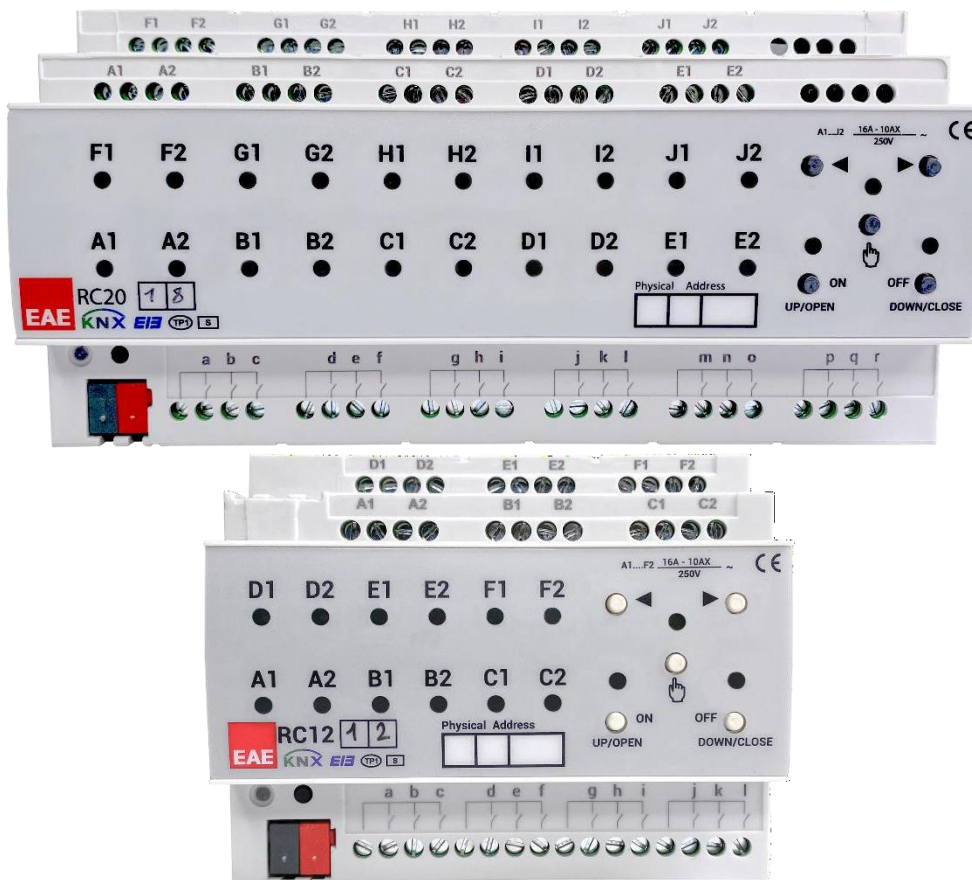


EAE KNX Room Control Unit

Product Manual RCXXYY



RC2018	20 Output, 18 Input
RC2000	20 Output, No Input
RC1616	16 Output, 16 Input
RC1600	16 Output, No Input
RC1212	12 Output, 12 Input
RC1200	12 Output, No Input
RC0808	8 Output, 8 Input
RC0800	8 Output, No Input

Note: RCXXYY where XX denotes the number of outputs and YY number of inputs. Input and Output numbers are as in the table.

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1 General

1.1 Device Description

- Room Control Unit RC Series are designed as an all in one product for different room layouts such as apartments, hotel rooms, hospitals and residences.
- Room Control Unit covers all requirements of the electrical installation of room applications and offers following functions in one product.
 - ✓ Switching lighting
 - ✓ Switching loads
 - ✓ Controlling AC/DC blinds
 - ✓ Controlling fan coils (2 & 3-point valve)
 - ✓ Dry contact inputs
- RCXXYY has XXx16A relay outputs. These outputs are grouped as 5/4/3/2 independent output channels for XX = 20/16/12/8 respectively. Each channel can be configured to have different modes of operation as follows,
 - Switching output x4
 - AC Blind x2
 - DC Blind x1
 - 2 Point valve x2
 - 3 point valve x2
- Suitable for switching resistive, capacitive and inductive loads as well as fluorescent lamp loads according to EN 60 669. A single switch output provides following functions,
 - Staircase
 - External logic
 - Internal logic
 - Priority
 - Threshold
 - Operating hour
 - Sweep
- RCXXYY has YY independent input channels. A single input channel provides following functions,
 - Switch / push button input
 - Dimmer control
 - Control of shutter/blinds
 - Value sending
 - Scene control
 - Counter for count pulse
- Manual control is possible for each channel through the built-in button panel.
- 220V auxiliary power is NOT required.

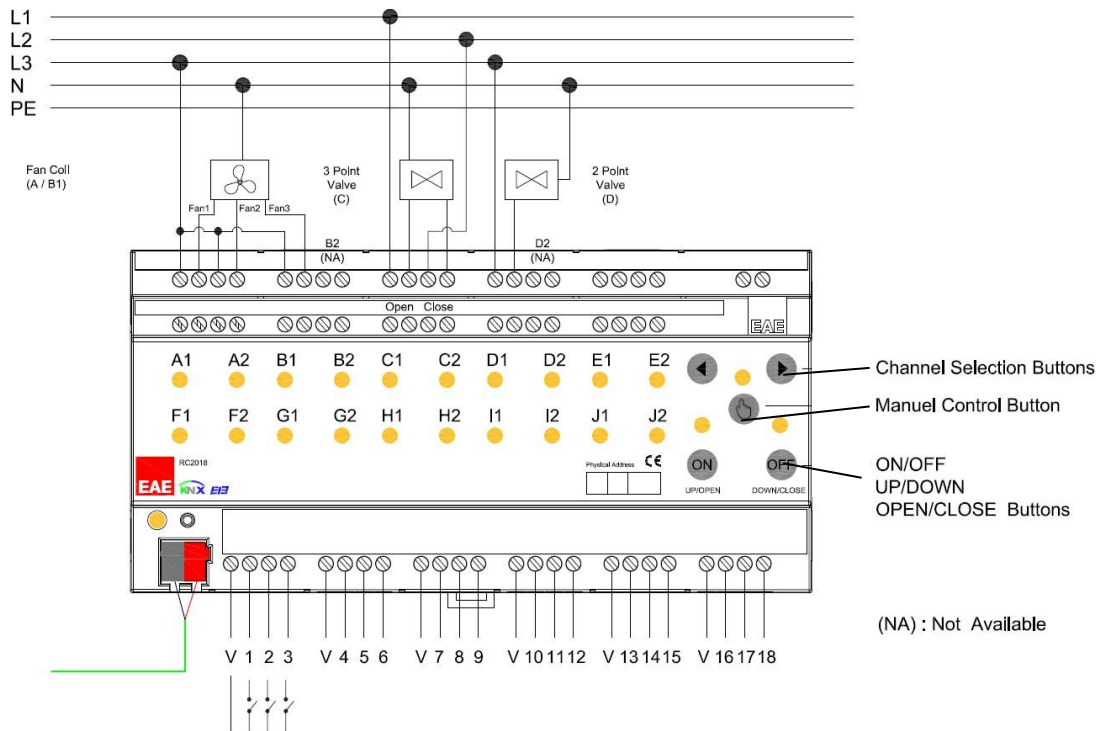
1.2 Technical Data RCXXYY Series

Type of protection	IP 20	EN 60 529
Safety class	II	EN 61 140
Power supply :	- Voltage	21V... 30V DC, SELV
	- Current consumption	<15 mA
External supply	-	-
Connections	- Screw terminals	0,05...4 mm solid and stranded wire 0,05...2,25 mm stranded wire with ferrule
	-Max tightening torque	0.8 Nm
	- KNX	Bus connect terminal
Output	- Number	XX output
	- Switching ratings	16A 250 VAC/6x 10 ³ OPS _(Resistive) 3500W 277VAC/1.2x10 ⁴ OPS _(Incandescent lamp)
	- Max. Inrush current	492A/1.5ms-165A/20ms
	- Max. switching power	4000VA
	- Mechanical life	2 x 10 ⁶
Type of contact	- Potential-free, bistable	
Input	- Number	YY binary inputs
	- Scanning voltage	32 V pulsed
	- Current	0.1 mA
	- Cable length	< 300 m
Installation	- 35mm mounting rail	EN 60 715
Operating elements	- LED (red) and button	For physical address
Temperature range	- Operation	-5° C + 45° C
	- Storage	-25° C + 55° C
Dimensions		66 x W x 90mm
	Width W in mm	180 mm
	Width W in units (18 mm modules)	10x18 modules
Weight		0.65 kg
Box		Plastic, polycarbonate, colour grey
CE		In accordance with the EMC guideline and low voltage

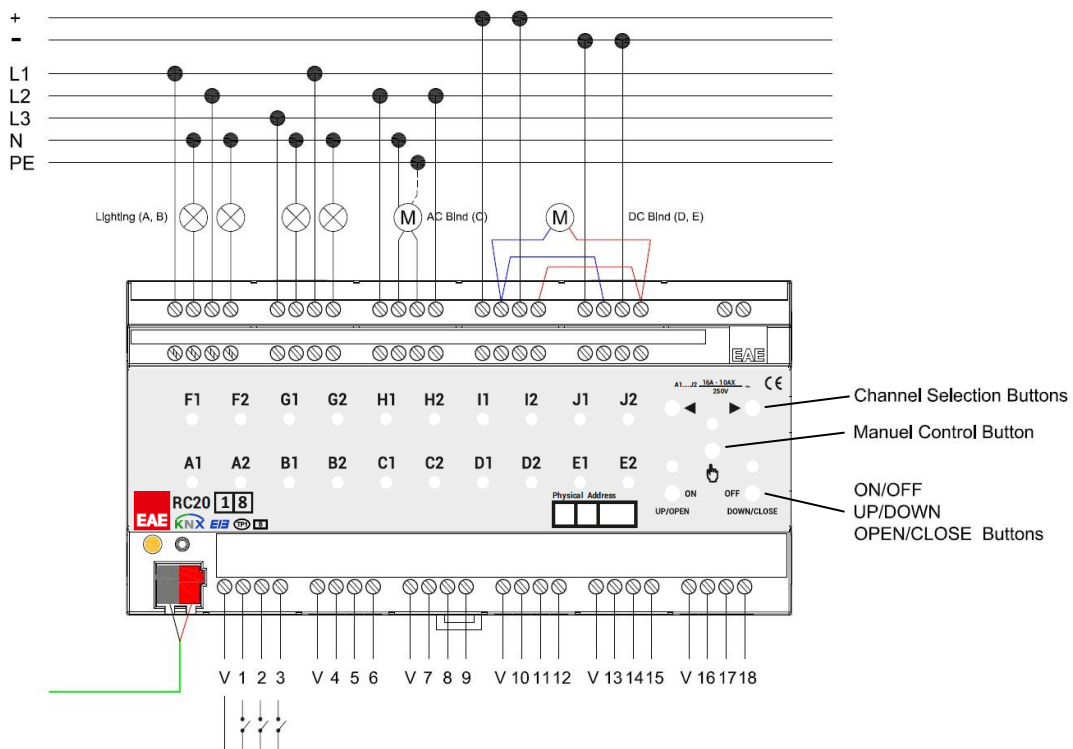
NOTE: Device factory default physical address is "15.15.255".

