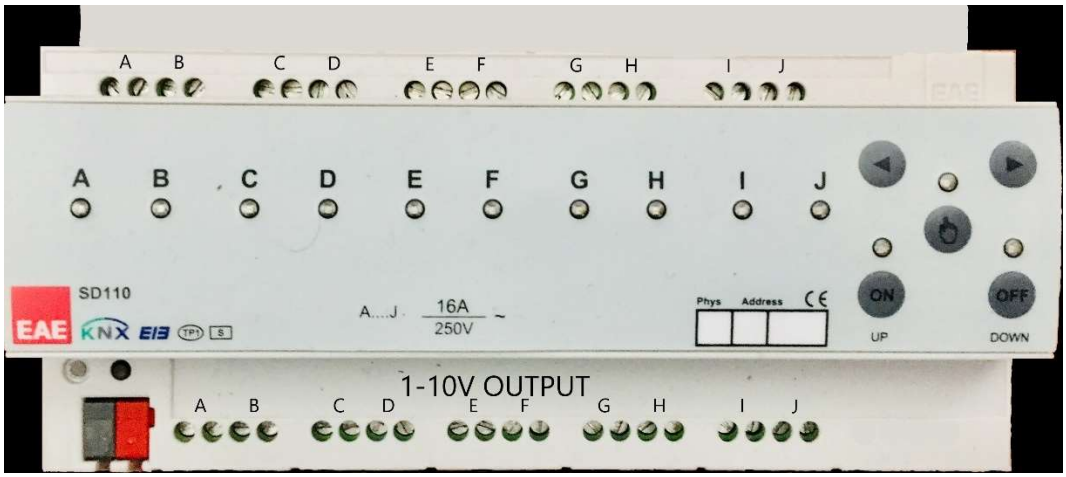
EAE KNX 1-10V DIMMER



Product Order Nr: 48032

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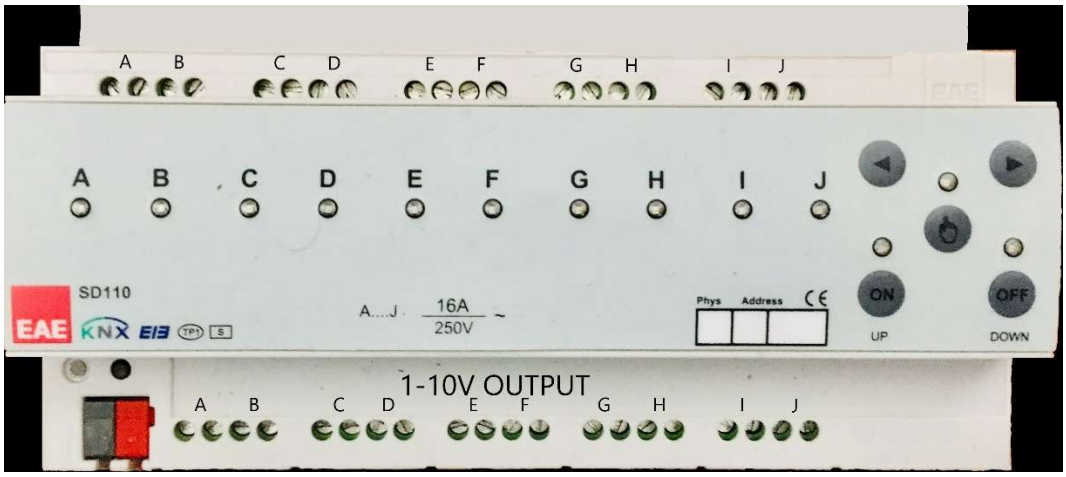
1. General Features

EAE KNX 1-10V Dimmer Actuator has 10 independent switching and dimming outputs. Maximum switching voltage is 250V and maximum current is 16A for each channel. Dimming functions can be used by 1-10V controlled ballasts only. The device can be operated manually via push button on it. Each channel can be programmed via ETS4 or above.



