

KNX manual

Flush-mounted blind/switch actuator JU 1,

Flush-mounted blind actuator JU 1 RF



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1 ⚡ IMPORTANT WARNINGS!



Risk of electric shock!

- The device JU 1 RF does not have basic insulation around the terminals and plug connection!
- The inputs carry mains voltage!
- When connecting the inputs or before any intervention at one of the inputs, interrupt the 230 V supply of the device.
- Protect against accidental contact during installation.
- Maintain a minimum distance of 3 mm from live parts or use additional insulation, e.g. separating strips/walls.
- Do not remove the insulation from the unused inputs.
- Do not cut off the conductors of the unused inputs.
- Do not connect mains voltage (230 V) or other external voltages to the inputs!
- During installation, ensure there is adequate insulation between mains voltage (230 V) and bus or inputs (min. 5.5 mm).

2 Function description



The JU 1 device can be configured either as a 1-channel blind actuator (C1), or as a 2-channel switch actuator (C1, C2).¹

The JU 1 RF device is a pure blind actuator.



Furthermore, both devices have 2 KNX binary inputs (I1, I2).

Usage as a blind actuator: JU 1, JU 1 RF

- 1-channel flush-mounted blind actuator.
- Configurable features: e.g. type of motor, response to power failure and restoration...
- 2 external inputs: can either be used for direct control of the actuator or as independent KNX binary inputs.
- Participation in central commands, such as up/down and save/call up scene.
- 8 individual positions can be preset and called up, for example via scenes.
- 5 safety objects: 3x wind, rain and frost.
- Correction of improper drive connection via parameters.
- Start-up mode for electronic motors
- Teaching of runtime possible

Usage as a switch actuator: JU 1 only

- 2-channel flush-mounted switch actuator.
- Adjustable features: e.g. switching, delayed switching, pulse function.
- 2 external inputs: can either be used for direct control of the actuator or as independent KNX binary inputs.
- Links, type of contact (NC contact/NO contact) and participation in central commands such as permanent on, permanent off, central switching and save/call up scene.
- Switch functions: e.g. on/off, pulse, on/off delay, staircase light with forewarning.
- Logical links: e.g. block, AND, release, OR.
- Activation of the channel function via 1-bit telegram or 8-bit threshold.
- NTC input for actual temperature measurement.
- 4-pole cable connection for external inputs.

¹ see parameter *Use* on parameter page *General*.

3 Operation

The device has 2 external inputs for buttons, switches, etc.



In the initial delivery condition, i.e. prior to KNX programming, the actuator can be operated directly as a blind actuator with buttons at I1 and I2.

Depending on the setting of the I1 external input in the ETS, the actuator can be operated in 2 different ways:

Control via bus telegrams.

This is the classic configuration for a KNX actuator.

The actuator is controlled exclusively via bus telegrams.



In this case, the external inputs I1 and I2 have no internal connection to the actuator.

Direct control (standard setting in the ETS)²

The actuator channels can be operated with conventional button³ or switch⁴.

These are connected directly to the external inputs I1 and I2.



The input configured this way are then used exclusively for this function and are no longer connected to the bus, i.e. there are no communication objects.

The actuator itself retains all of its communication objects in this configuration.

See chapter "Application examples".

² *Standard parameters* button

³ Blind and switch actuator

⁴ Only switch actuator

4 Technical data

4.1 JU 1

Operating voltage	KNX bus voltage
KNX bus current	5 mA
Connection type	Screw terminals bus connection: KNX bus terminal
Type of installation	Flush-mounted
L x W x D	44.5 x 44.5 x 32
Max. cable cross-section	Solid: 0.5 mm ² (Ø 0.8) to 4 mm ² strand with crimp terminal: 0.5 mm ² to 2.5 mm ²
Number of channels	1x blind or 2x switching
Contact gap	< 3 mm (µ contact)
Switch output	Floating, common connection in the middle.
Switching different phases	no
Type of contact	NO contact, 10 A per channel, max. 16 A per device
Resistive load	2400 W
Incandescent/halogen lamp load	800 W
Fluorescent lamp load (EB)	58 W
Compact fluorescent lamps	15 W
LED lamps	< 2 W: 3 W > 2 W: 30 W
Suitable for SELV	Yes, if all channels switch SELV
Number of binary inputs	2
Ambient temperature	-5 °C ... +45 °C

-
- ① The switching capacity ratings for lamps with electronic ballast, such as LEDs, compact fluorescent lamps, fluorescent lamps with EB, etc., might vary depending on the technical characteristics of the ballasts.
 - ① The switching capacity ratings refer to a relay lifetime of at least 30000 switching cycles.
 - ① It is possible to exceed the switching capacity ratings for these lamps. However, this will reduce the lifetime of the relay.
-

4.2 JU 1 RF

Operating voltage	KNX bus voltage
Standby output	< 0,4 W
Connection type	Screw terminals
Type of installation	Flush-mounted
L x W x D	44.5 x 44.5 x 32
Max. cable cross-section	Solid: 0.5 mm ² (Ø 0.8) to 4 mm ² strand with crimp terminal: 0.5 mm ² to 2.5 mm ²
Number of channels	1x blind
Contact gap	< 3 mm (µ contact)
Switch output	Up, Down - non-floating
Switching different phases	no
Type of contact	NO contact, 5 A
Suitable for SELV	no
Number of binary inputs	2
Ambient temperature	-5 °C ... +45 °C
Radio standard	KNX
Transmission frequency	868,3 MHz
Transmission power	10 mW
Coding	FSK (Frequency Shift Keying)
Transceiver type	Bidirectional



Generally, it is not allowed to exceed the current and voltage ratings stated on the device!

5 General information about KNX Secure

ETS5 Version 5.5 and higher support secure communication in KNX systems. A distinction is made between secure communication via the IP medium using KNX IP Secure and secure communication via the TP and RF media using KNX Data Secure. The following information refers to KNX Data Secure.

In the ETS catalogue, KNX products supporting "KNX-Secure" are clearly identified. 

As soon as a "KNX-Secure" device is included in the project, the ETS requests a project password. If no password is entered, the device is included with Secure Mode deactivated. However, the password can also be entered or changed later in the project overview.

5.1 Start-up with "KNX Data Secure"

For secure communication, the FDSK (Factory Device Setup Key) is required. If a KNX product supporting "KNX Data Secure" is included in a line, the ETS requires the input of the FDSK. This device-specific key is printed on the device label and can either be entered by keyboard or read by using a code scanner or notebook camera.

Example of FDSK on device label:



After entering the FDSK, the ETS generates a device-specific tool key. The ETS sends the tool key to the device to be configured via the bus. The transmission is encrypted and authenticated with the original and previously entered FDSK key. Neither the tool key nor the FDSK key are sent in plain text via the bus.

After the previous action, the device only accepts the tool key for further communication with the ETS.

The FDSK key is no longer used for further communication, unless the device is reset to the factory setting: In this case, all set safety-related data will be deleted.

The ETS generates as many runtime keys as needed for the group communication you want to protect. The ETS sends the runtime keys to the device to be configured via the bus.

Transmission takes place by encrypting and authenticating them via the tool key. The runtime keys are never sent in plain text via the bus.

The FDSK is saved in the project and can be viewed in the project overview. Also, all keys of this project can be exported (backup).

During project planning, it can be defined subsequently which functions / objects are to communicate securely. All objects with encrypted communication are identified by the "Secure" icon in the ETS.



5.2 Start-up without "KNX Data Secure"

Alternatively, the device can also be put into operation without KNX Data Secure. In this case, the device is unsecured and behaves like any other KNX device without KNX Data Secure function.

To start up the device without KNX Data Secure, select the device in the 'Topology' or 'Devices' section and set the 'Secure start up' option in the 'Properties' area of the 'Settings' tab to 'Disabled'.

6 The JU 1 application programme

6.1 Selection in the product database

Manufacturer	Theben AG
Product family	Output
Product type	JU 1, JU 1 RF
Programme name	JU 1, JU 1 RF

Number of communication objects	48 ⁵ , 25 ⁶
Number of group addresses	254
Number of associations	255



The ETS database can be found on our website:

www.theben.de/en/downloads_en

⁵ JU 1

⁶ JU 1 RF

6.2 Overview of communication objects

6.2.1 Blind actuator

No.	Object name	Function	Length	R	W	C	T	DPT
1	Channel C1	UP / DOWN	1 bit	-	W	C	-	1,008
2	Channel C1	Step / stop	1 bit	-	W	C	-	1,007
3	Channel C1	% height	1 byte	-	W	C	-	5,001
4	Channel C1	% slat	1 byte	-	W	C	-	5,001
5	Channel C1	Block comfort/automatic	1 bit	-	W	C	-	1,001
6	Channel C1	1 = block	1 bit	-	W	C	-	1,001
		1 = enable	1 bit	-	W	C	-	1,003
7	Channel C1	Call up/save scenes	1 byte	-	W	C	-	18,001
8	Channel C1	Enable scenes = 1	1 bit	-	W	C	-	1,003
		Block scenes = 1	1 bit	-	W	C	-	1,001
9	Channel C1	Priority on safety	2 bits	-	W	C	-	2,001
10	Channel C1	Position A	1 bit	-	W	C	-	1,003
11	Channel C1	Position B	1 bit	-	W	C	-	1,003
12	Channel C1	Position C	1 bit	-	W	C	-	1,003
14	Channel C1	Presence	1 bit	-	W	C	-	1,001
15	Channel C1	Heating support	1 bit	-	W	C	-	1,001
16	Channel C1	Cooling support	1 bit	-	W	C	-	1,001
17	Channel C1	Room temperature	2 bytes	-	W	C	-	9,001
18	Channel C1	Height feedback 1 bit	1 bit	R	-	C	T	1,009
19	Channel C1	Height feedback %	1 byte	R	-	C	T	5,001
20	Channel C1	Slat feedback %	1 byte	R	-	C	T	5,001
21	Channel C1	Feedback comfort/automatic	1 bit	R	-	C	T	1,011
22	Channel C1	Start-up mode	1 bit	-	W	C	-	1,001
23	Channel C1	Send runtime	2 bytes	R	-	C	T	7,005
		Receive runtime	2 bytes	-	W	C	-	7,005
24	Channel C1	Window contact 1	1 bit	-	W	C	-	1,001
25	Channel C1	Window contact 2	1 bit	-	W	C	-	1,001
40	Alarm	Excess temperature	1 bit	R	-	C	T	1,005

6.2.2 Switch actuator

No.	Object name	Function	Length	R	W	C	T	DPT
1	Channel C1	Switch object	1 bit	-	W	C	-	1,001
		Threshold 0..65535	2 bytes	-	W	C	-	7,001
		Threshold EIS 5 (DPT 9.xxx)	2 bytes	-	W	C	-	9.xxx
		Threshold as a percentage	1 byte	-	W	C	-	5,001
		Threshold 0..255	1 byte	-	W	C	-	5,010
2	Channel C1	Switching with priority	2 bits	-	W	C	-	2,001
3	Channel C1	Logic input in XOR gate	1 bit	-	W	C	-	1,002
		Logic input in AND gate	1 bit	-	W	C	-	1,002
		Logic input in OR gate	1 bit	-	W	C	-	1,002
4	Channel C1	Block	1 bit	-	W	C	-	1,001
5	Channel C1	Call up/save scenes	1 byte	-	W	C	-	18,001
6	Channel C1	Block scenes = 1	1 bit	-	W	C	-	1,001
		Enable scenes = 1	1 bit	-	W	C	-	1,003
7	Channel C1	On/Off feedback	1 bit	R	-	C	T	1,001
8	Channel C1	Time to next service	4 bytes	R	-	C	T	13,100
		Operating hours feedback	4 bytes	R	-	C	T	13,100
9	Channel C1	Service required	1 bit	R	-	C	T	1,001
10	Channel C1	Reset operating hours	1 bit	-	W	C	-	1,001
		Reset service	1 bit	-	W	C	-	1,001
21-31: objects for channel C2								
40	Alarm	Excess temperature	1 bit	R	-	C	T	1,005

6.2.3 External inputs: Switch/button function

No.	Object name	Function	Length	R	W	C	T	DPT
41	Channel I1.1	Switching	1 bit	R	W	C	T	1,001
		Priority	2 bits	R	-	C	T	2,001
		Send percentage value	1 byte	R	-	C	T	5,001
		Send value	1 byte	R	-	C	T	5,010
42	Channel I1.2	Switching	1 bit	R	W	C	T	1,001
		Priority	2 bits	R	-	C	T	2,001
		Send percentage value	1 byte	R	-	C	T	5,001
		Send value	1 byte	R	-	C	T	5,010
45	Channel I1	Block = 1	1 bit	-	W	C	-	1,001
		Block = 0	1 bit	-	W	C	-	1,003
51-55	Channel I2 (details: see channel I1)							

6.2.4 External inputs: Dimming function

No.	Object name	Function	Length	R	W	C	T	DPT
41	Channel I1	Switching	1 bit	R	W	C	T	1,001
42	Channel I1	Brighter / darker	4 bits	R	-	C	T	3,007
		Brighter	4 bits	R	-	C	T	3,007
		Darker	4 bits	R	-	C	T	3,007
43	Channel I1.1	Switching	1 bit	R	W	C	T	1,001
		Priority	2 bits	R	-	C	T	2,001
		Send percentage value	1 byte	R	-	C	T	5,001
		Send value	1 byte	R	-	C	T	5,010
45	Channel I1	Block = 1	1 bit	-	W	C	-	1,001
		Block = 0	1 bit	-	W	C	-	1,003
51-55	Channel I2 (details: see channel I1)							

6.2.5 External inputs: Blinds function

No.	Object name	Function	Length	R	W	C	T	DPT
41	Channel I1	Step / stop	1 bit	R	-	C	T	1,010
42	Channel I1	UP / DOWN	1 bit	R	W	C	T	1,008
		UP	1 bit	R	-	C	T	1,008
		DOWN	1 bit	R	-	C	T	1,008
43	Channel I1.1	Switching	1 bit	R	W	C	T	1,001
		Priority	2 bits	R	-	C	T	2,001
		Send percentage value	1 byte	R	-	C	T	5,001
		Height % ⁷	1 byte	R	-	C	T	5,001
		Send value	1 byte	R	-	C	T	5,010
		2-byte 9.x	2 bytes	R	-	C	T	9.xxx
		4-byte 14.x	4 bytes	R	-	C	T	14.xxx
44	Channel I1.2	Slat % ⁸	1 byte	R	-	C	T	5,001
45	Channel I1	Block = 1	1 bit	-	W	C	-	1,001
		Block = 0	1 bit	-	W	C	-	1,003
51-55	Channel I2 (details: see channel I1)							

6.2.6 External inputs: Temperature input function (I2 only)

No.	Object name	Function	Length	R	W	C	T	DPT
51	Channel I2	Actual value for temperature	2 bytes	R	-	C	T	9,001

6.2.7 External inputs: Window contact function

No.	Object name	Function	Length	R	W	C	T	DPT
41	Channel I1	Window contact 1	1 bit	R	-	C	T	1,001
45	Channel I1	Block = 1	1 bit	-	W	C	-	1,001
		Block = 0	1 bit	-	W	C	-	1,003
41	Channel I2	Window contact 2	1 bit	R	-	C	T	1,001
45	Channel I2	Block = 1	1 bit	-	W	C	-	1,001
		Block = 0	1 bit	-	W	C	-	1,003

⁷ Upon double-click with object type = height % + slat %

⁸ Upon double-click with object type = height % + slat %

6.2.8 Common objects

6.2.8.1 Blind actuator

No.	Object name	Function	Length	R	W	C	T	DPT
74	Central	Call up/save central scenes	1 bytes	-	W	C	-	18,001
75	Central safety 1	1	1 bit	-	W	C	-	1,002
76	Central safety 2	2	1 bit	-	W	C	-	1,002
77	Central safety 3	3	1 bit	-	W	C	-	1,002
78	Central	UP / DOWN	1 bit	-	W	C	-	1,008
79	Central safety	Rain	1 bit	-	W	C	-	1,002
80	Central safety	Frost	1 bit	-	W	C	-	1,002

6.2.8.2 Switch actuator

No.	Object name	Function	Length	R	W	C	T	DPT
71	Central	Central permanent ON	1 bit	-	W	C	-	1,001
72	Central	Central permanent OFF	1 bit	-	W	C	-	1,001
73	Central	Central switching	1 bit	-	W	C	-	1,001
74	Central	Call up/save central scenes	1 byte	-	W	C	-	18,001

6.3 Description of communication objects

6.3.1 Objects for the blind actuator

Object 1: UP/DOWN

Raise the roller blinds/blinds with "0" and lower with "1".

