25 A4 Sunblind switch 980101

Use of the application program

Product family: Shutter
Product type: Switch
Manufacturer: Siemens

Name: Sunblind switch N 523/02
Order no.: 5WG1 523-1AB02

Functional description

Application

The sun blind switch N 523/02 is a DIN rail mounted device in N-system dimensions with a width of 4 module units for controlling shutters, blinds and awnings. Only one sun protection drive mechanism (motor) for AC 230 V with electromechanical limit switches or with integrated electronics for up/down limit position disconnection may be connected to each of the 4 outputs of the sun blind switch N 523/02. The parallel operation of several drives on one output requires the intermediate switching of a special isolating relay.
Note: ETS2 V1.3 is required for the parameterisation and for loading the application program.

Functions and objects

The application program 25 A4 Sunblind switch 980101 can only be used together with the sun blind switch N 523/02. It is structured so that there is sufficient basic functionality in the supplied state for simple applications in combination with 9 basic communication objects available. Further functions and objects can be added as required during commissioning via the ETS parameter tab “Objects, Functions”.
It is ensured via the alarm object which is always available that the blind is raised automatically for example in the event of a wind/rain alarm and that it is prevented from being lowered via the EIB when the alarm is still present.
Two 1-bit command objects that are also always present per channel enable a blind to be moved into the upper or lower limit position. They also enable the blind to be stopped and the stepwise adjustment of the slats.
In simple applications, there are only these 9 basic communication objects available in total. The following functions per channel can be added for all the channels together via the parameter tab “Objects, Functions”:

- one object “Move-up blockade, On/Off” (required e.g. when carrying out cleaning),
- one object “Move-down blockade, On/Off” (required e.g. for interior sun protection and when the window is open),
- two 1-bit objects for storing / restoring two blind / slat positions,
- two 8-bit status objects (blind and slat position in %), which are transferred at any time after a query or automatically once the blind has moved to a new position (value = 1 = upper limit position = 0%, value = 255 = lower limit position = 100%; value = 0 = unknown position, e.g. after restarting the actuator).

Parameterisation

To enable a simple and rapid parameterisation of the sun blind switch N 523/02, it can be selected whether each channel should be parameterised individually or whether the parameterisation should be carried out for all channels together. The pause after a change in direction of movement does not need to be parameterised. It is fixed at about 1 s.
To enable a certain level of daylight to enter the room for example, it is possible to set, once the blind has been lowered into the lower limit position without disruption and the limit switch has been addressed, whether the blind should be raised again for a set period and the slats should thus be rotated into an intermediate position.
If 8-bit status objects are required for giving blind and slat positions as percentage values, e.g. in order to be able to display the positions of blinds and their slats on a PC with visualisation software, the travel time of the blind from one limit position to another as well as the adjustment period of the slats from fully closed to the start of movement of the blind must be determined as accurately as possible and entered.
To guarantee the uniform limit positions of all the blinds on a façade, additional times can be entered for the travel times for raising and lowering the blind, so that the reaching of the upper or lower limit position is guaranteed by addressing the respective limit switch.

Direct operation of the actuator outputs

For direct operation of the actuator outputs, both AC 230 V and bus voltage must be applied at the actuator and it must be switched from bus to direct operation via the corresponding push button with LED.
During direct operation, an output remains switched on while the associated push button on the top of the device is pressed. As the direct operation is fully isolated from the bus communication, the presence of an alarm or the activation of the blockade against the raising or lowering of the blind is not taken into account.

Communication objects

Diagram 1 shows the maximum possible number of communication objects which is 33. They are only visible if all the additional functions and objects have been added when commissioning the actuator.
Diagram 2 shows the 9 basic communication objects which are visible for the sun blind switch N 523/02 in the product data base in the supplied state.