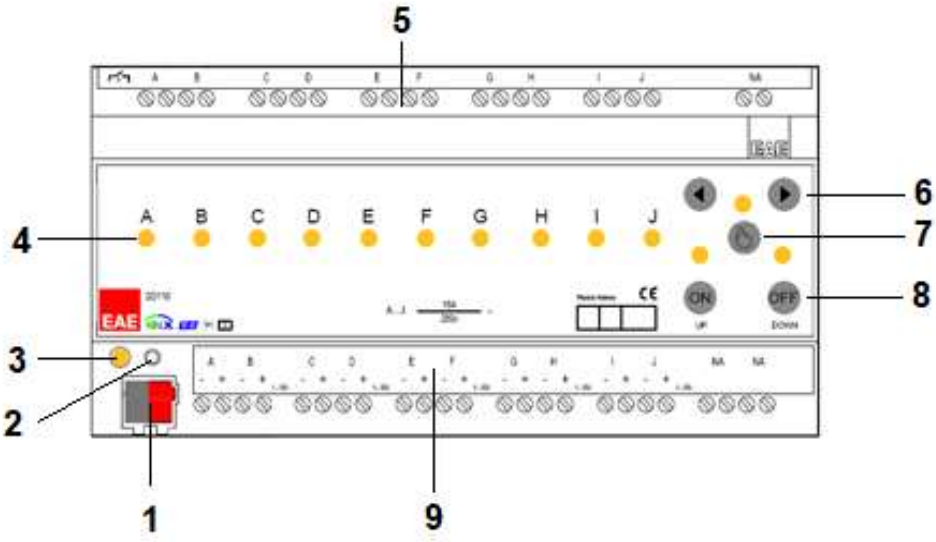
Channel features of switch & dim actuator;

- Staircase lighting
- Forced Operation
- Channel Disabling
- Operating Hour Counter

All features can be used separately or together. Please consider that those features will be processed depending on priority. Bus voltage fails and returns behavior can be set via ETS configuration.

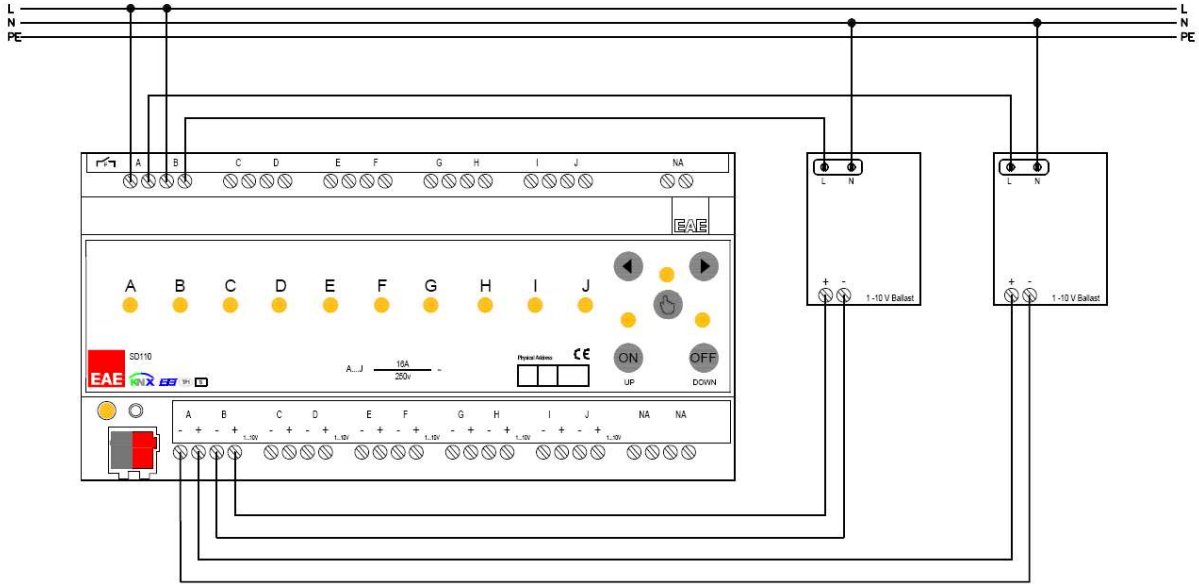
2. Device Technology

2.1 Device Peripherals



1- KNX Connection
2- Programming LED
3- Programming Button using for assigning a physical address and download application
4- Channel Switch Status LEDs
5- Switching Output
6- Channel Selection Buttons
7- Manual Operation Button
8- ON/UP, OFF/DOWN Buttons
9- 1-10V Dimming Outputs