1.3 Connection Example

RC2018

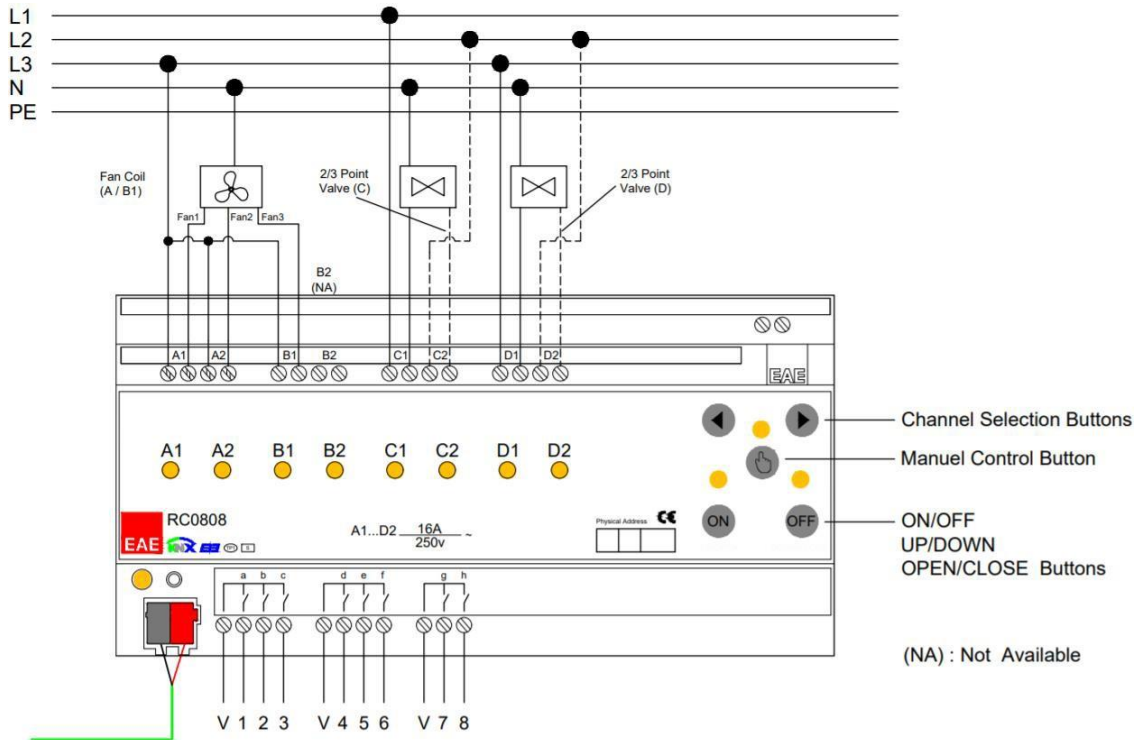


Connection Example 1

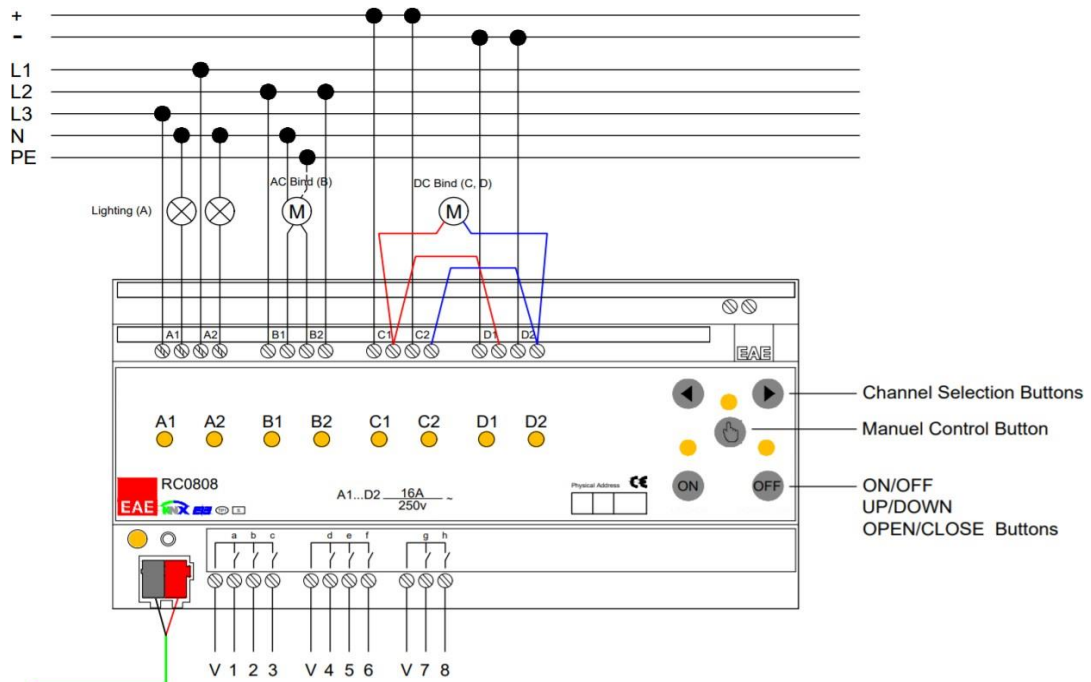


Connection Example 2

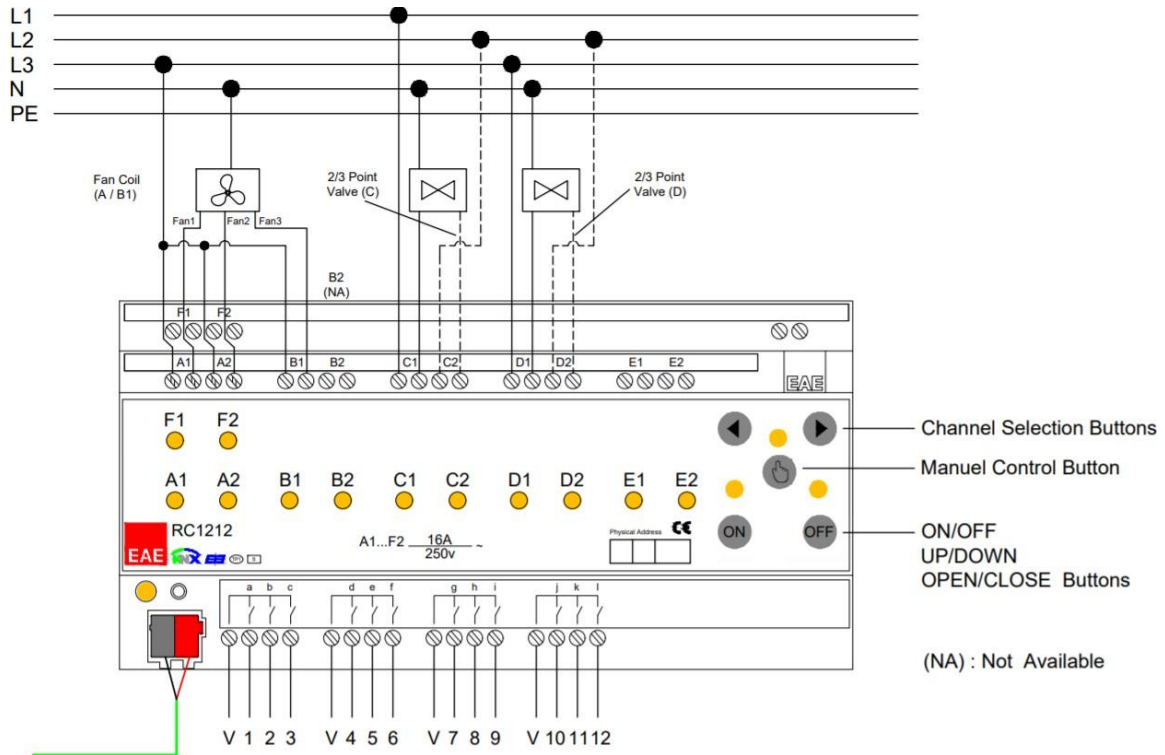
RC0808



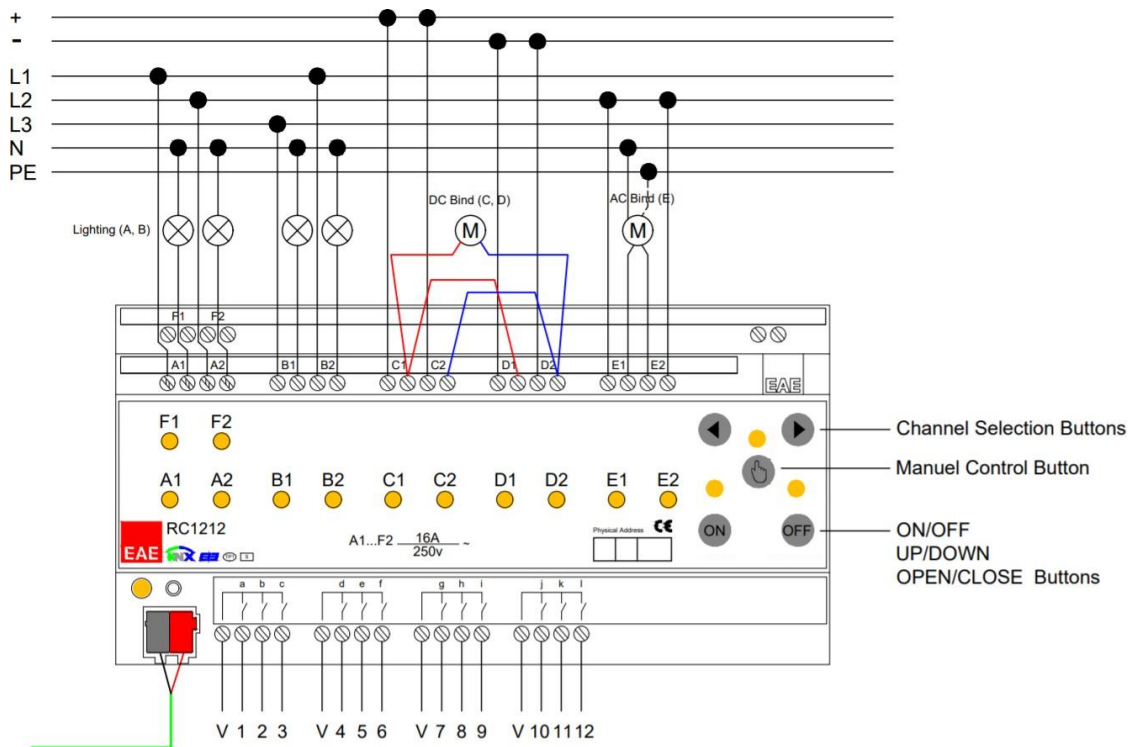
Connection Example 3



Connection Example 4

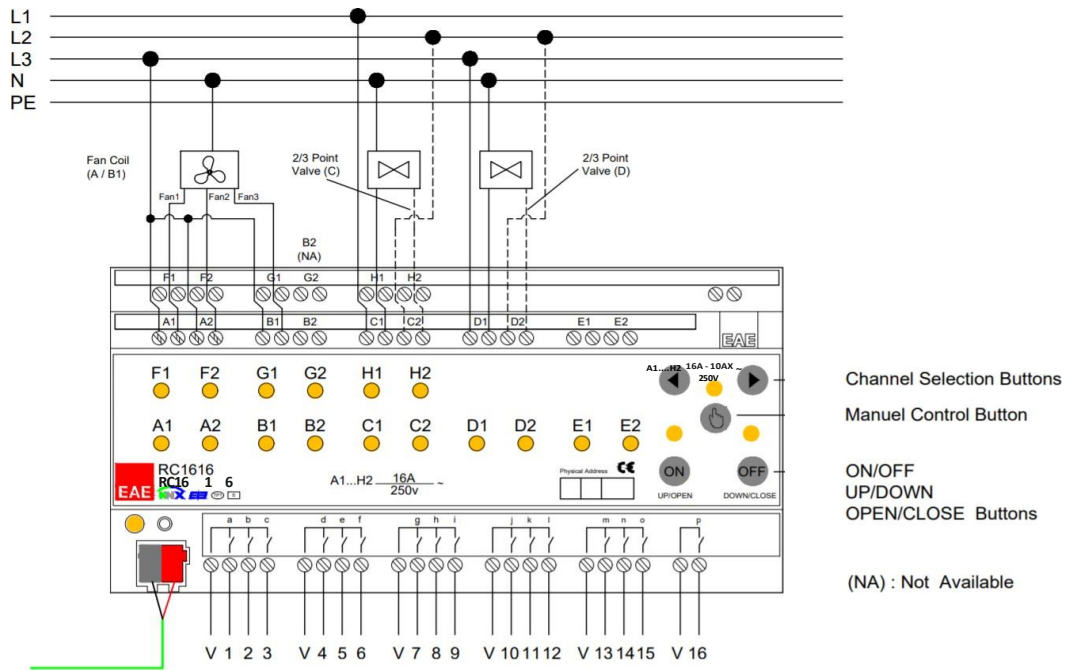


Connection Diagram 5

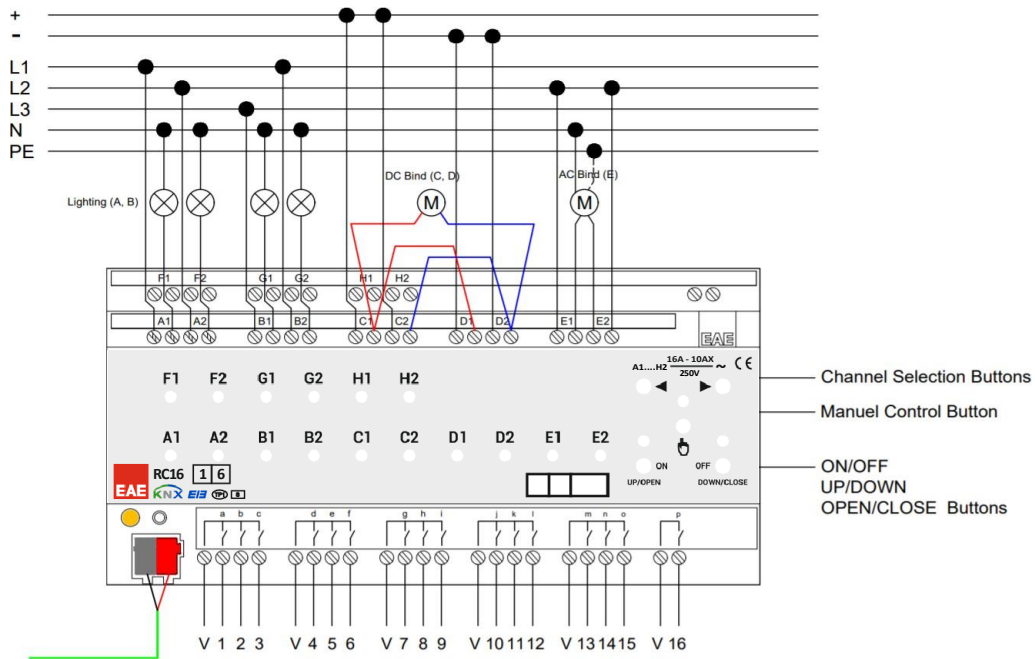


Connection Diagram 6

RC1616



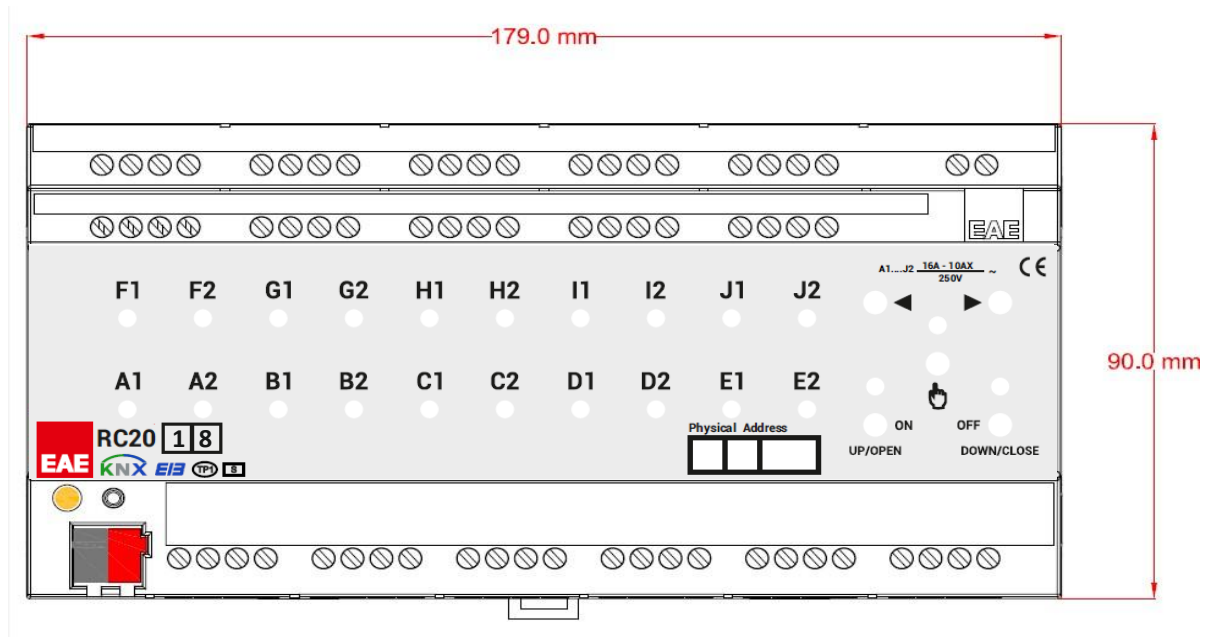
Connection Diagram 7



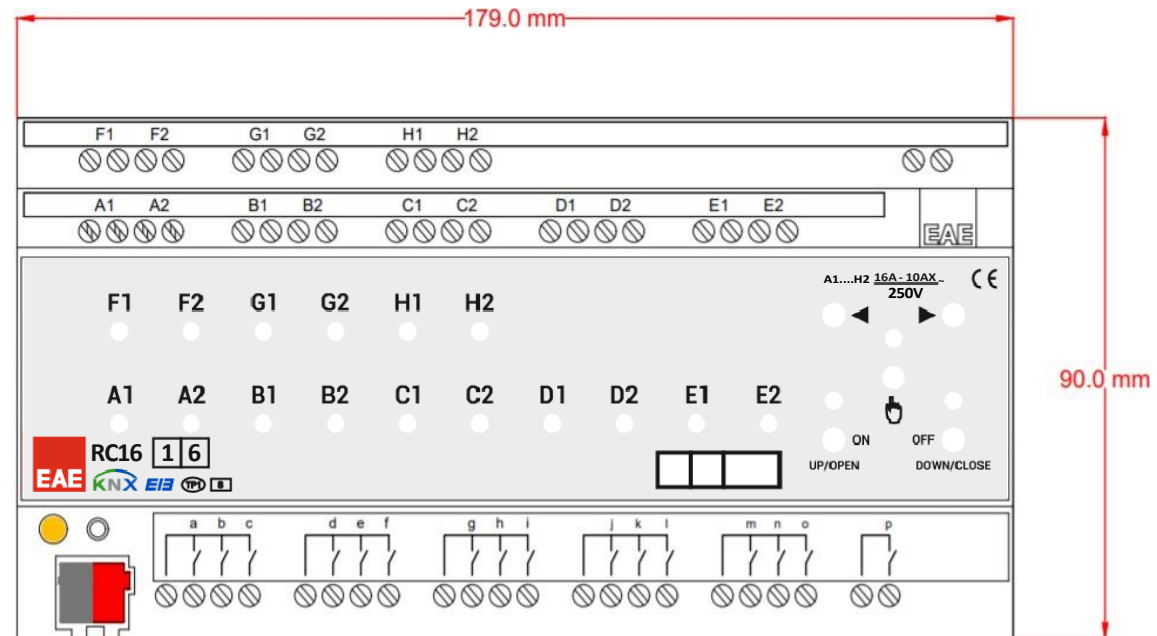
Connection Diagram 8

1.3 Scale Drawings RCXXYY

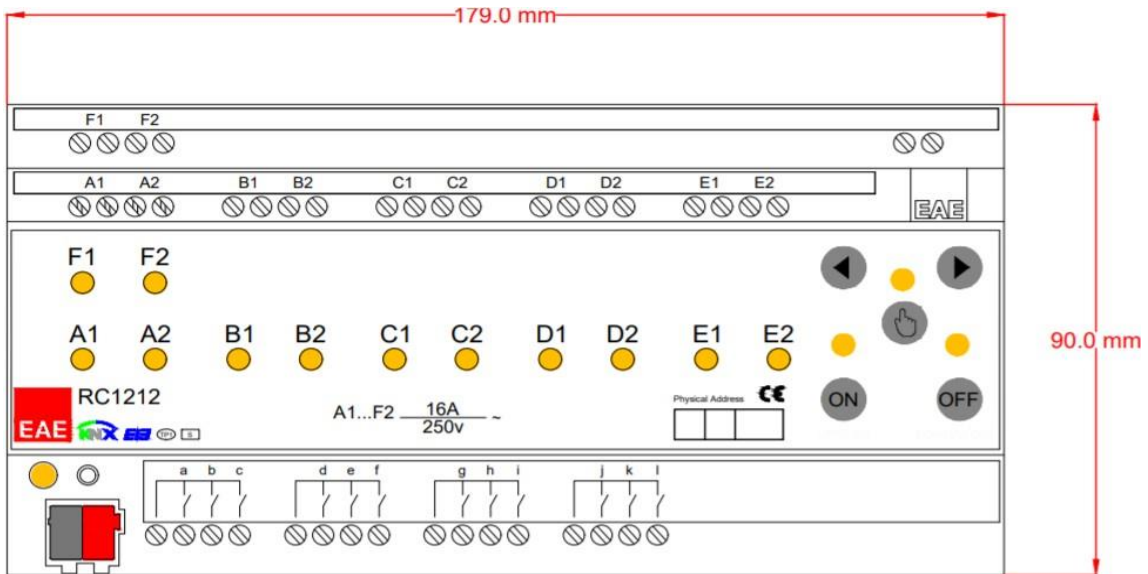
RC2018



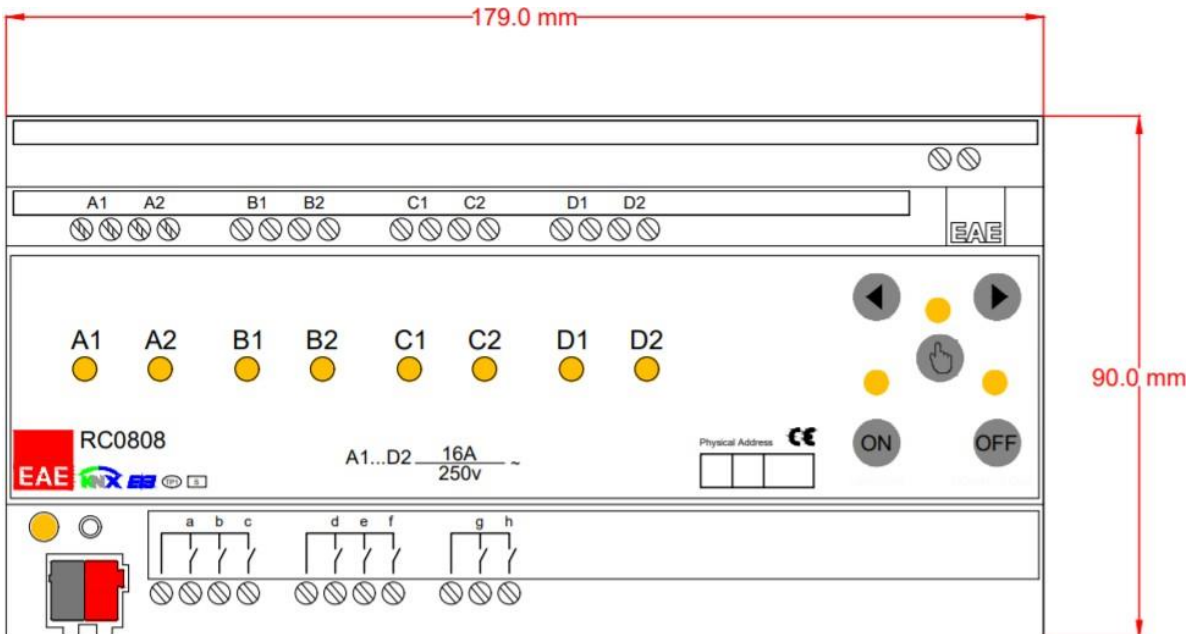
RC1616



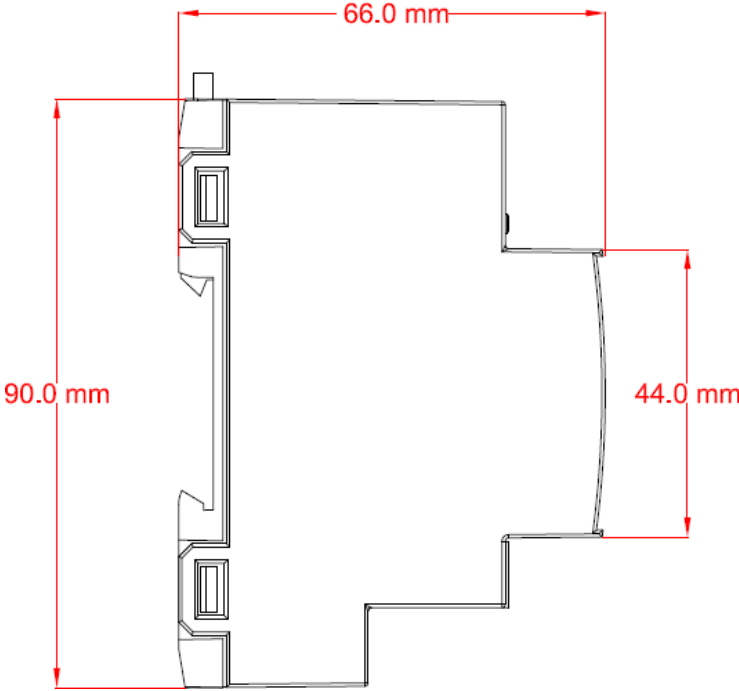
RC1212



RC0808



Scale Dimensions RCXXYY



2 Communication Object Table

The device has 254 communication objects. Overview of all communication objects of the device can be seen on the following table. Object names will be changed according to channel function as follows.

Fan coil: Fan A/B1, Fan C/D1, Fan E/F1, Fan G/H1, Fan I/J1 etc.

Valve control: Valve A/B, Valve C/D, Valve E/F, Valve G/H, Valve I/J.

Shutter/Blind DC: Output A/B, Output C/D, Output E/F, Output G/H, Output I/J.

Shutter/Blind AC: Output A, Output B, Output C, Output D, Output E.

Switch: Output A1, Output A2, Output B1, Output B2, Output C1, Output C2 etc.

No	Name	Function	DTP Type	Length	Flags
0	General	In operation	1.002	1 bit	CWT
1	General	Scene 8-bit	18.001	1 byte	CW
2	Blind	Wind alarm	1.005	1 bit	CWTU
3	Blind	Rain alarm	1.005	1 bit	CWTU
4	Blind	Frost alarm	1.005	1 bit	CWTU
5	Input a	Disable	1.003	1 bit	CW
6	Input a	Switch	1.001	1 bit	CWT
		Switch – short	1.001	1 bit	CWT
		Shutter Up/Down	1.008	1 bit	CT
		Value (0,1)	1.001	1 bit	CWT
		Value (forced)	2.001	2 bit	CWT
		Value [0...255]	5.001	8 bit	CWT
		Value [0...65535]	8.001	16 bit	CWT
		Value [-32768...32767]	7.001	16 bit	CWT
7	Input a	Value [0...4294967295]	12.001	32 bit	CWT
		Switch – long	1.001	1 bit	CWT
		Dimming brighter / darker	3.007	4 bit	CT
		Shutter stop / lamella	1.007	1 bit	CT
		Value (0,1) - long	1.001	1 bit	CT
		Value (forced) - long	2.001	1 bit	CT
		Value [0...255] - long	5.001	8 bit	CT
		Value [0...65535] - long	8.001	16 bit	CT
8	Input a	Value [-32768...32767]	7.001	16 bit	CT
		Value [0...4294967295]	12.001	32 bit	CT
9	Input a	Shutter upper limit position	1.002	1 bit	CW
		Value (temperature)	14.068	32 bit	CT
9	Input a	Shutter lower limit position	1.002	1 bit	CW
		Value (temperature) - long	14.068	32 bit	CT
10...94	Input b ... s	Same as "Input a"			
95	Output A1	Switch	1.001	1 bit	CW
	Output A Output A/B	Move blind/shutters up-down	1.008	1 bit	CW
	Fan A/B1	Fan speed switch	5.010	1 byte	CW
	Control input	Control value HEATING	5.001	1 byte	CW

96	Output A1	Status Switch	1.001	1 bit	CW
	Output A Output A/B	Slat adjustment/stop up-down	1.007	1 bit	CW
	Fan A/B1	Switch speed 1	1.001	1 bit	CW
	Control input	Control value COOLING	5.001	1 byte	CW
97	Output A1	Enable staircase function	1.003	1 bit	CRW
	Output A Output A/B	Blind/shutters up-down limited	1.008	1 bit	CW
		Enable limitation	1.003	1 bit	CW
	Fan A/B1	Switch speed 2	1.001	1 bit	CW
	Control input	Toggle Heating/Cooling	1.100	1 bit	CW
98	Output A1	Staircase lighting duration	7.007	2 byte	CRW
	Output A Output A/B	Move to position height 0...255	5.001	1 byte	CW
	Fan A/B1	Switch speed 3	1.001	1 bit	CW
	Control input	Fault control value	1.005	1 bit	CRT
99	Output A1	Permanent ON	1.001	1 bit	CW
	Output A/B	Move slats 0...255	5.001	1 byte	CW
	Fan A/B1	Fan speed UP/DOWN	1.007	1 bit	CW
	Valve HEATING	Block	1.003	1 bit	CW
100	Output A1	External logic input	1.001	1 bit	CW
	Output A Output A/B	Move to position 1, 2	1.022	1 bit	CW
	Fan A/B1	Status fan ON/OFF	1.001	1 bit	CT
	Valve HEATING	Forced operation	1.003	1 bit	CW
101	Output A1	Forced positioning	2.001	2 bit	CW
	Output A Output A/B	Move to position 3, 4	1.022	1 bit	CW
	Fan A/B1	Status fan speed	5.010	1 byte	CRT
	Valve HEATING	Trigger valve purge	1.017	1 bit	CW
102	Output A1	Sweep	1.017	1 bit	CW
	Output A Output A/B	Set position 1, 2	1.022	1 bit	CW
	Fan A/B1	Status fan speed 1	1.001	1 bit	CRT
	Valve HEATING	Status valve purge	1.003	1 bit	CRT
103	Output A2	Switch	1.001	1 bit	CW
	Output A Output A/B	Set position 3, 4	1.022	1 bit	CW
	Fan A/B1	Status fan speed 2	1.001	1 bit	CRT
	Valve HEATING	Status valve position	1.001	1 bit	CRT
		Status valve position	5.001	1 byte	CRT
104	Output A2	Status Switch	1.001	1 bit	CW
	Output A Output A/B	Trigger reference movement	1.008	1 bit	CW
	Fan A/B1	Status fan speed 3	1.001	1 bit	CRT
	Valve COOLING	Block	1.003	1 bit	CW
105	Output A2	Enable staircase function	1.003	1 bit	CRW
	Output A Output A/B	Block	1.003	1 bit	CWTU