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Phys.Addr.	Product	Order number
01.01.001	Sunblind switch N 523/2	5WG1 523-1AB02

no.	Object name	Function	Type
0	Alarm	Report	1 Bit
1	Venetian blind, Channel A	Up / Down	1 Bit
2	Slats, Channel A	Open / Close	1 Bit
3	Move-up blockade, Channel A	On / Off	1 Bit
4	Move-down blockade, Channel A	On / Off	1 Bit
5	Position 1/2, Channel A	Restore	1 Bit
6	Position 1/2, Channel A	Save	1 Bit
7	Status Venetian blind, Channel A	Position (0...100%)	1 Byte
8	Status slats, Channel A	Position (0...100%)	1 Byte
9	Venetian blind, Channel B	Up / Down	1 Bit
10	Slats, Channel B	Open / Close	1 Bit
11	Move-up blockade, Channel B	On / Off	1 Bit
12	Move-down blockade, Channel B	On / Off	1 Bit
13	Position 1/2, Channel B	Restore	1 Bit
14	Position 1/2, Channel B	Save	1 Bit
15	Status Venetian blind, Channel B	Position (0...100%)	1 Byte
16	Status slats, Channel B	Position (0...100%)	1 Byte
17	Venetian blind, Channel C	Up / Down	1 Bit
18	Slats, Channel C	Open / Close	1 Bit
19	Move-up blockade, Channel C	On / Off	1 Bit
20	Move-down blockade, Channel C	On / Off	1 Bit
21	Position 1/2, Channel C	Restore	1 Bit
22	Position 1/2, Channel C	Save	1 Bit
23	Status Venetian blind, Channel C	Position (0...100%)	1 Byte
24	Status slats, Channel C	Position (0...100%)	1 Byte
25	Venetian blind, Channel D	Up / Down	1 Bit
26	Slats, Channel D	Open / Close	1 Bit
27	Move-up blockade, Channel D	On / Off	1 Bit
28	Move-down blockade, Channel D	On / Off	1 Bit
29	Position 1/2, Channel D	Restore	1 Bit
30	Position 1/2, Channel D	Save	1 Bit
31	Status Venetian blind, Channel D	Position (0...100%)	1 Byte
32	Status slats, Channel D	Position (0...100%)	1 Byte

Diagram 1. Communication objects (max. number)

Phys.Addr.	Description	Product
01.01.001		Sunblind switch N 523/2

no.	Object name	Function	Type
0	Alarm	Report	1 Bit
1	Venetian blind, Channel A	Up / Down	1 Bit
2	Slats, Channel A	Open / Close	1 Bit
9	Venetian blind, Channel B	Up / Down	1 Bit
10	Slats, Channel B	Open / Close	1 Bit
17	Venetian blind, Channel C	Up / Down	1 Bit
18	Slats, Channel C	Open / Close	1 Bit
25	Venetian blind, Channel D	Up / Down	1 Bit
26	Slats, Channel D	Open / Close	1 Bit

Diagram 2. Basic communication objects (min. number)

Maximum number of group addresses: 100
Maximum number of associations: 100

Obj	Object name	Function	Type	Flags
0	Alarm	Report	1 Bit	CRWT
This object can be linked with an alarm signal from a wind, rain or ice detector, which sends a logical 0 in the idle state (cyclically) and a logical 1 in the event of an alarm. Via the parameter “Behaviour on alarm”, it can be set individually per channel whether the channel should not react to an alarm (“no action”, e.g. in the case of an interior blind) or whether the sun blind switch should e.g. move the blind of this channel into the upper limit position in the event of a wind alarm and block movement out of this position while the wind alarm is still present. The blind likewise moves to the parameterised position if a time has been assigned to the parameter “Monitoring period for alarm” and no telegrams have been received during the set time interval. An activated alarm has a higher priority than the activated blockade function for raising or lowering the blind. It therefore overrides both functions. Caution: If the actuator is switched to direct operation, the movement of the blinds is possible in spite of an alarm being received via the bus.				
1, 9, 17, 25	Venetian blind, Channel A, B, C, D	Up/ Down	1 Bit	CWT
The Up/Down movement of the blind for the corresponding channel is initiated via these objects. The blind is raised on receipt of a logical 0 and lowered on receipt of a logical 1. The drive mechanism of the blind remains switched on until either a stop command is received or the respective limit switch is addressed or the parameterised travel time including the additional period has elapsed. If the blind moves to the lower limit position (Down) via this object and a “Factor for slats opening / short move-up time (basis 0.1s) from down position” has been parameterised, the slats are opened or a blind is raised accordingly.				

