

KNX / SMI 8-fold actuator for roller shutters/screens, awnings and blinds Article number: 4002 000 003 0

Device function:	Roller shutter / Blind control
Interface with drive:	SMI
Interface with BUS system:	KNX, medium :TP-1
Max. number of SMI drives:	8
Configuration:	REG
Module width:	2TE
Operating voltage:	230V
Operating frequency:	50Hz
Degree of protection:	IP20
Controls on device:	1x KNX programming button
Displays on device:	1 x LED to display the addressing mode
KNX terminal:	KNX bus terminal

Mains terminal:	3 screw terminals 2 x 0.5 – 2.5mm ² single core for each or 2 x 0.5 – 1.5mm ² stranded with ferrule for each One for L/N/PE each
SMI terminal:	5 screw terminals 2 x 0.5 – 2.5mm ² single core for each or 2 x 0.5 – 1.5mm ² stranded with ferrule for each One for L/N/PE/I+/I- for each
KNX communication objects:	82
Maximum number of group addresses:	108
Maximum assignment of group addresses:	116

Overview of the ETS communication objects

Object number	Object name	Function	Type	Object flags											
0	Safety	On / Off	1 bit	UCW / Rec.											
1	Drive command lock	On / Off	1 bit	UCW / Rec.											
Object number	Object name	Function	Type	Object flags											
Drive: A1=Drive 1, A2=Drive 2, etc.															
A1	A2	A3	A4	A5	A6	A7	A8	R	S	M	J	RS = Roller shutter/Screen, M = Awning, J = Blind/Shutter			
2	14	26	38	50	62	74	86	•	•	•		Drive X - Move Up / Down	Up / Down	1 bit	UCW / Rec.
3	15	27	39	51	63	75	87	•	•	•		Drive X - Move Stop / Step	Up / Down	1 bit	UCW / Rec.
4	16	28	40	52	64	76	88	•	•			Drive X - Upper position	Up / Down	1 bit	UCW / Rec.
5	17	29	41	53	65	77	89	•	•			Drive X - Lower position	Pos1 / Pos2	1 bit	CRT / Rec.
6	18	30	42	54	66	78	90	•	•	•		Drive X - Automatic mode	Pos1 / Pos2	1 bit	UCW / Rec.
7	19	31	43	55	67	79	91	•	•	•		Drive X - Curtain position in %	8-bit value	8 bit	UCW / Rec.
8	20	32	44	56	68	80	92			•		Drive X - Position slat angle in %	8-bit value	8 bit	CRT / Trans.
9	21	33	45	57	69	81	93	•	•	•		Drive X - Status curtain position in %	On / Off	8 bit	CRT / Trans.
10	22	34	46	58	70	82	94			•		Drive X - Status slat angle in %	On / Off	8 bit	CRT / Trans.
11	23	35	47	59	71	83	95	•	•	•		Drive X - Restore scene POS1 / POS2	On / Off	1 bit	UCW / Trans.
12	24	36	48	60	72	84	96	•	•	•		Drive X - Store scene POS1 / POS2	Pos1 / Pos2	1 bit	UCW / Trans.
13	25	37	49	61	73	85	97	•	•	•		Drive X - Status drive error	On / Off	1 bit	CRT / Trans.

