Shutter/blind output. Only one of the following operating states can be activated at the same time. The status of operation is sent after a change. the telegram "0" - direct operation (general operation) the telegram "1" - manual operation (button operation) the telegram "2" - auto. operation the telegram "3" - safety operation 1 the telegram "4" - safety operation 2 Other value are not used					

Table 2.2 Communication objects table " Shutter outputs"