Application description

Item number	Product code
0108010.xxx	MCU-16 SMI AC
0108011.xxx	MCU-16 SMI LoVo

1 Introduction

1.1 About this document

This document explains the significance and setup of the individual communication objects and parameters of the device with the software ETS5™. The reader is provided with accompanying product data and basic knowledge to set up the device. This information is targeted towards electricians and specialist partners.

On the basis of his/her professional training, knowledge and experience as well as knowledge of the relevant standards and regulations, an electrician is able to perform work on electrical systems and to identify and avoid potential hazards independently.

The electrician is trained for the specific employment location at which he/she is working and familiar with the relevant standards and regulations associated with this product.

Validities and other applicable documents can be found in the annex.

In addition to this document, at least one basic product training is recommended.

1.2 Purpose of the application and access levels

The parameters for the device can be introduced in two different ways.
To adjust the basic parameters, the parameters are configured by means of the ETS software from version 5.

The enhanced settings can be made by means of the service tool from version 1.x. The service tool is available only from a specialist partnership.

Which enhanced settings can be made is part of the service tool documentation.

1.3 Terms / abbreviations within this document

CO	Communication object
SCO	SunControlObject
Central command	Commands sent from a switchboard. e.g. the SunControlServer
Local command	Switch connected directly or via KNX
Feedback	Information that is sent from the actuator to the bus
BCSS object	Building control system object

Caution: Material damage!

Incorrect or faulty wiring and configuration of the device can result in damage culminating in total failure.

- ► Ensure that the supply voltage corresponds to the requirements from the technical specifications for the device.
- ► Ensure that all external components, e.g. such as switches and motors, are connected in accordance with the circuit diagrams.
- ► For information about required settings refer to the technical documentation from the motor manufacturer.

Caution: Danger to life!

There is a danger to life in case of contact with live parts.

- ► Have all activities performed only by personnel qualified to do so.
- ► Before starting work, switch off and shut down all power supplies.

2 Specific properties of the device

2.1 Hardware properties

- 4 outputs SMI 230V AC or SMI-LoVo 24V DC
- 8 binary inputs for potential-free contacts
- Status display for each motor output
- LED display for activation of the binary inputs
- Manual test switch per motor output
- Size 4 TE – 72 x 90.5 x 62 mm

2.2 Software properties

- SunControlObject – one group address for all communication
- Position feedback (height and angle)
- Motor status feedback
- Detailed diagnosis and troubleshooting via separate service tool
- iPhone app connection for manual operation
- 3 security objects per channel
- Priorities management
- Automatic lock per channel
- Limited operation

3 Structure of the application in ETS 5

After starting, the application is presented as follows:

