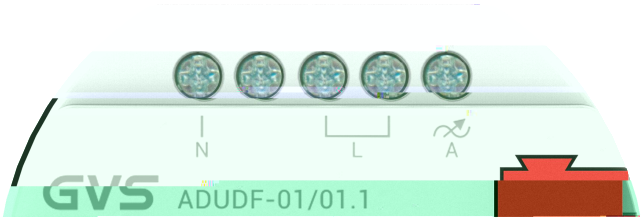
K-BUS 1

Universal Dimming Actuator,Flush Mounted,1-Fold_V1.4

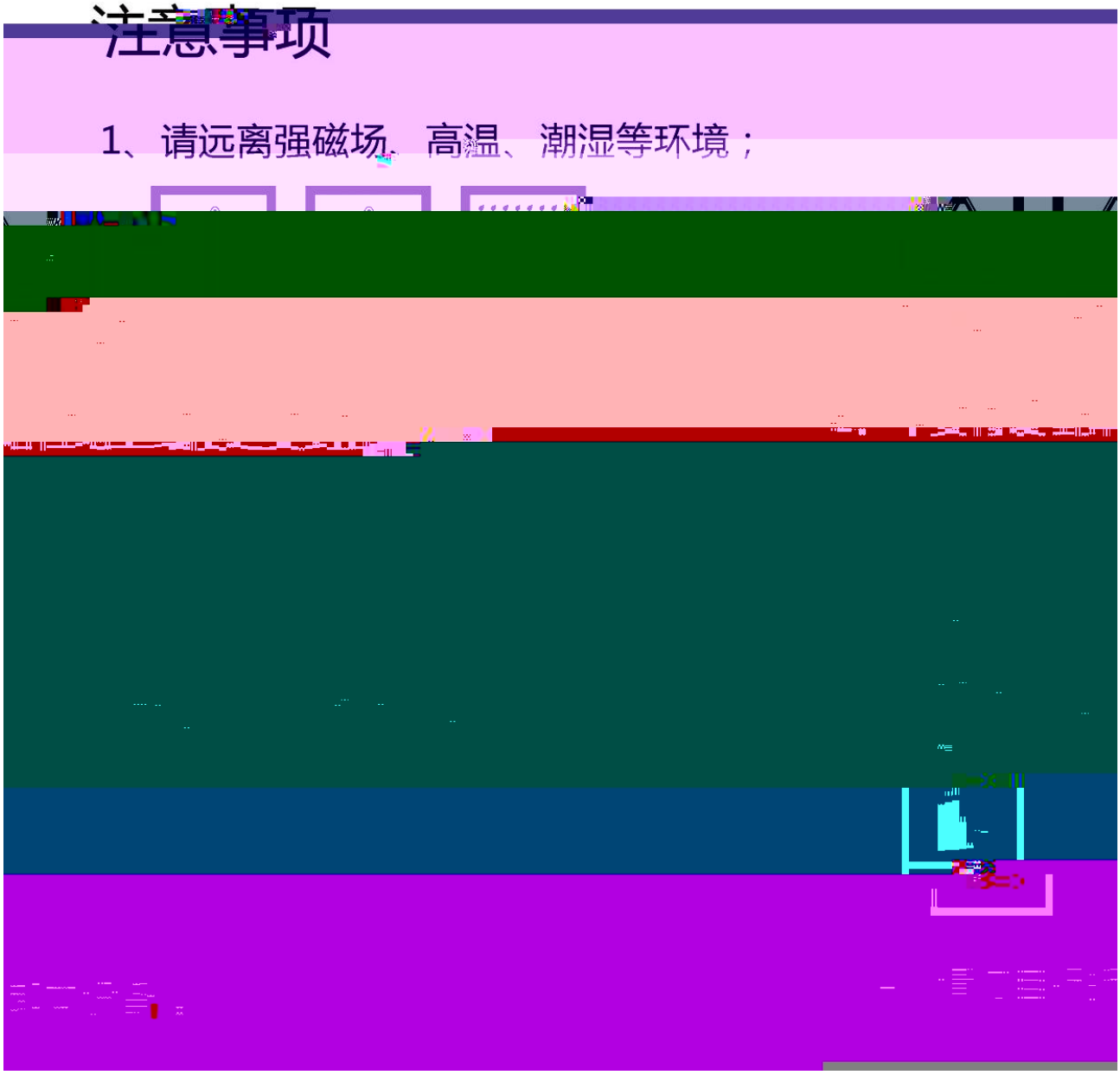
ADUDF-01/01.1



KNX/EIB

注意事项

1、请远离强磁场、高温、潮湿等环境；



⚠

1 □ [

---1
---3
2.1. ---4
2.2. ---6
---7
3.1. --- 7
3.2. --- 7
---8
ETS --- 10
5.1. KNX --- 10
5.2. “General” ---15
5.3. “Output setting” ---17
5.3.1. “Channel” ---18
5.3.2. “User defined dimming curve” --- 28
5.3.3. “Extension function” --- 31
5.4. “UI setting” --- 45
5.4.1. “Input x” --- 48
5.4.2. “LED x” ---65
5.5. “Logic” --- 68
5.5.1. “AND/OR/XOR” --- 69
5.5.2. “Gate forwarding” --- 71
5.5.3. “Threshold comparator” ---73
5.5.4. “Format convert” --- 76
5.5.5. “Gate function” --- 77
5.5.6. “Delay function” --- 79
5.5.7. “Staircase lighting” ---80
---82
6.1. “General” ---82
6.2. “Output setting” ---83
6.3. “UI setting” --- 87
6.3.1. “Input x” --- 87
6.3.2. “LED x” ---92
6.4. “Logic” --- 93
6.4.1. “AND/OR/XOR” ---93
6.4.2. “Gate forwarding” ---94
6.4.3. “Threshold comparator” --- 95
6.4.4. “Format convert” ---95
6.4.5. “Gate function” --- 98
6.4.6. “Delay function” --- 99
6.4.7. “Staircase lighting” --- 100

1 1

! ! ! LED ! !

LED KNX k

k KNX

k

! ! !

1-100%

k

knxprod ETS ETS5

k

k

k

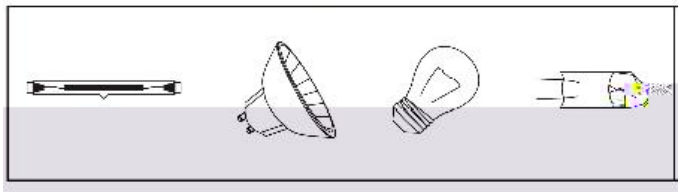
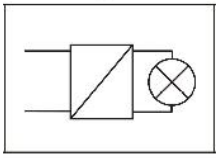
- ! /
- ! ! ! !
- !
- 6 ! ! ! ! !
-
- ! ! ! !
- ! ! ! ! ! !

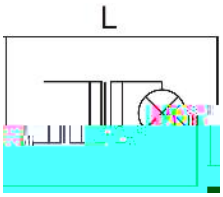
- 5V 12V
- ! ! ! ! ! ! !
- KNX

		21~30V DC KNX <18mA/24V <16mA/30V <480mW
		1
		200W / /LED 230 V AC 50/60HZ 0.5W 1.7W ! !
LED	LED	5V 12V
	LED KNX	4mA / 0.8 mm Ø 0.2-2.5mm^2 0.4N-m 10m LED LED
		-5 °C...+45 °C -25 °C...+55 °C

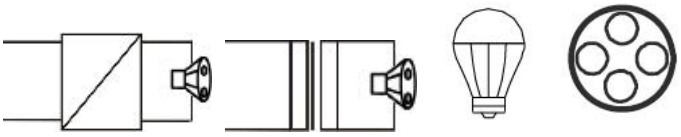
	-25 °C...+70 °C
	<93%
80mm 86mm	
ť 53 Ô 23.5mm	
0.1KG	

2.1.

	10...200W	10...200W
	10...200W	10...200W
	10...200W	10...200W
LED	2...60W	2...200W
LED	2...60W	2...200W
LED (!)	2...60W	2...200W
LED	2...60W	2...200W
	R 	
	C 	



LED



k + +

k k

LED **LED**

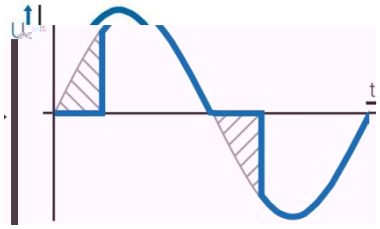
2.2.

!

1.

k

k k

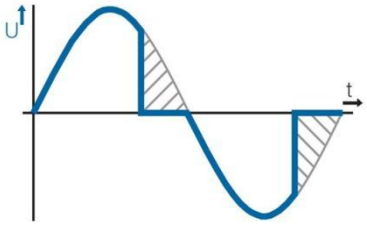


2.

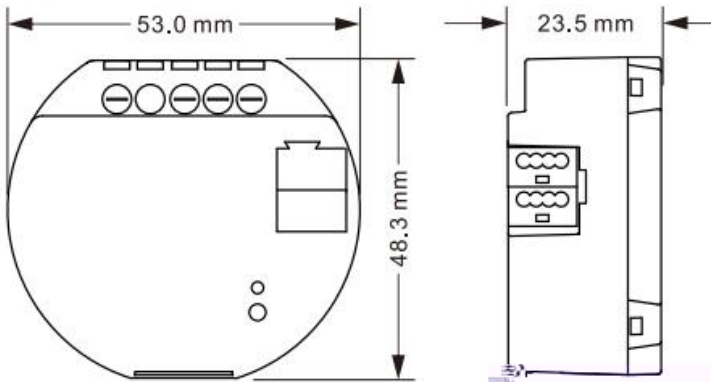
k

k

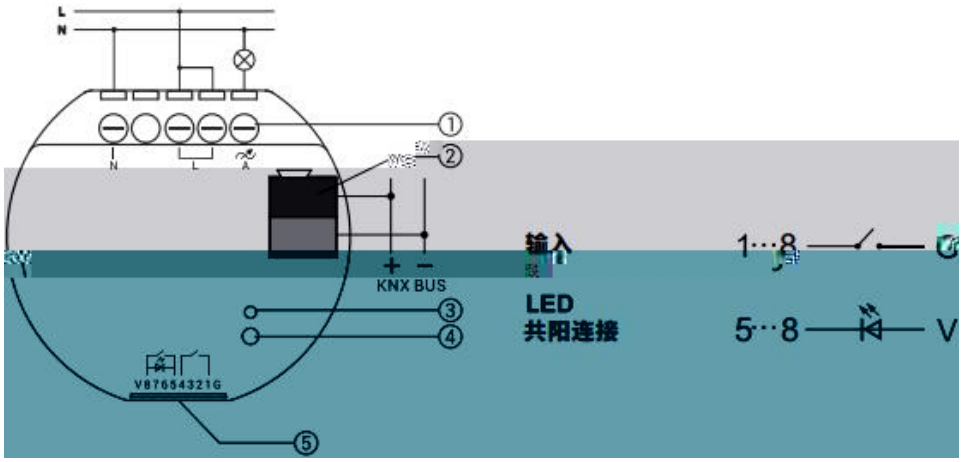
k k



3.1.



3.2.



F ┣ KNX ㄐ ㄎ LED

ㄋ /LED

G: GND

V: VCC

1...8: 1~8 1-4 5-8 LED

4 4 3

k

1 k ! / ! ! !

! k

! ! !