Object 2: Step/Stop

If the drive moves, it will be stopped when a Step/Stop telegram is received.

If the drive is stationary at this moment, then a short slat turning (step) is performed on blinds.

With the other drive types, the current position is adjusted up or down depending on the specified step direction.

The direction of the step is determined from whether a 0 or 1 is sent to the object.

No step is performed if the configured number of steps for a complete turn has already been reached.

Object 3: % Height

This raises/lowers the roller blinds/blinds to a certain height.

The setpoint value is expressed in %.

0% ... 3% = upper end position

100% = lower end position

This function can be blocked by the *comfort automatic object* (see below).

Object 4: % Slat

Specification of a particular slat turning in %

This function can be blocked by the *comfort automatic object* (see below)

Object 5: Block Comfort/Automatic

A 1 on this object locks the functions Drive Height and Drive Slat.

This function is used to prevent the blind from being adjusted due to external influences, and to thus maintain a preferred slat position of the blinds.

The Up/Down function is maintained (*object UP/DOWN*).

Object 6: Block/enable

Blocks the channel function.

Responses to the block being set and cancelled can be configured if the block function has been activated (*Configuration options* parameter page).

Object 7: Call up/save scenes

Only available if the scene function has been activated (**Configuration options** parameter page). This object can be used to save and subsequently call up scenes.

Saving stores the channel status.

It does not matter how this status is produced (whether via switch commands, central objects or the buttons on the device). The saved status is restored when it is called up.

All scene numbers from 1 to 63 are supported.

Each channel can participate in up to 8 scenes.

The scene that is currently active can be ended with the value 63 (= scene 64).

See appendix: [Scenes](#)

Object 8: Block scenes / enable scenes

Blocks the scene function with a 1 or a 0 depending on the configuration.

As long as it is blocked, scenes cannot be saved or called up

Object 9: Priority on safety

Priority on safety will be used when the roller blinds or sun protection devices must remain stationary in an end position for a certain time, e.g. for window cleaning.

This operating mode has the highest priority level.

While priority on safety is active, all operating commands (*UP/DOWN*, *% Height*, *Step/Stop*, *Slat %*), the other safety objects and the manual operation will be ignored.

Object value	Priority on safety
0	inactive
1	
2	UP
3	DOWN

Priority on safety is ended with a 1 or a 0.

Object 10: Position A

With a 1, the drive is brought to the predefined position A (preset or end position).

See parameter page **Positions via 1 bit**.

Object 11: Position B

With a 1, the drive is brought to the predefined position B (preset or end position).

See parameter page **Positions via 1 bit**.

Object 12: Position C

With a 1, the drive is brought to the predefined position C (preset or end position).

See parameter page **Positions via 1 bit**.

Object 13

n.a.

Object 14: Presence

Presence status for the heating or cooling support.
See parameter page *Sun protection*.

Object 15: Heating support

Activate heating support, see parameter page *Sun protection*

Object 16: Cooling support

Activate cooling support, see parameter page *Sun protection*.

Object 17: Room temperature

Receives the current room temperature in °C for the sun protection function.

Object 18: Height feedback 1 bit

Current drive height feedback in as DPT1.009.

Object 19: Height feedback %

Current drive height feedback in %.

Object 20: Slat feedback %

Current slat position feedback in %.

Object 21: Feedback comfort/automatic

0 = Automatic operation: drive position is controlled e.g. by the weather station.

1 = Comfort active: The channel is currently in comfort mode, telegrams on the objects height % and slat % are not executed.

Object 22: Start-up mode

0 = Normal mode (no start-up)

1 = Activate start-up mode

Object 23: Send runtime, receive runtime

The function of the object is dependent on the selected *Drive runtime setting*:

Setting the drive runtime	Function	Usage
Teach in in start-up mode (send)	Only in start-up mode: Sends the runtime that is determined for the channel to all channels that are also in start-up mode.	With the first DOWN command after selection of the start-up mode, the teaching-in of the runtime begins by measuring the time to the next Stop command. As soon as the Stop command takes place, the measured runtime will be saved, the value sent and start-up ended.
via object in start-up mode (receive)	Only in start-up mode: Receives the determined runtime of the sending channel	Runtime will be received, saved, and start-up ended.
via ETS	not used.	

Object 24: Window contact 1

Input object for the first⁹ window contact of the ventilation function.

Object 25: Window contact 2

Input object for the second window contact of the ventilation function.

This is required to distinguish between window open and window tilted.



The input objects *channel C1 - window contact 1* and *channel C1 - window contact 2* are not connected to inputs I1 and I2 internally.
The connection is exclusively implemented via bus telegrams.¹⁰
For this purpose, these objects are connected with the objects *channel I1 - window contact 1* and *channel I2 - window contact 2* via group addresses.

⁹ or only

¹⁰ Thus, the window status can be received either via the own inputs I1, I2, or from other bus sharing units (binary input, button interface, etc.).

6.3.2 Objects for the switch actuator

Object 1: Switch object, threshold as a percentage, threshold 0..255, threshold DPT 9.xxx, threshold 0..65535

Input object: this object activates the set channel function (see parameter: *Channel function*).

The set channel function can either be activated via 1-bit telegram or by exceeding a threshold (8- or 16-bit telegram).

Parameter		Activation of channel function via
Activation of function via	Type of threshold object	
Switch object		1-bit telegram
Exceeding the threshold	Object type: Per cent (DPT 5.001)	Exceeding per cent value
	Object type: Counter value 0..255 (DPT 5.010)	Any value in given numerical range
	Object type: Counter value 0..65535 (DPT 7.001)	
	Object type: EIS5 e.g. CO2, brightness (DPT 9.xxx)	2-byte floating-point number

Object 2: Switching with priority

Priority control:

Status of object	Channel status
Switching with priority	
0	As specified by the input object ¹¹
1	
2	OFF
3	ON

Object 3: Logic input in AND gate, in OR gate, in XOR gate

Only available if link is activated (**Configuration options** parameter page).

Forms a logical link together with the input object to activate the channel function.

Object 4: Block

Blocks the channel function.

Responses to the block being set and cancelled can be configured if the block function has been activated (**Configuration options** parameter page).

¹¹ Also in the case of direct control: button/switch at I1

Object 5: Call up/save scene

Only available if the scene function has been activated (**Configuration options** parameter page).

This object can be used to save and subsequently call up scenes.

Saving stores the channel status.

It does not matter how this status is produced (whether via switch commands, central objects or the buttons on the device).

The saved status is restored when it is called up.

All scene numbers from 1 to 64 are supported.

Each channel can participate in up to 8 scenes.

See appendix: [Scenes](#)

Object 6: Block scenes = 1, enable scenes = 1

Blocks the scene function with a 1 or a 0 depending on the configuration.

As long as it is blocked, scenes cannot be saved or called up.

Object 7: On/Off feedback

Reports the current channel status.

The status can also be inverted depending on configuration.

Object 8: Time to next service, operating hours feedback

Only available if the hour counter function is activated

(**Configuration options** parameter page).

Reports, depending on selected type of hour counter (**Hour counter and service** parameter page), either the remaining time to the next service or the current status of the hour counter.

Object 9: Service required

Only available if the hour counter function has been activated (**Configuration options** parameter page) and *Type of hour counter = Counter for time to next service*.

Reports if the next service is due.

0 = not due

1 = service is due.

Object 10: Reset service, reset operating hours

Function	Usage
<i>Reset service</i> ¹²	Reset service interval counter.
<i>Reset operating hours</i> ¹³	Reset hour counter

¹² Depending on configuration

¹³ Depending on configuration

6.3.3 Objects for the external inputs: Switch function

Object 41: Channel I1.1

First output object of the channel (first telegram).

4 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value.

Object 42: Channel I1.2

Second output object of the channel (second telegram).

4 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value.

Object 45: Channel I1 block = 1, or block = 0

The channel is blocked via this object.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 51-55

Objects for channel I2

6.3.4 Objects for the external inputs: Button function

Object 41: Channel I1.1

First output object of the channel (first telegram).

4 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value.

Object 42: Channel I1.2

Second output object of the channel (second telegram).

4 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value.

Object 45: Channel I1 block = 1, or block = 0

The channel is blocked via this object.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 51-55

Objects for channel I2

6.3.5 Objects for the external inputs: Dimming function

Object 41: Channel I1.1 switching

Switches the dimmer on and off.

Object 42: Channel I1.1 brighter, darker, brighter / darker

4-bit dimming commands.

Object 43: Channel I1.1 switching, priority, percentage..

Output object for the additional function with double-click.

4 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value.

Object 45: Channel I1 block = 1, or block = 0

The channel is blocked via this object.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 51-55

Objects for channel I2

6.3.6 Objects for the external inputs: Blinds function

Object 41: Channel I1 step / stop

Sends step/stop commands to the blind actuator.

Object 42: Channel I1 UP/DOWN, UP, DOWN

Sends operating commands to the blind actuator.

Object 43: Channel I1.1 switching, priority, percentage..., height %

Output object for the additional function with double-click.

5 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value, height %.

Object 44: Channel I1.1 slat %

Slat telegram for positioning the blinds upon double-click (together with object height %, with *object type = height + slat*).

Object 45: Channel I1 block = 1, or block = 0

The channel is blocked via this object.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 51-55

Objects for channel I2

6.3.7 Objects for the external inputs: Temperature input function

Object 51: Channel I2 actual value for temperature¹⁴

Sends the temperature measured at input I2 (remote sensor or floor temperature sensor).

¹⁴ The temperature input function is only possible with input I2.

6.3.8 Objects for the external inputs: Window contact function



The output objects *channel I1 - window contact 1* and *channel I2 - window contact 2* are not connected to blind actuator channel C1 internally. The connection is exclusively implemented via bus telegrams.¹⁵ For this purpose, these objects are connected with the objects *channel C1 - window contact 1,2* of the actuator via group addresses.

Object 41: Channel I1 window contact 1

First output object of the channel (first telegram).

4 telegram formats can be set:

Switching ON/OFF, priority, send percentage value, send value.

Object 45: Channel I1 block = 1, or block = 0

The channel is blocked via this object.

The acting direction of the block object and behaviour when the block is set or cancelled can be configured.

Objects 51-55

Objects for channel I2

¹⁵ In this way, window contact inputs I1 and I2 can be used for C1, as well as for other bus sharing units, blind actuators (displays etc.).

6.3.9 Common objects for the blind actuator

Object 40: Excess temperature

Reports when the device has reached too high a temperature, e.g. because the maximum current has been exceeded, and has switched the output off.

Object 74: Call up/save central scenes

Central object for using scenes.

This object can be used to save and subsequently call up scenes.

See appendix: [Scenes](#)

Objects 75, 76, 77: Central safety 1, 2, 3

The safety objects allow a specific response of the drives to a particular situation with a high priority. These objects can, for example, be linked with 3 differently placed wind sensors (weather stations).

Example: A safety object is linked to a wind sensor.

A drive to which a textile sun protection device is connected is configured to react to this safety object.

The operating condition is normal as long as a 0 is present.

In the event of a storm, the wind sensor sends a 1 to the safety object and the sun protection is immediately moved to the configured safety position.



A safety object must only be actuated by one device, as otherwise conflicting commands could cancel each other out.



With a request for safety objects e.g. via the ETS function "Read value": If the *Safety on* status arises through cyclical monitoring, the object value remains at 0.



The safety statuses must be reinitialized after download.

Object 78: Central Up/Down

This object can be used to centrally control all drives which are configured for it.

For example, all of the roller blinds on one facade can be raised or lowered at the same time with one button

0 = raise

1 = lower

Object 79: Central safety rain

This object can be used to move all drives which are configured for it into a defined position when there is a central rain alarm.

Object 80: Central safety frost

This object can be used to move all drives which are configured for it into a defined position when there is a central frost alarm.

6.3.10 Common objects for the switch actuator

Object 40: Excess temperature

Reports when the device has reached too high a temperature, e.g. because the maximum current has been exceeded, and has switched the output off.

Object 71: Central permanent ON

Central switch-on function.

0 = no function

1 = permanent ON

Participation in this object can be configured
(**Configuration options** parameter page).



This object takes top priority.

As long as it is set, other switch commands will not work on the participating channel.

Object 72: Central permanent OFF

Central switch-off function.

0 = no function

1 = permanent OFF

Participation in this object can be configured
(**Configuration options** parameter page).



This object has the second highest priority after Central permanent ON. As long

as it is set, other switch commands will not work on the participating channel.

Object 73: Central switching

Central switch function.

0 = OFF

1 = ON

Participation in this object can be configured
(**Configuration options** parameter page).

With this object, the participating channel responds exactly as if its input object were receiving a switch command.

Object 74: Call up/save central scenes

Central object for using scenes.

This object can be used to save and subsequently call up "scenes".

See appendix: [Scenes](#)

6.4 Parameter pages overview

6.4.1 General

Parameter page	Description
<i>General</i>	General parameters: Selection of switch actuator or blind actuator, etc.

6.4.2 Blind actuator JU 1, JU 1 RF

Parameter page	Description
Blind actuator channel C1	
<i>Configuration options</i>	Characteristics of channel and activation of additional functions (scenes, sun protection, block, etc.).
<i>Drive settings</i>	Direction of movement, runtimes, etc.
<i>Sun protection</i>	Heating and cooling support settings.
<i>Positions via 1 bit</i>	Behaviour when calling up or leaving the 1-bit positions
<i>Ventilation</i>	Automatic positioning of blinds or roller blinds when opening the window.
<i>Safety wind / rain / frost</i>	Priority and participation in the safety objects for wind, rain and frost.
<i>Presets</i>	8 preset heights and slat positions that can be called up via scenes or 1-bit objects.
<i>Restoration of power</i>	Behaviour during failure and restoration of bus and mains power.
<i>Block function</i>	Type of block telegram and response to blocking.
<i>Scenarios</i>	Selection of scene numbers relevant to the channel.

6.4.3 Switch actuator JU 1

Parameter page	Description
Switch actuator channel C1/C2	
<i>Configuration options</i>	Characteristics of channel and activation of additional functions (scenes, links, etc.).
<i>Contact characteristics</i>	Type of contact and status after download, bus failure, etc.
<i>Threshold</i>	Settings for triggering channel function through exceeding threshold.
<i>Block function</i>	Type of block telegram and response to blocking.
<i>Scenes</i>	Selection of scene numbers relevant to the channel.
<i>Feedback</i>	Status of feedback object, etc.
<i>Hour counter and service</i>	Type of hour counter and, if applicable, service interval, etc.
<i>Link</i>	Selection of logical link.