2.2 Connection Diagram



2.3 Technical Data

Type of protection	IP 20	EN 60 529	
Safety class	II	EN 61 140	
Power supply	- Voltage	21V… 30V DC, SELV	
	- Current consumption	< 10 mA	
External supply	**---**		
Connections	- Screw terminals	0,5…3,31 mm² solid and stranded wire 0,5…3,31 mm² stranded wire with ferrule	
	- Max. tightening torque	0.5 Nm	
	- KNX	Bus connection terminal	
Output	- Switching	10 output, passive	
	- Dimming	10 output, 1-10V DC	
	- Cable length	Max. 200 meters	
	- Max. switching power	4000 VA	
	- Mechanical life	> 1 x 10^6	
Type of contact	- potential-free, bistable		
Installation	- 35mm mounting rail	EN 60 715	
Operating elements	- LED (red) and button	For physical address programming	
Temperature range	- Ambient	-5° C + 45° C	
	- Storage	-25° C + 55° C	
	- Transport	-25° C + 70° C	
Humidity	- Max. air humidity	85 % no moisture condensation	
Dimensions		66 x W x 90 mm	
	Width W in mm	180 mm	
	Width W in units (18 mm modules)	10 modules	
Weight	0.45 kg		
Box	Plastic, polycarbonate, color grey		
CE	In accordance with the EMC guideline and low voltage		
Application program	Communication objects	Number of addresses(max)	Number of assignments(max)
	151	255	255

NOTE: Device default physical address is 15.15.255. In order to configure switch actuator, ETS application file ".knxprod" is needed. It's possible to download the file on EAE website. ETS is required for programming the device. Parameter settings and related group addresses can be changed by ETS. Learn more by reading ETS help file.

3. Communication Object Table

No	Object Name	Function	DTP Type	Number of bits	Flags
0	General	In operation	1.002	1 bit	CWT
1	General	Scene 8-bit	18.001	1 byte	CW
2, 17, 32, 47, 62, 77, 92, 107, 122, 137	Output A...J	Switch	1.001	1 bit	CW
3, 18, 33, 48, 63, 78, 93, 108, 123, 138	Output A...J	Status switch	1.001	1 bit	CRT
4, 19, 34, 49, 64, 79, 94, 109, 124, 139	Output A...J	Relative dimming	3.007	4 bit	CRWU
5, 20, 35, 50, 65, 80, 95, 110, 125, 140	Output A...J	Brightness value	5.001	1 byte	CW
6, 21, 36, 51, 66, 81, 96, 111, 126, 141	Output A...J	Status brightness value	5.001	1 byte	CRT
7, 22, 37, 52, 67, 82, 97, 112, 127, 142	Output A...J	Rel. dimming speed 0...100%	7.005	2 byte	CRWU
8, 23, 38, 53, 68, 83, 98, 113, 128, 143	Output A...J	Forced operation	1.001	1bit	CW
			2.001	2 bit	CW
9, 24, 39, 54, 69, 84, 99, 114, 129, 144	Output A...J	Block	1.003	1 bit	CW
10, 25, 40, 55, 70, 85, 100, 115, 130, 145	Output A...J	Staircase start stop	1.003	1 bit	CW
11, 26, 41, 56, 71, 86, 101, 116, 131, 146	Output A...J	Staircase lighting duration	7.005	2 byte	CRW
12, 27, 42, 57, 72, 87, 102, 117, 132, 147	Output A...J	Staircase permanent	1.001	1 bit	CW
13, 28, 43, 58, 73, 88, 103, 118, 133, 148	Output A...J	Counter start stop	7.007	2 byte	CRW
14, 29, 44, 59, 74, 89, 104, 119, 134, 149	Output A...J	Counter reset	1.015	1 bit	CW
15, 30, 45, 60, 75, 90, 105, 120, 135, 150	Output A...J	Counter current (hours)	7.007	2 byte	CRT
16, 31, 46, 61, 76, 91, 106, 121, 136, 151	Output A...J	Counter runout	1.002	1 bit	CT
152, 153, 154, 155, 156, 157, 158, 159, 160, 161	Output A...J	Counter current	13.100	4 byte	CRT

4. Priority Order List

Each function has priority between of them. 1 is highest priority of all.