! k

> >

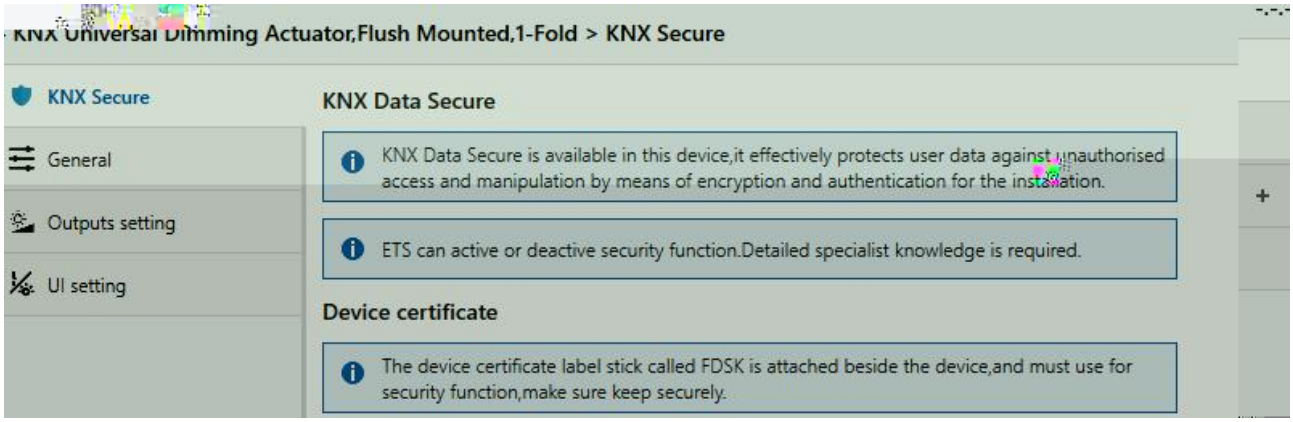
8 8 1 k

! ! ! ! ! ! ! k

ETS

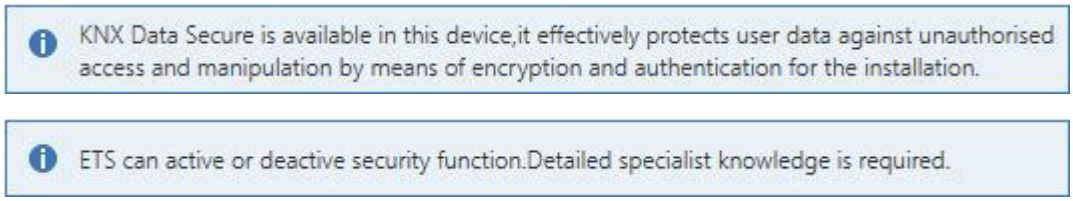
5.1.KNX

KNX KNX k k



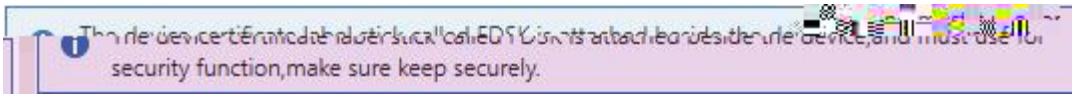
5.1 (1) “KNX Secure”

KNX KNX ETS 5.1(1)



KNX

k ETS k k



FDSK k

ETS

❖ KNX k

KNX

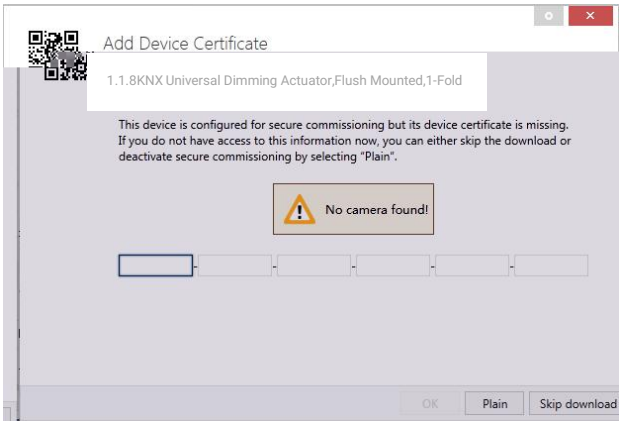
k

❖ KNX k FDSK =

ETS

✧ ETS 5.1 (2) k

QR k



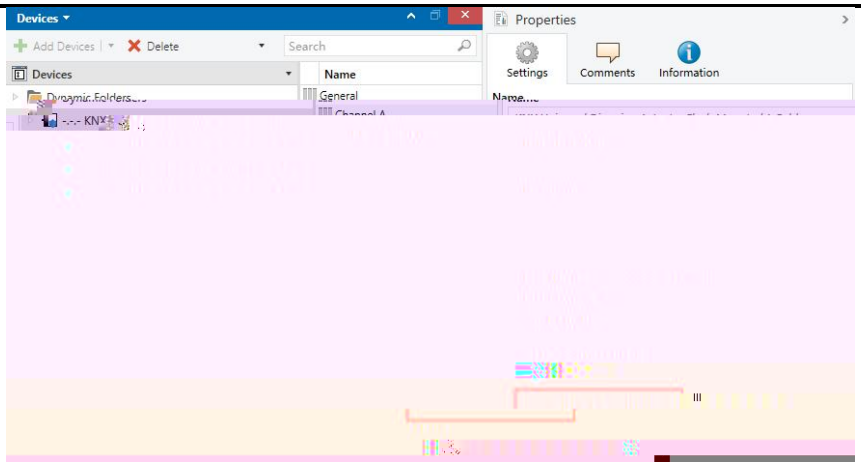
5.1(2) Add Device Certificate

✧ ETS k

“Security” 5.1(3) k

“Add Device Certificate” 5.1(4) k

5.1(3) Add Device Certificate



5.1(4) Add Device Certificate

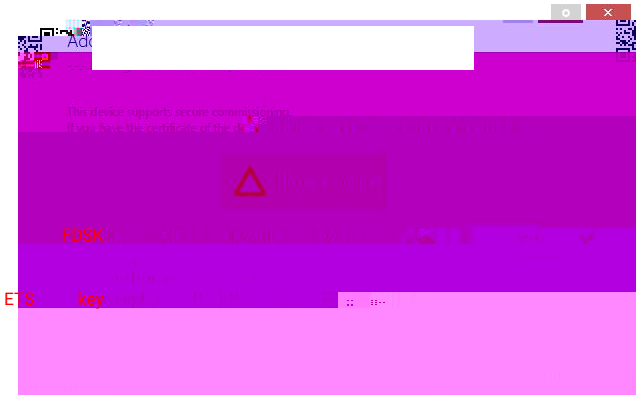
✧ FDSK k

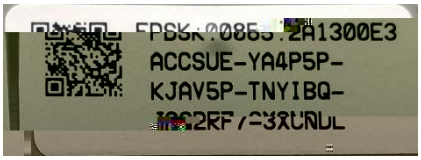
FDSK **KNX** k

FDSK FDSK ETS 5.1(5) k

ETS

FDSK k



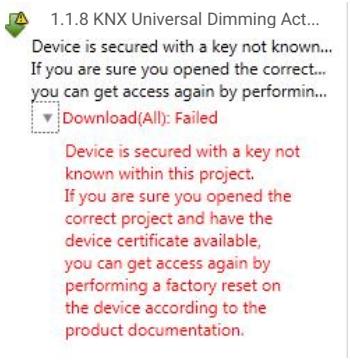


5.1(5)

k

5.1(6) “Yes” “Add Device Certificate” FDSK

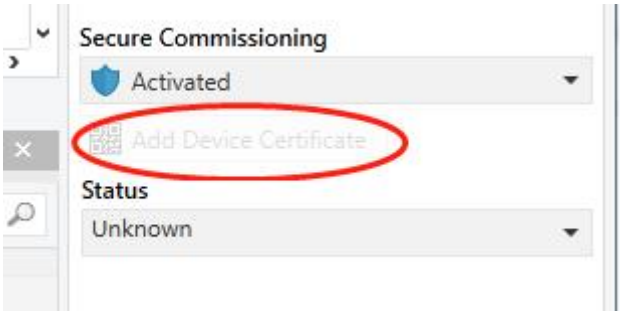
5.1(6) k



5.1(6)

FDSK k

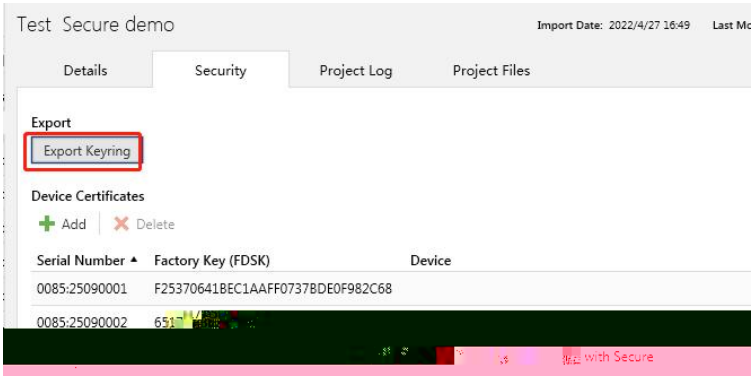
“Add Device Certificate” k



5.1(7)

ETS

5.1(8) .knxkeys k

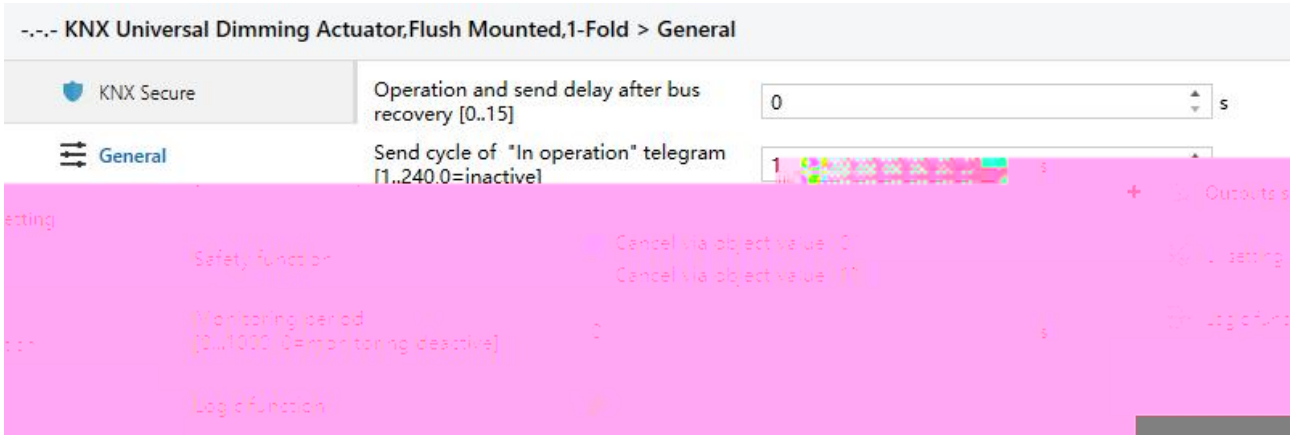


5.1(8)

KNX USB , ETS

k

5.2. “General”



5.2 “General setting”

“Operation and Send delay after bus recovery [0..15]”

k

0..15 s

k

“Send cycle of 'In operation' telegram [1..240,0=inactive]”

k “0” “In operation” k “0” “In operation” “1”

k **0…240 s 0=**

k

“Safety function”

k

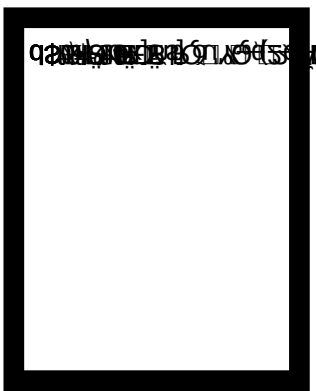
Cancel via object value "0"

Cancel via object value "1"

k

k

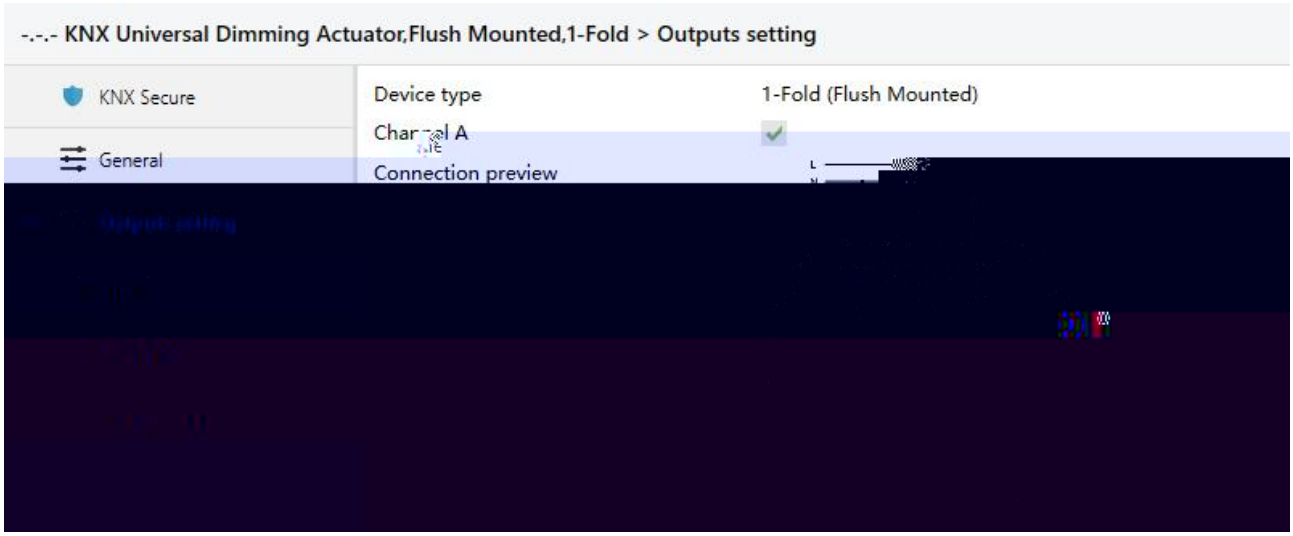
“Monitorin



k

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

5.3. “Output setting”



5.3 “Output setting”

“Device type”