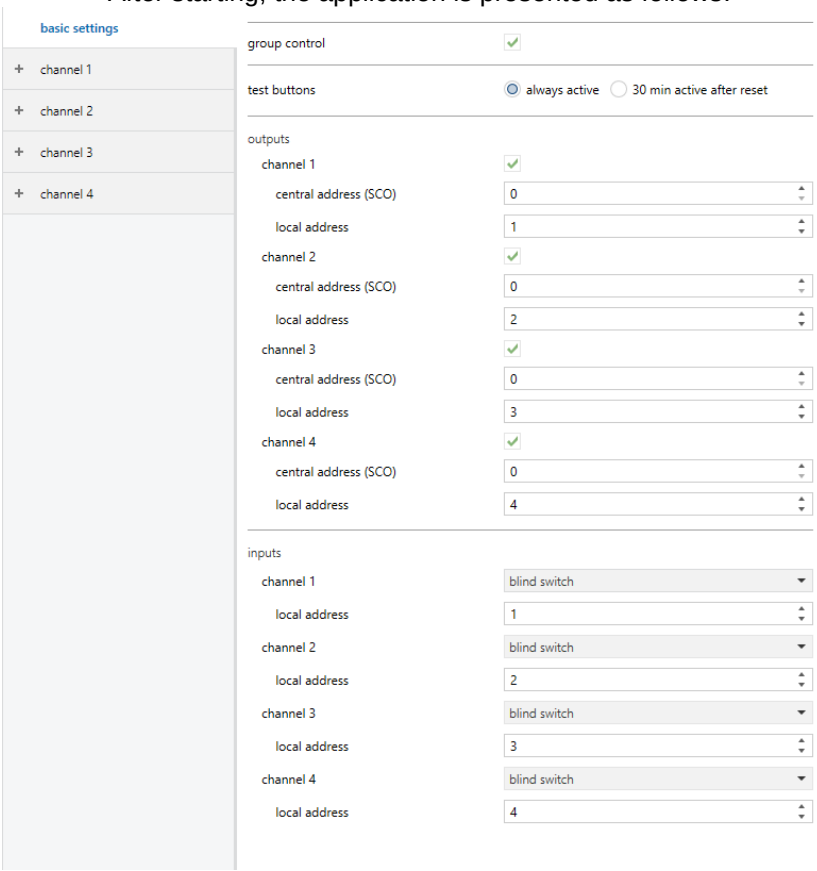

Fig. 1 View of basic parameter settings in ETS5

Basic settings – Channel-independent parameters and functions

Channel x – Channel-related settings.
Each channel can be parameterized individually.

4 Parameters

The following pages describe the adjustable parameters for the actuator. The arrangement here is orientated to the order in ETS5. The parameters are grouped according to their tabs. All channels have the same parameters, which is why no individual listing of the 8 channels has been undertaken.

An option **in bold** here corresponds to the standard setting of a parameter unless otherwise indicated.

A term shown in blue is the name of the respective parameter.

A term shown in orange is the name of a communication object.

4.1 Basic settings

Group control	Active / **inactive**
When group control is activated, all drives on an output / line are controlled as a group. If the group control is deactivated, each drive can be controlled individually. The line assignment is irrelevant. With individual control, the channel number corresponds to the SMI key ID that is assigned by the actuator according to the SMI standard.	

Test switch	**Always active** / active 30 min after reset
This parameter specifies how long after a restart the test switches on the front of the device react to inputs by the operator.	

Outputs -> Channel (x)		Active / **inactive**
The available channels for the outputs can be activated or deactivated by the parameters. A change shows or hides the corresponding parameter tab and associated communication objects.		
Outputs -> Channel (x)	Central address	**0** = Off 1… 256 = Sector address
Sector address of a switchboard. Through the SCO, all commands are therefore sent to the actuator via a group address. See also SCO.		
Outputs -> Channel (x)	Local address	0 = Off 1… 256 = Sector address
Link between motor channel and blind switch.		

Inputs -> Channel (x)	Inactive / **blind switch** / binary input
Selection blind switch Using the parameters, the available channels can be configured for the inputs or even deactivated according to their use. If the blind switch is used, the motor output can be controlled by means of a conventional switch directly on the channel or by local address. Example: Channel 1 output Local address 1 Channel 2 output Local address 1 Channel 1 input Local address 1 The switch on input 1 controls the motors on channel 1 and channel 2	
Selection binary input A further “binary input” parameter set is shown under the respective channel	

4.2 Channel (x)

4.2.1 Lock functions

SCO failure / bus voltage	**No function** Up / down / height / angle / height + angle / stop
The action performed if the bus voltage fails or no further SunControlObject is received.	

Security object (x)	Active / **inactive**
If this parameter is activated, the parameters associated with the security object and the communication objects are shown. A security object allows definition of a security status, which can be triggered manually or by failure monitoring. There are three security objects, 1 – 3, with decreasing priority; security object 1 has the highest priority. The secure status of the highest active priority is always adopted. If the channel is in security status, no further central commands are executed and local commands are executed in accordance with the local command parameter.	
Security object (x)-> Movement command	**Up** / down / height / angle / height + angle / stop
Command executed if the security object is triggered.	
Security object (x)-> Cyclic monitoring	**None** / 10s / 30s / 1min / 2min / 5min / 10min / 30min 1h / 2h / 5h / 12h / 24h
Cyclic monitoring detects a communication fault between actuator and switchboard. If the security object receives no telegram in the set period, it assumes a fault and triggers the security status of the security object (see movement command). The "channel (x), central command, security (x)" communication object must receive a valid telegram at least once within the set period.	
Security object (x)-> Local command	**Locked** / limited / released
Specifies how the actuator evaluates local commands whilst the security object is active: Locked — Local commands are not executed. Limited — Local commands are executed only if they are located within the specified limits. Released — Local commands are executed.	
Security object (x)-> Local command -> operating area	**Angle from bottom to limit** Angle from top to limit Height from bottom to limit Height from top to limit
Defines the possible movement range of the local commands. In the case of an option that limits the angle, the height can no longer be changed. An option that limits the height continues to allow the angle to be changed.	