1- Bus voltage return or failure
2- Forced Operation
3- Block
4- Permanent ON
5- Staircase Function
6- Brightness or Switch control

5. Parameters

5.1 General Parameters

Enable manual operation	*disable* ***enable***

This parameter can be used for programming whether manual control is to be enabled or disabled via the button on the device. When the manual operation is enabled, the connected load can be switched or dimmed via the corresponding channel key. Dimming function has fixed values shown below.

Dimming Behavior
Dimming transition time 1…%100 = 10 sec
Allow switching on/off via dimming = no
Dimming type = Start stop
Button Behavior
Short Press ON = Switching ON
Short Press OFF = Switching OFF
Long Press ON = Dimming BRIGHTER
Long Press OFF = Dimming DARKER

- 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	*via push button* ***automatically and via push button***

This parameter determines how long manual operation remains activated.

Time for automatic reset	*10…**300**…6000*

Manual operation remains activated until the adjust time has timeout or deactivated by manual button.

Send object "In operation"	***no*** *send value "0"* *send value "1"*

This object is using to report device still alive and connected the KNX bus line. Telegram value is selectable like "0" or "1". If telegram is not received, device may be defective or KNX cable will be interrupted.

If the parameter selected yes;

Sending cycle time in s[1…65535]	*1…***300**…65535*

This parameter is using for "In operation" communication object to sends to KNX line cyclically.

Sending and switching delay after bus voltage recovery in s[2…255]	***2**…255*

This parameter defines the behavior of the switch & dim actuator when bus power return. The telegrams will be sent delayed depends to user defined parameter.

Limit number of telegram	*yes* ***no**

If parameter selected "yes"; *Telegram limit count* and *Telegram limit period parameters* are visible.

Telegram limit count	***2**…255*

Max number of telegrams per period, can be sent freely.

NOT: The value of the object cannot sent in the time of period. The object is buffered for the next period time. The buffered object can be updated when the object value is updated.

Telegram limit period	*50ms* *100ms* *200ms* *500ms* *1s* *2s* *5s* ***10s*** *30s* *1min*

The limit period can be adjusted via this parameter.

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

If the parameter is selected 'yes', scene screen open on the main window. You can find scene information under the scene function title.

5.2 Channel Definition

Parameter settings	***all channels equal*** *each channel individual*

This parameter is used to all existing dimming channels can be assigned to the same parameters.

- Set the parameter to “all channel equal”
  This selection is reduced the ETS parameters. These visible parameters are used on all channels automatically. Only the communication objects can be configured separately.
- Set the parameter to “each channel individual”
  If selected, all channels and parameters can be configured separately.

5.3 Channel A…J – General Parameters

Switching reaction on bus voltage failure	***no reaction** *switch on* *switch off*

This parameter is used to set channel brightness value when the bus voltage failure.

- Set the parameter to “no reaction”
  When the bus voltage failure, the dimming channel shows no reaction and remains current position.
- Set the parameter to “switch on”
  When the bus voltage failure, the dimming channel is switched on.
- Set the parameter to “switch off”
  When the bus voltage failure, the dimming channel is switched off.

NOTE: If *no reaction* or *switch on* selected, dimming will not be possible during the bus voltage failure. Dimming percentage will be %100 dimed if the switch was (Switch ON) before bus failure.

Switching reaction on bus voltage recovery	*no reaction* ***brightness value before bus failure** *100%* *...* *1%* *switch off*

This parameter is used to set channel brightness value when the bus voltage recovery.

- Set the parameter to “no reaction”
  When the bus voltage return, the dimming channel shows no reaction and remains current position.
- Set the parameter to “1%...100%”
  When the bus voltage return, the dimming channel is set to the parameterized brightness value immediately.
- Set the parameter to “switch off”
  When the bus voltage return, the dimming channel is switched off.
- Set the parameter to “brightness value before bus failure”
  When the bus voltage return, the last brightness value set before bus failure.

5.4 Channel A…J – Function Parameters

Enable function 8-bit scene	*yes* ***no**

This parameter enables the recall or saving of up 64 scenes via 8-bit scene object.