	Fan A/B1	Forced operation	1.003	1 bit	CW
	Valve COOLING	Forced operation	1.003	1 bit	CW
106	Output A2	Staircase lighting duration	7.007	2 byte	CRW
	Output A	Forced operation 1 bit	1.003	1 bit	CWTU

	Output A/B	Forced operation 2 bit	2.002	2 bit	CW
	Fan A/B1	Automatic ON/OFF	1.003	1 bit	CW
	Valve COOLING	Trigger valve purge	1.017	1 bit	CW
107	Output A2	Permanent ON	1.001	1 bit	CW
	Output A	Status height 0...255	5.001	1 byte	CRT
	Output A/B				
	Fan A/B1	Status automatic	1.003	1 bit	CW
108	Valve COOLING	Status valve purge	1.003	1 bit	CRT
	Output A2	External logic input	1.001	1 bit	CW
	Output A	Status slat 0...255	5.001	1 byte	CRT
	Output A/B				
109	Valve COOLING	Status valve position	1.001	1 bit	CRT
		Status valve position	5.001	1 byte	CRT
	Output A2	Forced positioning	2.001	2 bit	CW
110	Output A	Status upper end position	1.011	1 bit	CRT
	Output A/B				
111...254	Output A2	Sweep	1.017	1 bit	CW
	Output A	Status lower end position	1.011	1 bit	CRT
	Output A/B				
	Output B1...U2	Same as "Output A1" for switch			
	Output C/D...	Same as "Output A/B" for blind			
	Output T/U				

3 Parameters

3.1 General

General	Enable manual operation	enable
Enable Input a...s	Reset manual operation to KNX operation	<input checked="" type="radio"/> via push button <input type="radio"/> automatically and via push button
Enable Output A...J	Device alive operation active	<input checked="" type="radio"/> yes <input type="radio"/> no
	In operation value	<input type="radio"/> send value '0' <input checked="" type="radio"/> send value '1'
	Operation send interval [min]	0
	First telegram send time in s[2...255]	2
	Telegram limit active	<input type="radio"/> yes <input checked="" type="radio"/> no
	Activate scene	<input checked="" type="radio"/> yes <input type="radio"/> no
	Weather alarm function	<input type="radio"/> yes <input checked="" type="radio"/> no

Group Objects | Parameter

Enable manual operation

disable
***enable**

This parameter can be used to enable/disable manual control. If manual operation is enabled, connected load can be controlled via the corresponding channel button on the device.

- Set the parameter to “enable”
 This selection is used to enable manual operation.
- Set the parameter to “disable”
 This selection is used to disable manual operation.

Reset manual operation to KNX operation	*via push button automatically and via push button
--	--

This parameter determines how long manual operation remains activated.

Time for automatic reset in s[10...6000]	10...*300...6000
--	------------------

Manual operation remains activated until the adjusted time is up or deactivated by button manually.

Device alive operation active	*no yes
--------------------------------------	-------------------

This object is used to report that device is still alive and connected to KNX line. (Heartbeat) If alive telegram is not received, device may be defective or KNX cable can be disconnected. If parameter is selected "yes", following parameters come up.

In operation bit	0 *1
-------------------------	---------

Telegram value can be selected as “1” or “0”.

In operation send interval	1...*300...65535
-----------------------------------	------------------

Telegram value is sent cyclically according to time interval.

Transmission delay [2...255s] after bus voltage return	*2...255
---	----------

The parameter defines the behaviour of the actuator at a bus power return. The transmission delay time determines the period between bus voltage recovery and the point after which telegrams can be sent.

Telegram limit active	*no yes
------------------------------	-------------------

Telegrams which are sent by the gateway can be limited with this parameter. If “yes” is selected, following parameters come up.

Telegram limit period	50ms...*10s...1dk
------------------------------	-------------------

The limit period can be selected via telegram limit period parameter.

Max. number of transmitted telegram	1...*20...255
--	---------------

Maximum number of telegrams can be sent freely within a period.

NOTE: If the value of the object cannot be sent in the time of a period. The object is buffered for the next period time. The buffered object will be updated if the object value is updated.

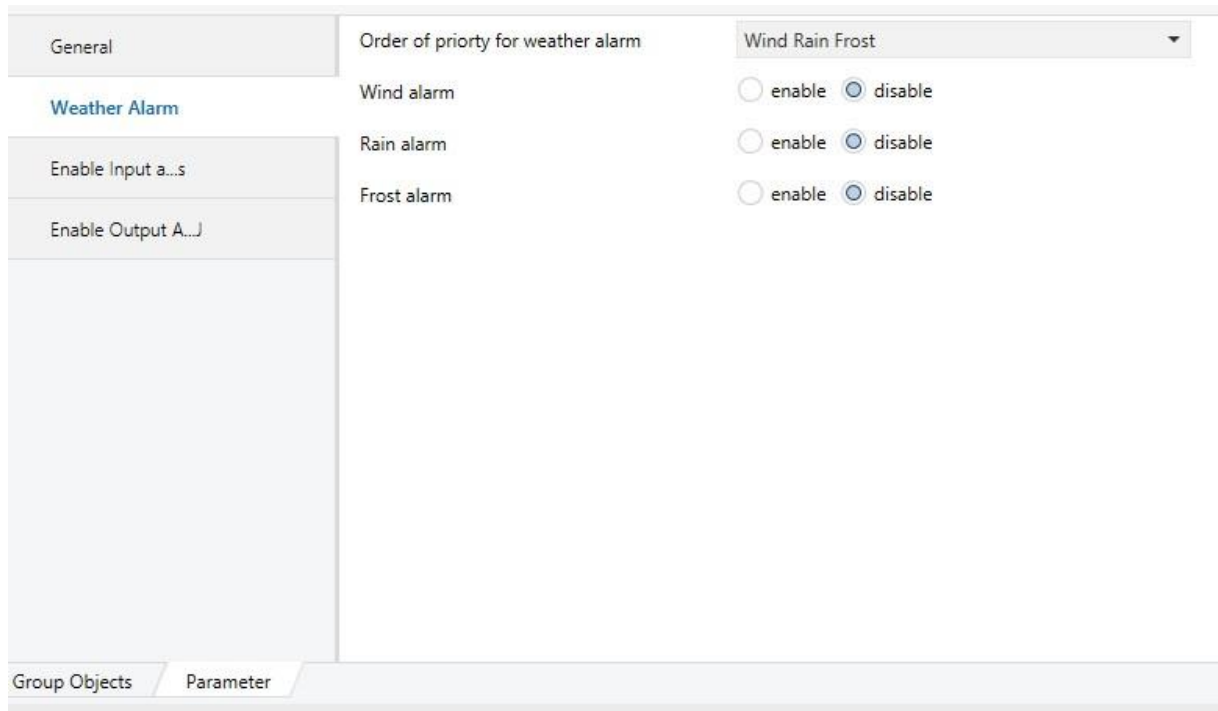
Activate scene	*no yes
-----------------------	-------------------

If parameter is selected “yes”, “Scenes” section will be visible in parameter titles.

Weather alarm function	enable *disable
-------------------------------	---------------------------

If the parameter is selected “yes”, “Weather Alarm” section will be visible in parameter titles. You can find weather alarm information under the “Weather Alarm” section.