Security object (x)-> Local command -> limit	0 – 100%
The parameter specifies the adjustable limit value for the operating area.	

Reset function Move back to position after lock	**No movement command** Up / down / height / angle / height + angle / last central command / last local command last central command or local command
The command that is executed if security status is ended. The last local command makes the motor move to the last local command received, whereas the last central command executes the last central command received. The option of the last local or central command starts the last command received, regardless of origin.	

Automatic lock	Active / **inactive**
Activates use of the automatic lock. Sending of a local command or manual setting of the communication object switches on the automatic lock. A switched on automatic lock means that only local and security commands are executed for the channel.	
Automatic lock Move back to position after lock	**No movement command** Up / down / height / angle / height + angle / last central command
The command that is executed if the automatic lock is switched on. The last central command makes the motor move to the last central command received.	
Automatic lock Reset after security	**Active** / inactive
If security status is ended, the automatic lock is likewise switched off.	
Automatic lock Reset after time	Active / **inactive**
The automatic lock is switched off after the parameterized time. The time is restarted after every further local command.	

4.2.2 Feedback

Position	**No feedback** Position reached Position reached and KNX object switched on Position change and KNX object switched on
This parameter describes the behaviour for feedbacks with respect to position changes. If an option other than “no feedback” is active, the feedback communication objects are shown for height and angle. **“Position reached”** – If this parameter is selected, the current height and angle of the motor are sent when the position is reached. **“Position reached and KNX object switched on”** – If this parameter is selected, the current height and angle of the motor are sent when the position is reached only if the object channel (x), activate feedback has been switched on via KNX (1). **“Position change and KNX object switched on”** – If this parameter is selected, only the current height and angle of the motor are sent only if the object channel (x), activate feedback has been switched on via KNX (1) and the position change has been altered by the parameterized percentage value at the last feedback.	

Feedback 1 – 3	**No feedback** Upper end position / lower end position / Unknown position / Security lock active / automatic lock active / Operating lock active / limited operation active / Check motor / Motorcycles
With these parameters, it can be determined which type of feedback the actuator should send. Up to 3 feedbacks can be defined per channel. For each option selected, the corresponding communication object is shown.	
“Upper end position”	The motor is in the upper end position
“Lower end position”	The motor is in the lower end position
“Unknown position”	Motor position not known (e.g. if no reference run has yet been executed)
“Security lock active”	At least one security lock is active
“Automatic lock active”	The automatic lock is switched on
“Operating lock active”	Local operation is locked
“Limited operation active”	The motor can be operated only to a limited extent
“Check motor”	Error message from the engine via the SMI bus
“Motor cycles”	Number of movements executed

Send BCSS object	**Off** Readout only / send on change / send on change of error bits
With this parameter, the BCSS object can be switched on and off. The precise structure of the object can be found in the annex.	
“Readout only”	The object can be read only
“Send on change”	Every change to the object is sent
“Send on change of error bits”	Is sent in case of changes to the error bits

4.2.3 Product

Carrier product Product type	**General** Blind moving down closed Blind moving down open Roller shutter Awning
The type of carrier product connected to this channel is defined by this parameter. Based on the product type, movement strategies for optimal positioning and standard values for subsequent parameters are defined. If applicable, parameters are shown specifically for the product type. Further information can be found in the annex and in the data sheets for the carrier products.	
Carrier product Product type	**General** Blind moving down closed Blind moving down open Roller shutter Awning
On the relevant channel, there is a shutter / Venetian blind, which starts with closed slats. The following parameters must then be set in addition. The order of the movements is determined under the movement strategy parameter, to ensure that the carrier product stands correctly and reproducibly in the desired target position. Possible parameters: -Move towards position from bottom -Move towards position from top -Move towards position from both sides With the additional parameter slat turning time (bottom), the increments between bottom end position (slats closed) and see-through position (slats horizontal) are parameterized. Adjustment range of 0 – 255 increments.	
Carrier product Product type	**General** Blind moving down closed Blind moving down open Roller shutter Awning
On the relevant channel, there is a shutter / Venetian blind, which starts with open slats (operating position 38°). The following parameters must then be set in addition. The order of the movements is determined under the movement strategy parameter, to ensure that the carrier product stands correctly and reproducibly in the desired target position. Possible parameters: -Move towards position from bottom -Move towards position from top -Move towards position from both sides With the additional parameter slat turning time (lifted), the increments between operating position (slat angle moving down) and see-through position (slats horizontal) are parameterized. Adjustment range of 0 – 255 increments. With the additional parameter slat turning time (bottom), the increments between lower end position (slats closed) and see-through position (slats horizontal) are parameterized. Adjustment range of 0 – 255 increments.	