Overwrite scene on download	*yes* ***no**

This parameter is selected the reaction of the scene set.

- Set the parameter to “no”;
  During storage of a scene, the scene values are stored in the device. If you want to protect your scene in the device, you are selected “no”.
- Set the parameter to “yes”;
  The original ETS parameter values can be reload into the device during ETS download operation.

Enable function forced operation	*yes* ***no**

The forced operation function can be used for each output. It has a 1 bit or 2-bit optional communication object.

Forced operation (1 bit / 2 bit)	**** activated (1 bit)*** *activated (2 bit)*

Fixed force operation brightness value processed when force operation is activated via 1-bit telegram. Also using 2-bit telegram, force operation can be activated.

Bit 1	Bit 0	Function
0	0	Forced position not active normal control
0	1	Forced position not active normal control
1	0	Forced operation active, priority control
1	1	Forced operation active, priority control

2-bit Forced Operation

Brightness on value when forced operation activate	***100%**...0%(OFF)*

This parameter is configured switch on the lighting of the output during activated forced operation.

Behavior after bus voltage return	***no forced operation active*** *forced position ON* *forced position OFF (if selected 2-bit)* *forced position before bus failure*

The forced operation function can be initialized after bus voltage return, so the forced operation communication object is updated. After the bus voltage return, forced operation 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*";
  The forced operation active and the set the channels to force operation parameterized brightness value after bus voltage return.
- Set the parameter to "*forced position OFF*";
  This parameter appears if "2-bit Force Operation" selected only. The forced operation will be deactivated and set the brightness value as bus voltage return behavior after bus voltage return.
- Set the parameter to "*state of forced pos. before bus volt. fail*";
  The forced operation activates the channel which was activated before bus failure. Other channels which was not activated will be processed as bus voltage return state. ETS download operation deletes the stored state.

Enable function disable	*yes* ***no***

If the parameter is selected "yes", "block" object can be visible. The channel can be blocked via this object. Although it can't be changed by bus. The current output brightness value is fixed. All commands with the exception of forced operation and the reactions to bus voltage failure and recovery are ignored due to priority order.

Enable staircase function	*yes* ***no***

If the parameter is selected "yes", "staircase" windows can be visible.

Enable operating hour	*yes* ***no***

If the parameter is selected "yes", "operating hour" windows can be visible.

5.5 Channel A…J – Switch Parameters

Brightness value when switch on	***100%**
	*...
	1%

This parameter is used to set the brightness of light which is controlled “Switch” communication object received ON telegram.

Dimming time for switching ON/OFF in s[0…255] (0 = immediately)	***0**…255

This parameter is used to defined how fast the lighting switch on or off with switching command. This time is considered 0% to 100 %.

Feedback of switching state	*yes*
	***no**

The current switching state of the dimming channel can be sent via “Status switch” object.

	yes
Feedback of brightness value	***no**

The current brightness state of the dimming channel can be sent via “Status brightness value” object.

5.6 Channel A…J – Dimming Parameters

Rel. dimming speed from 0…%100 in s[0…255] (0 = immediately)	*0…***6**…255*

This parameter sets the transition time for relative dimming from 0% to 100%. If selected “0”, relative dimming will be processed instantly.

Upper dimming limit	****100%**...50%*
Lower dimming limit	*50%**...20%**...1%*

You can limit largest and minimum brightness value via this parameter.

Allow switch on via relative dimming	****yes***
	no

This parameter is using for switching the channel(s) ON by a brighter dimming telegram.

Allow switching off via relative dimming	****yes***
	no

This parameter is using for switching the channel(s) OFF by a darker dimming telegram.

5.7 Channel A…J – Value Parameters

Dimming speed from 0…%100 in s[0…255] (0 = immediately)	*0…***6**…255*

This parameter sets the transition time for brightness value control from 0% to 100%. If selected “0”, brightness dimming will be processed instantly.

Upper dimming limit	****100%**...50%*
Lower dimming limit	*50%**...20%**...1%*

You can limit largest and minimum brightness value via this parameter.

Allow switch on via brightness value	****yes***
	no

This parameter is using for switching the channel(s) ON by a brightness value telegram.