3.2 Weather alarms



Order of priority for weather alarms	*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 an alarm is triggered, the drives move into a safe position and stay in safe position until the event is over. You can select the priority of the weather alarm. This parameter is applied for all blind/shutter channels which are enabled for weather protection function. If more than one weather alarms occur simultaneously, then only the alarm with highest priority will be activated. The other lower priority alarms are carried out after highest priority alarm is completed.

Wind alarm	*disable enable
-------------------	---------------------------

This parameter activates the wind alarm. If the parameter selected “enable”, “Monitoring period for wind alarm in s [0...1000]” parameter will be visible.

Monitoring period for wind alarm in s [0...1000]	*0...1000
---	------------------

The telegram of the active weather station is monitored cyclically. The actuator waits for a telegram from the weather station within the cycle time. If the telegram is not received within this monitoring period time, actuator assumes that the weather station is broken or bus line is damaged and the blind moves into the parameterized position.

- **0:** If “0” is selected cyclically monitoring is deactivated. If the alarm telegram value is “1”, weather alarm is activated.

Rain alarm	*disable enable
-------------------	---------------------------

This parameter activates the rain alarm. If the parameter selected “enable”, “Monitoring period for rain alarm in s [0...1000]” parameter is visible.

Monitoring period for rain alarm in s [0...1000]	*0...1000
---	------------------

The telegram of the active weather station is monitored cyclically. The actuator waits for a telegram from the weather station within the cycle time. If the telegram is not received within this monitoring period time, actuator assumes that the weather station is broken or bus line is damaged and the blind moves into the parameterized position.

- **0:** If “0” is selected cyclically monitoring is deactivated. If the alarm telegram value is “1”, weather alarm is activated.

Frost alarm	*disable enable
--------------------	---------------------------

This parameter activates the frost alarm. If the parameter selected “enable”, “Monitoring period for frost alarm in s [0...1000]” parameter is visible.

Monitoring period for frost alarm in s [0...1000]	*0...1000
--	------------------

The telegram of the active weather station is monitored cyclically. The actuator waits for a telegram from the weather station within the cycle time. If the telegram is not received within this monitoring period time, actuator assumes that the weather station is broken or bus line is damaged and the blind moves into the parameterized position.

- 4 **0:** If “0” is selected cyclically monitoring is deactivated. If the alarm telegram value is “1”, weather alarm is activated.

4.1 Scene

The scene function of the switch actuator has an 8 bit scene object. You can define for each 64 scene with parameter window. 8 independent values can be stored for each relay or each blind. The scene can be specified that the relay OFF (open contact), or ON (close contact) its state for switch function. If you use the blind, you can configure the blind height and slat position. You can save height position for blind also slat-opening angle as scene values.

Distinction between short/long operation and cyclical sending.

- This parameter is selected “switch dim sensor”

Start-stop dimming and stepwise dimming are possible.

- This parameter is selected “shutter sensor”

For movement/louvre adjustment of a blind or a shutter.

- This parameter is selected “value operation”

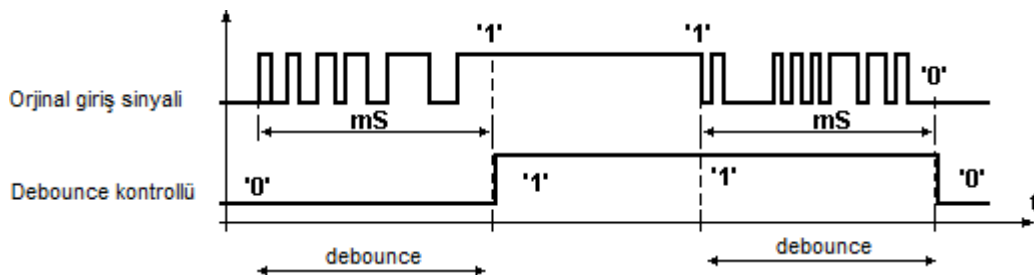
It is possible to send different values or data point types.

4.2.1 a - Switch Sensor

General	Distinction between long and short operation	<input type="radio"/> yes <input checked="" type="radio"/> no
Enable Input a...s	Connected contact type	<input type="radio"/> normally closed <input checked="" type="radio"/> normally open
a - Switch Sensor	Cyclic transmission of object	no
Enable Output A...J	Reaction on closing the contact (rising edge)	ON
	Reaction on opening the contact (falling edge)	OFF
	Transmit object value after bus voltage recovery	<input type="radio"/> yes <input checked="" type="radio"/> no
	Debounce Time	50ms debounce time

Group Objects Parameter

This function is used, for binary inputs to which a switch or a push button is attached, to send a switching telegram (ON, OFF or TOGGLE) as a reaction to a rising and / or falling signal edge at this input. It has only 1 bit communication objects.



Debounce: Bouncing is the tendency of any two metal contacts in an electronic device to generate multiple signals as the contacts close or open; debouncing is any kind of hardware device or software that ensures that only a single signal will be acted upon for a single opening or closing of a contact.

A similar effect takes place when a switch made using a metal contact is opened. The usual solution is a debouncing device or software that ensures that only one digital signal can be registered within the space of a given time (usually milliseconds).

Telegram is repeated every(transmission cycle time): base 100ms
*1s
10s
1min
10min

This parameter determines the desired cycle time.

Period time: Base x Factor

Factor 2... *30...255
Select time factor, between [2...255]

Reaction on short operation *ON
OFF
TOGGLE
no reaction

This parameter is visible if there is distinction between short and long operation. This parameter determines the switching value to be sent when the contact is short press.

Reaction on long operation ON
*OFF
TOGGLE
no reaction

This parameter is visible if there is distinction between short and long operation. This parameter determines the switching value to be sent when the contact is long press.

Number of object for short/long operation *1 object
2 object

This parameter is visible if there is distinction between short and long operation. Further communication object can be released by the option 2 communication objects.

Debounce time *10ms...50ms...150ms

Debounce uses the input, which means checking twice in a short period of time to make sure it's definitely pressed.

Dim BRIGHTER/DARKER

With the long push button action, the light becomes brighter or darker depending on the object value and the last controlled dimming direction.

A long operation changes the value of the object "Dimming".

Long operation after ***0,3s...10s**

This parameter is visible if the parameter value is set "Dimming and switching". Long press period is select here.

Dimming mode ***start-Stop dim** dimming steps

- "Start- Stop dim": It starts the dimming process with a telegram BRIGHTER or DARKER. In addition, button releases than STOP-dimming telegram sends. Cyclic sending telegram is not necessary in this case.
- "Dimming steps": The dimming telegram is sent cyclically during a long operation. STOP telegram sends at the end of operation.

Brightness change on every sent telegram **%100...*%6,25...%1,56**

This parameter is only visible with the "Dimming steps" options. This parameter is cyclically sent with every dim telegram.

Transmission cycle time: **0,3s...*0,5s...10s** **Telegram is repeated every**

This parameter is only visible with the "Dimming steps" options. The cycle time for sending corresponds with the time interval between two telegrams during cyclical sending.

Debounce time **10ms...*50ms...150ms**

Debounce uses the input, which means checking twice in a short period to make sure it is definitely pressed.

4.2.3 a - Blind Sensor

General	Operating functionality of blind	1-push-button, short = stepping, long = moving ▾
Enable Input a...	Connected contact type	<input type="radio"/> normally closed <input checked="" type="radio"/> normally open
a - Blind Sensor	Long operation after	0.4s ▾
Enable Output A...	Debounce time	30ms debounce time ▾

Group Objects
Parameter

The dual surface shutter function triggers shutter actuators, which can adjustment shutter and blind. You can rise the shutter/adjust the lamella using a single key and lower the shutter/adjust the lamella using a second key surface blind operation. Every shutter actuator controls with a 0-signal the up movement and a 1-signal down movement.

Operating functionality of the blind

***1 push-button, short=stepping, long=moving**

- 1 push-button, short=moving, long=stepping*
- 1 push-button-operation, moving*
- 1 switch-operation, moving*
- 2 push-button, standard*
- 2 switch-operation, moving*
- 2 push-button, moving*
- 2 push-button, stepping*

Description is below the table.

▪ **1 button, short=stepping, long=moving**

- | | |
|-----------------|---|
| Short operation | Stop / lamella adjustment
The stop/lamella adjustment object is for the adjustment opposite direction to the last movement of the lamella. In additional it stops a running movement of the shutter. |
| Long operation | Shutter up / Shutter down
Long press is opposite direction to the last movement for moving the shutter up or down. |

▪ **1 button, short= moving, long= stepping**

- | | |
|-----------------|--|
| Short operation | Shutter up / Shutter down
Long press is for moving the shutter up or down. |
| Long operation | Stop / lamella adjustment
The stop/lamella adjustment object is for the adjustment opposite direction to the last movement of the lamella. In additional it stops a running movement of the shutter. Long press detects than stop/lamella adj. communication object sends periodically. |

▪ **1 button operation, moving**

- | | |
|--------------|--|
| On operation | This property is for moving only shutters up or down. Each press this commands send sequence;
->Move UP → Stop/lamella adj. UP→
Move DOWN → Stop/ lamella DOWN |
|--------------|--|

▪ **1 switch operation, moving**

- | | |
|--------------------|--|
| Start of operation | This property is for moving only shutters up or down. While button is pressing, operation is continuing. This action is opposite direction to the last movement for moving the shutter up or down. |
| End of operation | When button releases, operation stop. Stop/ Lamella adj. command is send than movement stopped. |

With below functions, you must set the parameters for a second key (second input) with the corresponding settings for the shutter movement in the opposite direction.

▪ **2 button, standard**

- | | |
|-----------------|--|
| Short operation | Stop / lamella adjustment
The stop/lamella adjustment object is adjustment of the lamella UP or DOWN. In additional it stops a running movement of the shutter. |
| Long operation | This action is for moving the chosen direction shutter. Movement direction is choosing on parameter move up or moves down. |

▪ **2 switch operation, moving(shutter)**

- | | |
|--------------------|--|
| Start of operation | This property is for moving only shutters up or down.
While button is pressing, operation is continuing. This action is moving the shutter “move up” or “move down”. |
| End of operation | When button releases, operation stop.
“Stop/ Lamella adj. UP” or “Stop/ Lamella adj. DOWN” command is send than movement stopped.
You should use the property with two switches. |

▪ **2 switch operation, moving(shutter)**

- | | |
|--------------|---|
| On operation | The property object “Shutter” is choose and performs the up- and down-movement of the shutter.
The direction of movement depends to the parameters. When the button pressed firstly, than shutter move in direction that it was programmed. Second time button is pressed shutter stop command is sent such as STOP/Lamella adj. UP or STOP/Lamella adj. DOWN. |
|--------------|---|

- 1) Shutter MOVE UP -> STOP/Lamella UP
- 2) Shutter MOVE DOWN -> STOP/Lamella DOWN

▪ **2 button, stepping**

- | | |
|--------------|--|
| On operation | Stop / lamella adjustment
The stop/lamella adjustment object is adjustment of the lamella UP or DOWN. Lamella move direction chooses on the parameters. |
|--------------|--|

Connected contact type *normally closed*
***normally open**

The contact type of the push button attached to the channel is adjusted here.

Reaction on short operation ***STOP/lamella UP**
STOP/lamella DOWN

This parameter is visible if there is distinction between short and long operation.

Stop/step lamella adjustment parameter. This parameter object stops shutter movement.

Reaction on long operation *MOVE UP*
***MOVE DOWN**

Distinction between short and long;

This parameter use for choose shutter movement direction.

Long operation after *0,3s... *0,4s...10s*
 Distinction between short and long;

Long press time period is select here.

Telegr. STOP/lamella adj. is repeated every *0,3sn... *0,4s...10sn*

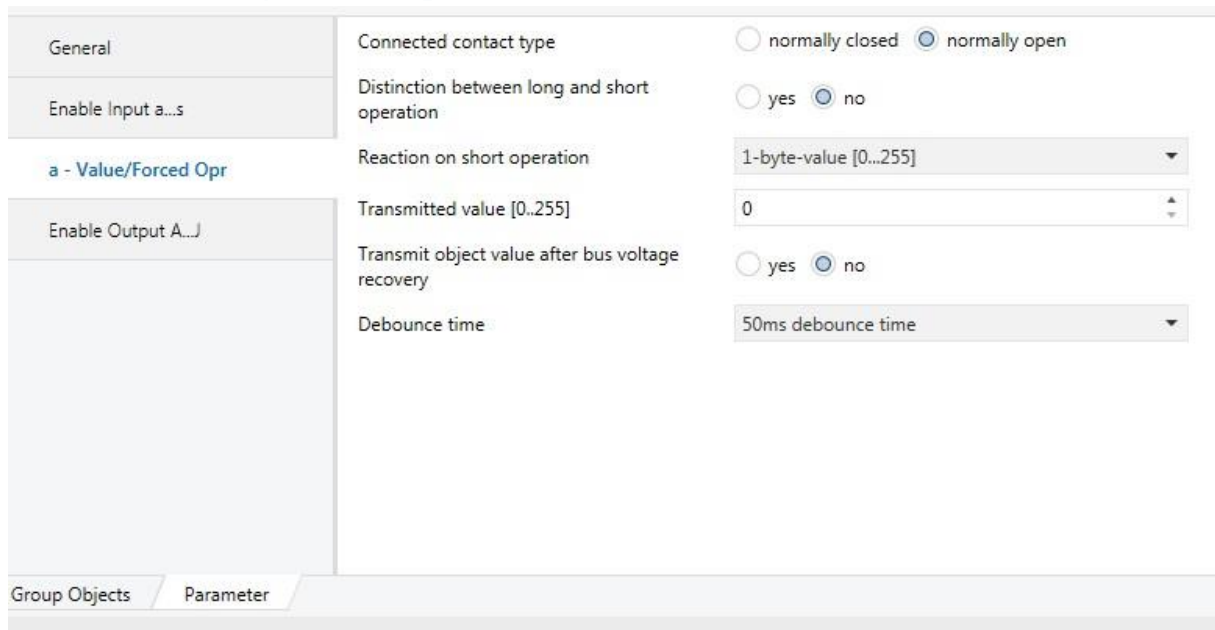
Only visible 1 push-button, short=moving,

This parameter we choose each sending stop/lamella telegram-sending period. Lamella adjustment cyclically.

Debounce time *10ms... *50ms...150ms*

Debounce uses the input, which means checking twice in a short period of time to make sure it's definitely pressed.

4.2.4 a - Value/Forced Operation



The screenshot shows a configuration window with a sidebar on the left containing tabs for 'General', 'Enable Input a...s', 'a - Value/Forced Opr', and 'Enable Output A...J'. The 'a - Value/Forced Opr' tab is active. The main area contains the following settings:

- Connected contact type: normally closed normally open
- Distinction between long and short operation: yes no
- Reaction on short operation: 1-byte-value [0...255] (dropdown menu)
- Transmitted value [0..255]: 0 (input field)
- Transmit object value after bus voltage recovery: yes no
- Debounce time: 50ms debounce time (dropdown menu)

At the bottom, there are tabs for 'Group Objects' and 'Parameter'.

You can use these value/forced functions to parameterize different object actions. You can transmit one or two objects short or long press status sequence, and select the size of the objects required (1 bit, 2-bit priority control, 1 byte, 2 byte or 4 byte) as needed. This enables you to parameterize a large number of application options. You can enter two values and set whether and how they are to be transmitted short or long.

Connected contact type *normally closed*
**normally open*

The contact type of the push button attached to the channel is adjusted here.

Distinction between long and short operation *yes*
**no*

If the parameter is set no, the input will be evaluated normally on every edge of the input signal.

Yes is selected. There is a delay after opening/closing the contact to determine whether there is a short or long operation.

Reaction on operation	<i>no reaction</i>
	<i>1-bit value</i>
	<i>2-bit value (forced operation)</i>
	*1 byte value [0...255]
	<i>2 byte [-32768...32767]</i>
	<i>2 byte [0...65535]</i>
	<i>4 byte (floating point)</i>
	<i>4 byte value [0...4294967295]</i>

This parameter is visible no distinction short/long operation;

This parameter determines the data type.

When button is pressed, this type of data sent KNX line with the communication object.

Reaction on short operation	<i>no reaction</i>
	<i>1-bit value</i>
	<i>2-bit value (forced operation)</i>
	*1 byte value [0...255]
	<i>2 byte [-32768...32767]</i>
	<i>2 byte [0...65535]</i>
	<i>4 byte (floating point)</i>
	<i>4 byte value [0...4294967295]</i>

This parameter is visible distinction short/long operation; when button is pressed, this value sends KNX line on the communication object.

Transmitted value	<i>*Dependent on the selection made at reaction on operation.</i>
--------------------------	--

Short press value or on operation value is enter here.