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Obj	Object name	Function	Type	Flags
2, 10, 18, 26	Slats, Channel A, B, C, D	Open / Close	1 Bit	CWT
Via these objects, the movement of a blind is stopped for the respective channel regardless of whether the telegram contains a logical 0 or a logical 1. If the blind is stationary, the slats are opened by one step on receipt of a logical 0 and closed by one step on receipt of a logical 1.				
3, 11, 19, 27	Move-up blockade, Channel A, B, C, D	On / Off	1 Bit	CRWT
If a logical 1 is received via this object, the movement of the blind away from its current position via bus telegrams is blocked until a logical 0 is received via this object. This object can be used e.g. while the blinds are being cleaned to prevent the blind from being raised e.g. by a time switch so that the cleaning staff are not endangered. The function that prevents the blind from being raised has a higher priority than the function that prevents the blind from being lowered. It can therefore override the latter. An activated alarm has a higher priority than both of these functions and overrides them. Caution: If the actuator is switched to direct operation, the movement of the blinds is possible even if the function to prevent the blind being raised is activated via the bus.				
4, 12, 20, 28	Move-down blockade, Channel A, B, C, D	On / Off	1 Bit	CRWT
If a logical 1 is received via this object, the blind is immediately moved to the upper limit position and its movement is then blocked via bus telegrams until a logical 0 is received via this object. This object can be used e.g. when the window is open, to prevent an internal blind from being lowered and damaged as a result or to prevent a roller shutter from being lowered when the patio door is open and thus locking out the occupants. The function that prevents the blind from being lowered has the lowest priority. It can therefore be overridden at any time by an alarm or if the function that prevents the blind from being raised is activated. Caution: If the actuator is switched to direct operation, the movement of the blinds is possible even if the function to prevent the blind being lowered is activated via the bus.				
5, 13, 21, 29	Position 1/2, Channel A, B, C, D	Restore	1 Bit	CRWT
This object and the following object enable the user of the room, who has assigned the function “Save / restore scenes” to the push button pair of a bus switch, to save the position of the blind and its slats via a long push button action and to restore the stored position of the blind and its slats automatically with a short push button action. Two intermediate positions of the blind that is connected to the respective channel and of its slats can be automatically restored via this object. To make this possible, these positions must previously be saved via the next object.				

Obj	Object name	Function	Type	Flags
6, 14, 22, 30	Position 1/2, Channel A, B, C, D	Save	1 Bit	CRWT
The saving of two intermediate positions of the blind that is connected to this channel and its slats is triggered via this object. The stored positions can then be restored at any time via the previous object. A successful saving of a position is only possible after having entered the sun protection movement time and the slat movement time followed by an uninterrupted reference travel of the sun blind from one final position to the other in order to synchronize the status objects for the blind and the slats position.				
7, 15, 23, 31	Status Venetian blind, Channel A, B, C, D	Position (0...100%)	8 Bit	CRWT
The position of the blind (as a percentage value) can be queried at any time via this object or sent automatically once the movement has stopped. The upper limit position corresponds to the value 1 (= 0%) while the lower limit position corresponds to the value 255 (= 100%). An unknown position is reported via the value 0 (e.g. after a restart of the actuator). This status object is updated for the first time after having entered the sun protection movement time and the slat movement time followed by an uninterrupted reference travel of the sun blind from one final position to the other.				
8, 16, 24, 32	Status slats, Channel A, B, C, D	Position (0...100%)	8 Bit	CRWT
The position of the slats (as a percentage value) can be queried at any time via this object or sent automatically once slat adjustment has stopped. The upper limit position (slats can no longer be adjusted) corresponds to the value 1 (= 0%) while the lower limit position (slats fully closed) corresponds to the value 255 (= 100%). An unknown slat position is reported via the value 0 (e.g. after a restart of the actuator). This status object is updated for the first time after having entered the sun protection movement time and the slat movement time followed by an uninterrupted reference travel of the sun blind from one final position to the other. Caution: The value 0% (1) corresponds to the slat position in which a further command for slat adjustment leads to the blinds being raised by a step.				