Allow switching off via brightness value	****yes***
	No

This parameter is using for switching the channel(s) OFF by a brightness value telegram.

5.8 Channel A…J – Staircase Parameters

This window will be shown if 'Enable Staircase function' is selected "yes" on the *A…J Function* windows. Staircase communication objects are visible. The staircase function can be parameterized for each or all channel depends to channel definition.

Brightness value after switch on	***%100**…%0 (OFF)*

This parameter is used to define the brightness value when staircase lighting switch ON.

Time duration in s[0…65535]	*0…**180**…65535*

This parameter defines the duration of staircase lighting.

Staircase time retriggerable	**not retriggerable* *yes retriggerable* *staircase lighting time 2x* *…* *staircase lighting time 5x*

This parameter defines whether the staircase on time can be retriggerable or not. Staircase time retriggering allows to limitless trigger staircase function until staircase time multiplier reached. (2x, 3x, 4x, 5x) Staircase time counter begins with the first Switch ON value. If the parameter selects 'not retriggerable', staircase on time doesn't extend.

e.g. Staircase time: 1 min, Staircase time retriggerable: 3x Maximum staircase time will be 3 mins. Staircase function can be triggered end of the 3 minutes.

Reaction on switching off via object "Staircase start stop"	***switch off*** *ignored*

- Set the parameter to "yes"
  The staircase lighting can be switched off.
- Set the parameter to "no"
  Switch OFF telegrams are ignored.

When the "Permanent ON" telegram is activated, the "switch OFF" telegram will be ignored and not processed due to priority order.

Brightness value during permanent ON	***%100**…%0*

This parameter is used to define the brightness value of the Permanent ON function.

Restart of staircase lighting time after end of permanent ON	*yes* ***no***

If this parameter is selected 'yes', Staircase time will be retriggered independently of the *Staircase time retriggerable* parameter when the Permanent ON object is deactivated. Even, when it is "no trigger" selected, the device will trigger the staircase lighting time due to selection.

Staircase time can be changed by object	*yes* ***no***

This parameter allows to change *staircase lighting time* by external communication object named as "Operating Hour limit value".

Reaction at the end of the staircase lighting time	****switch off*** *activate pre-warning time* *activate reduced continuous lighting*

The warning function can be activated by this parameter select 'yes'. Then, you can adjust pre-warning time, number of pre-warning and time for pre-warning interval. The warning function is for warning that the staircase lighting time run out and the lights will be switched off soon. In the warning, lights short turn off. Switch status is ON until finish warning time.

Pre-warning time s[0…65535]	*0…***30**…65535*

This parameter is visible when selected "*activate pre-warning time*". This parameter is used for setting the duration of the pre-warning time. The reduced brightness set time is configured.

Reduced brightness during the pre-warning time	*%100…**%50**…%1*

This parameter is defined the reduced brightness value for pre-warning time. At the end of the pre-warning time the lighting will be closed.

//

Dimming down time in s[0…65535]	*0…***30**…65535*

This parameter is visible if the "*activate reduced continuous lighting*" is enabled. This parameter is defined the continuously dimming fade time.

Reduced brightness for continuous lighting	*%100…**%0***

This parameter is defined the reduced brightness value after end of the staircase lighting. At the end of the staircase lighting time the lighting is still open or closed at the configured brightness level.

5.9 Channel A…J – Operating Hour Parameters

Type of counter	***up-counter*** *down-counter*

This parameter is used to configure as an up-counter or down counter.

- Set the parameter to "*up counter*"
  The operating hours start the count from '0'. The maximum counting value is 65535 hours. When the operating hour reached limit value, 'Operating hour runout' telegram sends to bus. Then the operating hours counter stop.
- Set the parameter to "*down counter*"
  The operating hours preset value counting down. When the counter reached '0', the counting status is reported to the bus via 'Operating hour runout'.

Limiting value preset	***no preset*** *yes, with parameter* *yes, with parameter & object*

The start or limit value preset here. A limit value can be preset as an option.