Reaction on long operation	<i>no reaction</i>
	<i>1-bit value</i>
	<i>2-bit value (forced operation)</i>
	*1 byte value [0...255]
	<i>2 byte [-32768...32767]</i>
	<i>2 byte [0...65535]</i>
	<i>4 byte (floating point)</i>
	<i>4 byte value [0...4294967295]</i>

This parameter is visible distinction short/long operation;

This parameter determines the data type.

When button is pressed, this type of data sent KNX line with the communication object.

Transmitted value (long press)	<i>* Dependent on the selection made at reaction on operation.</i>
---------------------------------------	---

This parameter is visible distinction short/long operation;

Short press value or on operation value is enter here.

Long operation after:	*250ms
Time base	1s
	10s
	1min
	10min

This parameter is visible distinction short/long operation;

This parameter determines the desired long press time.

Period time: Base x Factor

Factor	1... *4 ...255
---------------	-----------------------

Select time factor, between [1...255]

Transmit object value after bus voltage recovery.	yes
	*no

This parameter is visible no distinction short/long operation;

In the event of power supply failure to the electronics, the value (if this can be changed via a communication object) is permanently stored in a memory protected against data loss in the event of voltage failure. They are transferred from this memory into the working memory on bus voltage recovery.

Debounce time	10ms... *50ms ...150ms
----------------------	-------------------------------

Debounce uses the input, which means checking twice in a short period of time to make sure it's definitely pressed.

4.3 Enable Output A...J

General	Output group A and B	shutter/blind DC
Weather Alarm	Output group C and D	no function
Enable Input a...s	Output group E and F	no function
Enable Output A...J	Output group G and H	no function
	Output group I and J	no function

A/B - General
A/B - Drive Blind
A/B - Drive Slat
A/B - Function
A/B - Scene
A/B - Feedbacks

Group Objects	Parameter
---------------	-----------

Output group A and B

***no function**
shutter/blind DC
fan coil
valve control
individually

Both output group can be combined into one DC blind. In DC blind operation the four relay contacts of the device can be used to control electrically AC blind, shutter, awning, and venetian blind.

Depending on this setting, all the group parameters and objects are created in the ETS.

- Set the parameter to *“no function”*
 The parameter is selected output group A and B are invisible. You can not configured this channels.
- Set the parameter to *“shutter/blind DC”*;
 The appropriate output quad is configured to DC blind. Four outputs are combined into one blind channel. In the blind mode four relay are locked against each other. The DC blind can be used to control electrically driven blinds, shutters, awnings and venetian blinds. DC blind operation page name starts with A/B, C/D prefix. The names of the output objects and the parameter page change accordingly.
- Set the parameter to *“fan coil”*;
 The appropriate output three is configured to fan. Three outputs are combined into one fan channel. In the fan mode three relay are locked against each other. One output can not used by user.
- Set the parameter to *“valve control”*;
 Valve control channel has a two valve. They can be configured separately 3-point or 2-point. 3-point valve drives are normally connected via three connection cables to the device: Neutral conductor, switched phase to OPEN, switched phase for CLOSE. Using 3-point control value drives, the valve can be opened by any desired percentage and the position can be

retained over an extended period. If the valve does not move, no voltage is applied to the motor.

2-point valve drives are controlled via the telegrams OPEN and CLOSE. The valve can only be completely open or completely closed.

- Set the parameter to *“individually”*;
The parameter is selected *“AC motor or switch”* and the *“Output group A”* and *“Output group B”* parameters become visible. You can configured each output group separately.

Output group A

***shutter/blind AC**
2 x switch

Output group B

*** shutter/blind AC**
2 x switch

The appropriate output pair is configured by this parameter.

- Set the parameter to *“shutter/blind AC blind”*;
The appropriate output pair is configured to AC blind. Two outputs are combined into one blind channel. In the blind mode two relay are locked against each other. The AC blind can be used to control electrically driven blinds, shutters, awnings and venetian blinds. AC blind operation page name starts with A, B, C and D prefix. The names of the output objects and the parameter page change accordingly.
- Set the parameter to *“2 x switch”*;
- The appropriate output is configured to switch operation. Switch operation page name starts with A1, A2, B1... D1 and D2 prefix. The names of the output objects and the parameter page change accordingly.

4.4 Switch

4.4.1 A1 - General

General	Contact type	<input type="radio"/> normally closed <input checked="" type="radio"/> normally open
Weather Alarm	Send switch status feedback telegram	after change or request
Enable Input a...s	Create status object "Status Switch"	<input checked="" type="radio"/> yes <input type="radio"/> no
Enable Output A...J	Send status after bus voltage return	<input type="radio"/> yes <input checked="" type="radio"/> no
A1 - General	Behavior after ETS program	keep position
A1 - Function	Behavior bus voltage failure	keep position
A1 - Scene	Behavior bus voltage return	state as before bus voltage failure
A2 - General		
A2 - Function		
A2 - Scene		
Parameter		

Contact type

**normally open*
normally closed

The relays of a switching output can be parameterized as normally closed or normally open. This feature offers the possibility of inversion the switching state. Important: This state is only valid for switch communication object. Other relay function always works normally.

Normally closed contact

Switch state = off (0) → relay contact closed

Switch state = on (1) → relay contact open

Normally open contact

Switch state = off (0) → relay contact open

Switch state = on (1) → relay contact closed

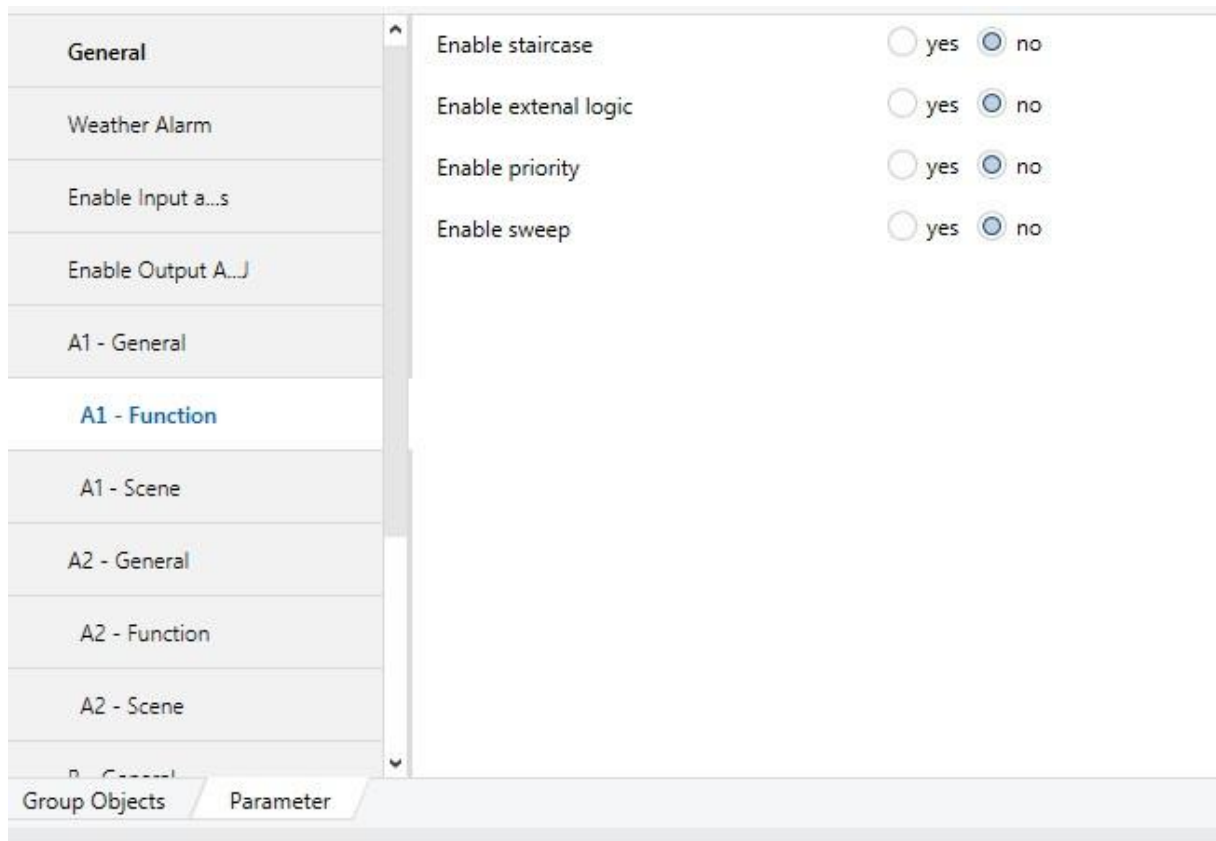
Send switch status feedback telegram

no
after change
after request
**after change or request*

The switch status feedback can be used as an active or passive communication object. Active message object, the switch status telegram is transmitted to the bus automatically when a relay state changes. Passive status object, there is no telegram transmission after relay state changes. If you want to learn switch status, you must read communication object. Communication object flags are automatically set by ETS.

NOTE: Switching state changes by manual operation can be detected by current measurement.

4.4.2 A1 - Function



Above function can be set for each channel. This function;

- I. Staircase function
- II. External logic
- III. Forced position
- IV. Sweep function

Below you can find this functions description.

4.4.2.3 A1 - Sweep

General	Blink count	3
Weather Alarm	Blink on time	15 sec
Enable Input a...s	Blink off time	1 sec
Enable Output A...J	Wait time after blinks (sec)	30
A1 - General		
A1 - Function		
A1 - Scene		
A1 - Sweep		
A2 - General		
A2 - Function		
A2 - Scene		
Group Objects	Parameter	

Sweep function only starts to operate if the relay is switched ON. It's an alternative way for turning off the relay with pre-warning. The sweep function is desired to warn a person that lights will go out shortly.

Send counter value 1...*3...10

The lamps connected to the relay will be switched off as many times. Enter the number of how many blink doing in the warning.

Blink on time 0,5sec...*1sec...5sec

How long the lights shall be switched on in the period.

Blink off time *300ms...1sec

How long the lights shall be switched off in the period.

Wait time after blinks (sec) 0...*30...255

How long the lights shall be switched on after sweep blink finished.

4.4.2.4 A1 - Scene

General	Overwrite scene on download	<input type="radio"/> yes <input checked="" type="radio"/> no
Weather Alarm	1...64 scene number (0 = no assignment)	0
Enable Input a...	Value	<input checked="" type="radio"/> OFF <input type="radio"/> ON
Enable Output A...	1...64 scene number (0 = no assignment)	0
A1 - General	Value	<input checked="" type="radio"/> OFF <input type="radio"/> ON
A1 - Function	1...64 scene number (0 = no assignment)	0
	Value	<input checked="" type="radio"/> OFF <input type="radio"/> ON
A1 - Scene	1...64 scene number (0 = no assignment)	0
A1 - Sweep	Value	<input checked="" type="radio"/> OFF <input type="radio"/> ON
A2 - General	1...64 scene number (0 = no assignment)	0
A2 - Function	Value	<input checked="" type="radio"/> OFF <input type="radio"/> ON
A2 - Scene	1...64 scene number (0 = no assignment)	0
Group Objects / Parameter		

For more information please look scene, page 12.

4.5 Blind

4.5.1 A/B – General

General	Mode of operation	<input checked="" type="radio"/> Venetian blind <input type="radio"/> Roller shutter / awning
Weather Alarm	Behavior after ETS programming or after ETS reset	stop
Enable Input a...s	Behavior bus voltage return	stop
Enable Output A...J	Behavior bus voltage failure	stop

A/B - General	
A/B - Drive Blind	
A/B - Drive Slat	
A/B - Function	
A/B - Scene	
A/B - Position/Preset	
A/B - Feedbacks	

Group Objects	Parameter
---------------	-----------

In this parameter page, general settings for blinds (AC blind or DC blind) are explained. Parameters for both types is the same.

Mode of operation

***venetian blind**
roller shutter / awning

This parameter defines the operating of the output group. Each output of the group can be configured independently for the drive type. The communication object and parameters for the respective outputs differ on the mode of operation. The ETS adapts the parameters and communication object for all group.

- Set the parameter to “*venetian blind*”;
In this mode, there are also parameters and objects for slat operation.
- Set the parameter to “*roller shutter / awning*”;
In this mode, there is no slat control so slat parameters and object automatically hiding by the ETS3.

Behavior after ETS programming or after ETS reset

***no reaction**
up
down
stop
position 1,2,3,4
approach position

Behavior bus voltage failure

This parameter can be used to configure the blind behavior after ETS programming.

- Set the parameter to “*no reaction*”;

- The output group switch remain in their current state.
- Set the parameter to “*up*”;
After the ETS programming, the actuator raises the blind.
 - Set the parameter to “*down*”;
After the ETS programming, the actuator lowers the blind.
 - Set the parameter to “*stop*”;
After the ETS programming, the actuator stops the blind movement.
 - Set the parameter to “*position 1,2,3,4*”;
The blind move to a present position. The positions are set in the “*X - Position/Present*” tabs .
 - Set the parameter to “*approach position*”;
The blind can travel to an approach position specified by other parameters. Other parameters are;

Position height in [0...100]
(0% = top; 100% = button)

Position slat in [0...100]
(0% = top; 100% = button).

This parameters are configured the blind height and slat position. If the “*Mode of operation*” is selected “*venetian blind*”, “*Position slat in [0...100]*” parameters are visible.

Behavior bus voltage return

****no reaction***

up

down

stop

This parameter can be used to configure the blind behavior after bus voltage return.

- Set the parameter to “*no reaction*”;
The output group switch remain in their current state.
- Set the parameter to “*up*”;
After the bus voltage return, the actuator raises the blind.
- Set the parameter to “*down*”;
After the bus voltage return, the actuator lowers the blind.
- Set the parameter to “*stop*”;
After the ETS programming, the actuator stops the blind movement.

end position + %2 overflow
end position + %5 overflow
end position + %10 overflow
end position + %20 overflow
total travel time + %10 overflow

When the blind has been reached the end position (this means top or bottom position), the blind is switched off its relay. An overflow time can be set to ensure the output safely reaches the end position. The voltage is supplied as an extra time after the blind has been switched off.

Enable communication object *enable*
“Trigger reference movement” 1 bit **disable*

If the parameter is selected “enable”, “Trigger reference movement” communication object is visible. The reference movement is triggered via this communication object. In long time, slight inaccuracies can occur so the upper and lower end positions are used for unique determination of current position. A position calibration is possible by executing the reference movement. A reference travel movement is not re-triggerable.

Position after travel detection **no reaction, remain in upper end position*
move to position before travel detection

If the “Detect travel times (Up/Down)” is selected “set travel times”, this parameters are visible. This parameter is configured the blind position after the reference movement. The step or stop telegram are ignored while the blind is moving in the reference movement.

Limit travelling range **no*
via object “Blind/shutter up down limited”
via object “Enable limitation”

The blind up and down limit position can be changed by this parameter.

The limit position only apply for “Move blind/shutter up-down”, “Slat adjustment/stop up-down” and automatic communication objects.

Upper limit in % [0...100] **0...100*
(0% = top; 100% = bottom)
Lower limit in % [0...100] *0... *100*
(0% = top; 100% = bottom)

If the “Limit travelling range” parameter is selected “via object “Blind/shutter up down limited””, this parameter is visible. This parameter set the blind upper/lower limit position in percent.

Pause on change in direction *1... *5...255*
(1-255 factor * 100ms)

When the blind actuator of a drive that is currently moving, receives a command to move opposite direction. The blind firstly stops than its waits for the pause on change in direction than the blind is moved its new direction.

Delay times for drive **standard*
user defined

If the parameter is selected “user defined”, these parameters are visible. You can show this below.

Different between coasting delay *-128... *0...127*

and start-up delay in ms[-128...127]

If the blind is closed lower end position, the used blind experiences dead time between the times when the blind is started the movement. You can compensate this time with this parameter.

Minimum run time for drive in ms[0-255] **0...*50...255**

The blinds have a minimum run time. Please look drive manufacturer datasheet.

4.5.3 A/B - Drive Slat

General	Determine times for slat	<input checked="" type="radio"/> via duration of slat adjustment (step) <input type="radio"/> via total duration for slat turning
Weather Alarm	Duration of slat adjustment (step) in ms[50...1000]	200
Enable Input a...s	Number of slat adjustments (from 0% = open to 100% = closed)	7
Enable Output A...J	Limit step commands to number of slat adjustment	<input type="radio"/> yes <input checked="" type="radio"/> no
A/B - General	Position of slat after arriving on lower end position (100% = disable)	100
A/B - Drive Blind		

A/B - Drive Slat

A/B - Function	
A/B - Scene	
A/B - Position/Preset	
A/B - Feedbacks	

Group Objects Parameter

Determine times for slat ***via duration of slat adjustment (step)**
via total duration for slat turning

This parameter defines the slat moving time configuration.