Carrier product Product type	**General** Shutter closed going down Shutter open going down Roller shutter Awning
On the relevant channel, there is a vertical awning / seating position awning. With the tighten textile parameter, it is possible to adjust whether the cloth should be tensioned after the cloth end position is reached.	

Positioning Duration of turning slats	0 – 255 increments
The parameter determines how long one step takes in the case of local and central commands as well as brief pressing of the test switch. A time of 0ms deactivates the function.	
Positioning Shading position angle	0 – 100%
The set position is approached via object up / shading.	

Motor Change direction of rotation	Active / **inactive**
On activation, the rotation direction is changed at the actuator output.	

4.2.4 Scene control

Overwrite saved values on download	Active / **inactive**
By activation, the learned values of the customer are overwritten when the application is loaded.	

Use scene assignment 1 .. 8	Active / **inactive**
With this parameter, up to 8 scenes can be allocated to the channel. The actual allocation to the scene is done through the parameters, which are shown on activation.	
Scene	1… 64
This parameter determines with which scene communicated via bus the channel is linked.	
Movement command	**No movement command** Up / down / height / angle / height + angle
This parameter specifies which command is executed. Up, down, height, angle, height + angle move the motor to the corresponding position.	
Lock function	**None** / automatic lock
This parameter defines whether the automatic lock should also be set when the scene is executed.	

4.2.5 Blind switch

Not visible when, under basic settings, inputs, channel (x), blind switch has been selected.

Show KNX objects	Active / **inactive**
If this parameter is activated, the KNX communication objects are shown for blind switches.	

Shading position (long + short)	Active / **inactive**
In the case of a long press (down) of the blind switch followed by a short press of the switch, the shading position is approached and not the bottom end position.	
Long keystroke after	0… 3000 ms
This parameter sets the press duration from which operation of the blind switch is recognised as a long switch press.	

4.2.6 Binary input

Visible only if, under basic settings, inputs, channel (x), binary input has been selected.
Order of binary inputs from left:
Channel 1 binary input 1
Channel 1 binary input 2
Channel 2 binary input 1

Channel 3 binary input 2
Channel 4 binary input 1
Channel 4 binary input 2

Channel (x), binary input (x) – Function	**1-bit switching** Move to position Scene
Defines the general function for the input.	

Function of 1-bit switching	
Channel (x), binary input (x) – Function Rising edge	**No function** Toggle On Off
The parameter determines the behaviour that is sent to the KNX object in the case of a rising edge. Toggle -> Sends 1 – 0 – 1 alternately to the object for every rising edge On – Sends a 1 to the object Off – Sends a 0 to the object	
Channel (x), binary input (x) – Function Falling edge	**No function** Toggle On Off
The parameter determines the behaviour that is sent to the KNX object in the case of a rising edge. Toggle -> Sends 1 – 0 – 1 alternately to the object for every rising edge On – Sends a 1 to the object Off – Sends a 0 to the object	
Channel (x), binary input (x) – Function Cyclic sending	Active / **inactive**
On activation of the parameter, the interval is set, at which the status of the binary input is sent cyclically to the corresponding object.	

Function move to position	
Channel (x), binary input (x) – Function React to	Rising edge Falling edge
With this parameter it is determined whether the *approach position* function should be executed on the rising or falling edge.	
Channel (x), binary input (x) – Function Movement command	Height Angle Height + angle
With this parameter it is determined which position types can be approached if the function is executed. Depending on the option, the parameters *height [%]* and/or *angle [%]* are shown.	

Function scene	
Channel (x), binary input (x) – Function React to	Rising edge Falling edge
With this parameter it is determined whether the scene function should be executed on the rising or falling edge.	
Channel (x), binary input (x) – Function Scene	1… 64
Sends the set scene via KNX object channel (x), binary input (x) scene.	

