Technical manuals

Product model:

SATION-WD0220	Silent KNX curtain opening and closing motor
SATION-WD0221	Curtain opening and closing motor
SATION-WD0222	Motor module
SATION-WD0223	Rolling shutter motor

1 Catalog

2 Overview

2.1 Overview of Equipment

Product model:

SATION-WD0220	Silent KNX curtain opening and closing motor
SATION-WD0221	Curtain opening and closing motor
SATION-WD0222	Motor module
SATION-WD0223	Rolling shutter motor

2.2 Purpose and usage

The Shutter motor is controlled by the **2-fold A** channel parameters and objects of the database SATION-WD0202 Shutter Actuator, which can realize opening and closing operation, stopping operation, specified percentage position operation, positive and reverse direction setting (opening and closing curtain), running direction feedback, real-time travel position feedback, scene function, etc.

In addition, the motor also supports the functions of stopping when blocked, starting with hand pull, power outage, memory stroke, cloth rebound stroke correction, hardware verification function (after the power on, the stroke setting before the power off can be restored once).

Note: The motor needs to be powered on first or power on at the same time with KNX bus, KNX bus power on first will lead to failure to write the motor address.

2.3 Functions

The following is the selection of channel functions. For the curtain motor, please use the function of channel A, but channel B is invalid:

- **not active**

  The channel is forbidden and the relevant parameters cannot be configured.

- **shutter**

  Select this function to configure the feedback parameters, scene parameters, and forward and reverse direction parameters of the curtain motor. Other parameters are invalid for the curtain motor, such as the curtain travel time parameter, because the curtain motor automatically memorates the trip after running an opening and closing block.

3 Communication object

3.1 Overview

The configuration project needs to use communication objects, and configure different group addresses for communication objects to realize association operations.
The first five communication objects are global objects, and starting from the 13th object, each channel is assigned a fixed group object. In fact, each channel is equal
There are 19 objects allocated. Objects are displayed or not depending on the parameter configuration. Channel A object number is from 13 to 32, and the curtain motor is mainly used Channel A object number 13 to object number 20, other objects do not work on the curtain motor.

3.2 Global Objects

A single channel can choose whether to respond to global object operations through parameter configuration. The display of global objects is independent of whether channels are activated or not, even if all channels are not activated, global objects will still be displayed.
The first and third bits of the four global objects of the curtain actuator (only configured with Shutter) are communication objects with a size of one bit, which can control the left and right movement of the curtain. The remaining 4th object is 1 byte in size and can be controlled by percentage to move the curtains.

Nu...	Name	Object Function	Description	Group Addresses	Leng...	C	R	W	T	U	Data Type	Priority
0	all Channels	Shutter up/down			1 bit	C	-	W	-	-	1 bit DPT_Up...	Low
1	all Channels	Blinds up/down /Stop			1 bit	C	-	W	-	-	1 bit DPT_Op...	Low
2	all Channels	Stop			1 bit	C	-	W	-	-	1 bit DPT_Swi...	Low
3	all Channels	Absolute position			1 Byte	C	-	W	-	-	8 bit unsigne...	Low
4	all Channels	Absolute position of blinds			1 Byte	C	-	W	-	-	8 bit unsigne...	Low

Figure 3

No.	Features	Usage	Data type
0	Shutter up/down	Switch command to control the curtains to move	DPT 1.008
2	Stop	Stop moving.	DPT 1.001
3	Absolute position	Move to an absolute position.	DPT 5.001

Table 1

3.3 Channel Objects

Each channel holds 19 object configurations, occupying an object location regardless of whether the object is in use or not. Channel A is numbered 13-32.

Nu...	Name	Object Function	Description	Group Addresses	Leng...	C	R	W	T	U	Data Type	Priority
13	Channel A	Shutter up/down			1 bit	C	-	W	-	-	1 bit DPT_UpD...	Low
14	Channel A	Blinds up/down /Stop			1 bit	C	-	W	-	-	1 bit DPT_Ope...	Low
16	Channel A	Scene			1 Byte	C	-	W	-	-		Low
17	Channel A	Act. direction			1 bit	C	R	-	T	-	1 bit DPT_UpD...	Low
18	Channel A	Absolute position			1 Byte	C	-	W	-	-	8 bit unsigned ...	Low
19	Channel A	Absolute position of blinds			1 Byte	C	-	W	-	-	8 bit unsigned ...	Low
20	Channel A	Actual position			1 Byte	C	R	-	T	-	8 bit unsigned ...	Low
21	Channel A	Actual position of blinds			1 Byte	C	R	-	T	-	8 bit unsigned ...	Low
22	Channel A	Act. position valid			1 bit	C	R	-	T	-	1 bit DPT_Bool	Low
23	Channel A	Start driving to reference			1 bit	C	-	W	-	-	1 bit DPT_Switch	Low
24	Channel A	Drive to limitation			1 bit	C	-	W	-	-	1 bit DPT_Switch	Low
25	Channel A	State upper Position			1 bit	C	R	-	T	-		Low
26	Channel A	State lower Position			1 bit	C	R	-	T	-		Low
27	Channel A	Block absolute position mode			1 bit	C	-	W	-	-	1 bit DPT_Enable	Low
28	Channel A	Block universal mode			1 bit	C	-	W	-	-	1 bit DPT_Enable	Low
32	Channel A	Block			1 bit	C	-	W	-	-	1 bit DPT_Enable	Low