Duration to turn slat from 0% - 100% in ms [50...60000] **50...*1500...60000**

Duration of slat adjustment (step) in ms [50...1000] **50...*200...1000**

These parameters define the travelling time of the slat. The time needed for a complete movement or step movement. Sets the millisecond of the slat moving time.

Number of slat adjustments (from 0% = open to 100% = closed) **1...*7...60**

This parameter defines the number of slat steps. The slat steps are required to turn the slats from fully closed to fully opened.

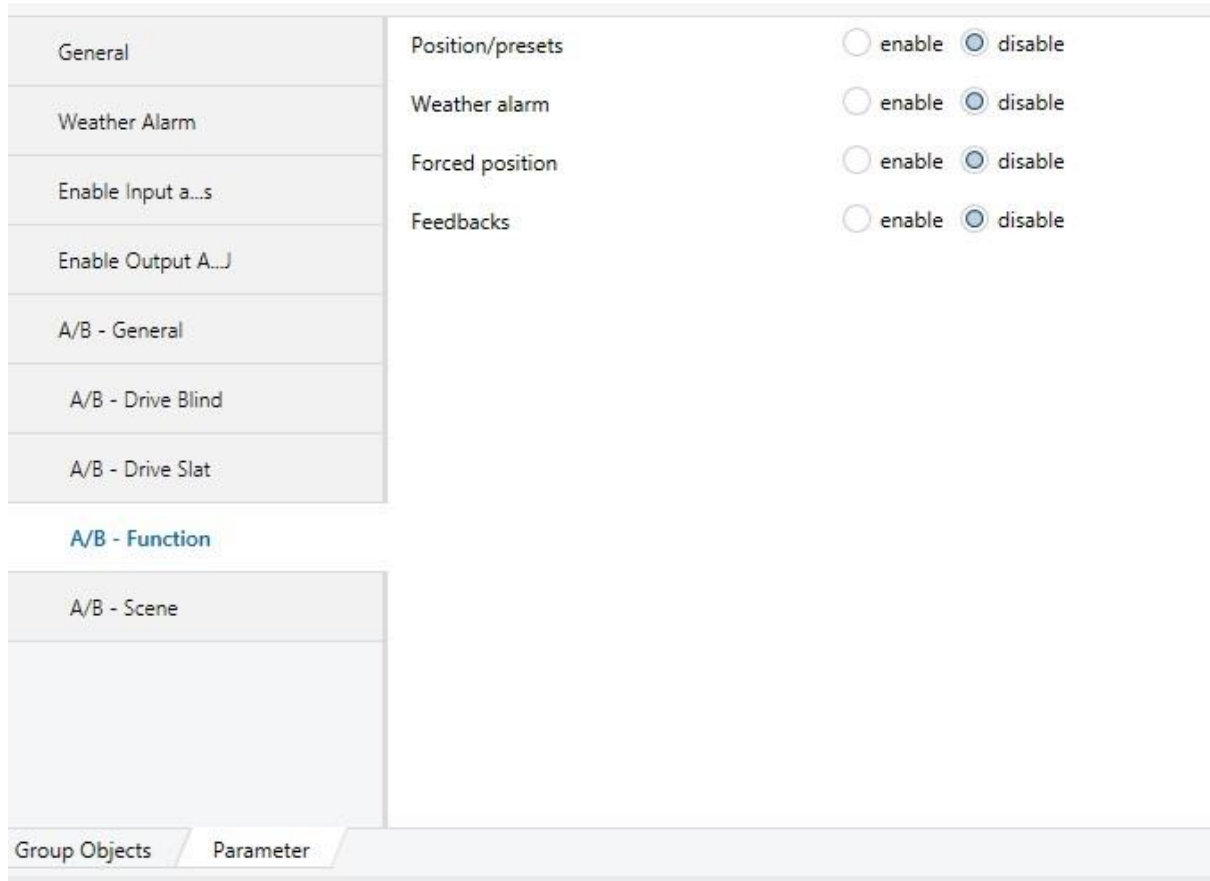
Limit step commands to number of slat adjustment ***no**
yes

This parameter defines the limit step adjustment command. If it selected “no”, the slat adjustment step count is unlimited.

Position of slat after arriving on lower end position (100% = disable) 0…*100

The blind will set the slat according to the parameterized value, after the end position is reached. This parameter is valid for move up down communication object.

4.5.4 A/B – Functions



General	Position/presets	<input type="radio"/> enable <input checked="" type="radio"/> disable
Weather Alarm	Weather alarm	<input type="radio"/> enable <input checked="" type="radio"/> disable
Enable Input a...s	Forced position	<input type="radio"/> enable <input checked="" type="radio"/> disable
Enable Output A...J	Feedbacks	<input type="radio"/> enable <input checked="" type="radio"/> disable
A/B - General		
A/B - Drive Blind		
A/B - Drive Slat		
A/B - Function		
A/B - Scene		

Group Objects Parameter

All outputs can be parameterized independent of one other. These parameters are only visible in blind operation.

- I. Enable position/presets
- II. Weather alarm
- III. Forced position
- IV. Feedbacks

The functions are described independently in detail below.

The original ETS parameter values can be reload into the device during ETS download operation.

Position 1: Height in % [0...100] 0... *20...100
(0% = top; 100% = bottom)

Position 1: Slat in % [0...100] 0... *20...100
(0% = top; 100% = bottom)

Position 2: Height in % [0...100] 0... *40...100
(0% = top; 100% = bottom)

Position 2: Slat in % [0...100] 0... *40...100
(0% = top; 100% = bottom)

Position 3: Height in % [0...100] 0... *60...100
(0% = top; 100% = bottom)

Position 3: Slat in % [0...100] 0... *60...100
(0% = top; 100% = bottom)

Position 4: Height in % [0...100] 0... *80...100
(0% = top; 100% = bottom)

Position 4: Slat in % [0...100] 0... *80...100
(0% = top; 100% = bottom)

These parameters define the blind preset height/slat position. Slat positions are only visible when the blind type is selected "Venetian blind".

Move to position

***directly**

indirectly via upper end position

indirectly via lower end position

indirectly via shortest way

This parameter is set to the blind how to go to the target position.

- Set the parameter to "directly";
The blind moves to target position directly.
- Set the parameter to "indirectly via upper/lower end position";
After the blind moves the upper/lower end position, the blind moves to target position.
- Set the parameter to "indirectly via shortest way";
Firstly, the blind moves the shortest end position and then the blind moves to target position directly.

The device raises the blind at the beginning of the wind alarm or wind alarms then the outputs are locked.

- Set the parameter to “down”;
The device lowers the blind at the beginning of the wind alarm or wind alarms then the outputs are locked.
- Set the parameter to “stop”;
At the beginning of the alarm the device switches the relay of output to stop then the outputs are locked.
- Set the parameter to “position 1, 2, 3, 4”;
The blind moves to the preset position when the alarm is activated. The position parameters are set in the “A – Position/Preset” tag.
- Set the parameter to “individual position”;
The blind moves to individual position. Individual position can be set with these parameters.

Position height in [0...100]
(0% = top; 100% = button)

Position slat in [0...100]
(0% = top; 100% = button).

These parameters are configured for the blind height and slat position. If the “Mode of operation” is selected “venetian blind”, “Position slat in [0...100]” parameters are visible.

Order of priority for safe

***1. Weather alarm – 2. Block – 3. Forced**

1. Weather alarm – 2. Forced – 3. Block

1. Block – 2. Weather alarm – 3. Forced

1. Block – 2. Forced – 3. Weather alarm

1. Forced – 2. Weather alarm – 3. Block

1. Forced – 2. Block – 3. Weather alarm

This parameter defines the order of the safe function priority. In this way, the blind is correctly controlled if more than one safety function is activated simultaneously. Priority level decreases from the first to the last. Weather alarm includes wind, rain, frost. Their priority can be configured in the “Weather Alarm” main tag; the parameter name is “Order of priority for weather”.

4.5.4.3 A/B – Forced position

General	Forced operation (1 bit / 2 bit)	<input checked="" type="radio"/> activated (1 bit) <input type="radio"/> activated (2 bit)
Weather Alarm	Position height in [0...100] (0% = top; 100% = bottom)	0
Enable Input a...s	Position slat in [0...100] (0% = open; 100% = close)	0
Enable Output A...J	Behavior after bus voltage return	no forced position active
A/B - General		
A/B - Drive Blind		
A/B - Drive Slat		
A/B - Function		
A/B - Scene		

A/B - Forced Position

Group Objects / Parameter

The forced position function can be used for each output. The forced position function has a 1 bit or 2 bit optional communication object. The blind can be moved up or down via forced operation telegram (1bit or 2 bit). Forced position function can be used for blind cleaning time. It can protect the person for unexpected accident.

Bit 1	Bit 0	Function
0	x	Forced position not active normal control
0	x	Forced position not active normal control
1	0	Forced position active, raising / opening the louver
1	1	Forced position active, lowering / closing the louver

Forced operation (1bit/2bit)

***activated (1bit)
 activated (2bit)**

The blind can be moved with forced operation to desired position via 1 bit telegram. Also using 2 bit telegram, the blind can be moved up or down. The movement is stopped when the blind reached at the end position.

**Position height in [0...100]
 (0% = top; 100% = bottom)**

Position slat in [0...100]

(0% = top; 100% = button).

This parameters are configured the blind height and slat position. If the “*Forced operation (1bit/2bit)*” is selected “*activated (1bit)*”, “*Position height/slat in [0...100]*” parameters are visible.

Behavior after bus voltage return

***no forced position active**

forced position ON, raising

forced position ON, lowering

state of forced pos. before bus volt. fail.

The forced position function can be initialized after bus voltage return so the forced operation communication object is updated. After the bus voltage return, forced position function set to the parametrized position.

- Set the parameter to “*no forced position active*”;
The forced operation is deactivated after bus voltage return.
- Set the parameter to “*forced position ON raising/lowering*”;
The forced operation active and the blind rising/lowering after bus voltage return.
- Set the parameter to “*state of forced pos. before bus volt. fail*”;
After bus voltage return, the forced position state last selected and internally stored in the device. ETS download operation deletes the stored state.

4.5.4.4 A/B – Feedbacks

General	Height and slat position status	<input type="radio"/> yes <input checked="" type="radio"/> no		
Weather Alarm	Upper and lower end position status	<input type="radio"/> yes <input checked="" type="radio"/> no		
Enable Input a...s				
Enable Output A...J				
A/B - General				
A/B - Drive Blind				
A/B - Drive Slat				
A/B - Function				
A/B - Scene				
A/B - Feedbacks				
<table border="1" style="width: 100%;"> <tr> <td style="background-color: #f2f2f2;">Group Objects</td> <td style="background-color: #f2f2f2;">Parameter</td> </tr> </table>			Group Objects	Parameter
Group Objects	Parameter			

Height and slat position status

**no*
yes

The blind position of the output can be reported to the KNX bus. The communication object value is 0 to upper (%0) position of blind. The communication object value is 255 to lower (%100) position of blind. "Status height 0...255" and "Status slat 0...255" communication objects are created and then the blinds height and slat status send with this objects.

transmit mode

after change
after request
****after change or request***

This parameter is selected the communication object transmit mode which means object flag is adjusted.

Upper and lower end position status

**no*
yes

If the blind is in the upper or lower end position, communication object telegram is sent. "Status upper end position" and "Status lower end position" communication objects are created and then the blinds reached the limit position send with these objects.

transmit mode

after change
after request
****after change or request***

This parameter is selected the communication object transmit mode which means object flag is adjusted.

4.5.4.5 A/B - Scene

General	Overwrite scene on download	<input type="radio"/> yes <input checked="" type="radio"/> no
Weather Alarm	1...64 scene number (0 = no assignment)	0
Enable Input a...s	Blind position value in %[100]	0
Enable Output A...J	Slat position value in %[100]	0
A/B - General	1...64 scene number (0 = no assignment)	0
A/B - Drive Blind	Blind position value in %[100]	0
A/B - Drive Slat	Slat position value in %[100]	0
A/B - Function	1...64 scene number (0 = no assignment)	0
A/B - Scene	Blind position value in %[100]	0
A/B - Feedbacks	Slat position value in %[100]	0

Group Objects Parameter

For more information please look scene, page 12.

4.6 Valve Control

4.6.1 A/B – Control Input

General	HVAC system	one control four pipe with switch
Weather Alarm	Operation HEATING/COOLING after bus voltage recovery	unchanged bus return
Enable Input a...s	Object value for HEATING the object "Toggle HEATING/COOLING"	<input type="radio"/> 0 <input checked="" type="radio"/> 1
Enable Output A...J		
A/B - Control Input		
A - Valve General	Monitoring control valves	<input checked="" type="radio"/> yes <input type="radio"/> no
A - Function	Monitoring period time in s[30...65535]	120
B - Valve General	Send object value ("Control value fault" 1 bit)	after change
B - Function	Enable control value after fault	<input type="radio"/> yes <input checked="" type="radio"/> no

Group Objects Parameter

HVAC system

****one control four pipe with switch***
two control two pipe
two control two pipe with switch
two control four pipe

This parameter is used to select the fan coil pipe system for valve operations.

- Set the parameter to “one control four pipe with switch”;
In this system contains HEATING and COOLING exchangers. 2 pipes for warm water and other 2 pipes for cold water. One communication object is used to HEATING or COOLING. It can be set via “Toggle HEATING/COOLING” communication object.
- Set the parameter to “two control two pipe”;
In this system contains only HEATING exchangers. 2 pipes is used for HEATING or COOLING. Both objects are used to for HEATING valve. The last value is considered valid if it comes from which object.
- Set the parameter to “two control two with switch”;
In this system contains only HEATING exchangers. 2 pipes is used for HEATING or COOLING. Both objects are used to for HEATING valve. Active communication object can be select via “Toggle HEATING/COOLING” communication object.
- Set the parameter to “two control four pipe”;
In this system contains HEATING and COOLING exchangers. 2 pipes for warm water and other 2 pipes for cold water. Each communication objects are managed the related valve. The same time only one valve can be opened. The other one is set to %0 percentage.

This parameters are configured the blind height and slat position.

Value control duration from 0...100% 0...*180...6000
in s[10...6000]

With this parameter, a time is set in seconds that the connected valve requires to move from position 0 % (valve closed) to position 100 % (valve fully open). If the *valve control* parameter is selected *three point open/close*, this parameter is visible.

For example, the time is 180s, the current valve position is at 20%, the target position is 60%, and then the travel time of the valve will need 72s from 20% to 60%.

Automatically adjust valve position *no
in s[10...6000] yes

This function is mainly used to correct the valve position, for example, the valve is not fully opened or closed after long working hours due to various reasons lead to the valve position slight inaccuracies, such temperature, aging of the device etc. So it needs to be repositioned via the function. If the *valve control* parameter is selected *three point open/close*, this parameter is visible.

Number of valve control 1...*100...65535
up to adjustment [1...65535]

This parameter is selected automatic adjustment threshold which automatic adjustment is undertaken. Assuming that the parameterized value is 100, when the number of valve controls arrived to 100, if the valve is adjusted to the opening direction on the 101st adjustment, then the automatic adjustment is not executed, if to the closing direction, the automatic adjustment will be executed, and the valve is adjusted to the position 0%, and then adjusted to the target position. For example, on the 100st the valve position is 50%, if the 101st the valve position is 60%, the valve position is adjusted directly to 60% and do not execute an automatic adjustment until a reversal control value is received. If the 101st the valve position is 40%, an automatic adjustment is undertaken and the valve is adjusted to the position 0%, and then adjusted to the target position 40%. The automatic adjustment is exceeded the closing position by % 5 of the total travel time. This time is maximum one minute.

Valve limitation yes
 *no

The limitation of the control value limits the height of the control value. The limitation is activated, when a value is chosen which is smaller/higher than the possible value for the control value, so minimum larger than 0 or maximum smaller than 1.If an input signal is out of the adjusted limitation, it will be decreased or increased.

Example: At the heating mode, the maximum limit is chosen as 70% and the minimum limit is chosen as 10%. The valve opening is adjusted as 10min. If a control value is sent as 100% for the input, the channel takes the maximum limit of 70% and calculates from this value the on-pulse as 7min. A control value in the limitations works normal, so a control value of 50% creates an on-pulse of 5min

This parameter determines the valve position after forced operation activates.

Enable communication object	*no
“Valve position status”	1 bit
	1 byte

This parameter is select sends/responds the actual value of the valve percentage. The valve status object is sent as soon as possible after the control value is received.

Send object value	*no
	after a change
	after request
	after change or request

The parameter is selected “Valve position status” object send type.

Object value with valve position > 0	0
	*1

If the Enable communication object “Valve position status” parameter is selected 1 bit, this parameter is visible.