5 Communication objects

The following image shows all communication objects for one channel with no connected binary input or local operation. In the ETS application, only communication objects are shown, which are required according to the parameter settings.

Number	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
1	SunControlObject	all functions	6 bytes	C	-	W	-	-		High
2	scene	scene object	1 byte	C	-	W	-	-	scene control	Low
10	channel 1, local command, end position	up / down	1 bit	C	-	W	-	-	up/down	Low
11	channel 1, local command, shading	up / shading	1 bit	C	-	W	-	-	up/down	Low
12	channel 1, local command, turn slats	step / stop	1 bit	C	-	W	-	-	step	Low
13	channel 1, local command, automatic lock	automatic lock	1 bit	C	-	W	-	-	boolean	Low
14	channel 1, local command, height	height	1 byte	C	-	W	-	-	percentage (0..100%)	Low
15	channel 1, local command, angle	angle	1 byte	C	-	W	-	-	percentage (0..100%)	Low
16	channel 1, central command, end position	up / down	1 bit	C	-	W	-	-	up/down	Low
17	channel 1, central command, shading	up / shading	1 bit	C	-	W	-	-	up/down	Low
18	channel 1, central command, turn slats	step / stop	1 bit	C	-	W	-	-	step	Low
19	channel 1, central command, height	height	1 byte	C	-	W	-	-	percentage (0..100%)	Low
20	channel 1, central command, angle	angle	1 byte	C	-	W	-	-	percentage (0..100%)	Low
21	channel 1, central command, security 1	security 1	1 bit	C	-	W	-	-	switch	Low
22	channel 1, central command, security 2	security 2	1 bit	C	-	W	-	-	switch	Low
23	channel 1, central command, security 3	security 3	1 bit	C	-	W	-	-	switch	Low
25	channel 1, feedback, height	height	1 byte	C	R	-	T	-	percentage (0..100%)	Low
26	channel 1, feedback, angle	angle	1 byte	C	R	-	T	-	percentage (0..100%)	Low
27	channel 1, feedback 1	motor current	2 bytes	C	R	-	T	-	current (mA)	Low
28	channel 1, feedback 2	overcurrent	4 bytes	C	R	-	T	-	counter pulses (unsigned)	Low
29	channel 1, feedback 3	motor cycles	4 bytes	C	R	-	T	-	counter pulses (unsigned)	Low
30	channel 1, feedback BCSS	BCSS object	4 bytes	C	R	-	T	-	status sunblind & shutter actuator	Low
31	channel 1, blind switch, control end position	up / down	1 bit	C	-	-	T	-	up/down	Low
32	channel 1, blind switch, control long+short	up / shading	1 bit	C	-	-	T	-	up/down	Low
33	channel 1, blind switch, control turn slats	step / stop	1 bit	C	-	-	T	-	step	Low
34	channel 1, blind switch, control pincer-like grip	automatic lock	1 bit	C	-	-	T	-	boolean	Low

Example communication objects for one channel

5.1 Basic objects

1

SCO SunControlObject — 6 byte

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6-byte KNX communication object for connection between weather control and motor controls. All commands from the control (such as shading, time and security commands) are sent to the motor controls via the same group address for up to 256 sectors (façade sections). The allocation to the sector is set in the motor control for each channel.

2 — 18.001 Scene control

Scene object — 1 byte

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With this object a set scene can be retrieved or programmed.
Here:
Value 0 – 63 retrieves corresponding scene 1 – 64
Value 128 – 191 programmes the current position into the corresponding scene

5.2 Local commands

10, 35, 60, 85, (110, 131, 152, 173, 194, 215, 236, 257, 278, 299, 320, 341)	1.008	Up/down
Channel (x), local command, end position	1 bit	

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With this object, the motor is moved into the respective end position. The respective output is triggered until a stop command is received, the parameterized movement time has passed or the motor end position switch is triggered.
0 – Up
1 – Down

11, 36, 61, 86, (111, 132, 153, 174, 195, 216, 237, 258, 279, 300, 321, 342)	1.008	Up/down
Channel (x), local command, shading	1 bit	