6.4.4 External inputs

Parameter page	Description
External inputs I1, I2	
<i>Configuration options</i>	Function of the input, debounce time, number of telegrams, block function, etc. Additionally in the case of I2: Selection of the temperature sensor, temperature calibration, etc.
<i>Switch object 1, 2</i>	Object type, transmission behaviour, etc. can be set for each object individually.
<i>Direct switching</i>	Switching statuses in the case of direct control
<i>Button object 1, 2</i>	Object type, transmission behaviour, etc. can be set for each object individually.
<i>Dimming</i>	Type of control.
<i>Blinds</i>	Type of control.
<i>Double-click</i>	Additional telegrams for <i>Dimming</i> and <i>Blinds</i> .
<i>Window contact</i>	Direction of action, cycl. Transmission, etc.

6.5 General parameters

6.5.1 General



The first parameter, *Usage*, defines the purpose of the device, and should be set first.

Designation	Values	Description
<i>Usage</i>	1-channel blind actuator	The device is used as a blind actuator.
	2-channel switch actuator	The device is used as a 2-fold switch actuator.
<i>Use external inputs</i>	No Yes	The actuator is exclusively controlled via the bus. 2 binary inputs are available. Possible functions: I1: Control actuator directly (button/switch function) or KNX binary input. I2: Control actuator directly (button/switch function) or KNX binary input with temperature.
<i>Send excess temperature alarm¹⁶ cyclically</i>	<i>always cyclically</i> only send cyclically in case of an error	The alarm info object always sends the current status cyclically and in the event of a change: Only sends in case of an error, cyclically and in the event of a change.
<i>Cycle time</i>	<i>every min</i> <i>every 2 min</i> <i>every 3 min</i> ... every 30 min <i>every 45 min</i> <i>every 60 min</i>	Cycle time for the alarm info object



¹⁶ When the temperature in the device increases too much due to overloading, the output is switched off and an alarm telegram is sent.
Normal operation cannot be resumed until the temperature has dropped by around 40 K.

6.6 Parameters for the blind actuator

6.6.1 Channel C1: Configuration options

Designation	Values	Description
Type of hanging	Blinds <i>Roller blinds / awning / general drive...</i>	The type of hanging which is to be actuated
Setting the drive runtime	via ETS <i>Teach in in start-up mode (send)</i> <i>via object in start-up mode (receive)</i>	Runtime is set on the parameter page Drive settings . In start-up mode, this channel should send the taught-in runtime to the other channels. In start-up mode, this channel should receive and apply the taught-in runtime from another channel.
Response after download	Maintain runtime <i>Delete runtime</i>	Not available with <i>Drive runtime setting = via ETS</i> . Download has no influence on the taught-in runtime Taught-in runtime is deleted during download.
Activate sun protection	<i>yes</i> no	Activate sun protection function with heating or cooling support. No sun protection function.
Activate ventilation function	<i>yes</i> no	When opening the window, the blinds or roller blinds move automatically to a defined position. No ventilation function.
Activate block function	<i>Yes..</i> no	Should the block function be used?
Activate scenes	<i>Yes..</i> no	Should scenes be used?
Direction of drive run	normal <i>inverted</i>	Standard setting: Hanging moves from top to bottom. For special applications or quick fix for wrongly wired devices (up/down directions mixed up).
Block Comfort/Auto on UP/DOWN/STOP command		Suppression of the Comfort/Auto function with manual positioning via On, Off or Stop telegrams.

Designation	Values	Description
	no, only via object <i>Comfort/Automatic</i> <i>yes, and via object</i> <i>Comfort/Automatic OFF</i> <i>yes, and after 0.5 h OFF</i> <i>yes, and after 1 h OFF</i> ... <i>yes, and after 2 h OFF</i> ... <i>yes, and after 48 h OFF</i>	No suppression: <i>Comfort/Auto</i> remains active after manual positioning. <i>Comfort/Auto</i> can be ended both by manual positioning and via the object <i>Comfort/Automatic</i> The <i>Comfort/Auto</i> function is blocked for the set time via manual positioning. Once this time has lapsed, <i>Comfort/Auto</i> is active once again and the drive reacts to height telegrams. The block can be ended at any time via the object <i>Comfort / Automatic</i> (=0).
<i>Response after return to automatic operation</i>	No response <i>Update height % / slat %</i>	Response after the Block <i>Comfort/Auto</i> object has been reset to 0.

6.6.2 Drive settings

Designation	Values	Description
Complete runtime Down	manual input 5 .. 500	Only available when Drive runtime setting = via ETS. Enter the measured runtime for descending (in seconds).
Drive start-up time	0..1000 ms	Time until the drive motor has reached its full output. This time is usually determined empirically.
Runtime adjustment for ascent	manual input -15 .. +15	Enter difference between runtime when ascending and runtime (in seconds) when descending. Correction value = $t_{Up} - t_{Down}$
Step duration of Step/Stop object ¹⁷	no steps 250 ms 500 ms 1 s 2 s 3 s 4 s 5 s 6 s 7 s 10 s	Only for roller blinds/awning/general drive. This specifies whether or not it should be possible to adjust the drive in small steps, and it also specifies the duration of a single step.
Tighten fabric (awning)	yes no	Only for roller blinds/awning/general drive. At values above 70%, the hanging, awning or roller blinds will be retightened by moving back briefly. On roller blinds it is guaranteed that the vent slots will remain open. no tightening.
Complete slat turning 4 ... 250	4 .. 250	Enter the measured turn time of the slats in increments of 100 ms. $10 = 10 \times 100 \text{ ms} = 1 \text{ s}$
No. of steps for a complete turn ¹⁸	3 steps 4 steps 7 steps ... 12 steps	This specifies the number of individual steps a complete slat turn is to be divided into (3 to 12).

¹⁷ For type of hanging = Roller blinds / awning / general drive

¹⁸ For type of hanging = blinds

Designation	Values	Description
<i>On receipt of a step/stop command</i>	<i>process immediately (recommended)</i> <i>Wait 0.3 s to see if an UP/DOWN command follows</i> <i>Wait 0.4 s to see if an UP/DOWN command follows</i> <i>Wait 0.5 s to see if an UP/DOWN command follows</i>	Every received step command is carried out immediately. Step commands are only executed if no operating command is received within the set time. These settings apply to push buttons which, when pressed and held, first send a step command and then an operating command.
<i>Pause time before reversal of direction</i>	<i>0.5 s</i> <i>1 s</i> <i>2 s</i> <i>3 s</i>	Pause introduced to protect the drive motor against conflicting commands (e.g. if a descend command is received while ascending). This setting depends on the information supplied by the manufacturer of the drive
<i>Automatic execution of the slat object value [%] after the height object [%]</i>	<i>yes</i> <i>no</i>	Selection whether or not the slat position (according to the slat object %) is to be resumed after the height adjustment via the height object %.
<i>Assignment of the 0% position to the slat objects [%]</i>	<i>0% corresponds to slat position on lowering</i> <i>0% corresponds to slat position on ascending</i>	Input of the starting position for the calculation of the slat turn.
<i>Participation in central Up/Down object</i>	<i>yes</i> <i>no</i>	Should the drive respond to the central object?
<i>Transmission of feedback</i>	<i>only at change</i> <i>cyclically and at change</i>	When should feedback (obj. slat feedback and height feedback) be sent?
<i>Time for cyclical transmission of feedback</i>	<i>2 minutes, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 20 minutes, 30 minutes, 45 minutes 60 minutes</i>	If cyclically, at what interval?

6.6.3 Sun protection



As soon as a room is not occupied, the sun protection function can be used to save energy costs again and again.

For this purpose, the sunlight is deliberately let in during the winter, while protection is provided in summer by moving down the blinds or roller blinds, if required.

Designation	Values	Description
<i>Desired room temperature during sun protection mode</i>	15 °C - 30 °C Default = 21 °C	Setpoint for heating or cooling support (see below).
<i>Response to presence in sun protection mode (presence object = 1)</i>	Preset 1, Preset 2 Preset 3, Preset 4 Preset 5, Preset 6 Preset 7, Preset 8 <i>top end position</i> <i>lower end position</i> <i>no reaction, unchanged</i> <i>update (height / slat)</i>	Approach a preset position. See Presets parameter page. Approach an end position. Do not respond. Approach last received position.
<i>Response to heating support</i>	Preset 1, Preset 2 Preset 3, Preset 4 Preset 5, Preset 6 Preset 7, Preset 8 <i>top end position</i> <i>lower end position</i>	If the conditions for heating support are fulfilled, i.e.: - Heating support obj. = 1 - Presence obj. = 0 (room not occupied) - Room temperature < Desired room temperature during sun protection mode Then heating by solar radiation should be favoured with the following setting. Approach a preset position. Recommended for blinds, as height and slat turning can be set. See Presets parameter page. Recommended. only for special applications.
<i>Response when heating support is no longer needed</i>	Preset 1, Preset 2 Preset 3, Preset 4 Preset 5, Preset 6 Preset 7, Preset 8 <i>top end position</i> <i>lower end position</i>	Approach a preset position. See Presets parameter page. Approach an end position.

Designation	Values	Description
	<i>no reaction, unchanged</i>	Do not respond.
	<i>update (height / slat)</i>	Approach last received position.
<i>Response to cooling support</i>	<i>Preset 1, Preset 2 Preset 3, Preset 4 Preset 5, Preset 6 Preset 7, Preset 8</i> <i>top end position</i> <i>lower end position</i>	If the conditions for cooling support are fulfilled, i.e.: - Cooling support obj. =1 - Room temperature > Desired room temperature during sun protection mode Then heating by solar radiation should be prevented with the following setting. Approach a preset position. Recommended for blinds, as height and slat turning can be set. See <i>Presets</i> parameter page. only for special applications. Recommended for roller blinds and textile sun protection.
<i>Response when cooling support is no longer needed</i>	<i>Preset 1, Preset 2 Preset 3, Preset 4 Preset 5, Preset 6 Preset 7, Preset 8</i> <i>top end position lower end position</i> <i>no reaction, unchanged</i> <i>update (height / slat)</i>	Approach a preset position. See <i>Presets</i> parameter page. Approach an end position. Do not respond. Approach last received position.



Ventilation function and heating/cooling support¹⁹ are mutually exclusive. If ventilation is active²⁰, no movements due to the heating/cooling support are executed, but only after completion²¹ of the ventilation function²².

Vice versa, if ventilation is active at the end of heating/cooling support, the configured action²³ will not be executed.

¹⁹ Parameter page **Sun protection**

²⁰ Window open or tilted

²¹ Termination by closing the window or blocking.

²² The parameter *Position after end of ventilation* is not taken into account.

²³ Parameter page **Sun protection**: Parameter *Behaviour when heating support is not required any longer* or *Behaviour when cooling support is not required any longer*.

6.6.4 Positions via 1 bit



3 individually preallocated positions can be called up using 1-bit objects (objects position A, B and C).

Designation	Values	Description
Position A		
Response when receiving a 1	Preset 1 Preset 2 Preset 3 Preset 4 Preset 5 Preset 6 Preset 7 Preset 8 top end position <i>lower end position</i>	Approach a preset position. See Presets parameter page. Approach an end position.
Response when receiving a 0	Preset 1 Preset 2 Preset 3 Preset 4 Preset 5 Preset 6 Preset 7 Preset 8 <i>top end position</i> <i>lower end position</i> no response <i>update (height / slat)</i>	Approach a preset position. See Presets parameter page. Approach an end position. Do not respond. Approach last received position.
Position B		
Response when receiving a 1	See above	Desired drive height or slat position for position B
Response when receiving a 0	See above	
Position C		
Response when receiving a 1	See above	Desired drive height or slat position for position C
Response when receiving a 0	See above	

6.6.5 Ventilation



With the ventilation function, the blinds or roller blinds are automatically moved to a defined position when opening or tilting the window.

Designation	Values	Description
<i>When the window is tilted</i>		
<i>Approach ventilation position</i>	<i>Never</i> <i>Always</i> <i>Only when below</i>	No change of position. Always approach the preset position. Do not take the current drive position into account. Only approach the new position if the blinds or roller blinds position is lower than the desired ventilation position (preset).
<i>Position</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i>	Desired ventilation position. See <i>Presets</i> parameter page. Approach an end position.
<i>When the window is open</i>		
<i>Approach ventilation position</i>	<i>Never</i> <i>Always</i> <i>Only when below</i>	No change of position. Always approach the preset position, do not take the current drive position into account Only approach the new position if the blinds or roller blinds position is lower than the desired ventilation position (preset).
<i>Position</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i>	Desired ventilation position. See <i>Presets</i> parameter page. Approach an end position.
<i>When the window is closed again</i>		

Designation	Values	Description
<i>Position after end of ventilation</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> Preset 5 <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i>	Desired drive position when the window is closed again. See Presets parameter page.
<i>Block comfort/auto during ventilation</i>	no <i>yes</i>	The drive can also be controlled via the <i>height</i> and <i>slat</i> objects. Movement based on the <i>height</i> and <i>slat</i> objects remains blocked, until the window is closed again. If <i>Position after end of ventilation = Update height and slat</i> is configured, the previously received values will be approached after the end of ventilation. ²⁴



If the window is open/tilted while ventilation is blocked, the ventilation function will not be started.

If a block is set while the ventilation function is active, it will be abandoned.²⁵



Ventilation function and heating/cooling support²⁶ are mutually exclusive. If ventilation is active²⁷, no movements due to the heating/cooling support are executed, but only after completion²⁸ of the ventilation function²⁹.

Vice versa, if ventilation is active at the end of heating/cooling support, the configured action³⁰ will not be executed.

²⁴ Here, the parameter *Response after return to automatic operation* is not taken into account.

²⁵ The parameter *Position after end of ventilation* is not taken into account any longer.

²⁶ Parameter page **Sun protection**

²⁷ Window open or tilted

²⁸ Termination by closing the window or blocking.

²⁹ The parameter *Position after end of ventilation* is not taken into account.

³⁰ Parameter page **Sun protection**: Parameter *Behaviour when heating support is not required any longer* or *Behaviour when cooling support is not required any longer*.

6.6.5.1 Window contacts

The current window status is received via the objects *Window contact 1* and *Window contact 2*. From the combination of both telegrams, the device can detect, whether the window is closed, tilted, or open.



The status of the window contacts is exclusively received via the bus.

Designation	Values	Description
Number of window contents for this window	1 contact	Here, only 2 states are detected: window open / window closed.
	2 contacts (open/tilted)	The device can distinguish 3 states: closed – tilted – open. The corresponding switching statuses are defined below.
When the window is tilted		
Status object window contact 1	Off On	Combination at which the window is detected as "tilted".
Status object window contact 2	Off On	
When the window is open		
Status object window contact 1	Off On	Combination at which the status is detected as "open".
Status object window contact 2	Off On	
Acting direction object window contact 1 ³¹	0 = window open or tilted	0 = open ³² / 1 = closed
	0 = window closed	0 = closed / 1 = open ³³
Block telegram	Block with 1 (standard)	0 = cancel block 1 = block
	Block with 0	0 = block 1 = cancel block



The input objects *channel C1 - window contact 1* and *channel C1 - window contact 2* are not connected to inputs I1 and I2 internally. The connection is exclusively implemented via bus telegrams.³⁴ For this purpose, these objects are connected with the objects *channel I1 - window contact 1* and *channel I2 - window contact 2* via group addresses.