Functional description of objects

Object name	Function
Object: "Safety" Object value "1": Safety function ON Object value "0": Safety function OFF	With this object the safety function can be switched on and off. This object can e.g. be combined with a wind monitor. Parameters can be used to set whether the safety function is enabled for each drive and how that drive behaves if the safety function is activated (UP, DOWN movement or No drive command). If the safety function is switched on and enabled via the parameters, all incoming drive commands are blocked on that channel. The command lock is not enabled until the safety function has been switched off. If the drive is in the automatic mode, incoming changes on the objects, "Drive X, curtain position in % 8-bit value" and "Drive X, slat angle in % 8-bit value" are buffered and restored after leaving the safety mode provided that the command lock object is no longer active.
Object: "Drive command lock" Object value "0": Drive command lock OFF Object value "1": Drive command lock ON	With this object the drive command lock can be switched on and off. A parameter can be used to set whether the drive command lock is enabled or disabled for a drive. If the drive command lock is switched on and enabled via the parameter, all incoming drive commands are blocked on that channel. If the drive is in the automatic mode, incoming changes on the objects, "Drive X, curtain position in % 8-bit value" and "Drive X, slat angle in % 8-bit value" are buffered and restored after leaving the safety mode provided that the safety object is no longer active.
Object: "Drive X move up / down" Object value "0": Moves to the upper limit position Object value "1": Moves to the lower limit position	With this object the drive can be moved to the upper or lower limit position.
Object "Drive X move Stop / Step" Object value "0": Stop or Step direction of upper limit position Object value "1": Stop or Step direction of lower limit position	With this object a run can be stopped or the drive moved a parameterisable increment.
Object "Drive X status upper position" Object value "0": Not in limit position Object value "1": In limit position	With this object it can be determined whether the drive of a particular object is in the upper limit position. For each parameter, it must be set whether the object can only be queried or whether a status change is spontaneously sent. This object is only available in the roller shutter/screen or awning mode.
Object "Drive X status lower position" Object value "0": Not in limit position Object value "1": In limit position	With this object it can be determined whether the drive of the particular object is in the lower limit position. For each parameter it must be set whether the object can only be queried or whether a status change is spontaneously sent. This object is only available in the roller shutter/screen or awning mode.
Object "Drive X automatic mode" Object value "0": Manual mode Object value "1": Automatic mode	With this object the mode of operation of the drive can be set to Automatic or Manual, provided that this is enabled in the drive's administration tab. The drive is controlled via the objects, "Drive X, curtain position in % 8-bit value" and "Drive X, slat angle in % 8-bit value". The objects "Safety" and "Drive command lock" have higher priority; changes in the objects, "Drive X, curtain position in % 8-bit value" and "Drive X, slat angle in % 8-bit value" are internally buffered when the object "Safety" and "Drive command lock" are active and executed as soon as the objects "Safety" and "Drive command lock" are cancelled. All other objects which execute a drive or stop command in the automatic mode reset the drive to manual mode, unless the object "Safety" or "Drive command lock" are enabled, in which case the automatic mode remains active.

Object name	Function
Object "Drive X curtain position in % 8-bit value" Object value "0": Moves to the upper limit position Object value "255": Moves to the lower limit position Intermediate values are possible.	With this object the drive can be positioned via a 1-byte value (0-255) scaled to its travel distance.
Object "Drive X slat angle in % 8-bit value" Object value "0": Slat horizontal / open Object value "255": Slat closed Intermediate values are possible.	With this object the slat angle can be positioned via a 1-byte value (0-255).
Object "Drive X status curtain position in % 8-bit value" Object value "0": Position upper limit position Object value "255": Position lower limit position Intermediate values are possible.	With this object the current position of the drive can be read out. The current position is scaled to a range of 0-255 (1 byte), and displayed.
Object "Drive X status slat position in % 8-bit value" Object value "0": Slat horizontal / open Object value "255": Slat closed Intermediate values are possible.	With this object the current position of the slat can be read out, provided that the drive is in the blind mode. The current position is scaled to a range of 0-255 (1 byte), and displayed.
Object "Drive X store scene Pos1 / Pos2" Object value "0": Drive to Pos1 Object value "1": Drive to Pos2	With this object the drive can be moved to Pos1 and Pos2 stored in that drive.
Object "Drive X store scene Pos1 / Pos2" Object value "0": Store Pos1 Object value "1": Store Pos2	With this object the current drive position can be stored in the drive under Pos1 or Pos2.
Object "Drive X status motor error" Object value "0": No error Object value "1": Error	With this object a drive error, if there is one, can be read out.

Note: The software checks whether ETS communication objects are coming in at the same time for drive commands (e.g. "Move Stop / Step, Drive X") of several drives. Using SMI group commands ensures the synchronous operation of connected drives. The Step command is executed for a group, but only to the extent that the parameterised Step length of those drives have the same value.

Description of the ETS – Parameters

(Presets are bold)

“General” tab	
Parameter	Setting
Send status objects	Only via read request On status change
This parameter can be used to set whether the status objects “Value” and “Drive error” of all channels can only be read out or whether the value is automatically sent after a new position is reached or if a drive error occurs.	
Time monitoring for safety	Disabled Enabled
This parameter is used to set whether the cyclical receipt of telegrams is to be monitored with the safety object. If it is “enabled”, the parameter “Monitoring time for safety” is also enabled.	
Monitoring time for safety	1 minute 5 minutes 10 minutes 30 minutes
Parameter dependent on time monitoring for safety (= enabled)	
If the parameter “Time monitoring for safety” is enabled, this parameter can be used to set the maximum time within which telegrams with a log. zero have to be received via the safety object.	
“Drive” tab	
Use of drive 1 ... 8	Unused Used
This parameter can be used to set how many drives are to be controlled on the actuator. At most, all 8 drives can be parameterised as used.	