☒ K
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☐ Ü
☐ A

The object serves to approach the operating position of the carrier product (shutter 38°) directly. The respective output is triggered until a stop command is received, the parameterized movement time has passed or the motor end position switch is triggered.
0 – Up
1 – Down / operating position

12, 37, 62, 87, (112, 133, 154, 175, 196, 217, 238, 259, 280, 301, 322, 343)	1.007	Step
Channel (x), local command, turn slats	1 bit	

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With the object, the motor can be controlled incrementally up or down. The duration of the increment is dependent upon the parameter set.
0 – Step up
1 – Step down

13, 38, 63, 88, (113, 134, 155, 176, 197, 218, 239, 260, 281, 302, 323, 344)	1.007	Boolean
Channel (x), local command, automatic lock	1 bit	

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If this object is described with a 1, the automatic lock is activated on the channel. With the automatic lock activated, the central commands (end position, shading, height, angle) are no longer executed. Local commands and security objects continue to be executed.

14, 39, 64, 89, (114, 135, 156, 177, 198, 219, 240, 261, 282, 303, 324, 345)	5.001	0 – 100 percent
Channel (x), local command, height	1 byte	

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With the object, the motor can be positioned at 0 – 100%.
Here, 0 or 0% corresponds to the top motor end position and 255 or 100% to the bottom motor end position.

15, 40, 65, 90, (115, 136, 157, 178, 199, 220, 241, 262, 283, 304, 325, 346)	5.001	0 – 100 percent
Channel (x), local command, angle	1 byte	

☒ K
☐ L
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This object is shown only if a corresponding product type (shutter) has been selected in the product parameter, which can perform an angle function. The value of this object determines the angle as a percentage, depending on the slat turning increments set.
Here, the value 0 or 0% corresponds to a max. open slat and 255 or 100% to a closed slat.

5.3 Central commands

16, 41, 66, 91, (116, 137, 158, 179, 200, 221, 242, 263, 284, 305, 326, 347)	1.008	Up/down
Channel (x), central command, end position	1 bit	

☒ K ☐ L ☒ S ☐ Ü ☐ A

With this object, the motor is moved into the respective end position.
The requirement is that the automatic lock is not set.
0 – Up
1 – Down

17, 42, 67, 92, (117, 138, 159, 180, 201, 222, 243, 264, 285, 306, 327, 348)	1.008	Up/down
Channel (x), central command, shading	1 bit	

☒ K ☐ L ☒ S ☐ Ü ☐ A

The object serves to approach the operating position of the carrier product (shutter 38°) directly.
The requirement is that the automatic lock is not set.
0 – Up
1 – Down / operating position

18, 43, 68, 93, (118, 139, 160, 181, 202, 223, 244, 265, 286, 307, 328, 349)	1.007	Step
Channel (x), central command, turn slats	1 bit	

☒ K ☐ L ☒ S ☐ Ü ☐ A

With the object, the motor can be controlled stepwise up or down. The duration of the step is dependent upon the parameter set. The requirement is that the automatic lock is not set.
0 – Step up
1 – Step down

19, 44, 69, 94, (119, 140, 161, 182, 203, 224, 245, 266, 287, 308, 329, 350)	5.001	0 – 100 percent
Channel (x), central command, height	1 byte	

☒ K ☐ L ☒ S ☐ Ü ☐ A

With the object, the motor can be positioned at 0 – 100%.
Here, 0 or 0% corresponds to the top motor end position and 255 or 100% to the bottom motor end position.
The requirement is that the automatic lock is not set.

21-23, 46-48, 71-73, 96-98, (121-123, 142-144, 163-165, 184-186, 205-207, 226-228, 247-249, 268-270, 289-291, 310-312, 331-333, 352-354)	5.001	0 – 100 percent
Channel (x), central command, angle	1 byte	

☒ K ☐ L ☒ S ☐ Ü ☐ A

This object is shown only if a corresponding product type (shutter) has been selected, which can perform an angle function. The value of this object determines the angle of the shutter as a percentage, depending on the slat turning increments set.
Here, the value 0 or 0% corresponds to a max. open slat and 255 or 100% to a closed slat.