1-Fold (Flush Mounted)

k

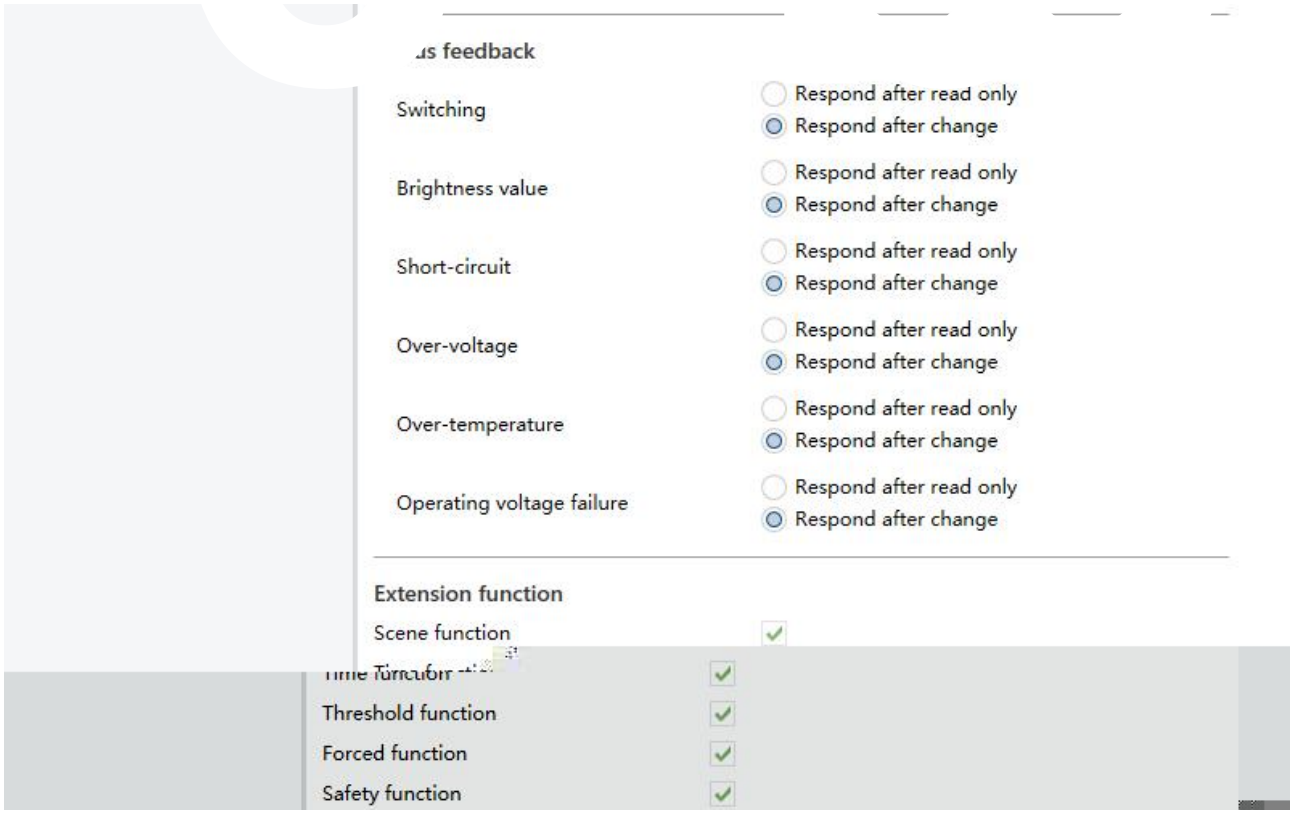
“Channel A”

k ETS

k

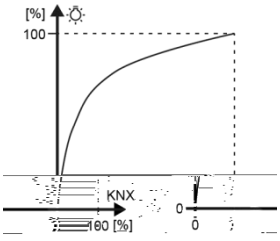
5.3.1. “Channel”

5.3.1(1) “Channel”

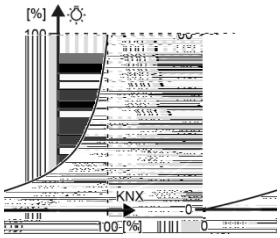


5.3.1(2) “Channel”

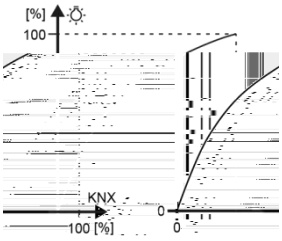
Logarithmic function



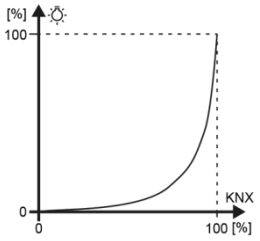
Cubic function



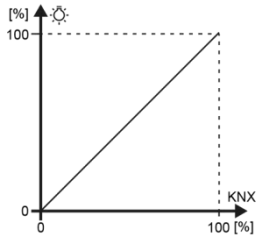
Root function



Exponential function

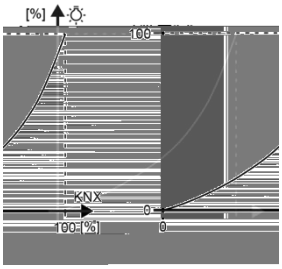


Linear function



User defined

Quadratic function



User defined 5.3.2 k

"General dimming time (from min. to max.)"

k 6s

0% 100% 0% 50% 3s k **2...255 s**

/ ! !

! k

"Minimum brightness value"

"Maximum brightness value"

!

k

! k

k

1...49 % **50...100 %**

"Switching on value"

k

Preset brightness value

Last brightness value

Last brightness value: "Switch ON" 50% 50% k

"Preset brightness value"

Preset brightness value k k **1...100 %**

"Dimming mode selection for switching on"

k

Jumping

Dimming

Jumping k

Dimming k

"Dimming mode selection for switching off"

k

Jumping

Dimming

Jumping k

Dimming k

"Dimming time for relative dimming"

k **2...255 s**

"Dimming time for absolute dimming"

k **2...255 s**

"Allow switch off via relative dimming"

k

k

"Absolute dimming value lower than the minimum value"

Absolute dimming k

0%=0% otherwise=Minimum brightness value

To be the minimum brightness value

To be 0%

0%=0%, otherwise=Minimum brightness value% 0% k

To be the minimum brightness value 0% k

To be 0% k

"Additional startup characteristic when the lamp is off"

k k

k

"Startup brightness value"

k **5..90 %**

! **ETS** k

"Behavior for dimming up"

k

Ignore the telegram

Like normal

Dim up based on the startup brightness

Ignore the telegram k

Like normal k

Dim up based on the startup brightness k

"Behavior when the switch or dimming value is lower than startup value"

k

Ignore the telegram

Like normal

Jump to startup brightness

Jump to startup then delay to target

Ignore the telegram k

Like normal k

Jump to startup brightness k

Jump to startup then delay to target k

Switching Absolute dimming k

“Delay time after reach startup”

Jump to startup then delay to target k

k

50ms

80ms

100ms

...

2s

4s

5s

Reset behavior / /

“Behavior after download”

k

Switching off

Preset brightness value

Brightness before bus failure

Switch off k

Preset brightness value k

Brightness before bus failure k

“Preset brightness value”

Preset brightness value k k **1...100 %**

”Behavior after bus failure”

k **ADUDF-01/01.1**

Switching off

”Behavior after bus recovery”

k

Switching off

Preset brightness value

Brightness before bus failure

Switch off k

Preset brightness value k

Brightness before bus failure k

“Preset brightness value”

Preset brightness value k k **1...100 %**

”Short-circuit detect for operating supply or device reset if output is off”

k

k

k

k

k

Status feedback

"Switching/Brightness value/Short-circuit/Over-voltage/Over-temperature/Operating voltage failure"

! ! ! ! k

Respond after read only

Respond after change

k

1

k

k k

k □ □ □ □ □ □ □

-... ;Ÿ wdX 2?f cÑ

10s 80℃ k

4 9° %! ^ m

k 20% □ □ □

Extension function

"Scene function"

k

"Time function"

k

"Threshold function"

k

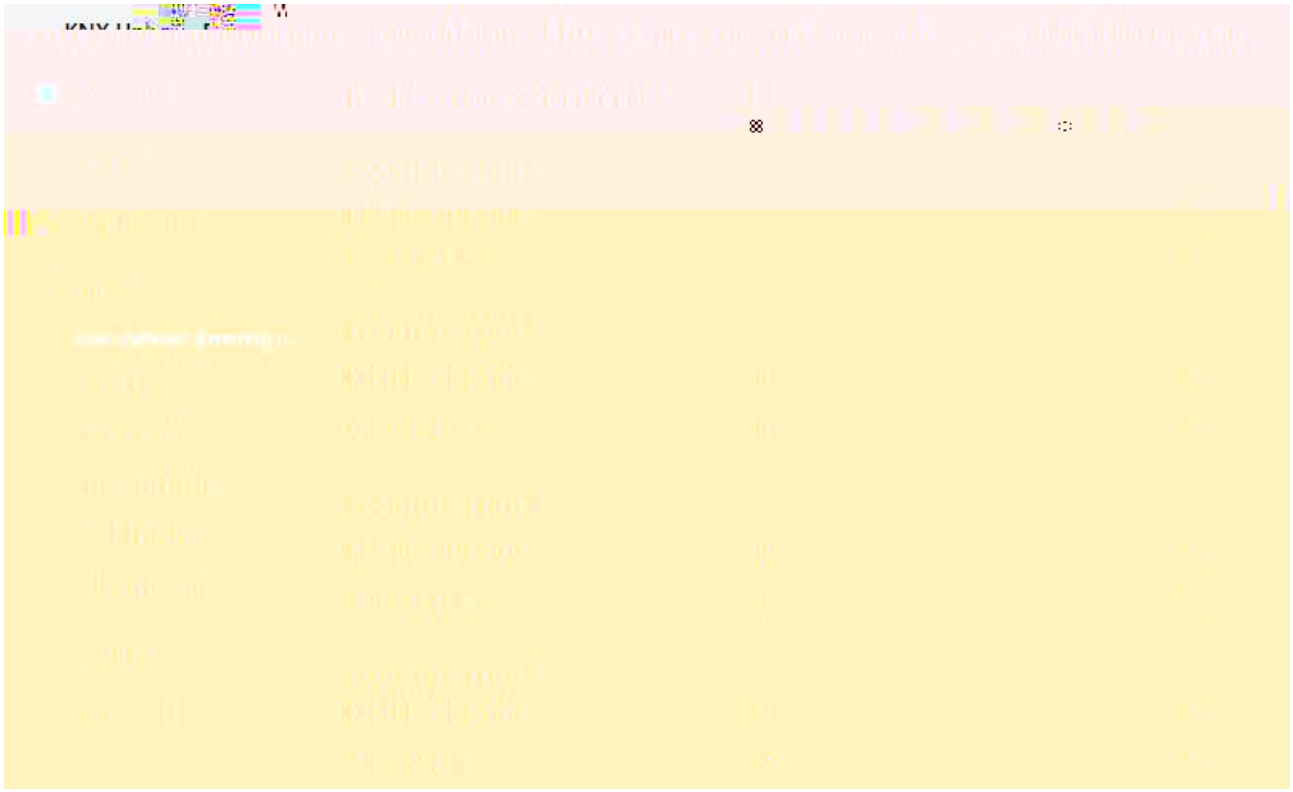
"Forced function"

k

"Safety function"

k

5.3.2. “User defined dimming curve”



5.3.2 “User defined dimming curve”

”Number of curve coordinate points”

k **2...16**

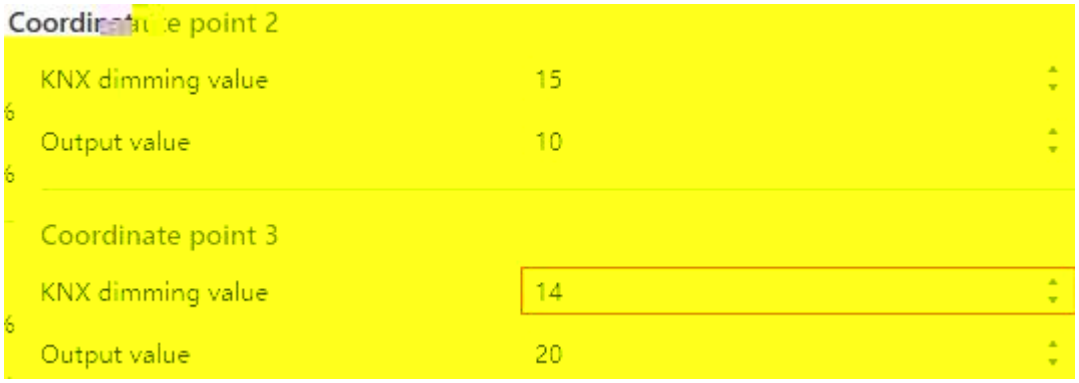
Coordinate point x (x=1~16)

”KNX dimming value”