³¹If only one window contact is used.

³²No differentiation between *open* and *tilted* possible.

³³No differentiation between *open* and *tilted* possible.

³⁴ Thus, the window status can be received either via the own inputs I1, I2, or from other bus sharing units (binary input, button interface, etc.).

6.6.6 Safety wind / rain / frost

Designation	Values	Description
<i>Priority of safety objects</i>	1. wind 2. rain, 3. frost 1. wind, 2. frost, 3. rain 1. rain, 2. wind, 3. frost 1. rain, 2. frost, 3. wind 1. frost, 2. wind, 3. rain 1. frost, 2. rain, 3. wind	If wind, rain and frost alarm occur together, the parameters of the object with the highest priority will be implemented. Example: 1. rain, 2. frost, 3. wind The parameters with priority 1 apply, i.e. start and end of rain safety. If the rain alarm (priority 1) is cancelled, the parameters for the object with priority 2 apply, here frost - start. If the object with priority 2 is also cancelled, the one with priority 3 applies.
<i>Monitor safety objects cyclically</i>	no every 10 min every 20 min every 60 min	No monitoring. After mains failure, the safety object will be reset to 0. Safety objects that do not receive any telegrams within the time set here will be handled as if they had received an ON telegram and trigger an alarm (e.g. WIND, etc.). The sender of the safety telegrams (e.g. weather station) must transmit them cyclically. Max. cycle time = monitoring time / 2 Example: Monitoring time = every 20 minutes, cyclical transmission time = 10 min or less.
<i>Participation in safety WIND</i>	yes no	Should the channel react to wind alarm?
<i>Source(s)</i>	Safety object 1 wind Safety object 2 wind Safety object 3 wind Safety object 1 + 2 (OR linked) Safety object 1 + 3 (OR linked) Safety object 2 + 3 (OR linked) safety object 1 + 2 + 3 (OR linked)	Which safety objects are used for wind alarm?
<i>Start</i>		Start on wind alarm:

Designation	Values	Description
	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> top end position <i>lower end position</i> <i>unchanged (stopped upon operating command)</i>	Approach a preset position. See parameter page Presets . Approach an end position. Do not respond. The drive should stop upon safety start during a movement.
<i>End</i>	same as before safety <i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> <i>update (height / slat)</i> <i>no response</i>	End on wind alarm: move back to the previous position. Approach a preset position. See parameter page Presets . Approach an end position. Approach last received position. Do not respond.
<i>Participation in safety RAIN</i>	<i>yes</i> no	Should the channel react to rain alarm?
<i>Start</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> top end position <i>lower end position</i> <i>unchanged (stop upon operating command)</i>	Start on rain alarm: Approach a preset position. See Presets parameter page. Approach an end position. Do not respond. The drive should stop upon safety start during a movement.
<i>End</i>	same as before safety	End on rain alarm: move back to the previous position.

Designation	Values	Description
	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> <i>update (height / slat)</i> <i>no response</i>	Approach a preset position. See parameter page <i>Presets.</i> Approach an end position. Approach last received position. Do not respond.
<i>Participation in safety FROST</i>	<i>yes</i> <i>no</i>	Should the channel react to frost alarm?
<i>Start</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> <i>unchanged (stopped upon operating command)</i>	Start on frost alarm: Approach a preset position. See parameter page <i>Presets.</i> Approach an end position. Do not respond. The drive should stop upon safety start during a movement.
<i>End</i>	<i>same as before safety</i> <i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> <i>update (height / slat)</i> <i>no response</i>	End on frost alarm: move back to the previous position. Approach a preset position. See parameter page <i>Presets.</i> Approach an end position. Approach last received position. Do not respond.

Designation	Values	Description
<i>Response after priority on safety</i>		Priority on safety will be used when the roller blinds or sun protection devices must remain stationary in an end position for a certain time, e.g. for window cleaning. See object <i>Priority on safety</i> . This operating mode has the highest priority level.
	<i>Preset 1</i>	Approach a preset position.
	<i>Preset 2</i>	See parameter page Presets .
	<i>Preset 3</i>	
	<i>Preset 4</i>	
	<i>Preset 5</i>	
	<i>Preset 6</i>	
	<i>Preset 7</i>	
	<i>Preset 8</i>	
	<i>top end position</i>	Approach an end position.
	<i>lower end position</i>	
	no reaction, unchanged	Do not respond.
	<i>update (height / slat)</i>	Approach last received position.

6.6.7 Presets



The presets are a predefined position settings, which can be called up if required, e.g. on safety (wind, rain, frost), on restoration of the bus supply, during ventilation, etc.

Designation	Values	Description
Preset 1		
Position	0%, 10%, 20% 30%, 40%, 50% 60%, 70%, 80% 90%, 100%, no change	Desired drive height and slat position for preset 1
Slat	0%, 10%, 20% 30%, 40%, 50% 60%, 70%, 80% 90%, 100%, no change	
Preset 2		
Position	See above	Desired drive height and slat position for preset 2
Slat	See above	
Preset 3		
Position	See above	Desired drive height and slat position for preset 3
Slat	See above	
Preset 4		
Position	See above	Desired drive height and slat position for preset 4
Slat	See above	
Preset 5		
Position	See above	Desired drive height and slat position for preset 5
Slat	See above	
Preset 6		
Position	See above	Desired drive height and slat position for preset 6
Slat	See above	
Preset 7		
Position	See above	Desired drive height and slat position for preset 7
Slat	See above	
Preset 8		
Position	See above	Desired drive height and slat position for preset 8
Slat	See above	

6.6.8 Restoration of power

Designation	Values	Description
<i>Response in the event of bus failure³⁵</i>	<i>Up</i> <i>Down</i> Stop	 After a bus failure, the device is no longer supplied with power. Therefore, the drive can only be stopped or moved up/down.³⁶ Raise. Lower. Stop drive.
<i>Behaviour on restoration of the bus supply³⁷</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> no response	After return of bus or mains voltage... Approach a preset position. See Presets parameter page. Approach an end position. Do not respond.

³⁵ Only JU 1

³⁶ In this case, the movement is finished by the drive itself, when reaching the end position.

³⁷ JU 1 RF: Mains restoration

6.6.9 Block function

Designation	Values	Description
<i>Block telegram</i>	Block with 1 (standard) <i>Block with 0</i>	0 = cancel block 1 = block 0 = block 1 = cancel block Note: The block is always deactivated after reset.
<i>Response when the block is set</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> <i>unchanged (stopped upon operating command)</i>	Approach a preset position. See Presets parameter page. Approach an end position. Do not respond. The drive should stop when a block command is received during a movement.
<i>Response when the block is cancelled</i>	<i>Preset 1</i> <i>Preset 2</i> <i>Preset 3</i> <i>Preset 4</i> <i>Preset 5</i> <i>Preset 6</i> <i>Preset 7</i> <i>Preset 8</i> <i>top end position</i> <i>lower end position</i> <i>unchanged (stopped upon operating command)</i> <i>update (height / slat)</i>	Approach a preset position. See Presets parameter page. Approach an end position. Do not respond. The drive should stop when a block command is received during a movement. Approach last received position.

Designation	Values	Description
	<i>yes</i>	During this scene, the channel no longer reacts to height and slat telegrams. The Up/Down function is maintained.
<i>Permit teach-in</i>	<i>no</i> <i>yes</i>	Scenes can only be called up. The user can both call up and teach in or amend scenes.
2nd scene – preallocated with preset 2		
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> <i>Scene number 2</i> ... <i>Scene number 63</i>	Second of the 8 possible scene numbers
<i>Comment for this scene number</i>	<i>(Enter name)</i>	See above.
<i>Block comfort/automatic during this scene</i>	<i>no</i> <i>yes</i>	See above.
<i>Permit teach-in</i>	<i>no</i> <i>yes</i>	See above.
3rd scene – preallocated with preset 3		
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... <i>Scene number 3</i> ... <i>Scene number 63</i>	Third of the 8 possible scene numbers
<i>Comment for this scene number</i>	<i>(Enter name)</i>	See above.
<i>Block comfort/automatic during this scene</i>	<i>no</i> <i>yes</i>	See above.
<i>Permit teach-in</i>	<i>no</i> <i>yes</i>	See above.
4th scene – preallocated with preset 4		
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... <i>Scene number 4</i> ... <i>Scene number 63</i>	Fourth of the 8 possible scene numbers
<i>Comment for this scene number</i>	<i>(Enter name)</i>	See above.
<i>Block comfort/automatic during this scene</i>	<i>no</i> <i>yes</i>	See above.
<i>Permit teach-in</i>	<i>no</i> <i>yes</i>	See above.
5th scene – preallocated with preset 5		
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... <i>Scene number 5</i> ... <i>Scene number 63</i>	Fifth of the 8 possible scene numbers
<i>Comment for this scene number</i>	<i>(Enter name)</i>	See above.

Designation	Values	Description
<i>Block comfort/automatic during this scene</i>	no yes	See above.
<i>Permit teach-in</i>	no yes	See above.
6th scene – preallocated with preset 6		
<i>Channel reacts to</i>	No scene number Scene number 1 ... Scene number 6 ... Scene number 63	Sixth of the 8 possible scene numbers
<i>Comment for this scene number</i>	(Enter name)	See above.
<i>Block comfort/automatic during this scene</i>	no yes	See above.
<i>Permit teach-in</i>	no yes	See above.
7th scene – preallocated with preset 7		
<i>Channel reacts to</i>	No scene number Scene number 1 ... Scene number 7 ... Scene number 63	Seventh of the 8 possible scene numbers
<i>Comment for this scene number</i>	(Enter name)	See above.
<i>Block comfort/automatic during this scene</i>	no yes	See above.
<i>Permit teach-in</i>	no yes	See above.
8th scene – preallocated with preset 8		
<i>Channel reacts to</i>	No scene number Scene number 1 ... Scene number 8 ... Scene number 63	Last of the 8 possible scene numbers
<i>Comment for this scene number</i>	(Enter name)	See above.
<i>Block comfort/automatic during this scene</i>	no yes	See above.
<i>Permit teach-in</i>	no yes	See above.

Designation	Values	Description
	<i>in central switching, permanent ON, permanent OFF</i> <i>only in central permanent ON</i> <i>only in central permanent OFF</i> <i>only in central switching</i> <i>only in central switching and permanent ON</i> <i>only in central switching and permanent OFF</i> <i>only in central permanent ON and permanent OFF</i>	Which central objects are to be taken into account? Central objects enable simultaneous switching on and off of several channels with one single object.
<i>Adjust feedback</i>	Yes.. no	The feedback function can be individually adjusted. The relevant parameter page is shown. The <i>Feedback</i> function works with the standard parameters: - <i>not inverted</i> - <i>do not send cyclically</i>
<i>Activate hour counter</i>	Yes.. no	Is the hour counter/service interval function to be used?
<i>Activate link</i>	Yes.. no	Use logical links with the channel object?

6.7.2 Contact characteristics

Designation	Values	Description
<i>Type of contact</i>	NO contact <i>NC contact</i>	Standard: The relay contact is closed when a switch-on command is issued. Inverted: The relay contact is opened when a switch-on command is issued.
<i>Status with download and bus failure</i>	<i>OFF</i> <i>ON</i> unchanged	After download or with bus voltage failure... ..the relay switches off. ..the relay switches on. ...the relay remains in the same state as before.  If several switching operations were executed immediately before the bus failure, the energy may not be sufficient for an additional switching operation. In this case, the relay remains in its previous state, regardless of the parameter setting.
<i>Status with restoration of the bus supply</i>	<i>OFF</i> <i>ON</i> same as before failure	After return of bus voltage... ..the relay is switched off. ..the relay switches on. ...the relay remains in the same state as before.

6.7.3 The "On/off delay.." time function

This parameter page appears if *On/off delay* is chosen as the *Channel function*.

Designation	Values	Description
<i>Switch-on delay</i>		
<i>Hours</i>	<i>0..3</i>	Input of desired switch-on delay in hours.
<i>Minutes</i>	<i>0..60</i>	Input of desired switch-on delay in minutes.
<i>Seconds</i>	<i>0..255</i>	Input of desired switch-on delay in seconds.
<i>Switch-off delay</i>		
<i>Hours</i>	<i>0..3</i>	Input of desired switch-off delay in hours.
<i>Minutes</i>	<i>0..60</i>	Input of desired switch-off delay in minutes.
<i>Seconds</i>	<i>0..255</i>	Input of desired switch-off delay in seconds.

6.7.4 The "Pulse" time function

This parameter page appears if *Pulse function* is chosen as the *Channel function*.

Designation	Values	Description
<i>Hours</i>	<i>0..3</i>	Input of desired pulse duration in hours.
<i>Minutes</i>	<i>0..60</i>	Input of desired pulse duration in minutes.
<i>Seconds</i>	<i>0..255</i>	Input of desired pulse duration in seconds.
<i>Pulse can be retriggered (with 1 on switch object)</i>	<i>Yes</i>	The pulse can be extended as often as desired via a 1-telegram
	<i>no</i>	The pulse cannot be extended.
<i>Pulse can be reset (with 1 on switch object)</i>	<i>Yes</i>	The pulse can be ended early at any time via a 0-telegram.
	<i>no</i>	The pulse cannot be ended early

6.7.5 The "Staircase light with forewarning function .." time function

This parameter page appears if *Staircase light with forewarning function* is chosen as the *Channel function*.

The user can press a button again to extend the staircase light time at any time.

Designation	Values	Description
<i>Staircase light time (min. 1 s)</i>		
<i>Hours</i>	0..3	Input of desired switch-on delay in hours.
<i>Minutes</i>	0..60	Input of desired switch-on delay in minutes.
<i>Seconds</i>	0..255	Input of desired switch-on delay in seconds.
<i>The maximum sum of pulses</i>	1..40 Default value = 5	Determines how often the staircase light time can be extended (restarted) by pressing the button again.
<i>Duration of 1st forewarning in s</i>	0 1..60 Default value = 10	The light switches off immediately once the staircase light time is completed. Once the staircase light time is completed, the light should flash briefly and then stay on for the duration of the forewarning
<i>Duration of 2nd forewarning in s</i>	0 1..60 Default value = 30	No 2nd forewarning. The light switches off at the end of the 1st forewarning. Second forewarning: Once the 1st forewarning is completed, the light should flash briefly and then stay on for the duration of the 2nd forewarning. The light switches off when this time is completed.

Example: forewarning function

Staircase light time	Flashing	1nd forewarning	Flashing	2nd forewarning	OFF
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6.7.6 The "Flashing" time function

This parameter page appears if *Flashing* is chosen as the *Channel function*.

Designation	Values	Description
ON phase of flash pulse		
<i>Hours</i>	0..3	Input of desired pulse time in hours.
<i>Minutes</i>	0..60	Input of desired pulse time in minutes.
<i>Seconds</i>	0..255	Input of desired pulse time in seconds.
OFF phase of flash pulse		
<i>Hours</i>	0..3	Input of desired length of break in hours.
<i>Minutes</i>	0..60	Input of desired length of break in minutes.
<i>Seconds</i>	0..255	Input of desired length of break in seconds.
<i>How often should it flash</i>	<i>Until it switches off</i> 1 x 2 x 3 x 4 x 5 x 7 x 10 x 15 x 20 x 30 x 50 x	The channel flashes until a switch-off telegram is received. The channel flashes as often as set here.

6.7.7 Threshold

This page is shown if the *Activation of the function by exceeding threshold* parameter is set.