21-23, 46-48, 71-73, 96-98, 121-123, 146-148, 171-173, 196-198	1.001	Switch
Channel (x), central command, security 1 … 3	1 bit	

☒ K ☐ L ☒ S ☐ Ü ☐ A

If this object is described with a 1, the parameterized security status of the respective security object is assumed. At the start of security status, the parameterized movement command is executed. Whilst security status is active, no further commands are executed other than if they reset a security object. Resetting is performed by describing the security object with 0. The priority of the individual security objects is defined, where 1 triggers the highest and 3 the lowest priority.

5.4 Feedbacks

24, 49, 74, 99, (124, 145, 166, 187, 208, 229, 250, 271, 292, 313, 334, 355)	1.001	Switch
Channel (x), activate feedback	1 bit	

☒ K ☐ L ☒ S ☐ Ü ☐ A

This object switches the position feedback on or off. It is not visible if the channel (x), feedbacks, position parameter is set to no feedback or position reached.
0 – Off
1 – On

25, 50, 75, 100, (125, 146, 167, 188, 209, 230, 251, 272, 293, 314, 335, 356)	5.001	0 – 100 percent
Channel (x), feedback, height	1 byte	

☒ K ☒ L ☐ S ☒ Ü ☐ A

The value of this object feeds back the current position (height) from the motor.
Here, 0 or 0% corresponds to the top motor end position and 255 or 100% to the bottom motor end position.

26, 51, 76, 101, (126, 147, 168, 189, 210, 231, 252, 273, 294, 315, 336, 357)	5.001	0 – 100 percent
Channel (x), feedback, angle	1 byte	

☒ K ☒ L ☐ S ☒ Ü ☐ A

This object is shown only if a parameter has been selected in the product parameter, which can perform an angle function. The value of this object determines the angle of the shutter as a percentage, depending on the slat turning increments set.
Here, the value 0 or 0% corresponds to a max. open slat and 255 or 100% to a closed slat.

27-29, 52-54, 77-79, 102-104, (127-129, 148-150,169-171, 190-192, 211-213, 232-234, 253-255, 274-276, 295-297, 316-318, 337-339, 358-360)
Channel (x), feedback 1… 3

☒ K ☒ L ☐ S ☒ Ü ☐ A

Feeds back to the bus the status that has been parameterized accordingly.
The following 1.002 Boolean 1 bit feedbacks can be selected:
upper end position / lower end position / position unknown / security lock active / automatic lock active / operating lock active / limited operation active / check motor
The motor cycles feedback is counting pulses, 12.001 counting pulse, 4 byte. Here, the movement cycles of the drive are counted.

30, 55, 80, 105, (130, 151, 172, 193, 214, 235, 256, 277, 298, 319, 340, 361)	241.800	Status shading
Channel (x), feedback BCSS	4 byte	

☒ K ☒ L ☐ S ☒ Ü ☐ A

Using the BCSS object, several feedbacks can be requested for each channel within one object.
The specific explanation of the object can be found in the annex.

5.5 Inputs switch

31, 56, 81, 106	1.008	Up/down
Channel (x), blind switch, control end position	1 bit	

☒ K The objects are visible only if the show KNX objects parameter has been activated.
☐ L The closed switch sends the long switch press to the object. Here:
☐ S Up switch – Value 0
☒ Ü Down switch – Value 1
☐ A

32, 57, 82, 107	1.008	Up/down
Channel (x), blind switch, control long + short	1 bit	

☒ K The objects are visible only if the show KNX objects parameter has been activated.
☐ L The connected switch sends a 1 to the object if a long switch press is executed followed by a
☐ S short switch press using the down switch blind switch. With the up switch, a 0 is always sent to
☒ Ü the object.
☐ A

33, 58, 83, 108	1.007	Step
Channel (x), blind switch, control turn slats	1 bit	

☒ K The objects are visible only if the show KNX objects parameter has been activated.
☐ L The connected switch sends the short switch press to the object. Here:
☐ S Up switch – Value 0
☒ Ü Down switch – Value 1
☐ A

34, 59, 84, 109	1.002	Boolean
Channel (x), blind switch, control pincer-like grip	1 bit	

☒ K The objects are visible only if the show KNX objects parameter has been activated.
☐ L If the up and down switches are operated simultaneously on the connected switch, this is referred
☐ S to as the pincer-like grip. Here:
☒ Ü Long operation Sends a 0 to the object
☐ A Short operation Sends a 1 to the object

5.6 Binary inputs

31, 56, 81, 106	33, 58, 83, 108	1.001	Switch
Channel (x), binary input 1	Channel (x), binary input 2	1 bit	

☒ K
☒ L
☐ S
☒ Ü
☐ A

The objects are visible only if the input parameter has been set to binary input.
The connected potential-free contact sends the respective status to the object.