Figure 5

Channel Object Description:

No.	Features	Usage	Data type
13	Shutter up/down	Move up/down	DPT 1.007
14	Short time operation	Step	DPT 1.007
15	Stop	Move stop	DPT 1.017
16	Scene	Scene call	DPT 18.001
17	Status actual Direction	Direction of movement	DPT 1.008
18	Status of movement	Status of movement	DPT 1.008
19	Absolute position	Move to an absolute position	DPT 5.001
20	Status actual position	Status actual position	DPT 5.001
21	Act. Position valid	Indicate if the actual position is valid	DPT 1.002

Table 3:

4 ETS parameters

4.1 Channel Selection

Channel Activation menu:

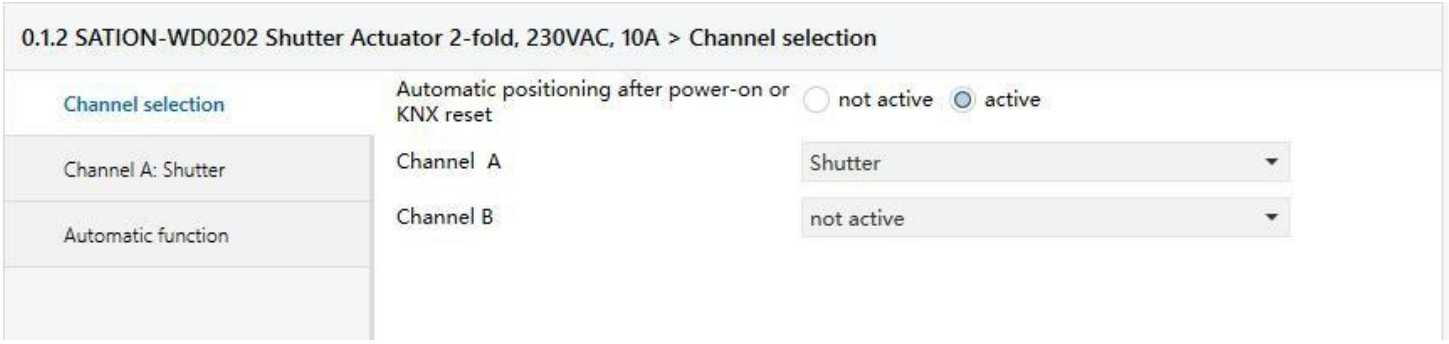

Figure 6: channel choice

Name	Scope [Default]	Remarks
Channel A	● **not active** ● Shutter ● Blinds	Channel working mode
Automatic positioning after power-on or KNX reset	● Not active ● active	Automatic reset function after repowering and KNX reset Yes, the default activated state (Curtain motor does not support this function)

Table 4: Channel functions

Channels can be selected to work in either "shutter" or "not active" mode.

4.1.1 Shutter

If channel A is selected as "Shutter" mode, then channel A can configure the curtain motor parameters, and the following object will appear:

Number	Name	Length	Usage
13	Shutter up/down	1 bit	The curtain motor moves up and down
15	Stop	1 bit	Curtain motor stops moving
16	Scene	1 byte	Scene call
17	Status current Direction	1 position	Curtain motor current moving direction
18	Absolute position	1 byte	The curtain motor runs to the specified
20	Status current position	1 byte	Real-time feedback on the current travel

Table 6

Use configuration as shown in the figure below:

13	Channel A	Shutter up/down	1/1/1	上下移动	1 bit	C	-	W	-	-	up/down
15	Channel A	Stop	1/1/2	停止移动	1 bit	C	-	W	-	-	switch
16	Channel A	Scene	1/1/16	窗帘场景	1 byte	C	-	W	-	-	scene control
17	Channel A	Status current direction	1/1/5	当前方向	1 bit	C	R	-	T	-	up/down
18	Channel A	Absolute position	1/1/3	指定行程位置	1 byte	C	-	W	-	-	percentage (0..100%)
20	Channel A	Status current position	1/1/4	当前行程反馈	1 byte	C	R	-	T	-	percentage (0..100%)

4.2 Curtain motor forward and reverse setting

The opening and closing curtain motor can set the forward and reverse directions according to the different installation directions, and the parameters are as shown in the following figure:

Figure 7

The name	Scope [Default]	Notes
Stop way	● **Motor stop way A** ● Motor stop way B	This direction parameter is only valid for the opening and closing curtain motor: Motor stop way A: Default direction; Motor stop way B: reverse direction;

Table 7:Direction parameters

4.3 Object for absolute position/Statue objects

The position object allows you to control the curtain to move to a specified position.

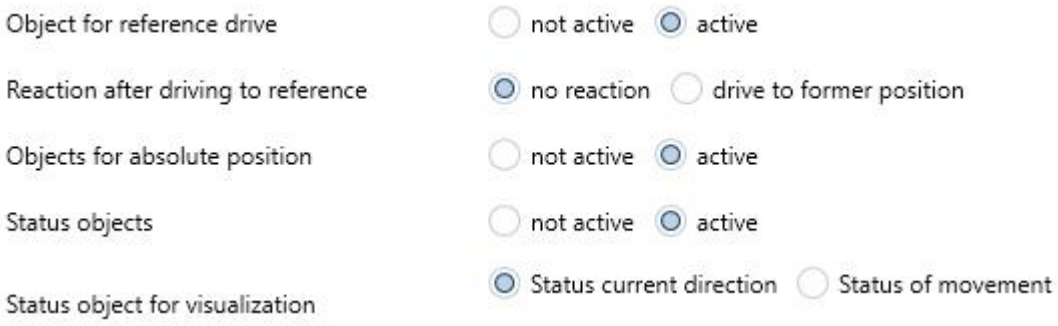

Figure 9

Name	Scope [Default]	Notes
Object for reference drive	● **not active** ● active	This parameter is used to set the default start or close of the hand-pull function (currently support Mipin, Ronson, Duya
Reaction after driving to reference	● **no reaction** ● drive to former position	In the last parameter, select active to turn off the hand-pull function by default. At the same time, the object Start driving to reference appears
Object for absolute position	● **not active** ● active	Activate the Location object feature.
Status objects	● **not active** ● active	Activate the status object.
Status object for visualization	● **Status actual direction** ● Status of movement	Specify the status of movement to display: Indicate the direction of movement. Indicate whether to move or not.

Table 8

No.	Name	Length	Usage
17	Status actual direction	1	Indicates the actual direction in which the curtain is
17	Status of movement	1	Indicates if the curtain is moving.
18	Absolute position	1 byte	Control the curtain to move to the designated
20	Status actual position	1 byte	Indicates the actual location of the curtain.
21	Status act. Position of slats	1 byte	Indicates the actual Angle of the slat.
22	Act. Position valid	1	Indicates whether the calibration operation is
23	Start driving to reference	1 bit	This object is used to manually start and close the curtain motor hand pull function,
25	State upper position	1	Indicate that the curtains are fully open.
26	State lower position	1	Instruct the curtains to close completely.

Table 9

4.3.1 Driving to reference

This feature is not supported by the curtain motor.

4.3.2 Command for absolute positions

The 1-byte position object can set the curtain to move to an absolute position with a position range of 0%-100% and a resolution of 1%.
The object "Absolute position" is used to set the actual position of the curtain. For the percentage setting of the curtain, 0% means completely open and 100% means completely closed.

4.3.3 **Status objects(actual position/direction)**

The object "Status actual position" indicates the actual position of the curtain.
The objects "Status current direction" and "Status of movement" are used to indicate the direction and whether the curtain is moving, respectively. The two objects share the same object number, therefore, only one of them can be selected to activate.
When "Status current direction" is selected, 1 indicates movement up and 0 indicates movement down.
When you select "Status of movement," 1 means you are moving and 0 means you are not moving.

4.3.4 Report objects

The "state lower position" and "state upper position" objects are both 1-digit in size and are used to indicate whether the curtain is fully closed or open, respectively.
A 0 signal is sent when the object moves away from 0% or 100%, and a 1 signal is sent otherwise.