“Manufacturer” tab	
Manufacturer code Drive X	0 = Not yet assigned 1 = Alcatel 2 = Becker-Antriebe 3 = Elero 4 = Selve 5 = NA 6 = NA 7 = NA 8 = NA 9 = NA 10 = NA 11 = NA 12 = NA 13 = NA 14 = NA 15 = NA
This parameter must be used to set which drive manufacturer goes under the internal SMI address. The only drives that appear are the ones that have been parameterised as used in the “Drive” tab.	
“SMI-key-IDs” tab	
SMI-key-ID of Drive X	0...42949467296
This parameter tells the actuator the SMI-Key-ID. This SMI-Key-ID is required to locate the drive and address it on the internal SMI BUS. This SMI-KEY-ID should be visible on the window or curtain in the form of a sticker or your curtain supplier should give it to you along with the planning documents. If neither is the case our KNX / SMI gateway software enables you to query and locate these SMI-Key-IDs and manufacturer codes via the KNX Bus. This software is contained in this actuator library and has separate instructions.	
“Ref x” tab	
Parameter	Setting
Safety (e.g. wind alarm)	Enabled Disabled
This parameter can be used to set whether the safety object and the safety function are effective for this channel.	
Drive command with safety	No action Drive up Drive down
Parameter dependent on safety (= enabled)	
This parameter can be used to set which limit position the curtain goes to in the event of a safety alarm or whether no drive command is to be executed. Regardless of this parameterisation, all drive commands coming in via KNX are blocked if the safety function is enabled and switched on.	

Drive command lock	Disabled Enabled
This parameter can be used to set whether the drive command lock is effective for this channel. If it is enabled and switched on all drive commands coming in via the KNX are disabled	
In the event of bus voltage failure	No action Drive up Drive down
This parameter is used to set which limit position the drive goes to in the event of the bus voltage fails or whether it stays in the current position.	
In the event of mains voltage recovery	No action Drive up Drive down
This parameter is used to set whether the drive is to be opened or closed in the event of mains voltage recovery.	
Automatic mode	Enabled Disabled
This parameter, if enabled, is used to set whether the drive X supports the objects, "Drive X, curtain position in % 8-bit value" and "Drive X, slat angle in % 8-bit value" when the Automatic object is active. If the parameter is "disabled" the objects: "Drive X, curtain position in % 8-bit value" and "Drive X, slat angle in % 8-bit value" are still interpreted as Manual objects and are not restored after an active "Safety" or "Drive command lock" object.	
"Mech x" tab	
Type of curtain	Roller shutter/Screen Awning Blind
This parameter can be used to define the curtain type. The curtain type defines the movement mode, how the drive is controlled and enables additional parameters.	
Factor number of degrees of angle on Step command (Basis: 2°)	0-255 5
This parameter can be used to set the increment for a Step command. This parameter is available with all three types of curtain.	
Cloth tension	Disabled Enabled
This parameter can be used to set whether the cloth tension function is active or not. If the parameter is "disabled", cloth tension is deactivated. Cloth tensioning is done always it is extended or on a Stop command after opening. If it is "enabled", cloth tension can be set in degrees of angle. This parameter is only available with the awning curtain type.	

Factor cloth tension retract number of degrees of angle from open (Basis 2°)	0-255 30
This parameter is used to set the cloth tension in degrees of angle after it is extended or following a Stop command after opening. This parameter is only available with the awning curtain type and if the cloth tension parameter is enabled.	
Factor tilt number of degrees of angle for shade function (Basis 2°)	0-255 30
This parameter can be used to set the angle in which the slats are tilted after moving to the lower position or after lowering and stopping. This parameter is only available with the blind curtain type.	
Tilt open after manually lowering and stopping	Disabled Enabled
This parameter can be used to set whether after every manual command object "lower and stop" the slats are to be tilted open to the angle set in the parameter "Factor tilt number of degrees of angle for shade function (Basis 2°)". This parameter is only available with the blind curtain type.	
Factor number of degrees of angle for slat to fully opened (Basis 2°)	0-255 45
This parameter is used to set the angle of the fully closed slat to fully opened slat. This parameter is only available with the blind curtain type.	
Factor number of degrees of angle for slat position from open to curtain height change (Basis 2°)	0-255 0
On curtains with such a mechanism, this parameter can be used to set the angle by which the slats have to exceed the open position when opening or tilting before the curtain height changes. This parameter is only available with the blind curtain type.	

Project planning and commissioning

With every restart (after ETS download, KNX switch-on or Bus reset) the actuator attempts to verify the assignment of drives and channels and correct them if necessary. If this fails error messages will be generated for the query by the ETS. If the SMI has no power supply at the time of the restart the attempt will be always repeated after 10 seconds.

For verification, the actuator attempts to register and address the drives expected according to ETS parameterisation using their SMI bus address. If the drive does not respond after a second attempt after 10 seconds the actuator attempts to reprogramme it using the SMI-Key-ID and manufacturer code with the SMI-Slave address. Only when the correct drive responds, if necessary after reprogramming on the particular channel using Key-ID and manufacturer code, it is possible to operate this drive.