Designation	Values	Description
<i>Type of threshold object</i>	Per cent (DPT5.001) Counter value 0..255 (DPT 5.010) Counter value 0..65535 (DPT 7.001) Floating-point number (DPT9), e.g. temperature, brightness, etc.	Threshold format
Parameter for threshold object <i>Per cent</i>		
<i>Threshold</i>	1..99% Default value = 50%	Desired threshold. Example of NO contact with response as switch object = 1: Switches on when: Object value > threshold Switches off when: Object value < threshold - hysteresis
<i>Hysteresis (as %)</i>	1..99% Default value = 10%	The hysteresis prevents frequent switching after small fluctuations in readings.
Parameter for threshold object <i>Counter value 0..255</i>		
<i>Threshold</i>	1..254 Default value = 127	Desired threshold. Example of NO contact with response as switch object = 1: Switches on when: Object value > threshold Switches off when: Object value < threshold - hysteresis
<i>Hysteresis</i>	1..254 Default value = 5	The hysteresis prevents frequent switching after small fluctuations in readings.
Parameter for threshold object <i>Counter value 0..65535</i>		
<i>Threshold</i>	1..65534 Default value = 1000	Desired threshold. Example of NO contact with response as switch object = 1: Switches on when: Object value > threshold Switches off when: Object value < threshold - hysteresis
<i>Hysteresis</i>	1..65534 Default value = 5	The hysteresis prevents frequent switching after small fluctuations in readings.
Parameter for threshold object <i>Floating-point number (DPT9), e.g. temperature, brightness, etc.)</i>		
<i>Threshold</i>	-671088.64.. 670760.96 Default value = 20	Desired threshold. Example of NO contact with response as switch object = 1: Switches on when: Object value > threshold Switches off when: Object value < threshold - hysteresis

Designation	Values	Description
<i>Hysteresis</i>	0.01.. 670760.96 <i>Default value = 1</i>	The hysteresis prevents frequent switching after small fluctuations in readings.
<i>Response on exceeding the threshold</i>	<i>As switch object = 0</i> <i>As switch object = 1</i>	Should the channel switch on or off on exceeding the threshold? The set type of contact must be taken into account here. NO contact: the relay switches off if threshold is exceeded. NC contact: the relay switches on if threshold is exceeded. NO contact: the relay switches on if threshold is exceeded. NC contact: the relay switches off if threshold is exceeded.

6.7.8 Block function

This page appears when "Adjust block function" is selected on the *Configuration options* parameter page.

Designation	Values	Description
<i>Block telegram</i>	<i>Block with 1 (standard)</i>	0 = cancel block 1 = block
	<i>Block with 0</i>	0 = block 1 = cancel block Note: The block is always deactivated after reset.
<i>Response when the block is set</i>	<i>OFF</i>	Switch off
	<i>ON</i>	Switch on
	<i>unchanged</i>	No response
<i>Response when the block is cancelled</i>	<i>OFF</i>	Switch off
	<i>ON</i>	Switch on
	<i>unchanged</i>	No response
	<i>update</i>	Restore normal operation and switch relay accordingly.

6.7.9 Scenes

This page appears when the scenes are activated on the **Configuration options** parameter page. Each channel can participate in up to 8 scenes.

Designation	Values	Description
<i>Block telegram for scenes</i>	Block with 1 (standard) <i>Block with 0</i>	0 = cancel block 1 = block 0 = block 1 = cancel block Note: With this setting, the scenes are always blocked immediately after reset or download.
<i>All channel scene statuses</i>	Overwrite on download <i>Unchanged after download</i>	A download deletes all scene memories in a channel, i.e. all previously taught-in scenes. When a scene number is called, the channel assumes the configured "Status after download" (see below). See appendix: Teaching in scenes without telegrams All previously taught-in scenes are saved. However, the scene numbers to which the channel should react can be changed (see below: Channel reacts to).
<i>Participation in central scene object</i>	No yes	Should the device react to the central scene object?
<i>Channel reacts to</i>	<i>No scene number</i> Scene number 1 <i>Scene number 63</i>	First of the 8 possible scene numbers to which the channel is to react.
<i>Status after download</i>	Off On	New switching status which is to be allocated to the selected scene number. Only possible if the scene statuses are to be overwritten after download.
<i>Permit teach-in</i>	No Yes	Scenes can only be called up. The user can both call up and teach in or amend scenes.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> Scene number 2 ... <i>Scene number 63</i>	Second of the 8 possible scene numbers
<i>Status after download</i>	Off	See above.

Designation	Values	Description
	<i>On</i>	
<i>Permit teach-in</i>	<i>No</i> Yes	See above.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... Scene number 3 ... <i>Scene number 63</i>	Third of the 8 possible scene numbers
<i>Status after download</i>	Off <i>On</i>	See above.
<i>Permit teach-in</i>	<i>No</i> Yes	See above.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... Scene number 4 ... <i>Scene number 63</i>	Fourth of the 8 possible scene numbers
<i>Status after download</i>	Off <i>On</i>	See above.
<i>Permit teach-in</i>	<i>No</i> Yes	See above.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... Scene number 5 ... <i>Scene number 63</i>	Fifth of the 8 possible scene numbers
<i>Status after download</i>	Off <i>On</i>	See above.
<i>Permit teach-in</i>	<i>No</i> Yes	See above.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... Scene number 6 ... <i>Scene number 63</i>	Sixth of the 8 possible scene numbers
<i>Status after download</i>	Off <i>On</i>	See above.
<i>Permit teach-in</i>	<i>No</i> Yes	See above.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... Scene number 7 ...	Seventh of the 8 possible scene numbers

Designation	Values	Description
	<i>Scene number 63</i>	
<i>Status after download</i>	Off <i>On</i>	See above.
<i>Permit teach-in</i>	<i>No</i> Yes	See above.
<i>Channel reacts to</i>	<i>No scene number</i> <i>Scene number 1</i> ... Scene number 8 ... <i>Scene number 63</i>	Last of the 8 possible scene numbers
<i>Status after download</i>	Off <i>On</i>	See above.
<i>Permit teach-in</i>	<i>No</i> Yes	See above.

6.7.10 Feedback

Designation	Values	Description
<i>Reported status</i>	<i>Not inverted</i> <i>inverted</i>	Channel switched on: feedback object sends a 1 Channel switched on: feedback object sends a 0
<i>Transmit feedback cyclically</i>	No <i>yes</i>	Send at regular intervals?
<i>Time for cyclical transmission of feedback</i>	<i>2 minutes, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 20 minutes, 30 minutes, 45 minutes 60 minutes</i>	At what interval?

6.7.11 Hour counter and service

This page appears when *Activate hour counter* is selected on the *Configuration options* parameter page.

Designation	Values	Description
<i>Type of hour counter</i>	Hour counter <i>Counter for time to next service</i>	Forward counter for channel duty cycle. Backward counter for channel duty cycle.
Hour counter		
<i>Reporting of operating hours in the event of a change (0..100 h, 0 = no report)</i>	<i>0..100</i> Default value = 10	At what interval is the current counter reading to be sent? Example: 10 = Send each time the counter reading increases by another 10 hours.
<i>Report operating hours cyclically</i>	No yes	Send at regular intervals?
<i>Time for cyclical transmission</i>	<i>2 minutes, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 20 minutes, 30 minutes, 45 minutes</i> 60 minutes	At what interval?
Counter for time to next service		
<i>Service interval (x10 h)</i>	<i>0..2000</i> Default value = 100	Desired timescale between 2 services. Example: 10 = 10 x 10 h = 100 hours
<i>Reporting of time to service in the event of a change (0 = no report)</i>	<i>0..100</i> Default value = 10	At what interval is the current counter reading to be sent? Example: 10 = Send each time the counter reading decreases by another 10 hours.
<i>Report time to service cyclically</i>	no Yes	Send remaining time to next service at regular intervals? → Object <i>Time to next service</i> .
<i>Report service cyclically</i>	no Yes	Send expiry of time to next service at regular intervals? → Object <i>Service required</i> .
<i>Time for cyclical transmission (if used)</i>	<i>2 minutes, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 20 minutes, 30 minutes, 45 minutes</i> 60 minutes	At what interval?

6.7.12 Link

Designation	Values	Description
<i>Activate link</i>	AND link <i>OR link (override)</i> <i>XOR link</i>	Selection of logical link with the input object The <i>Logic input in AND gate</i> object appears. The <i>Logic input in OR gate</i> object appears. The <i>Logic input in XOR gate</i> object appears.
<i>Block object affects logic object</i>	No <i>yes</i>	The block object only affects the input object. If required, the logic object can activate the channel function despite block (with OR and XOR link). The block object affects the input object and the logic object. The channel function is completely blocked if the block is active.

6.8 Parameters for the external inputs I1, I2 purely as KNX binary inputs



If direct control is not required, inputs I1 and I2 are available as KNX binary inputs.



The parameter *Control channel C1 directly*³⁸ must be set to *no* for this purpose.

6.8.1 Input I1, I2: Switch function

Designation	Values	Description
Function	<i>Switch..</i> ³⁹ <i>Button..</i> ⁴⁰ <i>Dimming..</i> <i>Blinds..</i> ⁴¹ <i>Window contact..</i>	Desired use.
Control channel C1 directly	<i>yes</i> <i>No</i>	<i>I1 is used exclusively as an input for switch actuator channel C1. I1 is connected to C1 internally and has no communication objects.</i> I1 is used purely as a KNX binary input. There is no internal connection to the switch actuator.
Debounce time	<i>30 ms, 50 ms, 80 ms</i> <i>100 ms, 200 ms,</i> <i>1 s, 5 s, 10 s</i>	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values ($\geq 1s$) can be used as a switch-on delay
Activate block function	<i>no</i> <i>yes</i>	No block function. Show parameters for the block function.
Block telegram	<i>Block with 1 (standard)</i> <i>Block with 0</i>	0 = cancel block 1 = block 0 = block 1 = cancel block

³⁸ If necessary, control C2 directly.

³⁹ Direct control of C1 possible (switch actuator).

⁴⁰ Direct control of C1 possible (switch actuator).

⁴¹ Direct control of C1 possible (blind actuator).

Designation	Values	Description
<i>Send cyclically</i>	<i>every min</i> <i>every 2 min</i> <i>every 3 min</i> ... <i>every 30 min</i> <i>every 45 min</i> <i>every 60 min</i>	Common cycle time for all 3 output objects of the channel.
<i>Number of telegrams</i>	<i>one telegram</i> <i>two telegrams</i>	Each channel has 2 output objects and can thus send up to 2 different telegrams.

6.8.1.1 Switch objects 1, 2

Each of the 2 objects can be configured individually on its own parameter page.

Designation	Values	Description
<i>Object type</i>	Switching (1 bit) <i>Priority (2 bit)</i> <i>Value 0-255</i> <i>Percentage value (1 byte)</i>	Telegram type for this object.
<i>Send if input = 1</i>	<i>no</i> yes	Send if voltage is present at the input?
<i>Telegram</i>	With object type = switching 1 bit	
	ON OFF INVERT	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)
	With object type = priority 2 bit	
	inactive	Function Priority inactive (no control) 0 (00 _{bin})
	ON	Priority ON (control: enable, on) 3 (11 _{bin})
	OFF	Priority OFF (control: disable, off) 2 (10 _{bin})
	With object type = value 0-255	
	0-255	Any value between 0 and 255 can be sent.
	With object type = percentage value 1 byte	
	0-100%	Any percentage value between 0 and 100% can be sent.
<i>Send if input = 0</i>	<i>no</i> yes	Send if no voltage is present at the input?
<i>Telegram</i>	See above: Same object type as <i>Send if input = 1</i>	
<i>Send cyclically</i>	no <i>yes, always</i> <i>only if input = 1</i> <i>only if input = 0</i>	When should cyclical sending take place? The cycle time is set on the main parameter page of the channel.
<i>Response after restoration of the bus supply⁴²</i>	none <i>update (immediately)</i> <i>update (after 5 s)</i> <i>update (after 10 s)</i> <i>update (after 15 s)</i>	Do not send. Send update telegram immediately or with delay.
<i>Response when the block is set</i>	Ignore block <i>no response</i> <i>as with input = 1</i>	The block function is ineffective with this telegram. Do not respond when the block is set. Respond as with rising edge.

⁴² JU 1 RF: Mains restoration

Designation	Values	Description
	<i>as with input = 0</i>	Respond as with falling edge.
<i>Response when the block is cancelled</i>	no response <i>update</i>	Do not respond when the block is cancelled. Send update telegram.



If a channel is blocked, no telegrams will be sent cyclically.

⁴³ Direct control of C1 possible.

Designation	Values	Description
<i>Activate block function</i>	<i>no</i>	No block function.
	<i>yes</i>	Show parameters for the block function.
<i>Block telegram</i>	<i>Block with 1 (standard)</i>	0 = cancel block 1 = block
	<i>Block with 0</i>	0 = block 1 = cancel block

6.8.2.1 Button objects 1, 2

Designation	Values	Description	
Object type	Switching (1 bit) Priority (2 bit) Value 0-255 Percentage value (1 byte)	Telegram type for this object.	
Send after short operation	do not send Send telegram	Respond to short button push?	
Telegram	With object type = switching 1 bit		
	ON OFF INVERT	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)	
	With object type = priority 2 bit		
	inactive ON OFF	Function	Value
		Priority inactive (no control)	0 (00 _{bin})
		Priority ON (control: enable, on)	3 (11 _{bin})
		Priority OFF (control: disable, off)	2 (10 _{bin})
	With object type = value 0-255		
	0-255	Any value between 0 and 255 can be sent.	
	With object type = percentage value 1 byte		
	0-100%	Any percentage value between 0 and 100% can be sent.	
Send after long operation	do not send Send telegram	Respond to long button push?	
Telegram	See above: Same object type as with short operation.		
Send after double-click	do not send Send telegram	Respond to double-click?	
Telegram	See above: Same object type as with short operation.		
Send cyclically	no yes	The cycle time is set on the main parameter page of the channel.	
Response after restoration of the bus	none	Do not send.	

Designation	Values	Description
<i>supply</i> ⁴⁵	<i>As with short (immediately)</i> <i>As with short (after 5 s)</i> <i>As with short (after 10 s)</i> <i>As with short (after 15 s)</i> <i>As with long (immediately)</i> <i>As with long (after 5 s)</i> <i>As with long (after 10 s)</i> <i>As with long (after 15 s)</i> <i>As with double-click (immediately)</i> <i>As with double-click (after 5 s)</i> <i>As with double-click (after 10 s)</i> <i>As with double-click (after 15 s)</i>	Send update telegram immediately or with delay. The value to be sent depends on the value configured for long button push, short button push or double-click.
<i>Response when the block is set</i>	<i>Ignore block</i> <i>no response</i> <i>as with short</i> <i>as with long</i> <i>as with double-click</i>	The block function is ineffective with this telegram. Do not respond when the block is set. Respond as with a short button push. Respond as with a long button push. Respond as with a double-click.
<i>Response when the block is cancelled</i>	<i>no response</i> <i>as with short</i> <i>as with long</i> <i>as with double-click</i>	Do not respond when the block is cancelled. Respond as with a short button push. Respond as with a long button push. Respond as with a double-click.