- Set the parameter to "*no preset*"
  Operating hour limit will not be activated but, Operating hour values will be transmitted intervally or cyclically related to user define. Operating hour counter is resettable.
- Set the parameter to "*yes, with parameter*"
  When this parameter selected; 'Limit value/Counter start' parameter is visible. This parameter is used for setting limit value of up counter, start value of down counter.
- Set the parameter to "*yes, with parameter and object*"
  This parameter allows to set counter limit/start value by external object named as *Operation Hour Limit Value* additionally.

Limit value h[1…65535]	*1…**65535***
Start value h[1…65535]	*1…**65535***

If the selected "down counter", "start value" can be defined via this parameter. If the selected "up counter", "limit value" can be defined via this parameter.

Automatic transmitting of the counter value	*cyclical* ***after change by interval value***

This object is used to configuration of counter status object.

Count value interval h[1…65535]	***1**…65535*
Cyclical sending interval hh:mm[00:01…23:59]	*00:01…**00:30**…23:59*

Operating Hour status can be transmitted end of the user defined time cyclically via "*Cyclical sending interval*".

Operating Hour status can be transmitted when (Switched ON) channels reached to user defined counter time via "*Cyclical sending interval*".

Enable sending operating hour information in hours format	***no** *yes*

Additional Operating Hour status can be selected "yes" to show Operating Time as hours format. Otherwise, the device will send the operating time as seconds.

5.10 Channel A…J – Scene Parameters

The scene function of the switch & dim actuator has an 8 bit scene object. You can define for each 64 scenes with parameter window. 8 independent values can be stored for each channel. The scene can be specified like brightness value and transition time to new brightness.

When the actuator receives a telegram that retrieves a scene address, device will set the channels desired brightness level in desired transition time to new brightness.

A scene is activated when it receives its scene number at the scene object. The storing of the current channel values is carried out using the scene object.

For example;

Scene	recall		save	
	Hex.	Des.	Hex.	Des.
1	0x00	0	0x80	128
2	0x01	1	0x81	129
3	0x02	2	0x82	130
4	0x03	3	0x83	131
5	0x04	4	0x84	132
6	0x05	5	0x85	133
7	0x06	6	0x86	134
8	0x07	7	0x87	135
9	0x08	8	0x88	136
10	0x09	9	0x89	137
11	0x0A	10	0x8A	138
…	…	…	…	…
63	0x3E	62	0xE2	190
64	0x3F	63	0xE3	191

Allocation to scene number 1…64	***no assignment*** *scene 1* *….* *scene 64*

This parameter is used to following parameter belongs to which scene. "*no assignment*" meaning following parameters are not belong to any scene.

Brightness value	*%100 (255) …**%0 (0)***

This parameter is used the brightness value which the output controls with a scene recall. This parameter can be changed by scene save.

Transition time to new brightness in s[0…255]	*0…**3**…255*

This time is defined the transition time of dimming speed. This parameter defines the dimming time between 0% to 100%. Scene dimming time calculating example shown below;

e.g. Transition time to new brightness= 3 sec
Scene Brightness value= % 25
Current Brightness value= % 60

$$Scene\ Dimming\ Time = \left(\frac{Transition\ time\ to\ new\ brightness}{100}\right) \times |Scene\ Brightness\ Value - Current\ Brightness\ value|$$

The result is = (3/100) x l 25-60 l

=0,03 x l-35l

=0,03 x 35

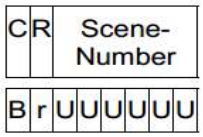
=1,05 sec

6. Object Descriptions

6.1 General Object Description

No	Object name	Name	DTP Type	Length	Flags
0	In operation	General	DPT 1.002	1 bit	CWT
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.					
1	Scene 8 bit	General	DPT 18.001	1 byte	CW

This object is used to recall or store scenes. Up to 64 scenes are available on the Switch & Dim Actuator.



C: 0 – recall scene
1 – store scene
R: Reserved

The object to recall and store the scene (1…64) is sent via the group address. 8-bit scenes are stored in the Switch & Dim Actuator.