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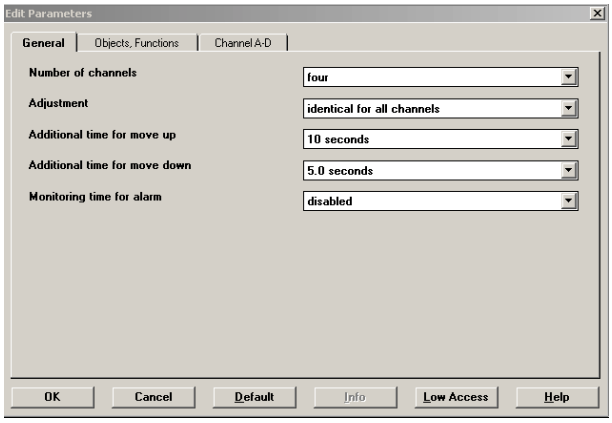
Parameters

General



Note

The settings printed in **bold** correspond to the factory settings (default values).

Parameters	Settings
Number of channels	**four** three two one
It can be set via this parameter how many channels of the actuator are used and how many parameter tabs will be displayed maximal for the parameterisation of the channels. Caution: If this parameter is set to a different value, the previous settings of all the other parameters can be lost!	
Adjustment	**identical for all channels** for each channel selectable
It can be set via this parameter whether each channel should be parameterised individually or whether it should be carried out for all the channels together. If “identical for all channels” is selected, only one parameter tab is displayed for the common parameterisation of all the actuator channels. Caution: If the respective setting is changed in this parameter, the previous settings of all the other parameters can be lost!	
Additional time for move up	No additional time, 1, 2, 3, 4, 5, 6, 7, 8, **10**, 12, 15, 20 seconds
It can be set via this parameter, whether and by how many seconds the parameterised travel time from one limit position to another should be extended when raising the blind in order to ensure that the drive mechanism is switched off via the upper limit switch.	
Additional time for move down	No additional time, 1, 2, 3, 4, **5**, 6, 7, 8, 10, 12, 15, 20 seconds
It can be set via this parameter, whether and by how many seconds the parameterised travel time from one limit position to another should be extended when lowering the blind in order to ensure that the drive mechanism is switched off via the lower limit switch.	
Monitoring time for alarm	**disabled**, 1, 2, 3, 4, 5, 7, 10, 15, 30, 60 minutes
If e.g. a wind detector is faulty or the bus cable to it is disrupted, gusts of wind can lead to the damage or destruction of an exterior sun protection/anti-glare device. To prevent this, the actuator can monitor whether the wind detector sends telegrams cyclically. If the setting “disabled” is assigned to the parameter “Monitoring time for alarm”, the cyclical sending of the alarm object is not monitored. Otherwise, it is set via this parameter within which period at least one telegram with a logical 0 must be received at the alarm object. If no telegrams are received at the alarm object during the “Monitoring time for alarm”, it is set internally to logical 1 i.e. all the blinds connected to the actuator channels are moved into the parameterised position in the event of an alarm. Movement out of this position is blocked while the alarm object is set to logical 1.	