KNX k **1..100%**

KNX 1% 100% k

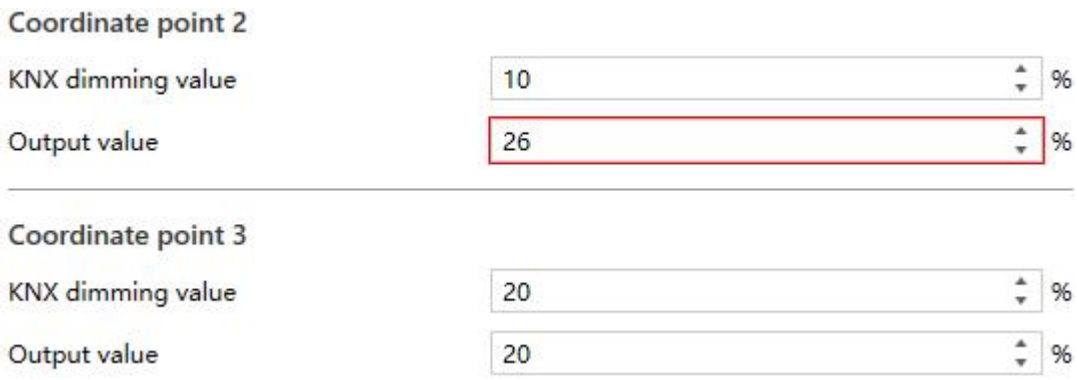
KNX **KNX** **ETS**



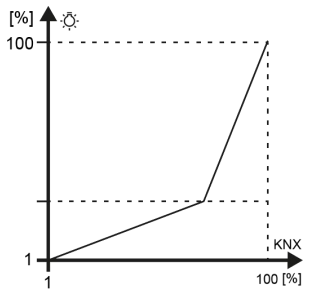
"Output value"

KNX k **1..100%**

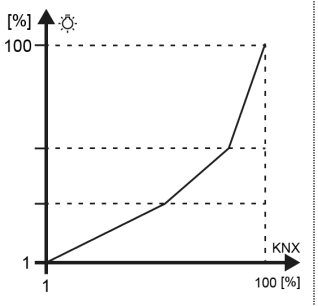
ETS



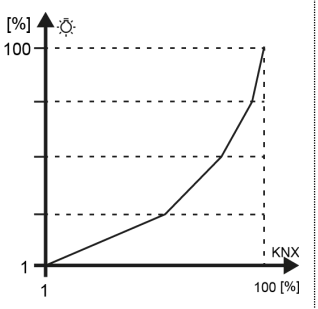
1 3



2 4



3 5



4 6

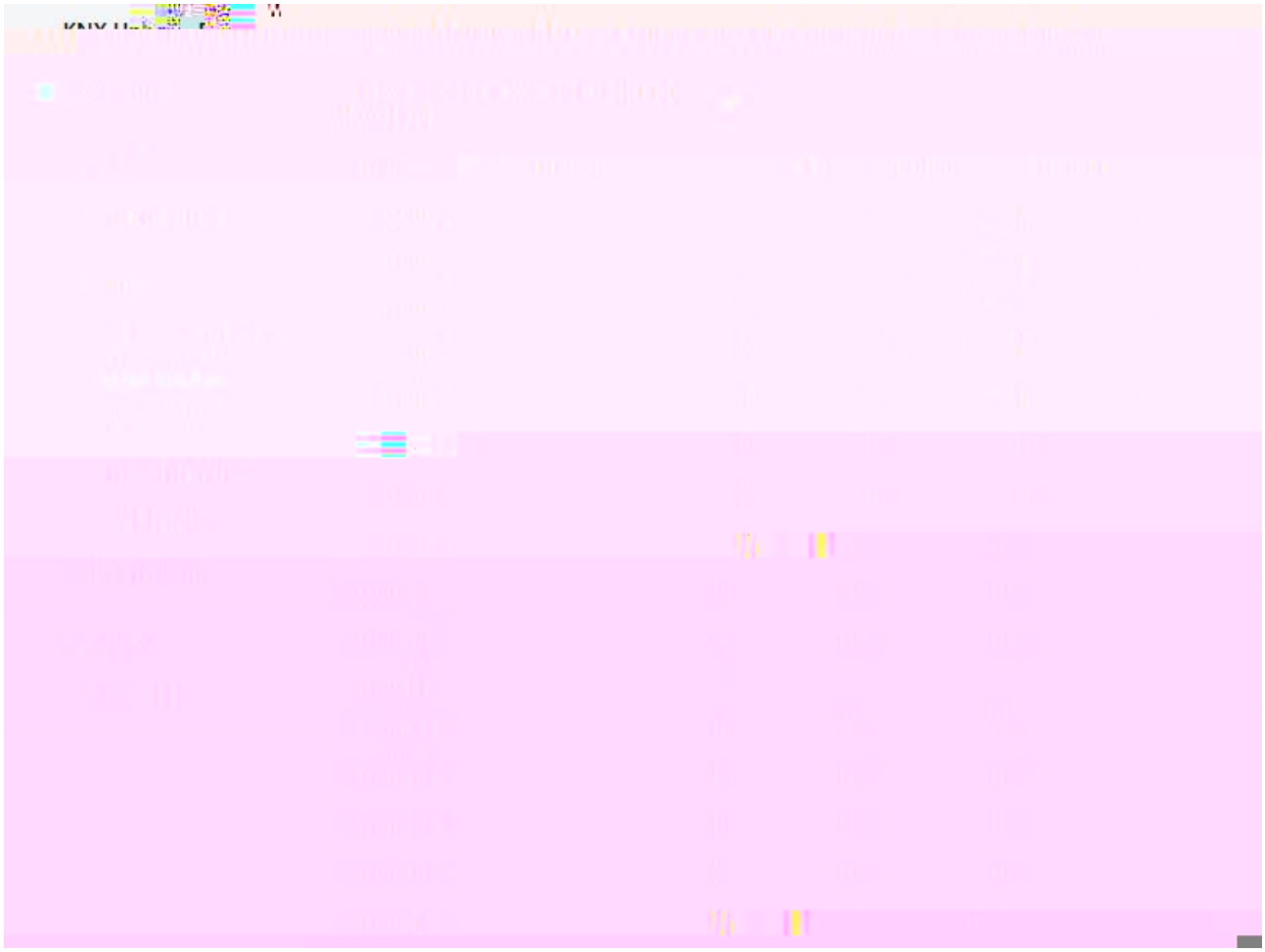
1

2 □□□□ □□ □ □□□ □□□□

5.3.3. “Extension function”

k

5.3.3.1. “Scene function”



5.3.3.1 “Scene function”

k

”Overwrite scene stored values during download”

k ETS

ETS k

Scene x x=1~16

"Description"

30 k

"Scene NO."

k 16 k **0...64**

0

Scenes	Description	Scene NO.	Brightness	Dimming
Scene 1		0	NA	NA

0

Exist multiple scene NO. assignment conflict, the valid scene NO. can't be the same, please correct, otherwise only the first one of those conflict scene is valid and others will be ignored

"Brightness"

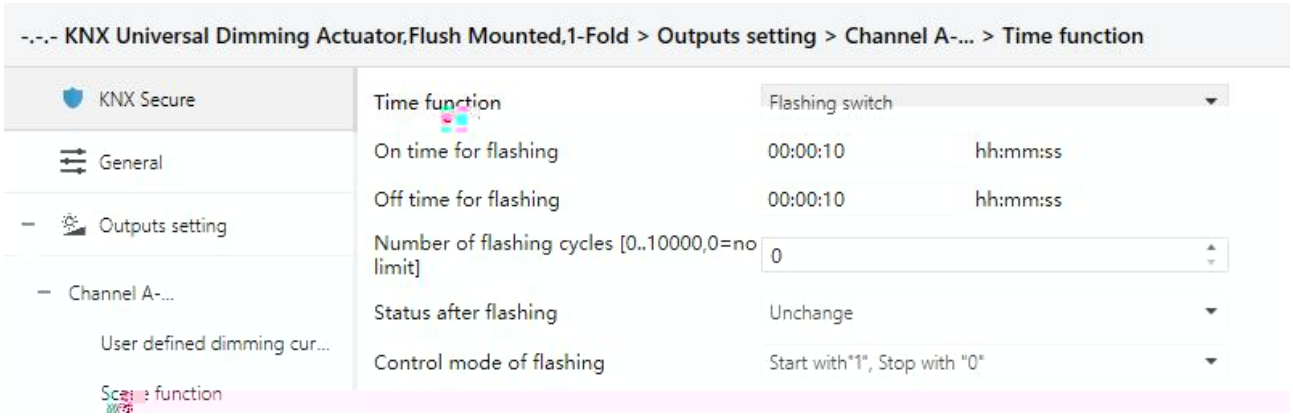
k **0...100 %**

"Dimming"

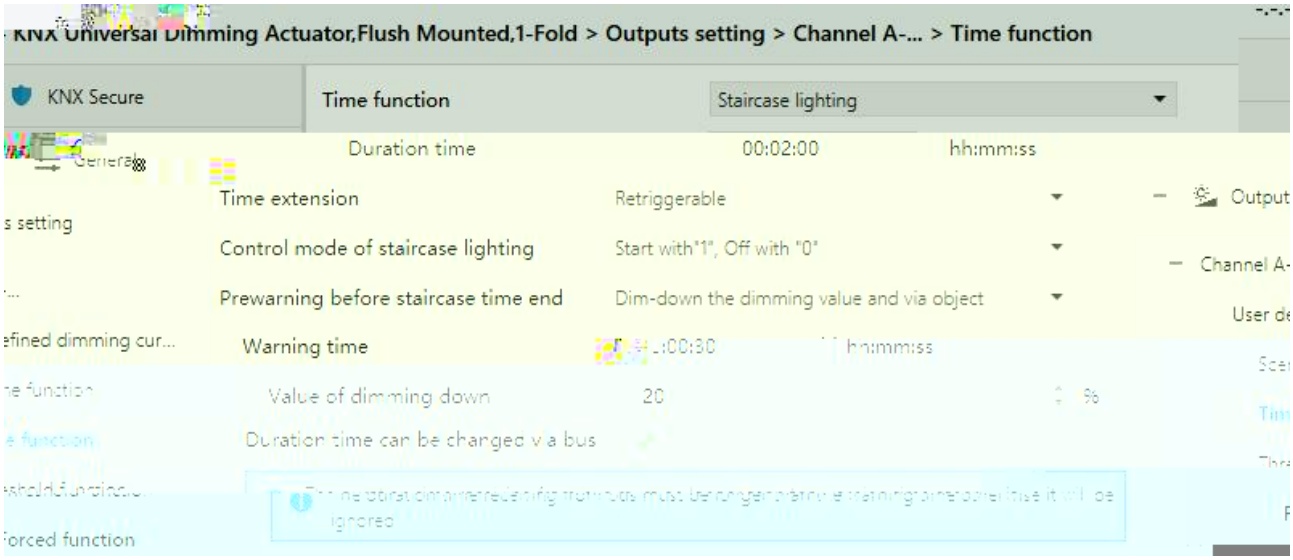
k **2...255 s**

5.3.3.2. “Time function”

Delay switch



Flash switch



Staircase lighting

5.3.3.2 “Time function”

k

“Time function”

k

Delay switch

Flashing switch

Staircase lighting

Delay switch / Jumping k

Flashing switch Jumping k

Staircase lighting Jumping k

! k

"Delay for switch on"

"Delay for switch o

Switching off

Switching on

Unchange

Switching on **Switching off** k

"Control mode of flashing"

Flashing switch k k

Start with"1", Stop with "0"

Start with"0", Stop with "1"

Start with"0/1", can not be stopped

Start with"1", Stop with "0" 1 0 k

Start with"0", Stop with "1" 0 1 k

Start with"0/1", can not be stopped 0/1

k

"Duration time"

Staircase lighting k

k **00:00:05s ...23h:59min:59s**

"Time extension"

Staircase lighting k

k

Not retriggerable

Retriggerable

Extend duration time

Not retriggerable k

Retriggerable k

Extend duration time

60s 40s

40s+60s=100s 100s k

k

"Control mode of staircase lighting"

Staircase lighting k k

Start with"1", Stop with "0"

Start with"1", no reaction with "0"

Start with"0/1", can not be stopped

Start with"1", Off with "0"

Start with"1", Stop with "0" 1 0

k

Start with"1", no

No, but dim-down the dimming value after end

Via object

Via flashing switching on-off

Via flashing switching on-off and object

Dim-down the dimming value

Dim-down the dimming value and via object

No k

No, but dim-down the dimming value after end k

Via object k

Via flashing switching on-off 1s 1s Jumping k

Via flashing switching on-off and object 1s 1s

Jumping k

Dim-down the dimming value k

Dim-down the dimming value and via object k

“Warning time”

No... k k

00:00:05s...00h:59min:59s

ETS k

k

k

“Value of dimming down”