4.4 Scenes

Scenes are the easiest way to perform multiple functions (e.g., lighting, air conditioning, curtains) with one click.
Normally, in order to turn on the lights, cool the air conditioner, and open the curtains, it takes at least three commands to achieve the purpose, that is, to press at least three different buttons. Doing it this way can feel tedious. Now, the advantage of the scene is that with a single push of a button, each device can act automatically to reach a certain state.
Each channel of each actuator type of device can be configured with 8 scenarios.
Once the channel's scenario feature is activated, the channel is ready to respond to scenario commands.
The scenario can also be configured with the learning function. After activating the learning function of the channel, when a learning command is received through the scene object, the channel saves the current value to replace the previously configured value, which can flexibly modify the scene function of the channel.

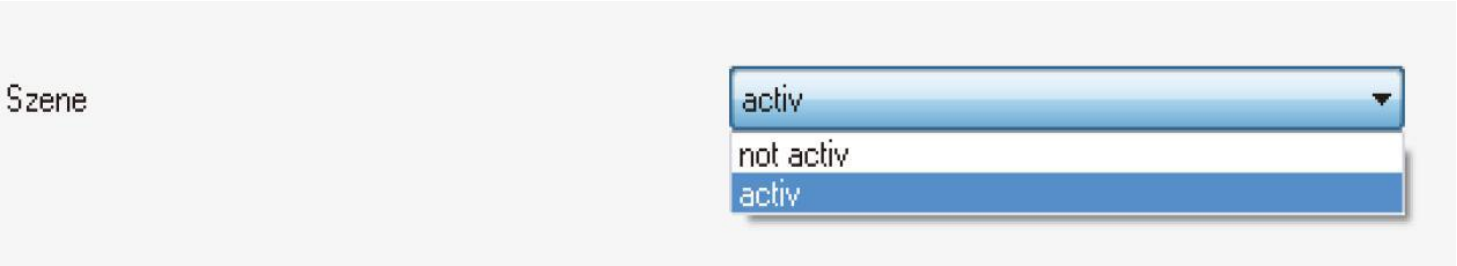

Figure 16: Scene function

No.	Name	Length	Usage
16	Scene	1 byte	Scene call object

Table 21: Scene objects

The invocation of the scene is achieved by the scene number, which ranges from 1-64, but corresponds to the actual scene value of 0-63, that is, when setting the scene number to 1, the object's sent value is actually 0, and when the scene number is 64, the object's value is actually 63. This conversion is automatically performed by the internal program of the device. When configured through ETS, only one of the numbers from 1 to 64 is selected as the scene number.

4.4.1 Submenu scene

A channel can be configured with 8 scenes, that is, a channel can achieve up to 8 scene modes. The following screenshot is a scene configuration:

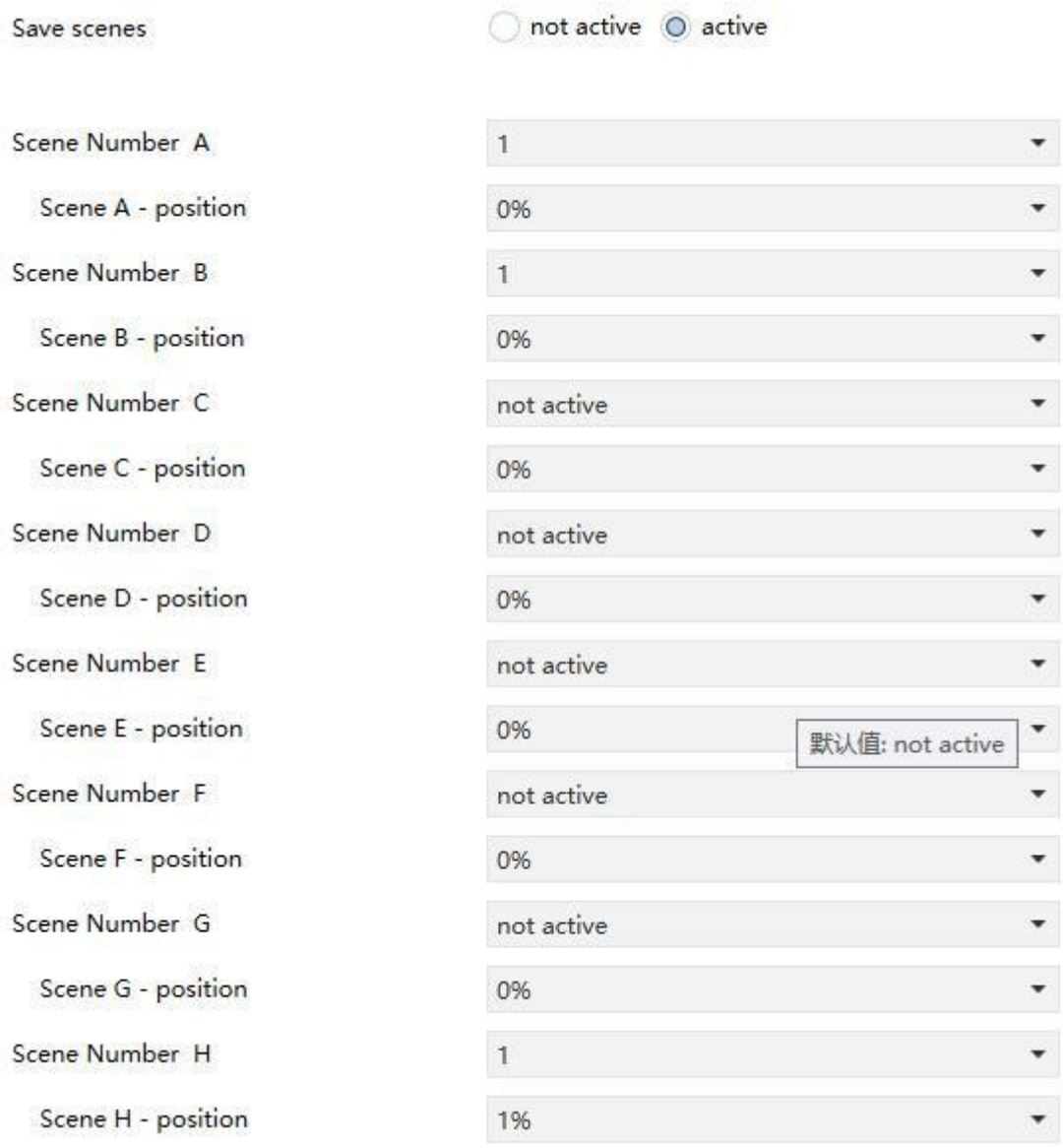

Fig.17: Scene menu

Parameter Description:

Name	Scope [Default]	Notes
Save scene	● not active ● active	Activate the learning function, if the function is not active, the received learning command will
Scene A position	0-100% [0%]	Configure the absolute position where the curtain moves
Scene number A	1-64 [1]	Scene number, used to determine which of the 8 scenes to call

Table 22: Scenario parameters

The execution of the scenario is also affected by the channel parameters, and the execution process of the scenario is subject to the same parameters as the absolute positioning.
A channel can be configured with up to 8 scene modes, so the scene number is used to distinguish which scene mode is currently invoked.
The number of different scene mode configurations for the same channel should be unique.

The calling function and the learning function of the scenario use the same scene object, but the values are different, as shown in the following table:

Scene number	Call		Study	
	Hexadecimal	Decimal	Hexadecimal	Decimal
1	0x00	0	0x80	128
2	0x01	1	0x81	129
3	0x02	2	0x82	130
4	0x03	3	0x83	131
5	0x04	4	0x84	132
6	0x05	5	0x85	133
7	0x06	6	0x86	134
8	0x07	7	0x87	135
9	0x08	8	0x88	136
10	0x09	9	0x89	137
11	0x0A	10	0x8A	138
12	0x0B	11	0x8B	139
13	0x0C	12	0x8C	140
14	0x0D	13	0x8D	141
15	0x0E	14	0x8E	142
16	0x0F	15	0x8F	143
17	0x10	16	0x90	144
18	0x11	17	0x91	145
19	0x12	18	0x92	146
20	0x13	19	0x93	147
21	0x14	20	0x94	148
22	0x15	21	0x95	149
23	0x16	22	0x96	150
24	0x17	23	0x97	151
25	0x18	24	0x98	152
26	0x19	25	0x99	153
27	0x1A	26	0x9A	154
28	0x1B	27	0x9B	155
29	0x1C	28	0x9C	156
30	0x1D	29	0x9D	157
31	0x1E	30	0x9E	158
32	0x1F	31	0x9F	159

Table 23: Scenario invocation and save

4.4.2 **Reaction when bus** power down**/up**

Bus power down/up can also be configured with some behaviors.

Names	Scope [Default]	Notes
Reaction when bus power down	● no action ● drive to top ● drive to bottom	
Reaction when bus power up	● no action ● drive to top ● drive to bottom	

Table 33

This functional parameter is not supported by the curtain motor.

Contact information

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