⁴⁵ JU 1 RF: Mains restoration

6.8.3 Input I1, I2: Dimming function

Designation	Values	Description
Channel function	Switch.. Button.. Dimming.. Blinds.. Window contact..	The input controls a dimming actuator,
Control channel C1 directly	No	I1 is used purely as a KNX binary input. There is no internal connection to the switch actuator.
Debounce time	30 ms, 50 ms , 80 ms 100 ms, 200 ms, 1 s, 5 s, 10 s	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
Activate block function	no yes	No block function. Show block function parameter page.
Block telegram	Block with 1 (standard) Block with 0	0 = cancel block 1 = block 0 = block 1 = cancel block
Long button push starting at	300 ms , 400 ms 500 ms, 600 ms 700 ms, 800 ms 900 ms, 1 s	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
Double-click additional function	no yes	No double-click function The double-click parameter page is shown.
Time for double-click	300 ms , 400 ms 500 ms, 600 ms 700 ms, 800 ms 900 ms, 1 s	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.

6.8.3.1 Double-click parameter page

Designation	Values	Description
Object type	Switching (1 bit) Priority (2 bit) Value 0-255 Percentage value (1 byte)	Telegram type for this object.
Telegram	With object type = switching 1 bit	
	ON OFF INVERT	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)
	With object type = priority 2 bit	
	inactive ON OFF	Function
		Priority inactive (no control)
		Priority ON (control: enable, on)
	Priority OFF (control: disable, off)	Value
		0 (00 _{bin})
	Priority ON (control: enable, on)	3 (11 _{bin})
		2 (10 _{bin})
	With object type = value 0-255	
	0-255	Any value between 0 and 255 can be sent.
	With object type = percentage value 1 byte	
	0-100%	Any percentage value between 0 and 100% can be sent.
Send cyclically	do not send cyclically every min every 2 min every 3 min ... every 45 min every 60 min	How often should it be resent?
Response after restoration of the bus supply ⁴⁶	none As with double-click (immediately) As with double-click (after 5 s) As with double-click (after 10 s) As with double-click (after 15 s)	Do not send. Send update telegram immediately or with delay. The value to be sent depends on the value configured for double-click.
Response when the block is set	Ignore block no response as with double-click	The block function is ineffective with this telegram. Do not respond when the block is set. Respond as with a double-click.

⁴⁶ JU 1 RF: Mains restoration

Designation	Values	Description
<i>Response when the block is cancelled</i>	<i>no response</i>	Do not respond when the block is cancelled.
	<i>as with double-click</i>	Respond as with a double-click.

6.8.3.2 Dimming parameter page

Designation	Values	Description
<i>Response to long / short</i>	One button operation <i>brighter / ON</i> <i>brighter / INVERT</i> <i>darker / OFF</i> <i>darker / INVERT</i>	The input distinguishes between a long and a short button push, and can thus carry out 2 functions. The dimmer is operated with a single button. Short button push = ON/OFF Long button push = brighter/darker release = stop With the other variants, the dimmer is operated using 2 buttons (rocker). Short button push = ON Long button push = brighter Release = stop Short button push = ON / OFF Long button push = brighter Release = stop Short button push = OFF Long button push = darker Release = stop Short button push = ON / OFF Long button push = darker Release = stop
<i>Increment for dimming</i>	100% 50% 25% 12.5% 6% 3% 1.5%	With a long button push, the dimming value is: Increased (or decreased) until the button is released. Increased by the selected value (or reduced)
<i>Response after restoration of the bus supply⁴⁷</i>	none	Do not respond.

⁴⁷ JU 1 RF: Mains restoration

Designation	Values	Description
	<i>ON</i> <i>OFF</i> <i>ON after 5 s</i> <i>ON after 10 s</i> <i>ON after 15 s</i> <i>OFF after 5 s</i> <i>OFF after 10 s</i> <i>OFF after 15 s</i>	Switch on dimmer Switch off dimmer Switch on dimmer with delay Switch off dimmer with delay
<i>Response when the block is set</i>	<i>Ignore block</i> <i>no response</i> <i>ON</i> <i>OFF</i>	The block function is ineffective with this telegram. Do not respond when the block is set. Switch on dimmer Switch off dimmer
<i>Response when the block is cancelled</i>	<i>no response</i> <i>ON</i> <i>OFF</i>	Do not respond when the block is cancelled. Switch on dimmer Switch off dimmer

Flush-mounted blind/switch actuators JU 1, JU 1 RF

6.8.4.1 Double-click parameter page

Designation	Values	Description
<i>Object type</i>	Switching (1 bit) <i>Priority (2 bit)</i> <i>Value 0-255</i> <i>Percentage value (1 byte)</i> <i>Height % + slat %</i>	Telegram type for this object.
<i>Telegram</i>	With object type = switching 1 bit	
	ON OFF INVERT	Send switch-on command Send switch-off command Invert current state (ON-OFF-ON etc.)
	With object type = priority 2 bit	
	inactive ON OFF	Function
		Priority inactive (no control)
		Priority ON (control: enable, on)
		Value
		0 (00 _{bin})
		3 (11 _{bin})
		2 (10 _{bin})
	With object type = value 0-255	
	0-255	Any value between 0 and 255 can be sent.
	With object type = percentage value 1 byte	
	0-100%	Any percentage value between 0 and 100% can be sent.
	With object type = height % + slat %	
	Height	Upon double-click 2 telegrams are sent simultaneously: Required blind height
	Slat	Required slat position.
<i>Send cyclically</i>	do not send cyclically <i>every min</i> <i>every 2 min</i> <i>every 3 min</i> <i>...</i> <i>every 45 min</i> <i>every 60 min</i>	How often should it be resent?
<i>Response after restoration of the bus supply⁴⁸</i>	none <i>As with double-click (immediately)</i> <i>As with double-click (after 5 s)</i> <i>As with double-click (after 10 s)</i> <i>As with double-click (after 15 s)</i>	Do not send. Send update telegram immediately or with delay. The value to be sent depends on the value configured for double-click.

⁴⁸ JU 1 RF: Mains restoration

Designation	Values	Description
<i>Response when the block is set</i>	<i>Ignore block</i>	The block function is ineffective with this telegram.
	<i>no response</i>	Do not respond when the block is set.
	<i>as with double-click</i>	Respond as with a double-click.
<i>Response when the block is cancelled</i>	<i>no response</i>	Do not respond when the block is cancelled.
	<i>as with double-click</i>	Respond as with a double-click.

6.8.4.2 Blinds parameter page

Designation	Values	Description
<i>Operation</i>	One button operation DOWN UP	The input distinguishes between a long and a short button push, and can thus carry out 2 functions. The blinds are operated with a single button. Short button push = step. Long button push = move. Short button push = step. Long button push = lower. Short button push = step. Long button push = raise.
<i>Movement is stopped by</i>	Releasing the button Short operation	How is the stop command to be triggered?
<i>Response after restoration of the mains or bus supply</i>	none UP DOWN UP after 5 s UP after 10 s UP after 15 s DOWN after 5 s DOWN after 10 s DOWN after 15 s	Do not respond. Raise blinds Lower blinds Raise blinds with delay Lower blinds with delay
<i>Response when the block is set</i>	Ignore block no response UP DOWN	The block function is ineffective with this telegram. Do not respond when the block is set. Raise blinds Lower blinds
<i>Response when the block is cancelled</i>	no response ON OFF	Do not respond when the block is cancelled. Raise blinds Lower blinds

6.8.5 Input I2: Temperature input⁴⁹

Designation	Values	Description
<i>Channel function</i>	<i>Switch..</i> <i>Button..</i> <i>Dimming..</i> <i>Blinds..</i> Temperature input⁵⁰	The input is connected to a temperature sensor.
<i>Sensor type</i>	Remote sensor 1 (9070191) <i>Remote sensor IP 65 (9070459)</i> <i>Floor sensor (9070321)</i>	External temperature sensor 1 Item no. 9070191, for surface-mounted installation. External temperature sensor RAMSES IP65 Item no. 9070459, for surface-mounted installation. Temperature sensor for laying in floor, IP65 protection rating.
<i>Temperature calibration</i>	-64..+64 (x 0.1 K)	Correction value for temperature measurement if sent temperature deviates from the actual ambient temperature. Example: Temperature = 20°C sent temperature = 21°C Correction value = 10 (d.h. 10 x 0.1°C)
<i>Transmit temperature in the event of change of</i>	<i>not due to a change</i> 0.2 K 0.3 K 0.5 K 0.7 K 1 K 1.5 K 2 K	Only send cyclically (if enabled) Send if the value has changed by the selected amount since the last transmission.
<i>Send temperature cyclically</i>	do not send cyclically <i>every min.</i> <i>every 2 min.</i> <i>every 3 min.</i> ... <i>every 45 min.</i> <i>every 60 min.</i>	How often should the current measured value be resent?

⁴⁹ Only available for I2

⁵⁰ Only available for I2

6.8.6 Input I1, I2: window contact function



The window contact function is only available in connection with C1 as blind actuator

Designation	Values	Description
Function	Switch.. ⁵¹ Button.. ⁵² Dimming.. Blinds.. ⁵³ Window contact..	Desired use.
Control channel C1 directly	No	I1 is used purely as a KNX binary input. There is no internal connection to the blind actuator.
Debounce time	30 ms, 50 ms , 80 ms 100 ms, 200 ms, 1 s, 5 s, 10 s	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
Send cyclically	every min every 2 min every 3 min ... every 30 min every 45 min every 60 min	Common cycle time for all 3 output objects of the channel.
Activate block function	no yes	No block function. Show parameters for the block function.
Block telegram	Block with 1 (standard) Block with 0	0 = cancel block 1 = block 0 = block 1 = cancel block

⁵¹ Direct control of C1 possible (switch actuator).

⁵² Direct control of C1 possible (switch actuator).

⁵³ Direct control of C1 possible (blind actuator).



The output objects *channel I1 - window contact 1* and *channel I2 - window contact 2* are not connected to blind actuator channel C1 internally.

The connection is exclusively implemented via bus telegrams.⁵⁴

For this purpose, these objects are connected with the objects *channel C1 - window contact 1,2* of the actuator via group addresses.

⁵⁴ In this way, window contact inputs I1 and I2 can be used for C1, as well as for other bus sharing units, blind actuators (displays etc.).

6.8.6.1 Window contact

Designation	Values	Description
<i>Telegram when contact closed</i>	On Off	Set switching status.
<i>Telegram when contact open</i>	On Off	Is set automatically.
<i>Send cyclically</i>	no yes, always only if input = 1 only if input = 0	When should cyclical sending take place? The cycle time is set on the main parameter page of the channel.
<i>Response after restoration of the bus supply⁵⁵</i>	none update (immediately) update (after 5 s) update (after 10 s) update (after 15 s)	Do not send. Send update telegram immediately or with delay.
<i>Response when the block is set</i>	Ignore block no response as with input = 1 as with input = 0	The block function is ineffective with this telegram. Do not respond when the block is set. Respond as with rising edge. Respond as with falling edge.
<i>Response when the block is cancelled</i>	no response update	Do not respond when the block is cancelled. Send update telegram.

⁵⁵ JU 1 RF: Mains restoration

Designation	Values	Description
<i>Debounce time</i> ⁵⁷	30 ms, 50 ms , 80 ms 100 ms, 200 ms, 1 s, 5 s, 10 s	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
<i>Long button push starting at</i> ⁵⁸	300 ms , 400 ms 500 ms, 600 ms 700 ms, 800 ms 900 ms, 1 s	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
<i>Double-click additional function</i>	no yes	No double-click function The double-click parameter page is shown.
<i>Time for double-click</i> ⁵⁹	300 ms , 400 ms 500 ms, 600 ms 700 ms, 800 ms 900 ms, 1 s	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.

⁵⁷ Applies here to I1, and for I2 if used.

⁵⁸ Applies here to I1, and for I2 if used.

⁵⁹ Applies here to I1, and for I2 if used.

6.9.1.1 I1 blinds directly parameter page

Designation	Values	Description
<i>Operation</i>	<i>One button operation</i>	The input distinguishes between a long and a short button push, and can thus carry out 2 functions. The blinds are operated with a single button. Short button push = step. Long button push = move.
		 I2 is not required, and freely available
	<i>DOWN</i>	Short button push = step. Long button push = lower.
		 I2 is automatically preallocated with <i>operation = UP</i> .
	<i>UP</i>	Short button push = step. Long button push = raise.
		 I2 is automatically preallocated with <i>operation = DOWN</i> .
<i>Movement is stopped by</i>	<i>Releasing the button</i> <i>Short operation</i>	How is the stop command to be triggered?

6.9.1.2 Double-click parameter page

Designation	Values	Description
<i>Height</i>	<i>0-100%</i>	Required blind height
<i>Slat</i>	<i>0-100%</i>	Required slat position.

6.9.2 I2 blinds directly

This parameter page is shown if I2 is required for direct control.

This is the case if, on the **Blinds input I1 directly** parameter page, the parameter *Operation* is set to *UP* or *DOWN*, and therefore a second button is required for the opposite direction.



If the blinds are operated with only one button (one button operation), then input I2 is freely available as a KNX binary input.

Designation	Values	Description
<i>Operation</i>	<i>DOWN</i>	Presetting if the direction is set to UP at I1.
	<i>UP</i>	Presetting if the direction is set to DOWN at I1.
<i>Double-click additional function</i>	<i>no</i>	No double-click function
	<i>yes</i>	The double-click parameter page is shown.
<i>Height</i>	<i>0-100%</i>	Required blind height
<i>Slat</i>	<i>0-100%</i>	Required slat position.



The following settings are taken over from I1, and do not have to be entered again at I2: *debounce time*, *long button push from*, *time for double-click*.

6.10 Parameters for direct control of the switch actuator



The parameter *Control channel C1 (C2) directly* determines whether the input functions as a direct control for C1 (C2) or purely as a KNX binary input. Channels I1 and I2 are configured for direct control of the actuator in the ETS default setting.

A button or switch connected to I1 will therefore have a direct internal effect on channel C1, a button or switch at I2 affects C2.



If an input is configured for direct control, it has no bus connection, i.e. no communication objects.

6.10.1 Control switch actuator directly, switch function

Designation	Values	Description
<i>Function</i>	<i>Switch..</i> <i>Button..</i> <i>Dimming..</i> <i>Blinds..</i>	Direct control of the switch actuator (C1/C2) is only possible with the switch or button functions.
<i>Control channel C1 directly⁶⁰</i>	yes <i>No</i>	Input is used exclusively for switch actuator channel C1 (or C2). I1 is connected to C1 internally (or I2 to C2) and has no communication objects. <i>Input is used purely as a KNX binary input.</i> <i>There is no internal connection to the switch actuator.</i>
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms</i> <i>100 ms, 200 ms,</i> <i>1 s, 5 s, 10 s</i>	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay.

⁶⁰ Direct control: This parameter is only available for the switch or button function.

6.10.1.1 Direct switching parameter page

This page replaces the *switch object 1, 2* parameter pages.

Designation	Values	Description
Switching status if input = 1	On <i>Off</i> <i>Change over</i>	Switching status if voltage is present at the input?
Switching status if input = 0	<i>on</i> off <i>Change over</i>	Switching status if no voltage is present at the input?