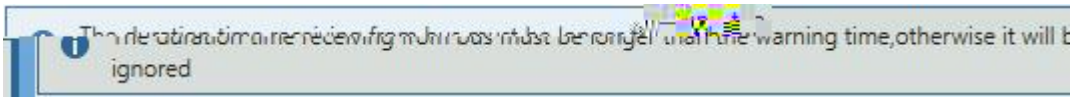
Dim-down the dimming value.... k

k **1...100 %**

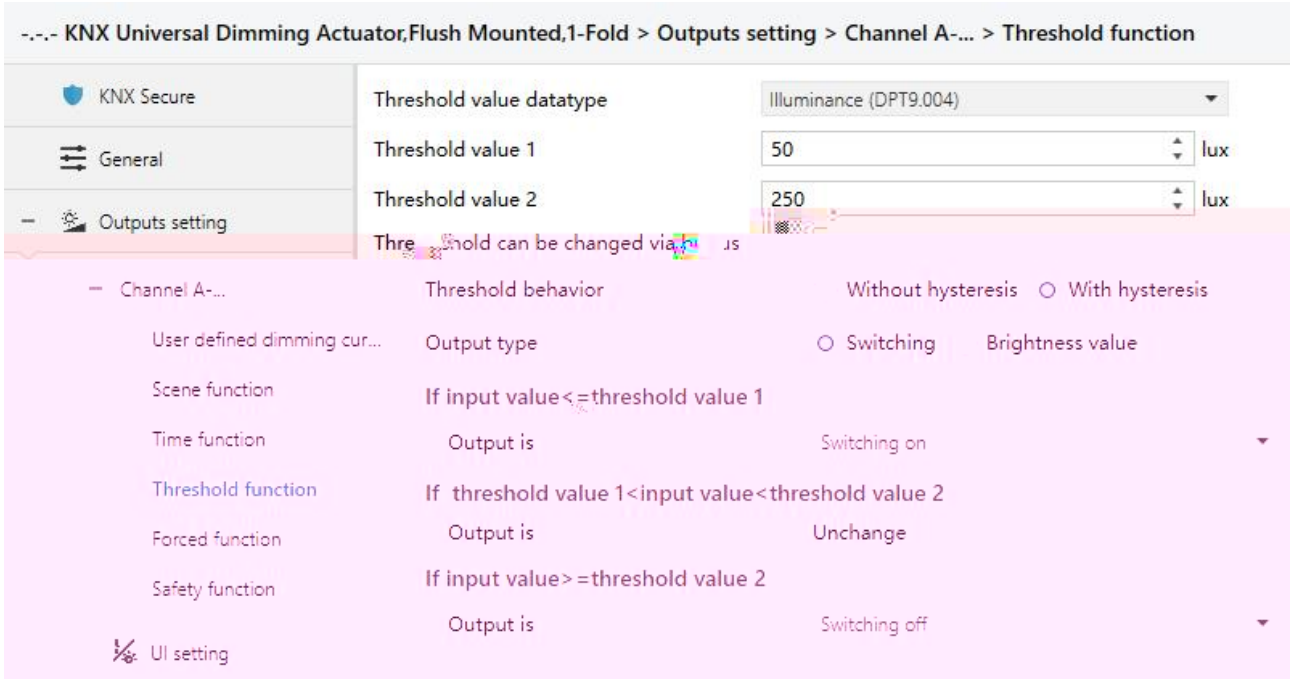
"Duration time can be changed via bus"

Staircase lighting k k

k



5.3.3.3. "Threshold function"



5.3.3.3 "Threshold function"

ETS k

k

reshold value d ype"

k

1byte unsigned value (DPT5.010)

1byte percentage (DPT5.001)

Temperature (DPT9.001)

Illuminance (DPT9.004)

"Threshold valee 1"

Jp

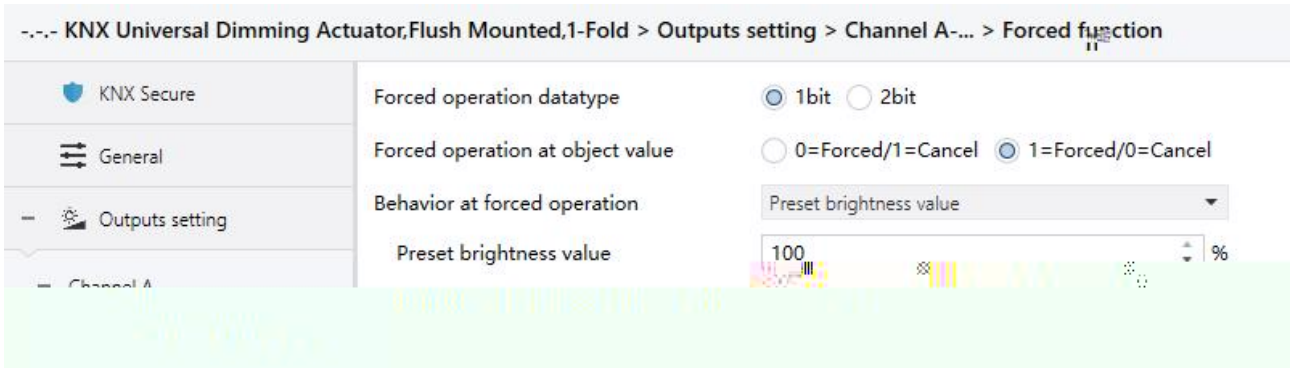
With hysteresis

2 k

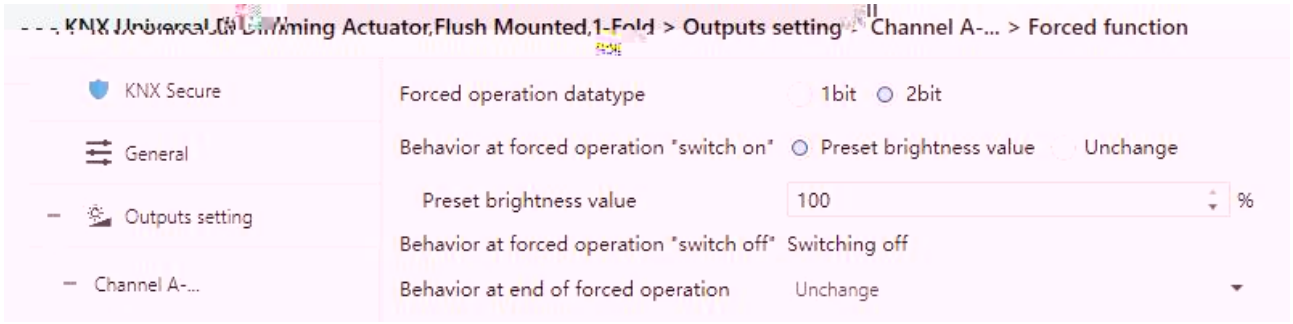
"Output type"

/ k

5.3.3.4. “Forced function”



1bit



2bit

5.3.3.4 “Forced function”

k k

k

“Forced operation datatype”

k

1bit

2bit

“Forced operation at object value”

1bit k 1bit / k

0=Forced/1=Cancel

1=Forced/0=Cancel

"Behavior at forced operation"

1bit k k

Switching off

Preset brightness value

Unchange

Switch off k

Preset brightness value k

Unchange k

"Preset brightness value"

Preset brightness value k k **1...100 %**

"Behavior at forced operation "switch on""

2bit k 2bit 3 k

Preset brightness value

Unchange

"Preset brightness value"

Preset brightness value k k **1...100 %**

"Behavior at forced operation "switch off""

2bit k 2bit 2 k

Switching off

"Behavior at end of forced operation"

k **2bit** **0/1** k

Switching off

Preset brightness value

Unchange

1. k

2.

k

“Preset brightness value”

Preset brightness value k k **1...100 %**

5.3.3.5. “Safety function”

5.3.3.5 “Safety function”

k k

”Behavior at safety operation”

”Behavior at end of safety operation”

/ k

Switching off

Preset brightness value

Unchange

Switch off k

Preset brightness value k

Unchange k

“Preset brightness value”

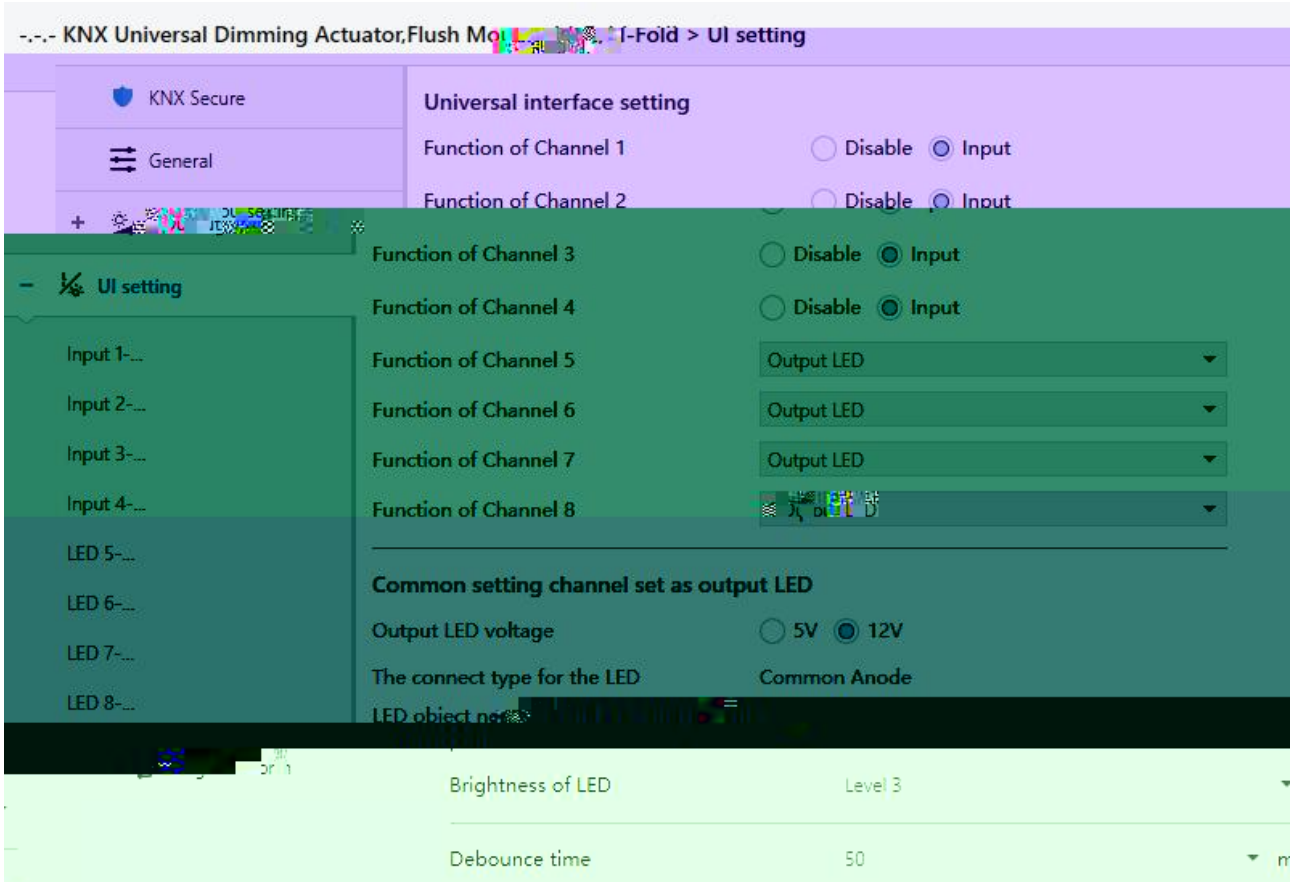
Preset brightness value k k **1...100 %**

1. k

2.

k

5.4. “UI setting”



5.4 “UI setting”

Universal interface setting

“Function of Channel x”(x=1~8)

k

Disable

Input

Output LED LED

8 4 4 / LED k

/ 0 k

Common setti channel set as output LED

"Output LED itage"

) LED k

V

2V

"The conne ype for the LED"

) k **Common An nnect**

Level 3

"Debounce time"

k

50ms

70ms

100ms

150ms

5.4.1. “Input x”

! ! ! ! ! !

k k

5.4.1 “Input x-...”

Description (max 30char.)