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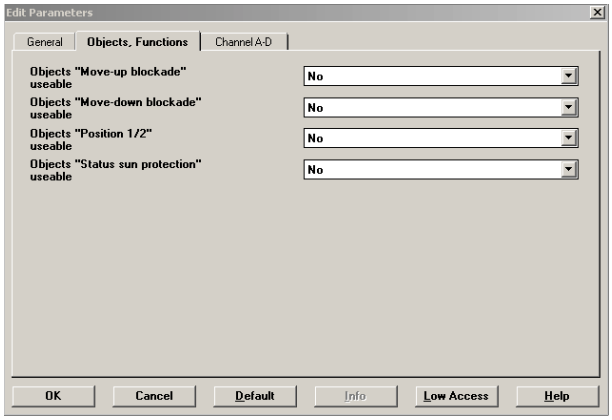
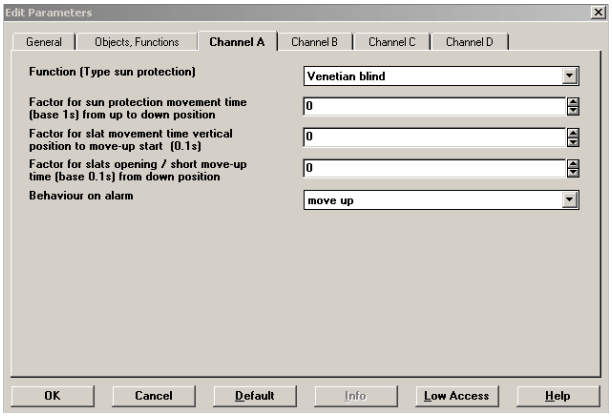
Objects, Functions



Parameters	Settings
Objects "Move-up blockade" useable	**No** Yes
It is set via this parameter whether a "Move-up blockade" communication object should be available per channel or not.	
Objects "Move-down blockade" useable	**No** Yes
It is set via this parameter whether a "Move-down blockade" communication object should be available per channel or not.	
Objects "Position 1/2" useable	**No** Yes
It is set via this parameter whether the two communication objects "Position 1/2, Save" and "Position 1/2, Restore" should be available per channel or not.	
Objects "Status sun protection" useable	**No** Yes
It is set via this parameter whether the two communication objects "Status Venetian blind" and "Status Slats" should be available per channel or not.	
Send status objects	**using read request only** on change in status
This parameter is displayed in addition only if the parameter "Objects Status sun protection useable" is set to "Yes". It is set via this parameter whether a status object is only transmitted after a read request or sent automatically at the end of a blind or slat adjustment.	

Channel A-D or Channel A, B, C, D



Parameters	Settings
Function (Type sun protection)	**Venetian blind** Roller shutter, awning
The type of sun/anti-glare protection that is to be controlled is set via this parameter. If the parameter is set to "Roller shutter, awning", the object "Status Slats" and the parameter "Factor for slat movement time: vertical position to move-up start (0.1s)" are not shown as they are not required for roller shutters and awnings.	
Factor for sun protection movement time (base 1s) from up to down position	0...255 **0**
The travel time of the sun protection device from the upper to the lower limit position is set via this parameter.	
Factor for slat movement time: vertical position to move-up start (0.1s)	0...255 **0**
This parameter sets the adjustment time for the slats to move from fully closed to the slat position from which the blind starts to move upwards. Note: It must be determined as accurately as possible.	
Factor for slats opening / short move-up time (base 0.1s) from down position	0...255 **0**
This parameter sets the period during which the slats are opened or a roller shutter is moved-up again after an uninterrupted movement from the upper to the lower limit position to let more daylight into the room. Note: It is a prerequisite for venetian blinds that they are lowered with closed slats.	
Behaviour on alarm	**move up** move down no action
It is set via this parameter whether the sun protection should move into the upper or lower limit position in the event of an alarm or stay in its respective position.	

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Space for notes

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