6.10.2 Control switch actuator directly, button function

Designation	Values	Description
<i>Function</i>	<i>Switch..</i> <i>Button..</i> <i>Dimming..</i> <i>Blinds..</i>	Direct control of the switch actuator (C1/C2) is only possible with the switch or button functions.
<i>Control channel C1 directly⁶¹</i>	yes <i>No</i>	Input is used exclusively for switch actuator channel C1 (or C2). I1 is connected to C1 internally (or I2 to C2) and has no communication objects. <i>Input is used purely as a KNX binary input.</i> <i>There is no internal connection to the switch actuator.</i>
<i>Debounce time</i>	<i>30 ms, 50 ms, 80 ms</i> <i>100 ms, 200 ms,</i> <i>1 s, 5 s, 10 s</i>	In order to avoid disruptive switching due to bouncing of the contact connected to the input, the new status of the input is only accepted after a delay time. Larger values (≥ 1 s) can be used as a switch-on delay
<i>Connected button</i>	NO contact <i>NC contact</i>	Set the type of connected contact.
<i>Long button push starting at</i>	300 ms, 400 ms <i>500 ms, 600 ms</i> <i>700 ms, 800 ms</i> <i>900 ms, 1 s</i>	Serves to clearly differentiate between long and short button push. If the button is pressed for at least as long as the set time, then a long button push will be registered.
<i>Time for double-click</i>	300 ms, 400 ms <i>500 ms, 600 ms</i> <i>700 ms, 800 ms</i> <i>900 ms, 1 s</i>	Serves to differentiate between a double-click and 2 single clicks. Time period in which the second click must begin, in order to recognise a double-click.

⁶¹ Direct control: This parameter is only available for the switch or button function.

6.10.2.1 Direct switching parameter page

This page replaces the *switch object 1, 2* parameter pages.

Designation	Values	Description
<i>Response after short operation</i>	<i>No response</i> Switching	Execute a switch command after a short button push?
<i>Switching status</i>	<i>On</i> <i>Off</i> Change over	Switching status.
<i>Response after long operation</i>	No response Switching	Execute a switch command after a long button push?
<i>Switching status</i>	<i>On</i> <i>Off</i> Change over	Switching status.
<i>Response after double-click</i>	No response Switching	Execute a switch command after a double-click?
<i>Switching status</i>	<i>On</i> <i>Off</i> Change over	Switching status.

7 Application examples - blind actuator

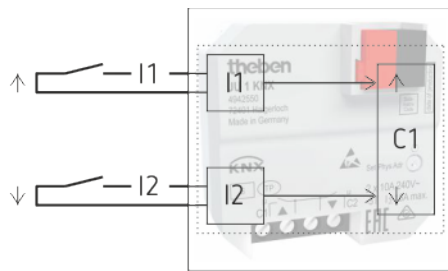
7.1 Blind actuator direct control: Basic configuration

In this configuration, the blind actuator is operated directly with the buttons connected to I1 and I2.

7.1.1 Devices

- JU 1 (4942550)

7.1.2 Overview



7.1.3 Objects and links

The communication objects of C1 are all available for further functions.
A basic function (blinds up/down, step/stop) is provided via actuation of inputs I1 and I2.

In this case, the external inputs I1 and I2 have no communication objects.

7.1.4 Important parameter settings

Standard or customer-defined parameter settings apply for unlisted parameters.

JU 1:

Parameter page	Parameter	Setting
General	<i>Usage</i>	<i>1-channel blind actuator</i>
	<i>Use binary inputs</i>	Yes
External inputs		
I1, I2 configuration options	<i>Function</i>	<i>Blinds</i>
	Control channel C1 directly	yes
Blinds directly I1	<i>Operation</i>	<i>Up</i>
Blinds directly I2	<i>Operation</i>	<i>Down⁶²</i>

⁶² Not adjustable, will be adjusted automatically.

7.2 Controlling the blind actuator via the bus

In this example, the external inputs and the blind actuator channel are completely separate from each other and can only be used via the KNX bus.⁶³

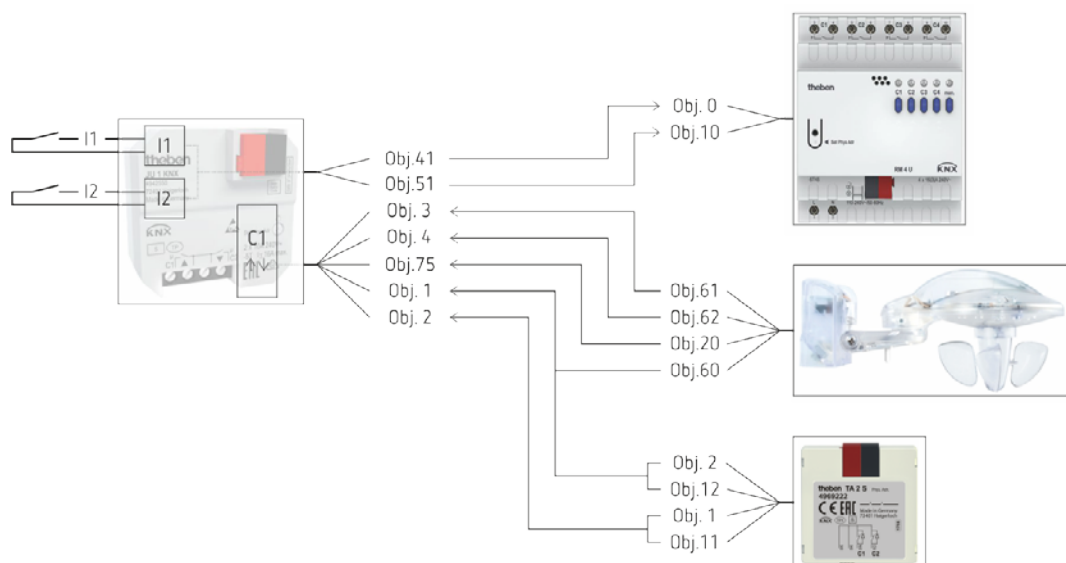
The blind actuator channel of the JU 1 is operated by means of a KNX button interface (TA 2 S). The automatic sun function is implemented by the Meteodata 140 S weather station. In case of a wind alarm, the drive will be moved up.

The external inputs I1, I2 control a further KNX switch actuator (RM 4 U).

7.2.1 Devices

- JU 1 (4942550)
- TA 2 S (4969222)
- RM 4 U (4940223)
- Meteodata 140 S weather station (1409207)

7.2.2 Overview



⁶³ Normal KNX operation, without direct control.

7.2.3 Objects and links

No.	JU 1	No.	RM 4 U	Comment
	Object name		Object name	
41	<i>Channel I1.1 – switching</i>	0	<i>Channel C1 – switch object</i>	The external inputs control switch actuator RM 4 U
51	<i>Channel I2.1 – switching</i>	10	<i>Channel C2 – switch object</i>	

No.	TA 2 S	No.	JU 1	Comment
	Object name		Object name	
1	<i>Channel I1 – step / stop</i>	2	<i>Channel C1 – step / stop</i>	The step telegrams from both buttons of the button interface are sent to the same group address.
11	<i>Channel I2 – step / stop</i>			
2	<i>Channel I1 – up</i>	1	<i>Up / down</i>	The up and down telegrams of the button interface are sent to the same group address. .
12	<i>Channel I2 – down</i>			

No.	Meteodata 140 S	No.	JU 1	Comment
	Object name		Object name	
20	<i>C1.1 Universal channel – Switching</i>	75	<i>Central safety – wind 1</i>	Wind alarm
60	<i>C11 Drives up/down</i>	1	<i>Up / down</i>	Controlled by automatic sun function
61	<i>C11 Blinds height</i>	3	<i>% height</i>	
62	<i>C11 Slat position</i>	4	<i>% slat</i>	

7.2.4 Important parameter settings

Standard or customer-defined parameter settings apply for unlisted parameters.

JU 1:

Parameter page	Parameter	Setting
General	<i>Usage</i>	<i>1-channel blind actuator</i>
	<i>Use binary inputs</i>	<i>Yes</i>
C1 configuration options	<i>Type of hanging</i>	<i>Blinds</i>
Safety wind / rain / frost	<i>Participation in safety wind</i>	<i>yes</i>
	<i>Source</i>	<i>Safety object 1 wind</i>
	<i>Start</i>	<i>Top end position</i>
External inputs		
I1, I2 configuration options	<i>Function</i>	<i>Button</i>
	<i>Control channel C1, C2 directly</i>	<i>no</i>
Button object 1	<i>Object type</i>	<i>Switching</i>
	<i>Telegram</i>	<i>Change over</i>
Button object 2	<i>Object type</i>	<i>Switching</i>
	<i>Telegram</i>	<i>Change over</i>

RM 4 U:

Parameter page	Parameter	Setting
Configuration options	<i>Channel function</i>	<i>Switch on/off</i>
	<i>Activation of function via</i>	<i>Switch object</i>

TA 2 S:

Parameter page	Parameter	Setting
Channel 1 configuration options	<i>Channel 1 function</i>	<i>Blinds</i>
Blinds	<i>Operation</i>	<i>Up</i>
Channel 2 configuration options	<i>Channel 2 function</i>	<i>Blinds</i>
Blinds	<i>Operation</i>	<i>Down</i>

Meteodata 140 S:

Parameter page	Parameter	Setting
General	Activate universal channel C1	Yes
	Activate sun protection channel C11	Yes
Universal channel C1: function	Channel function	Wind sensor
	Wind speed	Above 4 m/s ⁶⁴
Objects	Telegram type C1.1	Switch command
	If the condition is met	Send cyclically
	Telegram	On
	If the condition is not met	Send cyclically
	Telegram	Off
Sun protection channel C11	Channel controls	Blinds
Automatic sun function	Activation of automatic sun function	Via dimming threshold

⁶⁴ Depending on the application.

7.3 Blind actuator with ventilation function



The ventilation function moves the blinds or overrule the blinds automatically into a predefined position⁶⁵, as soon as the window is tilted or opened.

In order to distinguish between tilted and open, the window must be equipped with 2 contacts. The combined switching status of both contacts (at I1 and I2) enables the detection of the current window setting.

Here, the following configuration is assumed:

	Window contact 1		Window contact 2	
	Status ⁶⁶	Telegram ⁶⁷	Status ⁶⁸	Telegram ⁶⁹
Window tilted	open	Off	closed	On
Window open	closed	On	closed	On

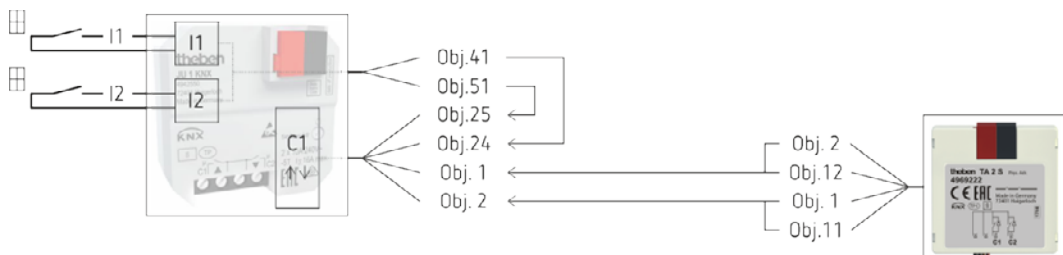
Inputs I1 and I2 send the status of the window contacts via the bus to the objects window contact 1 and 2 of blind actuator C1.

The blind actuator is operated by means of a KNX button interface (TA 2 S).

7.3.1 Devices

- JU 1 (4942550)
- TA 2 S (4969222)

7.3.2 Overview



⁶⁵ The desired position is set on the Presets parameter page.

⁶⁶ Actual switching status of the window contact

⁶⁷ Telegram which is sent from an external input.

⁶⁸ Actual switching status of the window contact

⁶⁹ Telegram which is sent from an external input.

7.3.3 Objects and links

No.	JU 1 Object name	No.	JU 1 Object name	Comment
41	<i>Channel I1.1 – switching</i>	24	<i>Channel C1 – window contact 1</i>	I1 is connected with the first window contact object of the blind actuator via an own group address.
51	<i>Channel I2.1 – switching</i>	25	<i>Channel C1 – window contact 2</i>	I2 is connected with the second window contact object of the blind actuator via an own group address.

No.	TA 2 S Object name	No.	JU 1 Object name	Comment
1	<i>Channel I1 – step / stop</i>	2	<i>Channel C1 – step / stop</i>	The step telegrams from both buttons of the button interface are sent to the same group address. .
11	<i>Channel I2 – step / stop</i>			
2	<i>Channel I1 – up</i>	1	<i>Up / down</i>	The up and down telegrams of the button interface are sent to the same group address. .
12	<i>Channel I2 – down</i>			

7.3.4 Important parameter settings

Standard or customer-defined parameter settings apply for unlisted parameters.

JU 1:

Parameter page	Parameter	Setting
General	<i>Usage</i>	<i>1-channel blind actuator</i>
	<i>Use binary inputs</i>	<i>Yes</i>
C1 configuration options	<i>Type of hanging</i>	<i>Blinds</i>
	<i>Activate ventilation function</i>	<i>Yes</i>
Ventilation⁷⁰	When the window is tilted	
	<i>Approach ventilation position</i>	<i>always</i>
	<i>Position</i>	<i>Preset 1</i>
	When the window is open	
	<i>Approach ventilation position</i>	<i>always</i>
	<i>Position</i>	<i>Preset 2</i>
	When the window is closed	
	<i>Position after end of ventilation</i>	<i>As before ventilation</i>
Presets⁷¹	Preset 1	
	<i>Height</i>	<i>0%</i>
	<i>Slat</i>	<i>0%</i>
	Preset 2	
	<i>Height</i>	<i>80%</i>
	<i>Slat</i>	<i>0%</i>
Window contacts	<i>Number of window contents for this window</i>	<i>2 contacts</i>
	When the window is tilted	
	<i>Status of object window contact 1</i>	<i>Off</i>
	<i>Status of object window contact 2</i>	<i>On</i>
	When the window is open	
	<i>Status of object window contact 1</i>	<i>On</i>
	<i>Status of object window contact 2</i>	<i>On</i>
External inputs		
Configuration options I1, I2	<i>Function</i>	<i>Window contact</i>
	<i>Control channel C1, C2 directly</i>	<i>no</i>
Window contact I1	<i>Telegram when contact closed</i>	<i>On</i>
	<i>Telegram when contact open</i>	<i>Off⁷²</i>
Window contact I2	<i>Telegram when contact closed</i>	<i>On</i>
	<i>Telegram when contact open</i>	<i>Off⁷³</i>

⁷⁰ These settings are user-specific. Here, values are only given as an example.

⁷¹ These settings are user-specific. Here, values are only given as an example.

⁷² Not adjustable, will be adjusted automatically.

⁷³ Not adjustable, will be adjusted automatically.

TA 2 S:

Parameter page	Parameter	Setting
<i>Channel 1 configuration options</i>	<i>Channel 1 function</i>	<i>Blinds</i>
<i>Blinds</i>	<i>Operation</i>	<i>Up</i>
<i>Channel 2 configuration options</i>	<i>Channel 2 function</i>	<i>Blinds</i>
<i>Blinds</i>	<i>Operation</i>	<i>Down</i>

8 Application examples - switch actuator

These application examples are designed to aid planning and are not to be considered an exhaustive list.
They can be extended and updated as required.

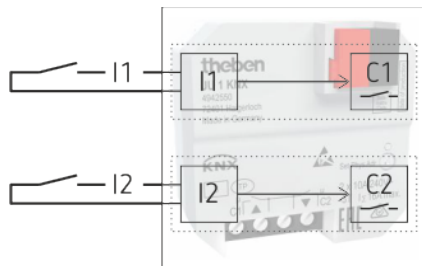
8.1 Direct control of switch actuator: Basic configuration

In this configuration, both switching channels are operated directly with buttons⁷⁴ connected to I1 and I2.
Each time the button is pressed, the corresponding channel-relay is switched.

8.1.1 Devices

- JU 1 (4942550)

8.1.2 Overview



8.1.3 Objects and links

The communication objects of C1 and C2 are all available for further functions.
A basic function (C1, C2 On/Off) is provided via actuation of inputs I1 and I2.