30 k

Function of channel

k

Switch	**Blind**
Dimming	**Shift register**
Value output	**Multiple operation**
Scene control	**Delay mode**

5.4.1.1. “Switch”

Switching 5.4.1.1

k

5.4.1.1 “Input x-Switch”

Distinction between short and long operation

/ k

k

Long operation after [3..25]

/ k k

k **3...25 *0.1s**

Connect contact type

k

Normally open

Normally closed

Normally open k

Reaction on short operation” /”Reaction on press the contact

Reaction on long operation”/ ”Reaction on release the contact

/ / k

k

No action

ON

OFF

TOGGLE

No action k

ON k

OFF k

TOGGLE

k Switch

0 k

Send object value after bus recovery (valid if reaction is not toggle)

k “Switch”

k

“Switch” “Reaction on press /release the contact” “Toggle” “No reaction” “Switch” “Toggle” “No reaction” k

Number of objects

1 2 k

1

2

Disable function

k k

Trigger value of disable object

k / k

Disable=1/enable=0

Disable=0/enable=1

k

5.4.1.2. “Dimming”

5.4.1.2 “Input x- Dimming”

Reaction on short operation

No action

ON

OFF

TOGGLE

No action k

ON k

OFF k

TOGGLE k Switch 0

k

Reaction on long operation

No action

Brighter

Darker

Brighter/Darker

No action k

Brighter k

Darker

Brighter/darker k Dimming

0 k

TOGGLE

k **k**

Dimming mode

k

Start-stop dimming

Steps dimming

Start-stop dimming

k k

Steps dimming

k

Step size

“Steps dimming” k

k

100%

50%

`

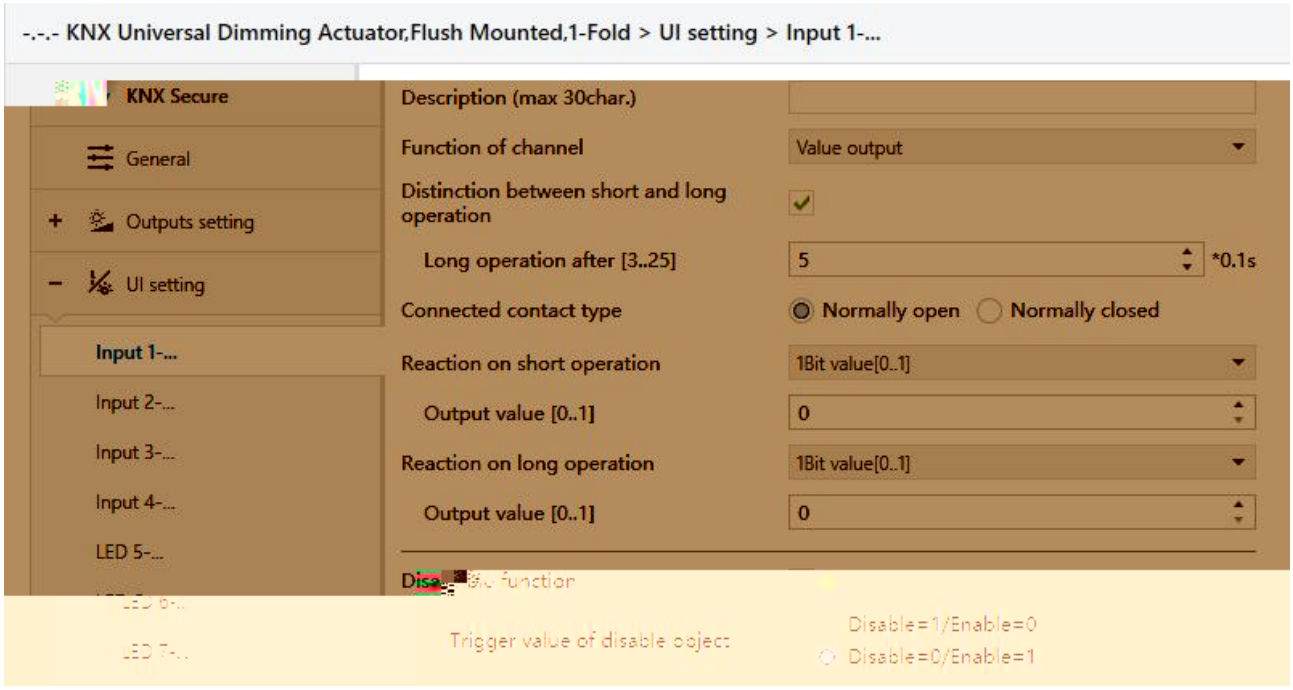
1.56%

Interval of tele. Cyclic send [0..25] (0=send once)

“Steps dimming” k k

0...25 *0.1s, 0=

5.4.1.3. “Value output”



5.4.1.3 “Input x}- Value output”

Reaction on short operation” /”Reaction on press the contact

Reaction on long operation”/ ”Reaction on release the contact

/ / k

No reaction

1bit value [0..1]

2bit value [0..3]

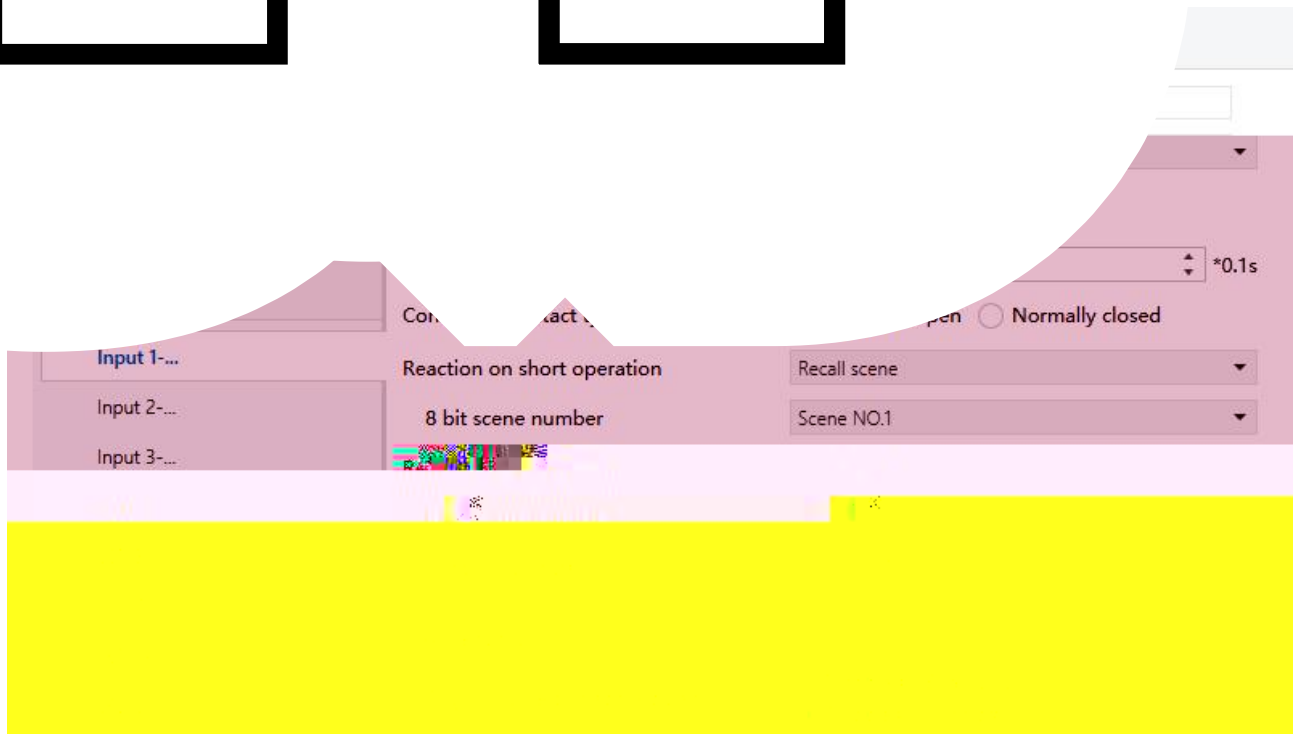
4bit value [0..15]

1byte value [0..255]

2byte value [0..65535]

Output value [...]

k k



5.4.1.4 “Input x- Scene control”

Reaction on short operation“ /”Reaction on press the contact

Reaction on long operation”/ ”Reaction on release the contact

/ / k

No reaction

Recall scene

Store scene

8 bit scene number

Scene NO.1~64 □ □ □ □ □

Stop (Adjust Up) k

Stop (Adjust Down) k

Stop (Adjust Up/Down) / k

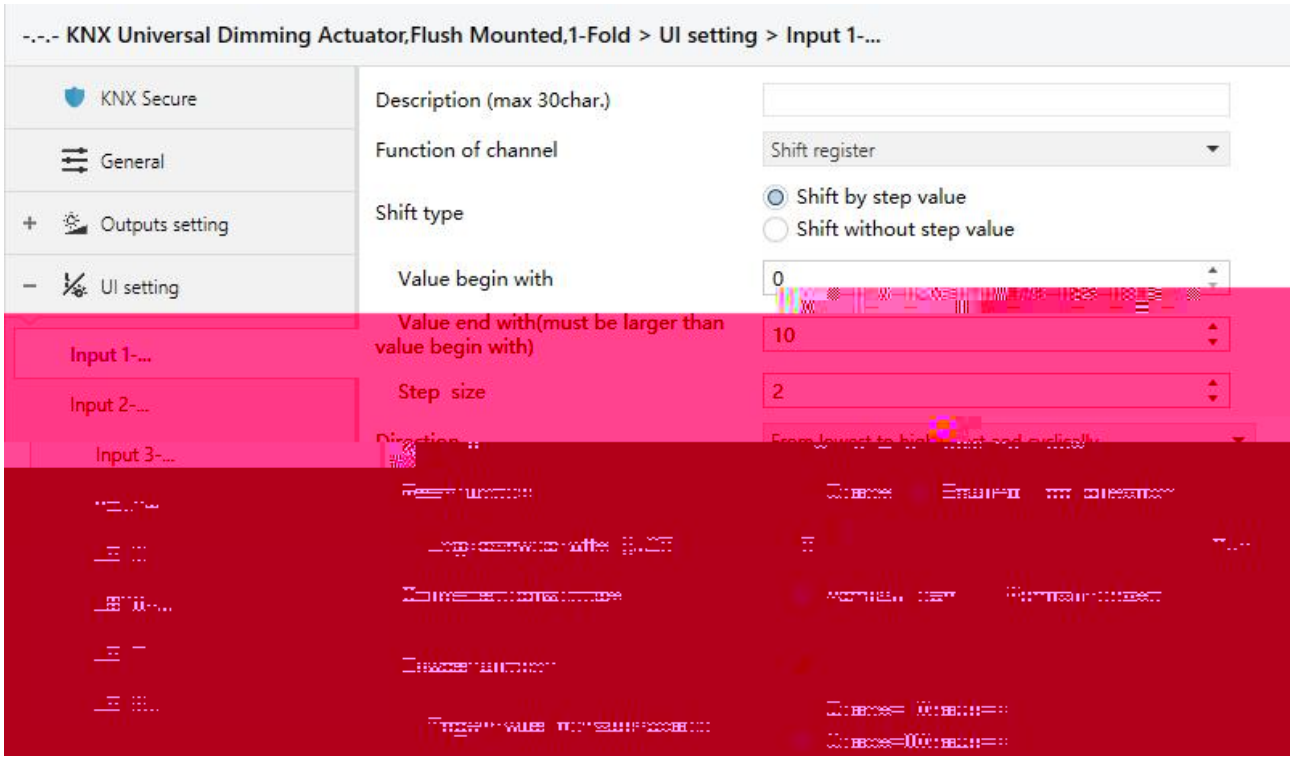
Stop/Adjust Blind 0 / k

Interval of tele. cyclic send [0..25] (0=send once)

“Stop...” k

0...25 *0.1s 0

5.4.1.6. “Shift register”



5.4.1.6 “Input x- Shift register”

“Shift type”

k

Shift by step value

Shift without step value

Shift by step value

HVAC mode

1byte percentage

“Shift number”

10 k

“1byte unsigned value” ! “Scene number” “1byte percentage” **0/1/2/.../10**

“HVAC mode” **1/2/3/4**

“Value x”(x=1~10 x=1~4)

k

“1byte unsigned value” **0...255**

“Scene number”

Scene NO.1

Scene NO.2

Scene NO.3

...

Scene NO.64

“HVAC mode”

Comfort mode

Standby mode

Economy mode

Frost/heat protection

“1byte percentage”

0%

1%

...