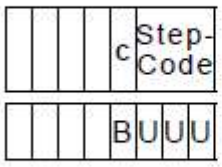
Scene	recall		save	
	Hex.	Des.	Hex.	Des.
1	0x00	0	0x80	128
2	0x01	1	0x81	129
3	0x02	2	0x82	130
4	0x03	3	0x83	131
5	0x04	4	0x84	132
6	0x05	5	0x85	133
7	0x06	6	0x86	134
8	0x07	7	0x87	135
9	0x08	8	0x88	136
10	0x09	9	0x89	137
11	0x0A	10	0x8A	138
…	…	…	…	…
63	0x3E	62	0xE2	190
64	0x3F	63	0xE3	191

6.2 Input Object Description

No	Object name	Name	DTP Type	Length	Flags
2	Switch	Output A...J	DPT 1.001	1 bit	CW
This object is used for switching a relay output ON/OFF. 0: relay opens 1: relay closes					
3	Status switch	Output A...J	DPT 1.001	1 bit	CRT
This object is used to send current contact position of relay. This object can be sent with changed or all updated. 0: relay opens 1: relay closes					
4	Relative dimming	Output A...J	DPT 1.001	4 bit	CRWTU

4 bit: B_1U_3

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 received via the group address linked with this object. The dimming parameterized speed and the limits are configured in “Dimming” window. While in transition operation, a stop command received the brightness value is retained. This object is always visible.

5	Brightness value	Output A...J	5.001	1 byte	CW
The brightness value is received via this object for relevant channel. The transition time is configured in “Value” window. Brightness value is follow the parameterized value with the limitation. Brightness value status can be send via “Status brightness value” and “Status switch” objects. 0 : OFF, or min brightness value 255 : 100 %					

6	Status brightness value	Output A...J	5.001	1 byte	CRT

This object is released if the parameter status of brightness value This object can be sent with changed or all updated.

0 : OFF, or min brightness value
255 : 100 %

7	Rel. dimming speed 0…100%	Output A...J	5.001	1 byte	CRWTU

This object is used to configure relative dimming speed. The value is using in a seconds and contain 0% to 100%. This value does not stored after bus voltage failure. The dimming speed of switching, value and staircase does not influenced.

8	Forced operation	Output A...J	1.001	1bit	CW
			2.001	2 bit	CW

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. The brightness value is set to parameterized position in “Function” window.
Forced operation is a higher priority than blocking an output.

Bit Field		Description
Bit 0	:	Switching state “0”: switching off “1”: switching on
Bit 1	:	Forced control “0”: inactive “1”: active

9	Block	Output A...J	1.003	1 bit	CW

This object is used to blocking an output. When the block operation is activated, the other received telegrams are ignored and not evaluated. After bus voltage recovery or download the blocking is removed.

0 : block passive
1 : block activated

10	Staircase start stop	Output A...J	1.003	1 bit	CW

This object is used to activation of the staircase function. This object is enabled, the staircase function is activated.

The object is;
0 = disable
1 = enable

11	Staircase duration	Output A...J	7.005	2 byte	CRW

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 *staircase function* tag.
The object is;
0 = must be greater than zero
....
65535

12	Staircase permanent	Output A...J	1.001	1 bit	CW
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. This object feature is useful for cleaning person. The object is; 0 = deactivate 1 = permanent ON active					
13	Operating Hour Limit Value	Output A...J	7.007	2 byte	CRW
This object is used 2-byte object for external specification of a limit value or starting value of the operating hours counter of dimming channel. Value range: 0…65535					
14	Operation Hour Reset	Output A...J	1.015	1 bit	CW
This object is used for resetting the operating hours counter of the dimming channel 0 = no reaction 1 = restart					
15	Operation Hour Current (hours)	Output A...J	7.007	2 byte	CRT
This object is used for transmitting or reading out the current counter count of the operating hour. If the bus voltage should fail, the value of the communication object is not lost and is actively transmitted to the bus after bus voltage return or an ETS programming operation.					
16	Operation Hour Runout	Output A...J	1.002	1 bit	CT
This object is used for sign that the operating hours counter has elapsed (forwards counter = limit value reached / backwards counter = value "0" reached). With a message, the object value is actively transmitted to the bus ("1" = message active / "0" = message inactive).					
17	Operation Hour current	Output A...J	13.100	4 byte	CRT
This object is used for transmitting or reading out the current counter count of the operating hour in seconds format. If the bus voltage should fail, the value of the communication object is not lost and is actively transmitted to the bus after bus voltage return or an ETS programming operation.					