25 A4 Roller shutter switch 980181

Use of the application program

Product family: Shutter
Product type: Switch
Manufacturer: Siemens

Name: Roller shutter switch N 523/03
Order no.: 5WG1 523-1AB03

Functional description

Application

The roller shutter switch N 523/03 is a DIN rail mounted device in N-system dimensions with a width of 4 module units for controlling roller shutters and awnings. Only one sun protection drive mechanism (motor) for AC 230 V with electromechanical limit switches or with integrated electronics for limit switch disconnection may be connected to each of the 4 outputs of the roller shutter switch N 523/03. 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 Roller shutter switch 980181 can only be used together with the roller shutter switch N 523/03. 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”.
In connection with a weather station, it is ensured via the alarm object which is always available that the sun protection 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 roller shutter to be moved into the upper or lower limit position and movement to be stopped.
In simple applications, there are only 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 sun protection positions,
- one 8-bit status object (roller shutter position in %), which is transferred at any time after a query or automatically once the roller shutter 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 roller shutter switch N 523/03, 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 roller shutter has been lowered into the lower limit position without disruption and the limit switch has been addressed whether it should be raised again for a set period and thus be opened slightly.
If an 8-bit status object is required for giving the position of the sun protection as a percentage value, e.g. in order to be able to display the positions of roller shutters and awnings on a PC with visualisation software, the travel time of the roller shutter from one limit position to another must be determined as accurately as possible and entered.
To guarantee the uniform limit positions of all the roller shutters on a façade, additional times can be entered for the travel times for raising and lowering the shutter, 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 roller shutter is not taken into account.

Communication objects

Diagram 1 shows the maximum possible number of communication objects which is 29. 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 roller shutter switch N 523/03 in the product data base in the supplied state.

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Phys.Addr.		Product		Order number
	no.	Object name	Function	Type
	01.01.001	Roller shutter switch N 523/3		5WG1 523-1AB03
	0	Alarm	Report	1 Bit
	1	Roller shutter, Channel A	Up / Down	1 Bit
	2	Roller shutter, Channel A	Stop	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 roller shutter, Channel A	Position (0...100%)	1 Byte
	9	Roller shutter, Channel B	Up / Down	1 Bit
	10	Roller shutter, Channel B	Stop	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 roller shutter, Channel B	Position (0...100%)	1 Byte
	17	Roller shutter, Channel C	Up / Down	1 Bit
	18	Roller shutter, Channel C	Stop	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 roller shutter, Channel C	Position (0...100%)	1 Byte
	25	Roller shutter, Channel D	Up / Down	1 Bit
	26	Roller shutter, Channel D	Stop	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 roller shutter, Channel D	Position (0...100%)	1 Byte

Diagram 1. Communication objects (max. number)

Phys.Addr.		Description	Product	
	no.	Object name	Function	Type
	01.01.001		Roller shutter switch N 523/3	
	0	Alarm	Report	1 Bit
	1	Roller shutter, Channel A	Up / Down	1 Bit
	2	Roller shutter, Channel A	Stop	1 Bit
	9	Roller shutter, Channel B	Up / Down	1 Bit
	10	Roller shutter, Channel B	Stop	1 Bit
	17	Roller shutter, Channel C	Up / Down	1 Bit
	18	Roller shutter, Channel C	Stop	1 Bit
	25	Roller shutter, Channel D	Up / Down	1 Bit
	26	Roller shutter, Channel D	Stop	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 roller shutter switch should e.g. move a textile blind 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 sun protection. It therefore overrides both functions. Caution: If the actuator is switched to direct operation, the movement of the sun protection is possible in spite of an alarm being received via the bus.				
1, 9, 17, 25	Roller shutter, Channel A, B, C, D	Up/ Down	1 Bit	CWT
The Up/Down movement for the corresponding channel is initiated via these objects. The roller shutter is raised on receipt of a logical 0 and lowered on receipt of a logical 1. The drive mechanism 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 roller shutter 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 roller shutter is raised again accordingly.				

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Obj	Object name	Function	Type	Flags
2, 10, 18, 26	Roller shutter, Channel A, B, C, D	Stop	1 Bit	CRT
Via these objects, the movement of a roller shutter is stopped for the respective channel regardless of whether the telegram contains a logical 0 or a logical 1. If a stop command is received when the roller shutter is stationary, the command is ignored.				
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 sun protection 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 roller shutter is being cleaned to prevent the shutter from being raised e.g. by a time switch so that the cleaning staff are not endangered. The function that prevents the sun protection from being raised has a higher priority than the function that prevents it 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 sun protection is possible even if the function to prevent it 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 sun protection 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 sun protection 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 sun protection from being raised is activated. Caution: If the actuator is switched to direct operation, the movement of the sun protection is possible even if the function to prevent it being lowered is activated via the bus.				