100%

"Direction"

k

From lowest to highest and stop to the end

From highest to lowest and stop to the begin

From lowest to highest and cyclically

From highest to lowest and cyclically

From lowest to highest and stop to the end k

From highest to lowest and stop to the begin k

From lowest to highest and cyclically k

From highest to lowest and cyclically k

"Reset function"

k

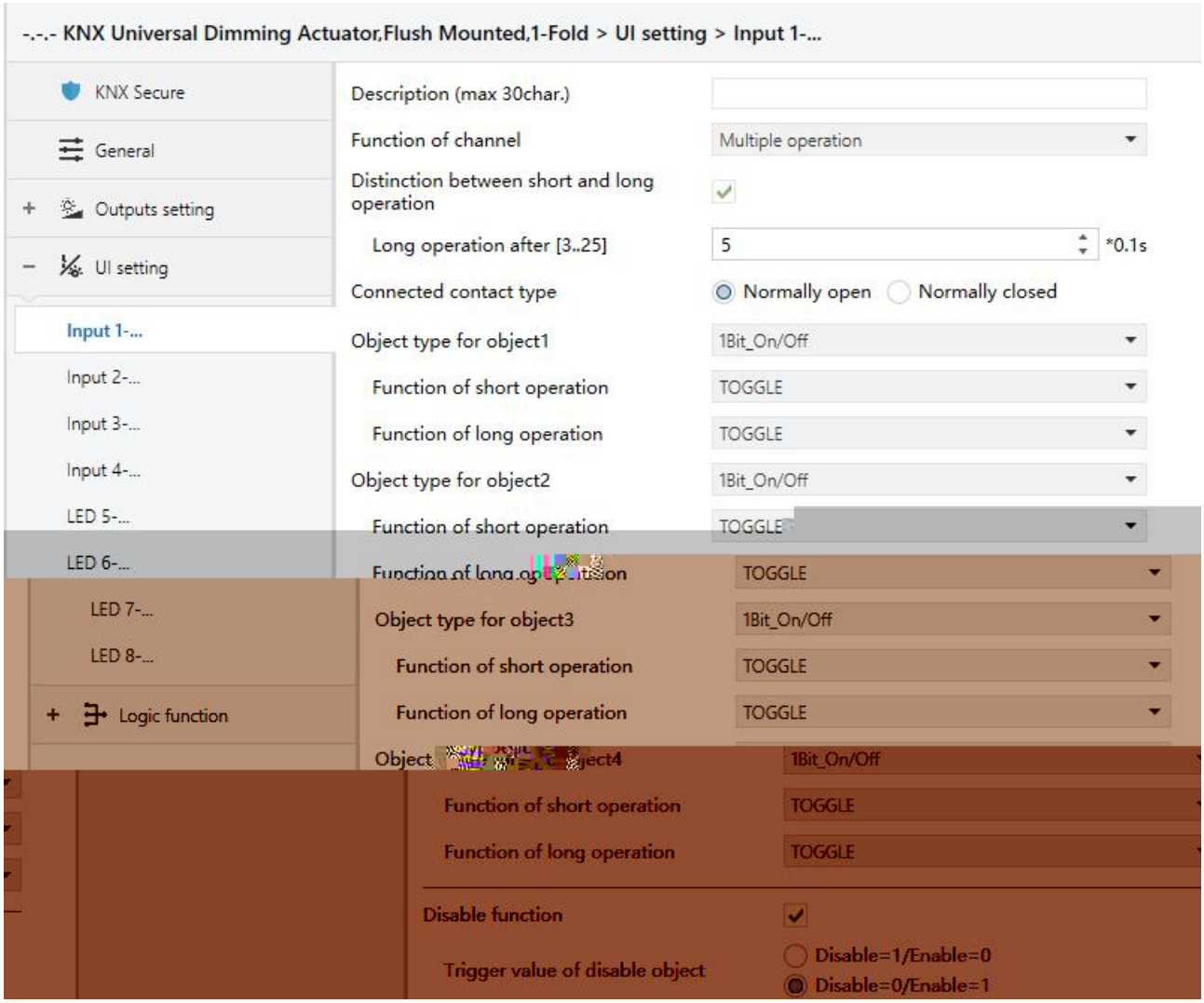
Disable

Enable by long operation

Disable

Enable by long operation k

5.4.1.7. “Multiple operation”



5.4.1.7 “Input x- Multiple operation”

Object type for object x (x=1...4)

/ k

Disable

1Bit_On/Off

1Bit_Up/Down

1Byte_RecallScene

1Byte_StoreScene

1Byte_Percentage

1Byte_Unsigned value

1Bit_On/Off On/Off 0 k

1Bit_Up/Down Up/Down 0

k

Function of short operation" /"Function of press the contact

Function of long operation

No reaction (Send value

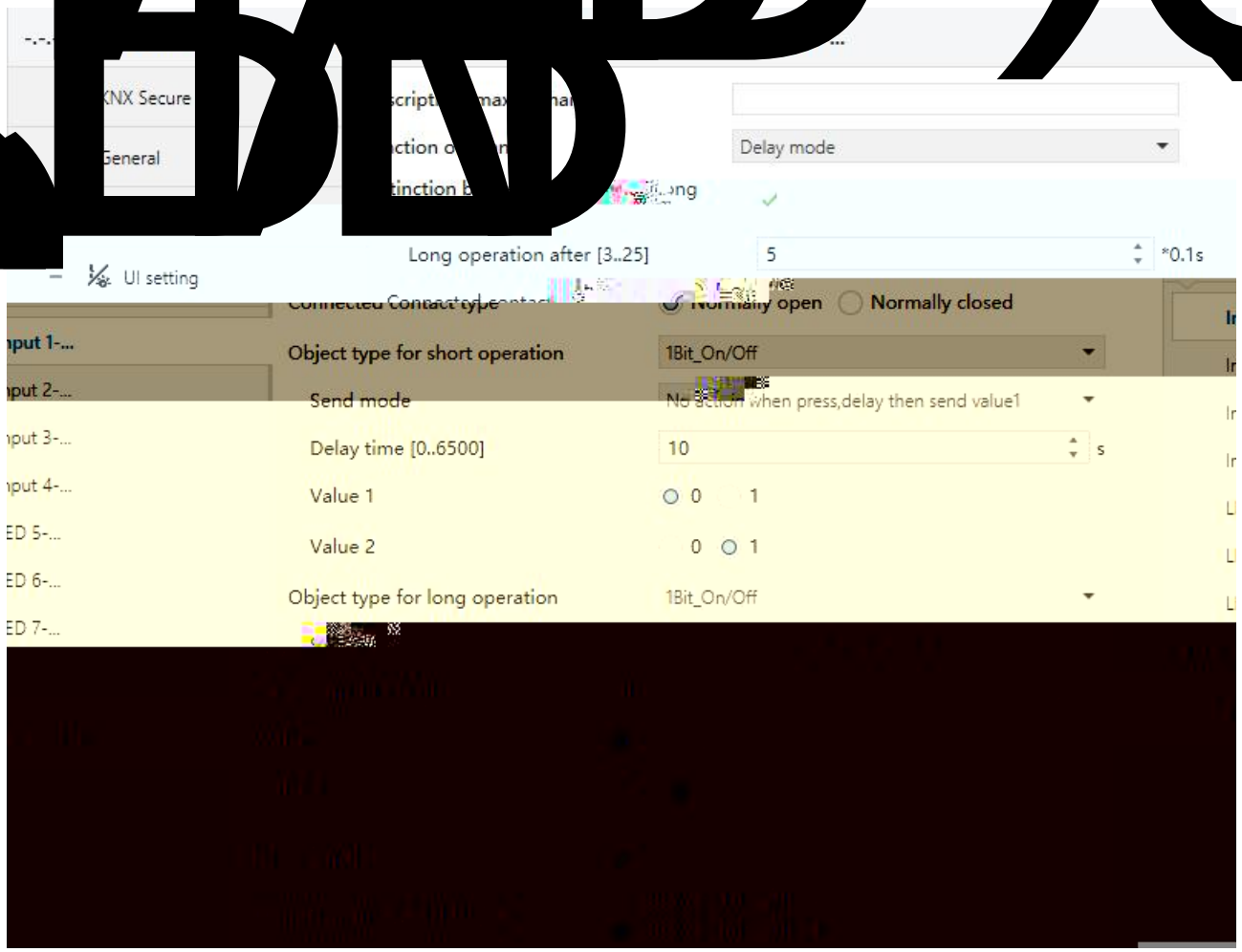
) k

Value 1/2 (Scene NO./ Percentage/Unsigned value)

1Byte_RecallScene 1Byte_StoreScene 1Byte_Percentage

1Byte_Unsigned value k k

k Scene NO.1...64/0..100/0..255



5.4.1.8 “Input x- Delay m

No action when press, delay then send value 1 **1**

No action when press, delay then send value 2 **2**

Send value 1 when press, delay then send value 2 **1** **2**

Send value 2 when press, delay then send value 1 **2** **1**

Delay time [0..6500]

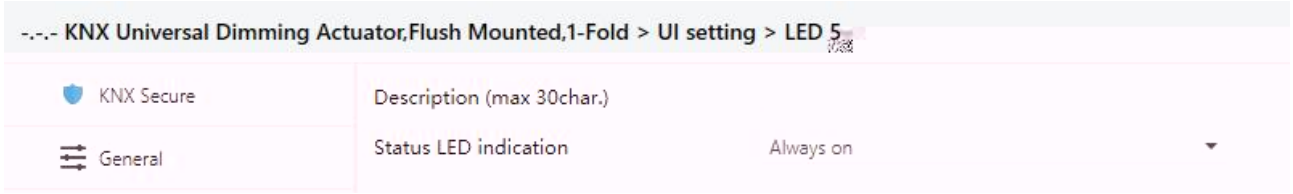
k **0..6500 s**

value1/2 [...]

1/2 k k

5.4.2. “LED x”

Control by external object



Always on

5.4.2 “LED x”

Status LED indication

LED

None

Control by external object

Always on

None k

Control by external object LED k

Always k

Control by external object

External object datatype

LED k

1bit

1byte

“When object value =’0/1’, LED is”

1bit k LED 1 0 k

OFF

ON

Threshold value is

1byte k LED k **1...255**

“If object value<threshold value, LED is”

1byte k LED k

OFF

ON

“If object value=threshold value, LED is”

1byte k LED k

OFF

ON

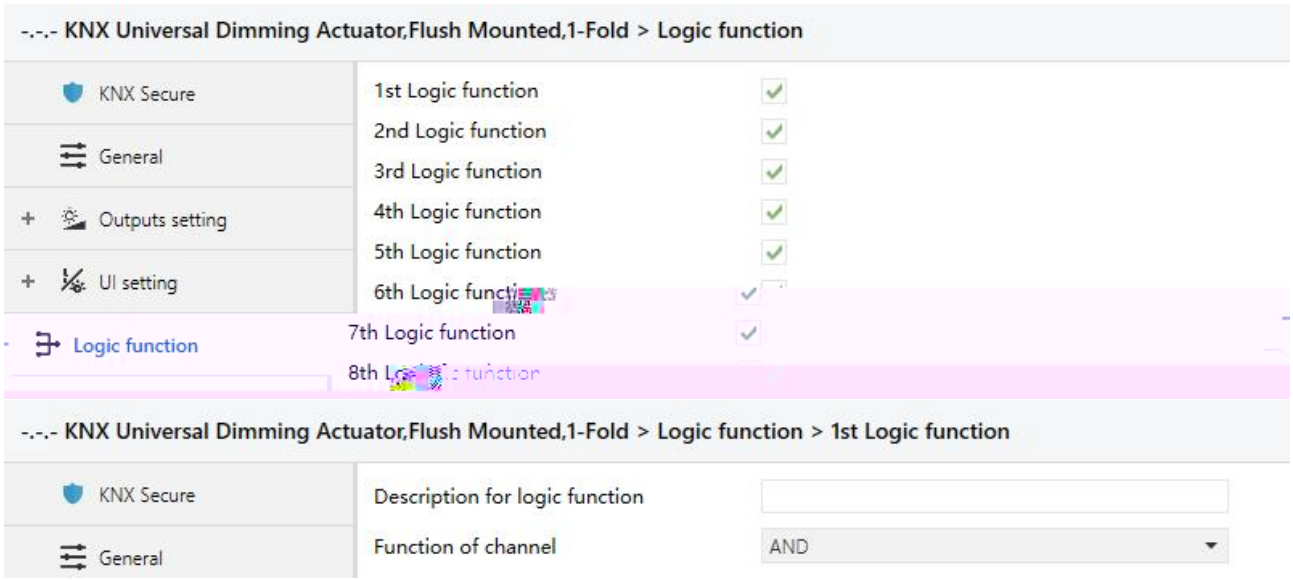
“If object value>threshold value, LED is”

1byte k LED k

OFF

ON

5.5. “Logic”



5.5 “Logic function setting”

“1st/2nd/3rd... Logic function”

k 8

5.5.1.“AND/OR/XOR”

5.5.1 “AND/OR/XOR”

”Input a/b/c/d/e/f/g//h”

Input x k

Disconnected

Normal

Inverted

Disconnected

Normal

Inverted k k

“Default value”

Input x k

0

1

"Result is inverted"

k

No

Yes

No

Yes k

"Read input object value after voltage recovery"

k

No

Yes

"Output send when"

k

Receiving a new telegram

Every change of output object

Receiving a new telegram

Every change of output object k

k

"Send delay time"

Base: **None**

0.1s

1s

...