Enable valve purge	yes
	*no

Valve protection can be enabled separately for each fan coil channel. The fan coil actuator can protect the valves for heating and cooling connected for each channel against sticking. The anti-sticking protection is generally necessary to prevent a valve defect if the valve drives are not moved for a prolonged time.

Enable communication object	yes
“Status valve purge” 1 bit	*no

If the parameter is selected “yes”, “Status valve purge” communication object is visible.

Send object value	*no
	after a change
	after request
	after change or request

The parameter is selected object send type.

Duration of valve purge	1... *10 ...255
In min [1...255]	

If the valve purge is activated, the actuator opens the corresponding valve for a period.

Automatic valve purge	yes
	*no

Automatic control can be enabled with this parameter.

Purge cycle in weeks	1... *6 ...12
[1...12]	

If the “Automatic valve purge” parameter is selected “yes”, this parameter is visible. The purge cycle is started automatically after initialization of the actuator. If the valve isn’t actuated for a period of the adjusted time, then the actuator open the corresponding valve for a period of 5 minute.

4.7 Fan Coil

4.7.1 Fan

General	Select valve with working	valve A/B
Weather Alarm	Number of fan levels	3
Enable Input a...	Controlling the fan levels	<input checked="" type="radio"/> only one fan output <input type="radio"/> fan hierarchically
Enable Output A...	Fan operation mode	<input checked="" type="radio"/> changeover switch <input type="radio"/> step switch
	Delay between fan speed switching in ms[50...5000]	500
A/B1 - Fan		
A/B1 - Status Message	Fan speed on bus voltage failure	fan off
A/B1 - Automatic Operation	Fan speed on bus voltage recovery	fan off
	Enable forced operation	<input type="radio"/> yes <input checked="" type="radio"/> no
	Enable automatic operation	<input checked="" type="radio"/> yes <input type="radio"/> no
	Enable direct operation	<input type="radio"/> yes <input checked="" type="radio"/> no
	Starting characteristic of fan	<input type="radio"/> yes <input checked="" type="radio"/> no

Group Objects Parameter

Select valve with working

***valve A/B**
valve C/D
valve E/F
valve G/H
valve I/J

This parameter is used to select valve channel working with automatic mode. Selected valve channel control value input object also used for fan level in the automatic mode.

Number of fan levels

1...*3

The fan level can be selected to the specific fan coil application required by means of parameter configurations. Thus, initially the number of fan levels required for the connected devices can be defined. The number of fan levels can be specified separately for each fan coil channel.

Controlling the fan levels

***only one fan output switches**
fan outputs switch hierarchically

The change-over principle: When a fan is switched on, there is always only one fan level output active "ON". If the active fan level is changed, the fan coil actuator first switches the previously switched-on fan level off ("OFF" state), and only after that switches the other output on.

The level principle : When a fan is switched on, several outputs are switched on, depending on the active fan level. When the fan level is increased, the adjacent output with the next higher output number is also switched on; the lower outputs remain switched on.

Fan operation mode

***changeover switch**

***no**

This parameter can be enabled the direct control. Direct control meaning is control via direct communication object.

Starting characteristic of fan

yes
***no**

This parameter enables the fan to start from the OFF state with a defined fan speed. The fan can be switched on temporarily to a defined switch-on level. This switch-on level can be any of the available fan levels.

Switch on to switch-on level

1
 2
***3**

This switch-on level can be any of the available fan levels.

**Minimum dwell period in switch on
 in s [1...65535]**

1... *5...65535

The fan thus remains in the switch-on level until the set dwell time has elapsed.

4.7.2 A/B1 - Status Message

General	Enable communication object "Status fan speed x" 1 bit	<input type="radio"/> yes <input checked="" type="radio"/> no
Weather Alarm	Enable communication object "Status fan speed" 1 byte	<input type="radio"/> yes <input checked="" type="radio"/> no
Enable Input a...s	Enable communication object "Status fan ON/OFF" 1 bit	<input type="radio"/> yes <input checked="" type="radio"/> no
Enable Output A...J	Enable communication object	<input type="radio"/> yes <input checked="" type="radio"/> no
A/B1 - Fan		
A/B1 - Status Message		
A/B1 - Automatic Operation		
A/B1 - Direct Mode		
<div style="display: flex; border: 1px solid #ccc; padding: 2px;"> Group Objects Parameter </div>		

**Enable communication object
 "Status fan speed x" 1 bit**

yes
***no**

The data format for the fan level feedback is defined as 1 bit. Separate objects are defined separately for each fan level. When the fan level is changed, the actuator updates and transmits only the object values that change.

Meaning

***current fan speed**
required fan speed

Current fan speed : The fan is actual operating state.

Required fan speed : The fan desired fan state. E.g. when the translation and dwell times are completed.

Send object type

***no**
after a change
after request
after change or request

This parameter defines the object send type.

Enable communication object
"Status fan speed" 1 byte

yes
***no**

The data format for the fan level feedback is defined as 1 byte.

Meaning

***current fan speed**
required fan speed

Current fan speed : The fan is actual operating state.

Required fan speed : The fan desired fan state. E.g. when the translation and dwell times are completed.

Send object type

***no**
after a change
after request
after change or request

This parameter defines the object send type.

Enable communication object
"Status fan ON/OFF" 1 bit

yes
***no**

This ON telegram acts on a main switch that has to be switched on.

Send object type

***no**
after a change
after request
after change or request

This parameter defines the object send type.

Enable communication object
"Status automatic" 1 bit

yes
***no**

This parameter is enabled the communication object "Status automatic".

Minimum dwell period in fan speed *0...65535
In s [0...65535]

This parameter defines the dwell time for a fan speed of the fan until it switches to the next higher or lower fan speed.

0: no delay time for switching.

4.7.4 A/B1 - Direct Mode

General	Enable communication object "Switch speed x" 1 bit	<input type="radio"/> yes <input checked="" type="radio"/> no
Weather Alarm	Enable communication object "Fan speed UP/DOWN" 1 bit	<input type="radio"/> yes <input checked="" type="radio"/> no
Enable Input a...s	Enable communication object "Fan speed switch" 1 byte	<input type="radio"/> yes <input checked="" type="radio"/> no
Enable Output A...J		
A/B1 - Fan		
A/B1 - Status Message		
A/B1 - Automatic Operation		
A/B1 - Direct Mode		
<div style="display: flex; border: 1px solid #ccc; padding: 2px;"> Group Objects Parameter </div>		

Enable communication object yes
"Switch speed x" 1 bit *no

The data format for the fan level feedback is defined as 1 bit. Separate three objects are defined separately for each fan level. If several ON/OFF telegrams are received consecutively in a short period of time at various communication objects *Fan speed 1...3*, the value last received by the fan control is the decisive value.

Enable communication object yes
"Fan speed UP/DOWN" 1 bit *no

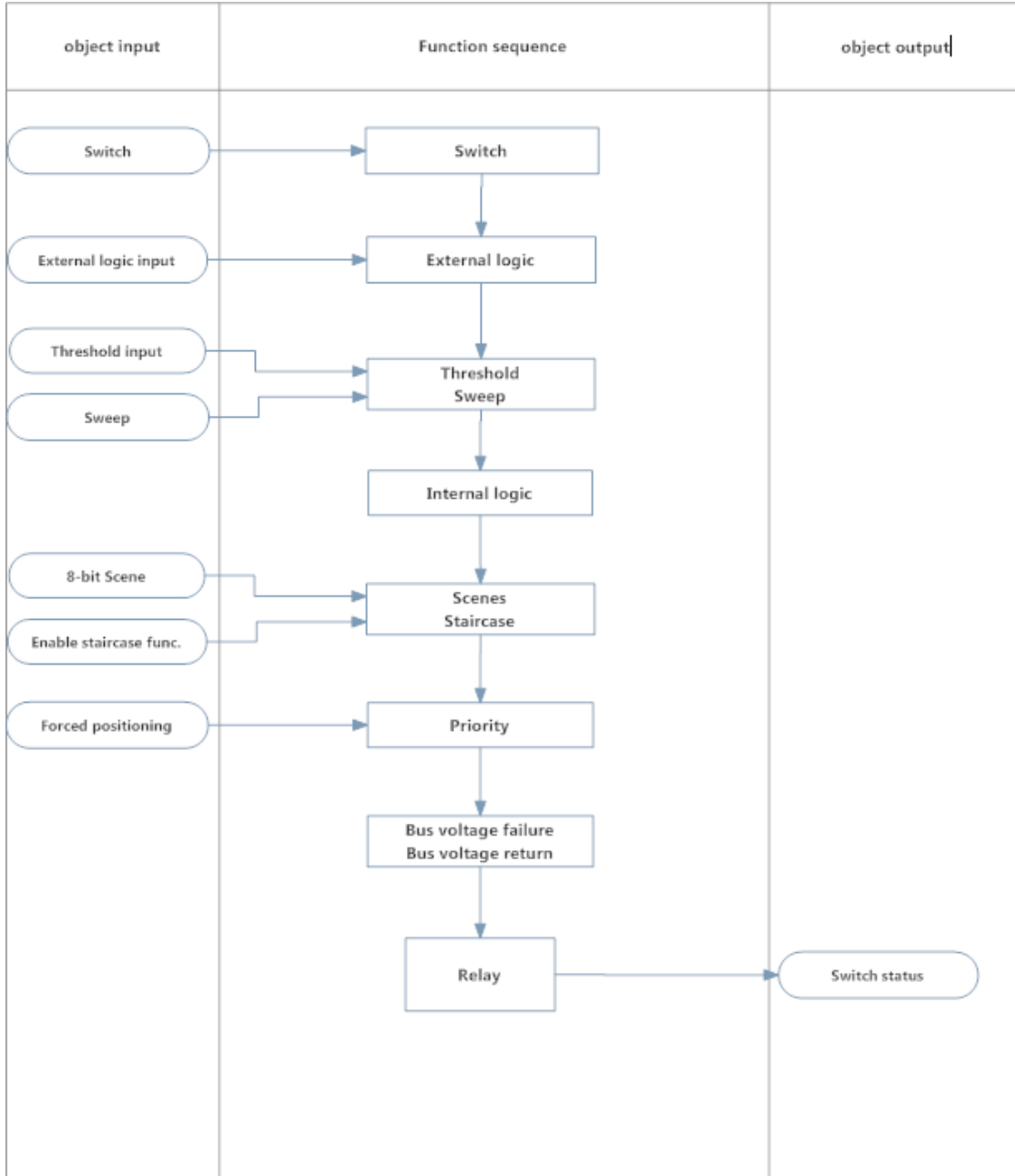
With multiple manual UP or DOWN switching, the target speed will be increased or reduced by a speed step. This is possible until the maximum or minimum possible speed is achieved.

Enable communication object yes
"Fan speed switch" 1 byte *no

This parameter is enabled "Fan speed switch" communication object with percentage 0...100%.

5 Function Chart

The following schematic indicates the function sequence. The functions are processed. Communication object enter the left side. Same box meaning same priority.



6 Object Description

6.1 General Object Description

No	Object name	Name	DTP Type	Length	Flags																																																							
0	In operation	General	DPT 1.002	1 bit	CWT																																																							
<p>You use this object to report device still alive and contacted the KNX line. Telegram value is select ON/OFF. If a telegram is not received, device may be defective or KNX cable will be interrupted. This communication object sends to the line cyclically.</p>																																																												
1	Scene 8 bit	General	DPT 18.001	1 byte	CW																																																							
<p>This object is used to recall or store scenes. Up to 64 scenes are available on the Switch/Blind Actuator.</p> <div style="text-align: center;"> <table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">C</td> <td style="padding: 2px;">R</td> <td style="padding: 2px;">Scene- Number</td> </tr> </table> <table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">B</td> <td style="padding: 2px;">r</td> <td style="padding: 2px;">U</td> <td style="padding: 2px;">U</td> <td style="padding: 2px;">U</td> <td style="padding: 2px;">U</td> <td style="padding: 2px;">U</td> <td style="padding: 2px;">U</td> </tr> </table> <p style="margin: 0;">C: 0 – recall scene 1 – store scene</p> <p style="margin: 0;">R: Reserved</p> </div> <p>The object to recall and store the scene (1...64) is sent via the group address. 8-bit scenes are stored in the Switch/Blind Actuator.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Scene</th> <th colspan="2">recall</th> <th colspan="2">save</th> </tr> <tr> <th>Hex.</th> <th>Des.</th> <th>Hex.</th> <th>Des.</th> </tr> </thead> <tbody> <tr><td>1</td><td>0x00</td><td>0</td><td>0x80</td><td>128</td></tr> <tr><td>3</td><td>0x02</td><td>2</td><td>0x82</td><td>130</td></tr> <tr><td>5</td><td>0x04</td><td>4</td><td>0x84</td><td>132</td></tr> <tr><td>7</td><td>0x06</td><td>6</td><td>0x86</td><td>134</td></tr> <tr><td>9</td><td>0x08</td><td>8</td><td>0x88</td><td>136</td></tr> <tr><td>11</td><td>0x0A</td><td>10</td><td>0x8A</td><td>138</td></tr> <tr><td>63</td><td>0x3E</td><td>62</td><td>0xE2</td><td>190</td></tr> </tbody> </table>						C	R	Scene- Number	B	r	U	U	U	U	U	U	Scene	recall		save		Hex.	Des.	Hex.	Des.	1	0x00	0	0x80	128	3	0x02	2	0x82	130	5	0x04	4	0x84	132	7	0x06	6	0x86	134	9	0x08	8	0x88	136	11	0x0A	10	0x8A	138	63	0x3E	62	0xE2	190
C	R	Scene- Number																																																										
B	r	U	U	U	U	U	U																																																					
Scene	recall		save																																																									
	Hex.	Des.	Hex.	Des.																																																								
1	0x00	0	0x80	128																																																								
3	0x02	2	0x82	130																																																								
5	0x04	4	0x84	132																																																								
7	0x06	6	0x86	134																																																								
9	0x08	8	0x88	136																																																								
11	0x0A	10	0x8A	138																																																								
63	0x3E	62	0xE2	190																																																								
2	Disable/enable man. operation	General	DPT 1.003	1 bit	CRW																																																							
<p>The manual operation can be enabled or disabled with this communication object. If the manual operation is disabled, the manual control button cannot be enabled the manual operation.</p> <p>The object is; 0 = manual button enabled 1 = manual operation cannot be enabled by the button.</p>																																																												
3	Wind alarm	General	DPT 1.005	1 bit	CWTU																																																							

4	Rain alarm				
5	Frost alarm				

Active weather sensors can be monitored cyclically. The device expects a telegram from sensor within the cycle time. If the telegram doesn't receive within the cycle time or the value 1 is received, the blinds are moved to parameterized position. The blind control telegrams are ignored until the device is received telegram value 0.

The monitoring period is restarted each telegram is received from weather sensor. The wind alarms are connected each other via OR gate.

The object is;
0 = no alarm
1 = alarm active

6.2 Input Object Description

No	Object name	Name	DTP Type	Length	Flags
5	Disable	Input a	DPT 1.003	1 bit	CW
<p>0: enable input 1: disable input</p> <p>This object is only visible if it is used as an input. Via the group address linked to this object blocking of the respective input channel is turned on or off.</p> <p>When a disabled input is enabled, no telegrams are sent on the bus, even if the state of the input has changed during blocking. If the input is just being operated as it is being enabled, the input behaves as if the operation has just commenced.</p>					
6	Switch Switch - short	Input a	DPT 1.001	1 bit	CWT
<p>0: OFF 1: ON</p> <p>Switching telegrams are sent via the group address linked with this object. Object can be switched by actuation of the ON, OFF or TOGGLE input.</p>					
6	Shutter up/down	Input a	DPT 1.008	1 bit	CT
<p>The driving object is for moving the shutters "move UP" and "move DOWN". 0: Move upwards (UP) 1: Move downwards (DOWN)</p>					
6	Value	Input a	CWT

An adjustment can be made as to whether a value telegram is to be sent as a reaction to a short and / or long button press action when a push button is pressed or released. Additionally, it is possible to configure whether the value associated with the long button press action is sent via a second object.

1 bit [0 / 1]	DPT 1.001	switch command
2 bit [0...3]	DPT 2.001	forced operation
1 byte [0...255]	DPT 5.001	brightness value
2 byte [-32768...32767]	DPT 7.001	signed value
2 byte [0...65535]	DPT 8.001	unsigned value
4 byte [float value]	DPT14.068	temperature
4 byte [0...4294967295]	DPT12.001	value unsigned

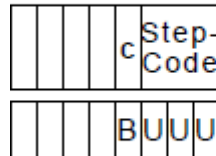
7	Switch - long	Input a	DPT 1.008	1 bit	CT
---	---------------	---------	-----------	-------	----

0: OFF
1: ON
Switching telegrams for long push button press are sent via the group address linked with this object if the parameter "Number of objects for short/long operation" is set to "2 object".