Drives that are not identified “error-free” will not function.

The project planning and commissioning of an SMI system (KNX module and SMI drives) need the following steps:

1. Assignment of the SMI drives to drives 1 to 8

The drives are assigned to the drive numbers by entering the manufacturer code in the “Manufacturer code” tab, SMI-Key-IDs in the “SMI-Key-IDs” tab. When doing so the KNX does not have to be connected.

The SMI-KEY-ID should be visible on the window or curtain in the form of a sticker or your curtain supplier should give it to you along with the planning documents. If neither is the case, our KNX / SMI gateway software enables you to query and locate these SMI-Key-IDs and manufacturer codes via the KNX Bus. This software is contained in this actuator library and has separate user instructions.

For a better planning overview we also provide forms on our website www.Becker-Antriebe.com that facilitate clear documentation. With the help of this documentation, the shade system can be put back into operation after servicing without KNX programming.

2. Further parameterisation and KNX group address assignment

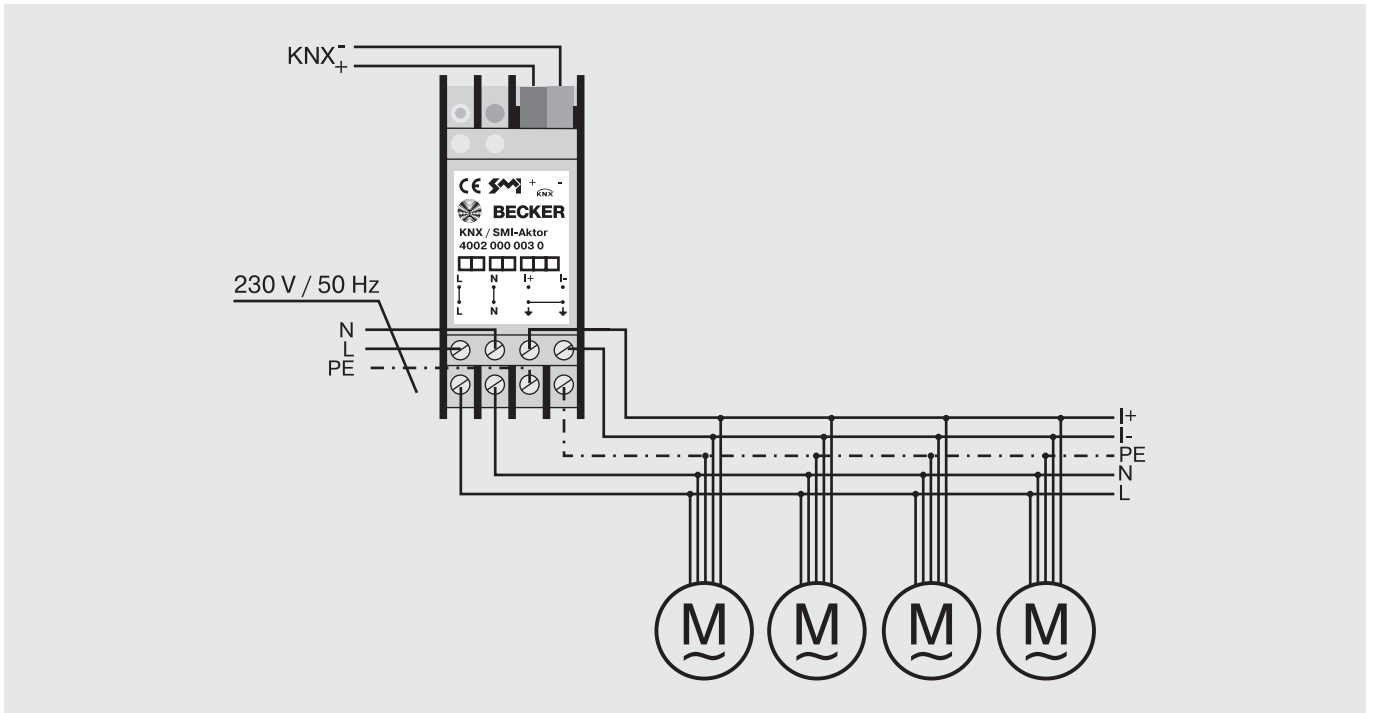
The parameterisation and linking of the communication objects to the group addresses can also be done without having to connect KNX.

3. Programming the physical address of the KNX module.

To access the KNX module the physical address is loaded via the KNX and ETS (KNX Tool Software) into the KNX module.

4. Download

The parameterisation, assignment of the group addresses and assignment of the SMI drives to the object groups is written to the KNX module via the ETS download. The KNX module subsequently verifies and, if necessary, addresses the SMI drives on the SMI bus.



Subject to technical changes without notice.