In this case, the external inputs I1 and I2 have no communication objects.

⁷⁴ Direct control is also possible with a switch, depending on the application.

8.1.4 Important parameter settings

Standard or customer-defined parameter settings apply for unlisted parameters.

JU 1:

Parameter page	Parameter	Setting
General	<i>Usage</i>	<i>2-channel switch actuator</i>
	<i>Use binary inputs</i>	Yes
Configuration options C1, C2⁷⁵	<i>Channel function</i>	<i>Switch on/off⁷⁶</i>
External inputs		
I1, I2 configuration options	<i>Function</i>	<i>Button⁷⁷</i>
	Control channel C1 directly	yes
Direct switching	<i>Response after short operation</i>	<i>Switching</i>
	<i>Switching status</i>	<i>Change over</i>

⁷⁵ The remaining parameters on the **Configuration options** page are only relevant in conjunction with communication objects and are not considered in any more detail here.

⁷⁶ Included here as an example. All other functions can also be used.

⁷⁷ Direct control is also possible with a switch, depending on the application.

8.2 Controlling switch actuator channels via the bus

In this example, the external inputs and the switch actuator channels are completely separate from each other and can only be used via the KNX bus.⁷⁸

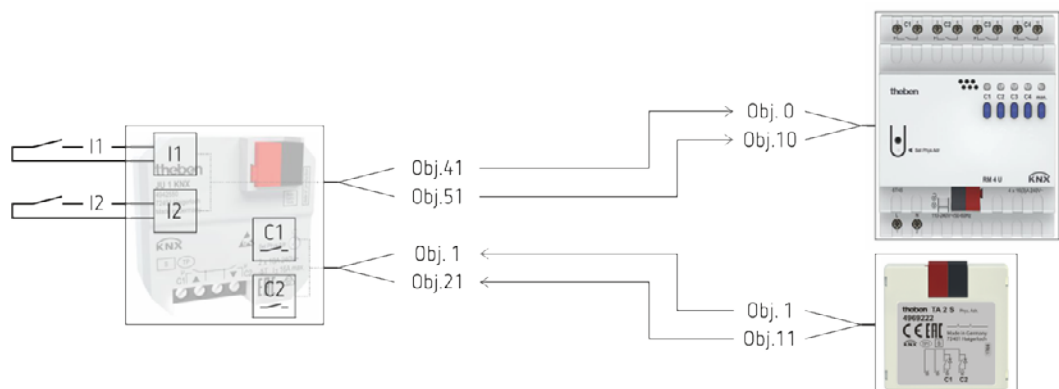
The switch actuator channels of the JU 1 are operated by means of a KNX button interface (TA 2 S).

The external inputs I1, I2 control a further KNX switch actuator (RM 4 U).

8.2.1 Devices

- JU 1 (4942550)
- TA 2 S (4969222)
- RM 4 U (4940223)

8.2.2 Overview



⁷⁸ Normal KNX operation, without direct control.

8.2.3 Objects and links

No.	JU 1	No.	RM 4 U	Comment
	Object name		Object name	
41	<i>Channel I1.1 – switching</i>	0	<i>Channel C1 – switch object</i>	The external inputs control switch actuator RM 4 U
51	<i>Channel I2.1 – switching</i>	10	<i>Channel C2 – switch object</i>	

No.	TA 2 S	No.	JU 1	Comment
	Object name		Object name	
1	<i>Channel I1.1 – switching</i>	1	<i>Channel C1 – switch object</i>	The button interface controls the switching channels C1 and C2.
11	<i>Channel I2.1 – switching</i>	21	<i>Channel C2 – switch object</i>	

8.2.4 Important parameter settings

Standard or customer-defined parameter settings apply for unlisted parameters.

JU 1:

Parameter page	Parameter	Setting
General	<i>Usage</i>	<i>2-channel switch actuator</i>
	<i>Use binary inputs</i>	<i>Yes</i>
Configuration options C1, C2	<i>Channel function</i>	<i>any</i>
External inputs		
I1, I2 configuration options	<i>Function</i>	<i>Button</i>
	Control channel C1, C2 directly	no
Button object 1	<i>Object type</i>	<i>Switching</i>
	<i>Telegram</i>	<i>Change over</i>
Button object 2	<i>Object type</i>	<i>Switching</i>
	<i>Telegram</i>	<i>Change over</i>

RM 4 U:

Parameter page	Parameter	Setting
Configuration options C1, C2	<i>Channel function</i>	<i>Switch on/off</i>
	<i>Activation of function via</i>	<i>Switch object</i>

TA 2 S:

Parameter page	Parameter	Setting
Channel 1 configuration options	<i>Channel 1 function</i>	<i>Button</i>
Button object 1	<i>Object type</i>	<i>Switching (1 bit)</i>
	<i>Send after short operation</i>	<i>Send telegram</i>
	<i>Value</i>	<i>Change over</i>
Channel 2 configuration options	<i>Channel 2 function</i>	<i>Button</i>
Button object 1	<i>Object type</i>	<i>Switching (1 bit)</i>
	<i>Send after short operation</i>	<i>Send telegram</i>
	<i>Value</i>	<i>Change over</i>

8.3 Switch actuator channels with and without direct control

In this example, bus and direct control are flexibly combined with each other:

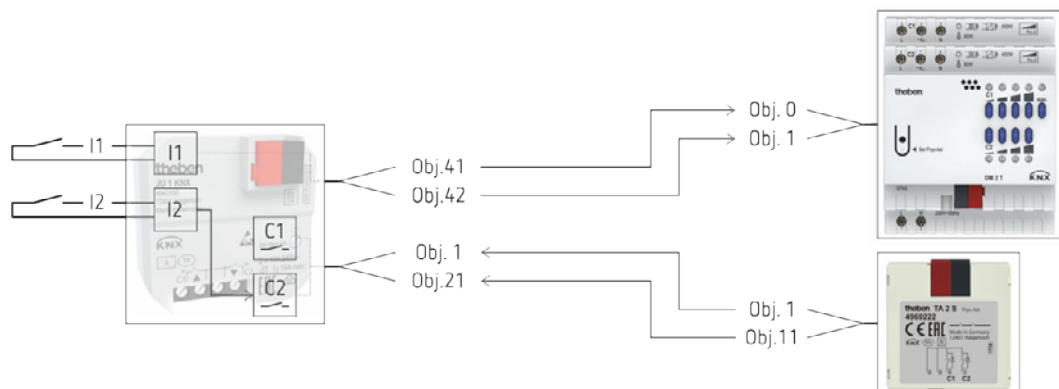
- I1 is configured as a pure KNX binary input, and it controls a dimming actuator.
- I2 is connected directly with C2 internally.
- C1 is exclusively controlled via the bus.
- C2 can be operated directly via a button at I2, as well as via bus telegrams, at the same time.

Both switch actuator channels of the JU 1 are operated by means of a KNX button interface (TA 2 S).

8.3.1 Devices

- JU 1 (4942550)
- TA 2 S (4969222)
- DM 2 T (4940270)

8.3.2 Overview



8.3.3 Objects and links

No.	JU 1 Object name	No.	DM 2 T Object name	Comment
41	<i>Channel I1 - switching</i>	0	<i>Channel C1 – switching On/Off</i>	The external input I1 controls the dimming actuator DM 2 T.
42	<i>Channel I1 – brighter / darker</i>	1	<i>Channel C1 – brighter/darker</i>	

No.	TA 2 S Object name	No.	JU 1 Object name	Comment
1	<i>Channel I1.1 – switching</i>	1	<i>Channel C1 – switch object</i>	The first channel of button interface TA 2 S is controlled by C1.
11	<i>Channel I2.1 - switching</i>	21	<i>Channel C2 – switch object</i>	The second channel of button interface TA 2 S is controlled by C2. Independently, C2 can also be operated with the button at the external input I2 of the JU 1.

8.3.4 Important parameter settings

Standard or customer-defined parameter settings apply for unlisted parameters.

JU 1:

Parameter page	Parameter	Setting
General	<i>Usage</i>	<i>2-channel switch actuator</i>
	<i>Use binary inputs</i>	<i>Yes</i>
Configuration options C1, C2	<i>Channel function</i>	<i>any</i>
External inputs		
I1 configuration options	<i>Function</i>	<i>Dimming</i>
	Control channel C1 directly	no
Dimming	<i>Response to long/short</i>	<i>One button operation</i>
I2 configuration options	<i>Function</i>	<i>Button</i>
	Control channel C2 directly	yes
Direct switching⁷⁹	<i>Response after short operation</i>	<i>Switching</i>
	<i>Switching status</i>	<i>Change over</i>

TA 2 S:

Parameter page	Parameter	Setting
Channel 1 configuration options	<i>Channel 1 function</i>	<i>Button</i>
Button object 1	<i>Object type</i>	<i>Switching (1 bit)</i>
	<i>Send after short operation</i>	<i>Send telegram</i>
	<i>Value</i>	<i>Change over</i>
Channel 2 configuration options	<i>Channel 2 function</i>	<i>Button</i>
Button object 1	<i>Object type</i>	<i>Switching (1 bit)</i>
	<i>Send after short operation</i>	<i>Send telegram</i>
	<i>Value</i>	<i>Change over</i>

DM 2 T:

No specific configuration required.

This device can be configured with the standard or customer-defined parameter settings.

⁷⁹ Input I2

9 Appendix

9.1 General information about KNX RF

As with KNX TP, KNX RF also distinguishes between Standard and Easy mode.

The standard mode is called "KNX RF1.R S mode". The carrier frequency is 868.3 MHz. This relatively low frequency offers excellent signal propagation compared to higher frequencies (Bluetooth: 2.4 GHz or WLAN: 2.4/5 GHz) and a good balance between power consumption and range. The range in the free field is up to 100 m. Inside buildings, the range depends on structural factors and conditions.

The structural conditions and distances between the radio products must already be taken into account when planning the electrical installation. The radio signals are mainly dampened by e.g. concrete components with steel reinforcement or metal components. The more dampening components between transmitter and receiver and the greater the distance, the more critical for the radio communication. For a system with TP and RF lines, the placement of the media coupler must be planned as much in the center as possible.

Furthermore, the frequency range used by KNX RF is not exclusively available to KNX. This means other radio systems might also be in a building and influence the KNX RF communication (e.g. garage door drives, alarm systems, weather stations, etc.).

Other devices, such as ballasts and lamps, can also be potential sources of interference for KNX RF systems due to the emission of electromagnetic waves.

The ETS app *KNX RF Field Strength Analyzer* from Tapko Technologies GmbH shows the receiving field strength of selected KNX RF products and can support start-up and troubleshooting.

In ETS 5, the "RF" transmission medium can be selected for a line. The KNX RF products are included in this line. For each line with "RF" medium, the ETS generates a unique domain address. The KNX RF products added in the RF line are assigned to this domain address. This ensures that pieces of information from neighbouring KNX RF lines will not influence each other. Only devices with the same domain address communicate with each other. The domain address is automatically transmitted by the ETS when programming the KNX RF products. An RF line can have a maximum of 256 devices (addresses 0...255). If the system consists of several RF lines or a combination of TP and RF media, the first device in the RF line is always a media coupler with the physical address x.x.0 (e.g. 1.2.0). The media coupler transmits the information across lines via the TP medium. KNX RF products are easy to recognise in the ETS product catalogue due to the specific radio symbol. 

9.2 The scenes

9.2.1 Principle

The current status of a channel, or of a complete device, can be stored and retrieved later at any time via the scene function.

Each channel can participate simultaneously in up to 8 scenes.
Scene numbers 1 to 64 are permitted.

Permission to participate in scenes must be granted for the relevant channel via parameter.
See Activate scenes parameter and **Scenes** parameter page.

The current status is allocated to the appropriate scene number when a scene is saved.
The previously saved status is restored when a scene number is called up.

This allows a device to be easily integrated into any chosen user scene.

The scenes are permanently stored and remain intact even after the application has been downloaded again.
See "All channel scene statuses" parameter on the **Scenes** parameter page.

9.2.2 Calling up or saving scenes:

To call up or save a scene, the relevant code is sent to the corresponding scene object.

Scenario	Call up		Save	
	Hex.	Dec.	Hex.	Dec.
1	\$00	0	\$80	128
2	\$01	1	\$81	129
3	\$02	2	\$82	130
4	\$03	3	\$83	131
5	\$04	4	\$84	132
6	\$05	5	\$85	133
7	\$06	6	\$86	134
8	\$07	7	\$87	135
9	\$08	8	\$88	136
10	\$09	9	\$89	137
11	\$0A	10	\$8A	138
12	\$0B	11	\$8B	139
13	\$0C	12	\$8C	140
14	\$0D	13	\$8D	141
15	\$0E	14	\$8E	142
16	\$0F	15	\$8F	143
17	\$10	16	\$90	144
18	\$11	17	\$91	145
19	\$12	18	\$92	146
20	\$13	19	\$93	147
21	\$14	20	\$94	148
22	\$15	21	\$95	149
23	\$16	22	\$96	150
24	\$17	23	\$97	151
25	\$18	24	\$98	152
26	\$19	25	\$99	153
27	\$1A	26	\$9A	154
28	\$1B	27	\$9B	155
29	\$1C	28	\$9C	156
30	\$1D	29	\$9D	157
31	\$1E	30	\$9E	158
32	\$1F	31	\$9F	159
33	\$20	32	\$A0	160
34	\$21	33	\$A1	161
35	\$22	34	\$A2	162
36	\$23	35	\$A3	163
37	\$24	36	\$A4	164
38	\$25	37	\$A5	165
39	\$26	38	\$A6	166
40	\$27	39	\$A7	167
41	\$28	40	\$A8	168
42	\$29	41	\$A9	169
43	\$2A	42	\$AA	170
44	\$2B	43	\$AB	171
45	\$2C	44	\$AC	172
46	\$2D	45	\$AD	173
47	\$2E	46	\$AE	174

Scenario	Call up		Save	
	Hex.	Dec.	Hex.	Dec.
48	\$2F	47	\$AF	175
49	\$30	48	\$B0	176
50	\$31	49	\$B1	177
51	\$32	50	\$B2	178
52	\$33	51	\$B3	179
53	\$34	52	\$B4	180
54	\$35	53	\$B5	181
55	\$36	54	\$B6	182
56	\$37	55	\$B7	183
57	\$38	56	\$B8	184
58	\$39	57	\$B9	185
59	\$3A	58	\$BA	186
60	\$3B	59	\$BB	187
61	\$3C	60	\$BC	188
62	\$3D	61	\$BD	189
63	\$3E	62	\$BE	190
64	\$3F	63	\$BF	191

Examples (central or channel-related):

Call up status of scene 5:

→ Send \$04 to the relevant scene object.

Save current status with scene 5:

→ Send \$84 to the relevant scene object.

9.2.3 Teaching in scenes without telegrams

Instead of defining scenes individually by telegram, this can be done in advance in the ETS. This merely requires the *All channel scene statuses* parameter (**Scenes** parameter page) to be set to *Overwrite on download*.

The required status can then be selected for each of the 8 possible scene numbers in a channel (= *Status after download* parameter).

After the download, the scenes are already programmed into the device.

Later changes via teach-in telegrams are possible if required and can be permitted or blocked via a parameter.

9.3 Conversion of percentages to hexadecimal and decimal values

Percentage value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Hexadecimal	00	1 A	33	4D	66	80	99	B3	CC	E6	FF
Decimal	00	26	51	77	102	128	153	179	204	230	255

All values from 00 to FF hex. (0 to 255 dec.) are valid.