7	Dimming brighter / darker	Input a	DPT 3.007	4 bit	CT
---	---------------------------	---------	-----------	-------	----

4 bit: B₁U₃

1



c = {0,1}
StepCode = [000b...111b]

c	Increase or decrease the brightness	0 = Decrease 1 = Increase
StepCode	The amount of intervals into which the range of 0 % ... 100 % is subdivided or the break indication.	- 001b ... 111b: Step Number of interval = $(2)^{(stepcode-1)}$ - 000b : Break

The dimming telegrams are sent to the dimming actuator via the group address linked with this object. In the process, a long push button action produces a "100 % dimming" telegram. A stop command is sent when the push button is released.

7	Shutter stop / lamella	Input a	DPT 1.007	1 bit	CT
---	------------------------	---------	-----------	-------	----

The stop-/lamella adjustment object is for the adjustment of the lamellas and additional it stops a running movement of the shutter.

0: Stop / lamella UP
1: Stop / lamella DOWN

7	Value	Input a	CWT
---	-------	---------	-----	-----	-----

An adjustment can be made as to whether a value telegram is to be sent as a reaction to a short and / or long button press action when a push button is pressed or released. Additionally, it is possible to configure whether the value associated with the long button press action is sent via a second object.

1 bit [0 / 1]	DPT 1.001	switch command
2 bit [0...3]	DPT 2.001	forced operation
1 byte [0...255]	DPT 5.001	brightness value
2 byte [-32768...32767]	DPT 7.001	signed value
2 byte [0...65535]	DPT 8.001	unsigned value
4 byte [float value]	DPT14.068	temperature
4 byte [0...4294967295]	DPT12.001	value unsigned

8	Shutter upper limit position	Input a	DPT 1.002	1 bit	CW
---	------------------------------	---------	-----------	-------	----

This object the shutter actuator indicates is it is in the upper limit position. This object is used for 1 button options.

0: No Upper end limit

1: Upper end limit

8	Value (temperature)	Input a	DPT 14.068	32 bit	CT
---	---------------------	---------	------------	--------	----

The value type is selected "floating point" this object is created. For more information look Value communication object.

9	Shutter lower limit position	Input a	DPT 1.002	1 bit	CW
---	------------------------------	---------	-----------	-------	----

This object the shutter actuator indicates is it is in the lower limit position. This object is used for 1 button options.

0: No Lower end limit

1: Lower end limit

9	Value (temperature) - long	Input a	DPT 14.068	32 bit	CT
---	----------------------------	---------	------------	--------	----

The value type is selected "floating point" this object is created. For more information look Value communication object.

6.3 Switch Object Description

No	Object name	Name	DTP Type	Length	Flags
95	Switch	Output A1	DTP 1.001	1 bit	CW

This object is used to switching of relay. If a logic operation is enabled, the output is calculated via logic combination.

The object is;

0 = switched ON

1 = switched OFF

96	Status switch	Output A1	DPT 1.001	1 bit	CRT
----	---------------	-----------	-----------	-------	-----

The current switching state of the channel is saved in the status object. It can be transmitted automatically its state changed.

<p>This object is ; 0 = relay OFF position 1 = relay ON position</p>											
97	Enable staircase function	Output A1	DPT 1.003	1 bit	CRW						
<p>This object is used to activation of the staircase function. This object is enabled, the staircase function is activated.</p> <p>The object is; 0 = disable 1 = enable</p>											
98	Staircase lighting duration	Output A1	DPT 7.007	2 byte	CRW						
<p>The staircase lighting duration is set via this object. The object resolution is second. In addition, the bus return state can be parameterized by the parameter at the <i>staircase function</i> tag.</p> <p>The object is; 0 = must be greater than zero 65535</p>											
99	Permanent ON	Output A1	DTP 1.001	1 bit	CW						
<p>This object is used to mask the other function. This meanings function is working back ground of the Permanent ON. If the Permanent ON object is set to off, the other function switch result can be visible on the output. After bus voltage return, the object is deactivated.</p> <p>This object feature is useful for cleaning person.</p> <p>The object is; 0 = permanent ON active 1 = deactivate</p>											
100	External logic input	Output A1	DPT 1.001	1 bit	CW						
<p>This object is used to receive the switching data for the second input. The switch operation and external logic are respect with logic OR, AND.</p> <p>The object is; 0 = logic state 1 = logic state</p>											
101	Forced positioning	Output A1	DPT 2.001	2 bit	CW						
<p>This object is used to the switching state of the output is directly determined by this object. The first bit is switching state and the second bit is activated or deactivated the forced control.</p> <table border="1" data-bbox="231 1780 1204 1892"> <thead> <tr> <th>Bit Field</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Bit 0</td> <td>: Switching state "0": switching off "1": switching on</td> </tr> <tr> <td>Bit 1</td> <td>: Forced control "0": inactive "1": active</td> </tr> </tbody> </table>						Bit Field	Description	Bit 0	: Switching state "0": switching off "1": switching on	Bit 1	: Forced control "0": inactive "1": active
Bit Field	Description										
Bit 0	: Switching state "0": switching off "1": switching on										
Bit 1	: Forced control "0": inactive "1": active										
102	Sweep	Output A1	DPT 1.017	1 bit	CW						
<p>This object is used to trigger the sweep function.</p>											

The object is;
0 = do nothing
1 = trigger

6.4 Blind Object Description

95	Move blind/shutter up-down	Output A	DPT 1.008	1 bit	CW
<p>When the telegram is received from bus, blind is moved to the direction (the value 0 or 1) of movement of the set time.</p> <p>The object is; 0 = up 1 = down</p>					
96	Slat adjustment/stop up-down	Output A	DPT 1.007	1 bit	CW
<p>While blind is moving, the telegram is received then the blind movement is stopped. Other time the blind slat can be adjusted.</p> <p>The object is; 0 = stop/slat move one step open 1 = stop/slat move one step close</p>					
97	Blind/shutters up-down limit Enable limitation	Output A Output A/B	DPT 1.008 DPT 1.003	1 bit	CW
<p>This communication objects are controlled by "Limit travelling range" parameter. Blind up or down end position can be limited by this communication object. The blind stops automatically when the configured upper or lower end position have been reached. After the bus voltage, return object value is set to 0 so this meaning upper end position is limited.</p> <p>For the first communication object "<i>Blind/shutters up-down limit</i>"; 0 = limited upper end position active 1 = limited lower end position active</p> <p>For the second communication object "<i>Output A/B, Enable limitation</i>" 0 = limitation disable 1 = limitation enable</p>					
98	Move to position height 0...255	Output A	DPT 5.001	1 byte	CW
<p>If device is received this telegram, the blind is moved to height determined by the percentage of value. After the blind moving operation is finished, the slats are returned its previous position.</p> <p>While the blind is moving, the "Move slat 0...255" command is received from the bus. If the blind is reached its target position, the slats are set to the received position.</p> <p>The object is; 0 = upper end position %0</p>					

<p>...</p> <p>255 = lower end position %100</p>					
99	Move slats 0...255	Output A	DPT 5.001	1 byte	CW
<p>If the device is received this communication object, the slats are moved to the desired position.</p> <p>The object is;</p> <p>0 = slats open %0</p> <p>...</p> <p>255 = slat closed %100</p>					
100	Move to position 1, 2	Output A	DPT 1.022	1 bit	CW
101	Move to position 3, 4				
<p>This object is used to move to the blind saved preset position. After the position has been reached, the slat position is move to the own preset position.</p> <p>The object is;</p> <p>0 = move to position 1 or 3</p> <p>1 = move to position 2 or 4</p>					
102	Set position 1, 2	Output A	DPT 1.022	1 bit	CW
103	Set position 3, 4				
<p>This object is used to save the current position of blind. If the telegram value is received 0, the current position is stored as the new position 1 or 3. If the telegram value is received 1, the current position is stored as the new position 2 or 4.</p> <p>The object is ;</p> <p>0 = set to position 1 or 3</p> <p>1 = set to position 2 or 4</p>					
104	Trigger reference movement	Output A	DTP 1.008	1 bit	CW
<p>This object is triggered the reference movement. If the telegram is received, the blind is moved up or down end position. Then the blind can return its last position or desired position. End of reference movement, the device is updated travel times.</p> <p>The travel time operation can be interrupted by</p> <ul style="list-style-type: none"> ▪ Weather alarm, forced operation, block function ▪ Manual operation ▪ Move to position UP or DOWN commands <p>The object is;</p> <p>0 = no reaction</p> <p>1 = trigger the reference movement (UP – DOWN – UP)</p>					
105	Block	Output A	DPT 1.003	1 bit	CWTU
<p>The state of the blind cannot changed by other control commands as long as block telegram with the value 1 is received. You can define the reaction of output relay via parameters.</p> <p>The object is;</p>					

<p>0 = operation enable 1 = operation disable</p>					
106	Forced operation 1 bit	Output A	DPT 1.003	1 bit	CWTU
<p>If the telegram is received (value 1), the blind is moved to parameterized position and the blind is locked for the movement command. After the forced operation is disabled by the object (value 0), the blind is moved to parameterized position.</p> <p>The object is; 0 = operation enable 1 = forced active / operation disable</p>					
106	Forced operation 2 bit	Output A	DPT 2.002	2 bit	CWTU
<p>If the telegram is received value 2 or value 3, the blind is moved to UP (2) or DOWN (3) and the blind is locked for the movement command. After the forced operation is disabled by the object (value 0) or (value 1), the blind is moved to parameterized position.</p> <p>The object is; 0 = operation enable 1 = operation enable 2 = forced active, move UP / operation disable 3 = forced active, move DOWN / operation disable</p>					
107	Status height 0...255	Output A	DPT 5.001	1 byte	CRT
<p>The blind position of drive is available as a value 0...255 percentage %0...%100. The height status is to be transmitted or read out via this object. The height status object is only updated when the blind has reached a target position after movement.</p> <p>The object is; 0 = upper end position %0 ... 255 = lower end position %100</p>					
108	Status slat 0...255	Output A	DPT 5.001	1 byte	CRT
<p>The blind slat position of drive is available as a value 0...255 percentage %0...%100. The slat status is to be transmitted or read out via this object. The slat status object is only updated when the blind has reached a target position after movement.</p> <p>NOTE: This object is only available in the venetian blind type.</p> <p>The object is; 0 = slat open %0 ... 255 = slat close %100</p>					
109	Status upper end position	Output A	DPT 1.011	1 bit	CRT
<p>The blind is reached the upper end position, the device sends information.</p> <p>The object is; 0 = the blind is not in upper end position</p>					

1 = the blind is in upper end position					
110	Status lower end position	Output A	DPT 1.011	1 bit	CRT
The blind is reached the lower end position, the device sends information.					
The object is;					
0 = the blind is not in lower end position					
1 = the blind is in lower end position					

6.5 Valve Object Description

No	Object name	Name	DTP Type	Length	Flags
95	Control valve HEATING	Control Input	DPT 5.001	1 byte	CW
Via this object, command value for heating operation is sent.					
96	Control valve COOLING	Control Input	DPT 5.001	1 byte	CW
Via this object, command value for cooling operation is sent.					
97	Toggle Heating/Cooling	Control Input	DPT 1.100	1 bit	CW
If the HVAC System parameter has been selected one control four pipe with switch or <i>two control two pipe with switch</i> , this object is enabled.					
If the parameter <i>Object value for HEATING the object</i> is selected 1:					
1 : HEATING					
0 : COOLING					
If the parameter <i>Object value for HEATING the object</i> is selected 0:					
1 : COOLING					
0 : HEATING					
98	Fault control value	Control Input	DPT 1.005	1 bit	CRT
If the control input telegram does not arrive in the monitoring period, this object set TRUE and send to bus.					
0 : no fault					
1 : fault					
99	Block	Valve HEATING Valve COOLING	DPT 1.003	1 bit	CW
This object is used to block the valve operation. The valve does not respond any control input values.					
100	Forced operation	Valve HEATING Valve COOLING	DPT 1.003	1 bit	CW
This object is used to force the valve-desired state. This state can be configure via <i>Value position on forced operation in % [0...100]</i> parameter.					
0 : end of forced operation					
1: start of forced operation					

101	Trigger valve purge	Valve HEATING Valve COOLING	DPT 1.017	1 bit	CW
<p>This object is use to triggered the valve purge.</p> <p>0 : end of valve purge 1: start of valve purge</p>					
102	Status valve purge	Valve HEATING Valve COOLING	DPT 1.003	1 bit	CRT
<p>The status of the valve purge is visible via this communication object.</p>					
103	Status valve position	Valve HEATING Valve COOLING	DPT 1.001 DPT 1.005	1 bit 1 byte	CRT
<p>The status of valve position is visible vis this communication object.</p> <p>If the object is configured 1-bit; 0 : valve position is zero 1 : valve position is not zero</p> <p>If the object is configured 1 byte; 0...255 : valve position is show via percentage</p>					

6.6 Fan Object Description

No	Object name	Name	DTP Type	Length	Flags												
95	Fan speed switch	Fan	DPT 5.010	1 byte	CW												
<p>This object is used to switch on fan speed via 1-byte object. If the object received, automatic mode is set OFF.</p> <table border="1"> <thead> <tr> <th>Hex</th> <th>Fan Speed</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>0 (Fan OFF)</td> </tr> <tr> <td>01</td> <td>Fan speed 1</td> </tr> <tr> <td>02</td> <td>Fan speed 2</td> </tr> <tr> <td>03</td> <td>Fan speed 3</td> </tr> <tr> <td>>03</td> <td>ignored</td> </tr> </tbody> </table>						Hex	Fan Speed	00	0 (Fan OFF)	01	Fan speed 1	02	Fan speed 2	03	Fan speed 3	>03	ignored
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00	0 (Fan OFF)																
01	Fan speed 1																
02	Fan speed 2																
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96	Switch speed 1	Fan	DPT 1.001	1 bit	CW												
97	Switch speed 2	Fan	DPT 1.001	1 bit	CW												
98	Switch speed 3	Fan	DPT 1.001	1 bit	CW												
<p>This object is used to receive a control value for fan speed. An OFF telegram to one of the three communication objects, fan speed 1-3, switch off the fan completely. If the object received, automatic mode is set OFF.</p> <p>0 : fan OFF</p>																	

1 : fan ON															
99	Fan speed UP/DOWN	Fan	DPT 1.007	1 bit	CW										
<p>This object is used to switched one fan speed further up or down via 1-bit telegram.</p> <p>0 : fan speed DOWN 1 : fan speed UP</p>															
100	Status fan ON/OFF	Fan	DPT 1.001	1 bit	CT										
<p>The status of fan coil channel is visible via this communication object.</p> <p>0 : complete fan coil channel inactive (all outputs OFF) 1 : any output of fan coil channel is switched ON</p>															
101	Status fan speed	Fan	DPT 5.010	1 byte	CRT										
<p>This object is used to display the fan speed via 1-byte object.</p> <table border="1" data-bbox="231 840 587 1019"> <thead> <tr> <th>Hex</th> <th>Fan Speed</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>0 (Fan OFF)</td> </tr> <tr> <td>01</td> <td>Fan speed 1</td> </tr> <tr> <td>02</td> <td>Fan speed 2</td> </tr> <tr> <td>03</td> <td>Fan speed 3</td> </tr> </tbody> </table>						Hex	Fan Speed	00	0 (Fan OFF)	01	Fan speed 1	02	Fan speed 2	03	Fan speed 3
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102	Status fan speed 1	Fan	DPT 1.001	1 bit	CRT										
103	Status fan speed 2	Fan	DPT 1.001	1 bit	CRT										
104	Status fan speed 3	Fan	DPT 1.001	1 bit	CRT										
<p><i>Only visible if the Enable communication object "Status fan speed x" 1 bit is configured to yes.</i></p> <p>0 : fan level x deactivated 1 : fan level x activated</p>															
105	Forced operation	Fan	DPT 1.003	1 bit	CW										
<p>This object used to set fan desired forced position independently from the control value.</p> <p>0 : no forced operation 1 : forced operation</p>															
106	Automatic ON/OFF	Fan	DPT 1.003	1 bit	CW										
<p>This object is used to switch the automatic mode. Automatic mode is switched off, if a telegram is received on a direct communication object.</p> <p>If the <i>object value "automatic ON/OFF" switched on to automatic</i> parameter is selected "1"; 0 : automatic operation OFF 1: automatic operation ON</p> <p>If the <i>object value "automatic ON/OFF" switched on to automatic</i> parameter is selected "0"; 0 : automatic operation ON 1: automatic operation OFF</p>															

107	Status automatic	Fan	DPT 1.003	1 bit	CW
<p>The object indicates the status of the automatic mode.</p> <p>0 : inactive 1 : active</p>					