31, 56, 81, 106	33, 58, 83, 108	5.001	0 – 100 percent
Channel (x), binary input 1, height	Channel (x), binary input 2, height	1 byte	

☒ K
☐ L
☐ S
☒ Ü
☐ A

The objects are visible only if the input parameter has been set to binary input.
Accordingly, after parameterisation, the object sends the set value to the rising or falling edge of the connected potential-free contact.

32, 57, 82, 107	34, 59, 84, 109	5.001	0 – 100 percent
Channel (x), binary input 1, angle	Channel (x), binary input 2, angle	1 byte	

☒ K
☐ L
☐ S
☒ Ü
☐ A

The objects are visible only if the input parameter has been set to binary input.
Accordingly, after parameterisation, the object sends the set value to the rising or falling edge of the connected potential-free contact.

31, 56, 81, 106	33, 58, 83, 108	18.001	Scene control
Channel (x), binary input 1, scene	Channel (x), binary input 2, scene	1 byte	

☒ K
☐ L
☐ S
☒ Ü
☐ A

The objects are visible only if the input parameter has been set to binary input.
Accordingly, after parameterisation, the object sends the set scene to the rising or falling edge of the connected potential-free contact.

6 Annex

6.1 Carrier products

6.1.1 Shutter open going down

Also referred to as Venetian slats or a Venetian blind. The slats are open when going down. The angle is specified mechanically and cannot be changed by the control.
Advantages of the carrier product open going down:
- Defined shading position in going down position for uniform façade appearance
- No dark phase
- Ideal for solar, glare, thermal and visual protection

Notes:
- Motors with 3 end switches are possible (note!).
- Automated products must be protected from wind and poss. frost.

6.1.2 Shutter closed going down

Also referred to as Venetian slats or a Venetian blind. The slats are closed when going down. The angle is specified mechanically and cannot be changed by the control.
Advantages of the carrier product closed going down:
- Slats can be closed in any position
- Ideal for thermal and visual protection

Notes:
- Motors with 3 end switches are possible (note!).
- Automated products must be protected from wind and poss. frost.

6.1.3 Roller shutters

The roller shutter hanging is “wound up” in the box around the roller shutter shaft.
Advantages:
- Improved protection from intrusion and weather
- Good dimming of the room

Notes:
- Tube motors can be installed in the roller shutter shaft both on the left and right.
The result of this is that the connection for up / down must be checked beforehand.
- Not suitable for solar protection in the workplace.

6.1.4 Vertical awning or counter-tension systems

The awning hanging here is “wound up” around the motor shaft.
Advantages:
- Decorative façade element

Notes:
- Tube motors can be installed in the motor shaft both on the left and right.
The result of this is that the connection for up / down must be checked beforehand.
- Automated awnings must be protected from wind, poss. rain and poss. frost.

6.1.5 Sliding-arm awning

The sliding-arm awning initially moves vertically downwards and then extends the drop arm from a certain height.
Advantages:
- Better outlook and solar protection than with vertical awnings

Notes:
- Tube motors can be installed in the motor shaft both on the left and right.
The result of this is that the connection for up / down must be checked beforehand.
- Automated awnings must be protected from wind, poss. rain and poss. frost.

6.1.6 Drop-arm awning

Unlike the sliding-arm awning, the drop-arm awning extends the drop arm immediately when moving downwards.
Advantages:
- Better outlook and solar protection than with vertical awnings

Notes:
- Tube motors can be installed in the motor shaft both on the left and right.
The result of this is that the connection for up / down must be checked beforehand.
- Automated awnings must be protected from wind, poss. rain and poss. frost.

6.1.7 Articulated-arm awning

The articulated-arm awning is often referred to as a seating or folding-arm awning. The hanging is “wound up” around the motor shaft.
Advantages:
- Large area that can be shaded.
- Shade edge tracking possible

Notes:
- Tube motors can be installed in the motor shaft both on the left and right.
The result of this is that the connection for up / down must be checked beforehand.
- Automated awnings must be protected from wind, poss. rain and poss. frost.