Obj	Object name	Function	Type	Flags
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 sun protection via a long push button action and to restore the stored position automatically with a short push button action. Two intermediate positions of the sun protection that is connected to the respective channel can be automatically restored via this object. To make this possible, these positions must previously be saved via the next object.				
6, 14, 22, 30	Position 1/2, Channel A, B, C, D	Save	1 Bit	CRWT
The saving of two intermediate positions of the sun protection that is connected to this channel 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 followed by an uninterrupted reference travel of the sun protection from one final position to the other in order to synchronize the status object for the roller shutter position.				
7, 15, 23, 31	Status roller shutter, Channel A, B, C, D	Position (0...100%)	8 Bit	CRWT
The position of the sun protection (as a percentage value) can be queried at any time via this object or sent automatically once 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 followed by an uninterrupted reference travel of the sun protection from one final position to the other.				

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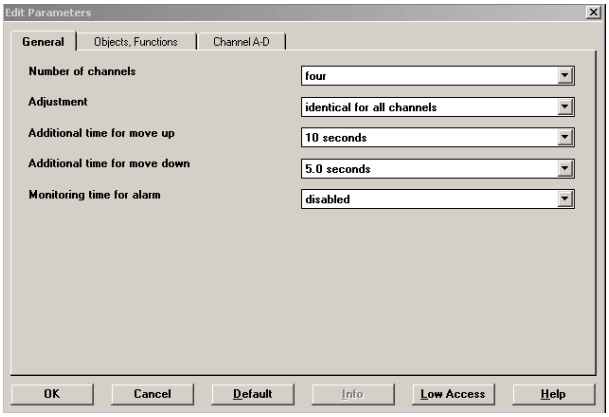
Parameters

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 roller shutter 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 roller shutter 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 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 sun protection devices 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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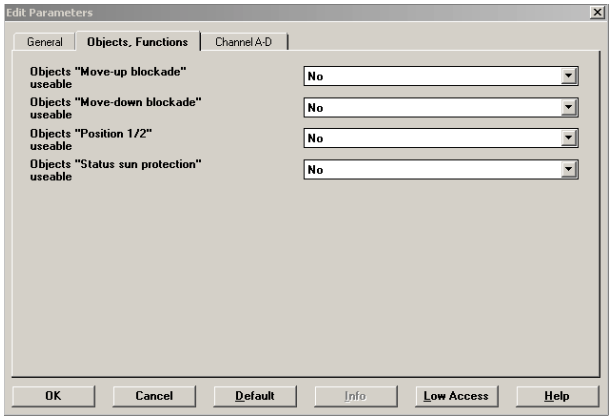
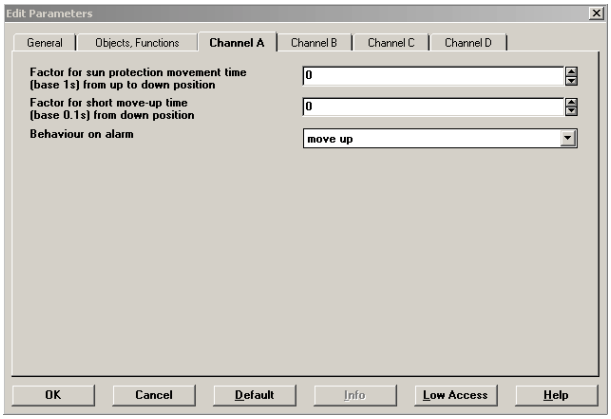
Objects, Functions



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 an object "Status roller shutter" should be available per channel or not.	
Send status objects	**using read request only** on change in status
This parameter is displayed in addition after having set the parameter "Objects status sun protection useable" to "Yes". It is set via this parameter whether a status object is only transmitted after a read request or sent automatically when the position of the sun protection changes.	

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



Parameters	Settings
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 slats opening / short move-up time (base 0.1s) from down position	0...255 **0**
This parameter sets the period during which the roller shutter is raised again after an uninterrupted movement from the upper to the lower limit position in order to let some daylight into the room.	
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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Spaces for notes

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