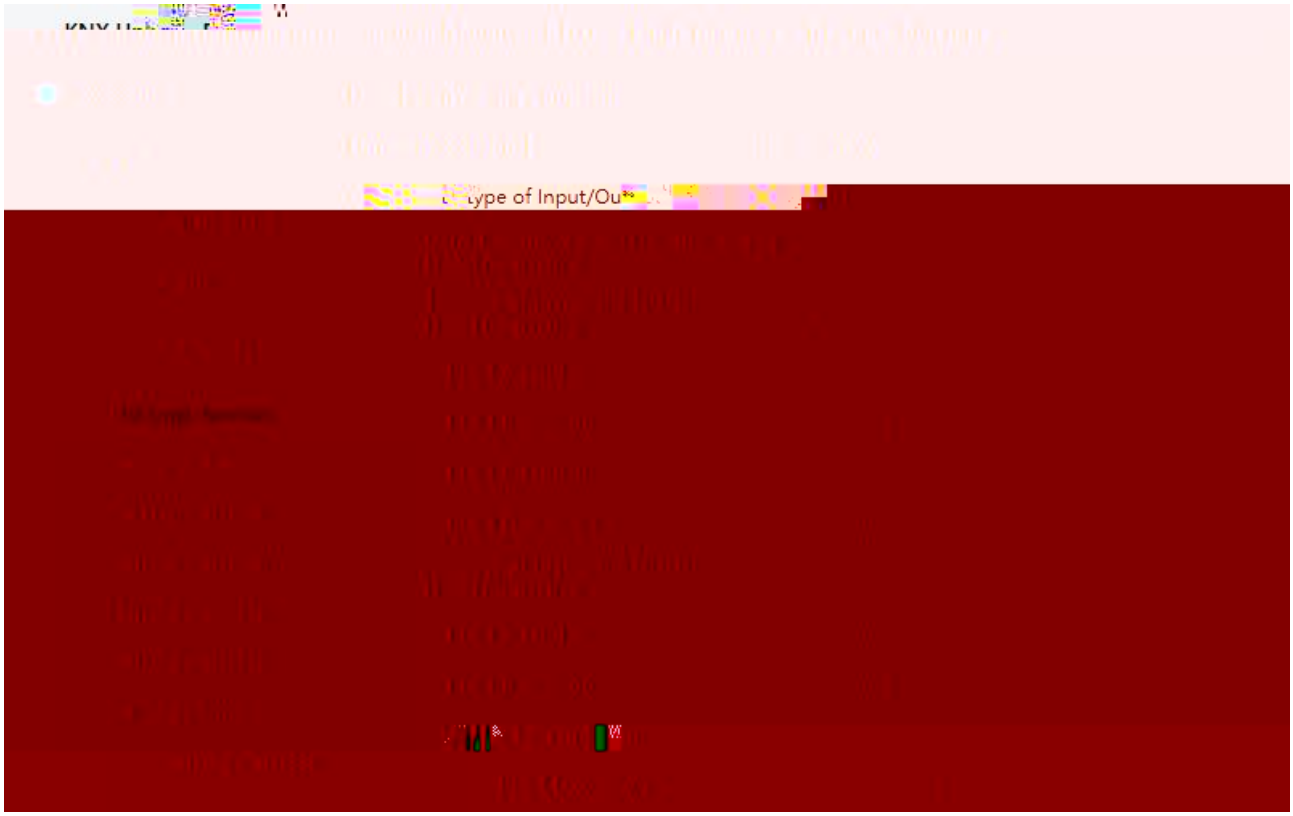
10s

25s

Factor: **1..255**

k Base × Factor Base "None" k

5.5.2."Gate forwarding"



5.5.2 "Gate forwarding"

"Object type of Input/Output"

/ k

1bit

4bit

1byte

"Default scene NO. of Gate after startup [1~64,0=inactive]"

k

0..64 0=

k

"z->Gate trigger scene NO. is [1~64,0=inactive]"(z=1~8)

k 8 k

0..64 0=

" " "Input A/B/C/D send on"

X (X=A/B/C/D) k

Disable

Output A

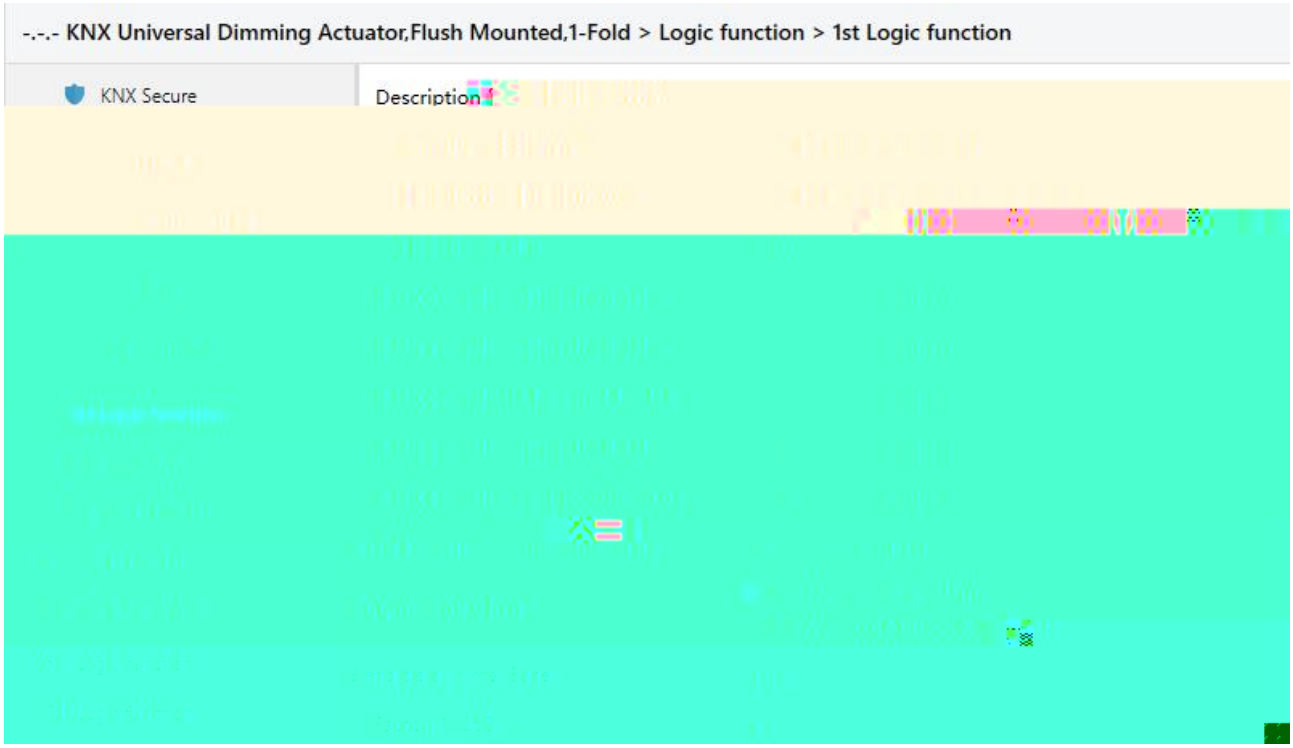
Output B

...

Output B,C,D

k k

5.5.3.“Threshold comparator”



5.5.3 “Threshold comparator”

“Threshold value data type”

k

4bit value (DPT3.007) **4byte unsigned value[0..4294967295]**

1byte unsigned value (DPT5.010) **Ext. temperature value (DPT 9.001)**

2byte unsigned value (DPT7.001) **Ext. humidity value (DPT 9.007)**

2byte signed value (DPT8.x) **Illuminance value (DPT 9.004)**

2byte float value (DPT9.x)

“Threshold value ”

k

4bit value (DPT3.007) 0..15 /1byte unsigned value (DPT5.010) 0..255 /

2byte unsigned value (DPT7.001) 0..65535 / 2byte signed value (DPT8.x) -32768..32767 /

2byte float value (DPT9.x) -670760...670760 / 4byte unsigned value[0..4294967295]

0..4294967295 /Ext. temperature value (DPT 9.001) -20..95¸ / Ext. humidity value (DPT 9.007)

0..100% / Illuminance value (DPT 9.004) 0..65535lux

"Hysteresis threshold value"

"2byte float value (DPT9.x)" ¦ "Illuminance value (DPT 9.004)" k

k **0..500**

"If Object value<Threshold value"

"If Object value=Threshold value"

"If Object value!=Threshold value"

"If Object value>Threshold value"

"If Object value<=Threshold value"

"If Object value>=Threshold value"

! ! ! !

k "2byte float value (DPT9.x)" ¦ "Illuminance value (DPT 9.004)"

k

Do not send telegram

Send value "0"

Send value "1"

Do not send telegram

Send value "0"/"1" 0 1 k

k **If Object value=Threshold value Send value 0 If Object value<=Threshold value Send value 1 1** k

"Output send when"

k

Receiving a new telegram

Every change of output object

Receiving a new telegram

Every change of output object k

k

"Send delay time"

Base: **None**

0.1s

1s

...

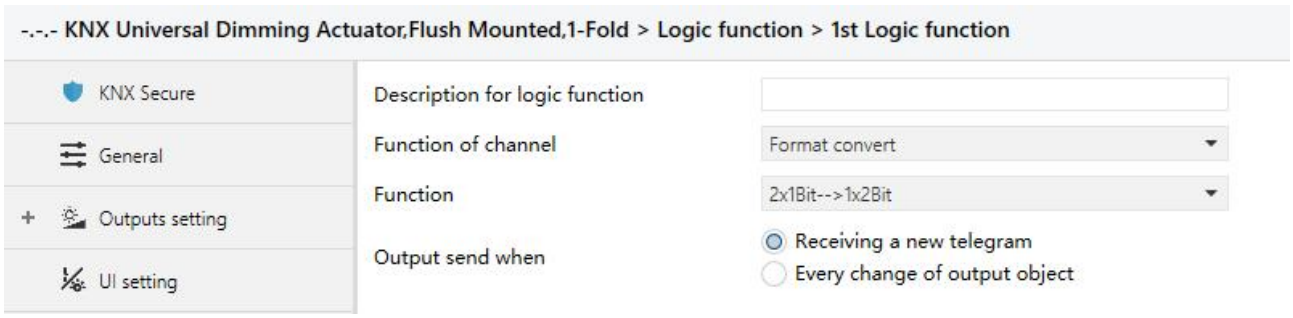
10s

25s

Factor: **1..255**

k Base × Factor Base "None" k

5.5.4.“Format convert”



5.5.4 “Format convert”

“Function”

k

2x1bit-->1x2bit

8x1bit-->1x1byte

1x1byte-->1x2byte

2x1byte-->1x2byte

2x2byte-->1x4byte

1x1byte-->8x1bit

1x2byte-->2x1byte

1x4byte-->2x2byte

1x3byte-->3x1byte

3x1byte-->1x3byte

“Output send when”

k

Receiving a new telegram

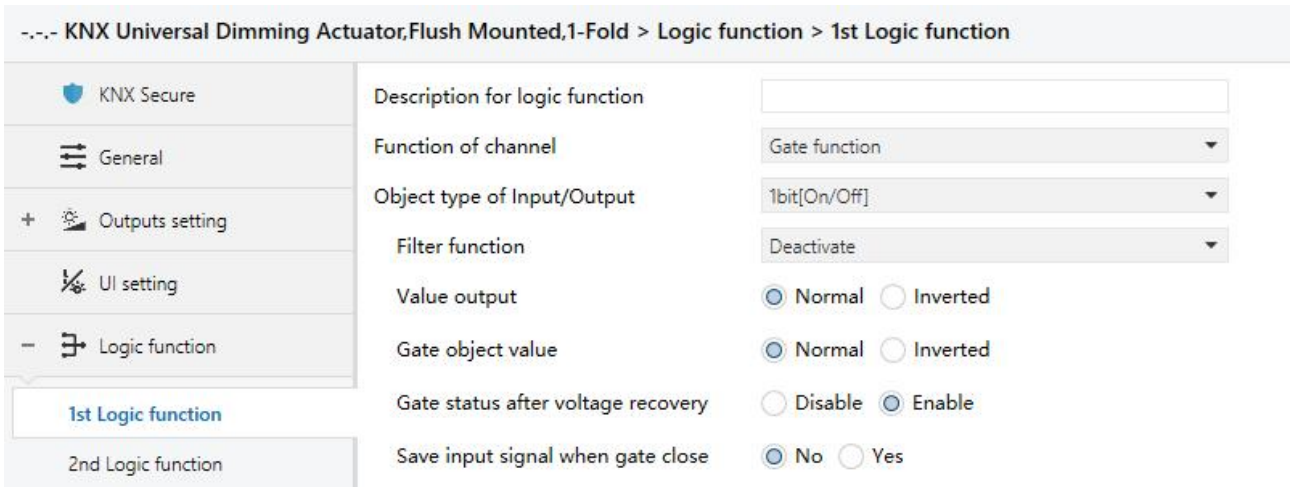
Every change of output object

Receiving a new telegram

Every change of output object k

k

5.5.5.“Gate function”



5.5.5 “Gate function”

“Object type of Input/Output”

/ k

1bit[On/Off]

1byte[0..100%]

1byte[0..255]

2byte[Float]

2byte[0..65535]

“Filter function”

“1bit[On/Off]” k On Off

k

Deactivate

On filter out

Off filter out

Deactivate On Off

On filter out Off On

Off filter out On Off k

" "Value output"

"1bit[On/Off]" k k

Normal

Inverted

"Gate object value"

k

Normal

Inverted

"Gate status after voltage recovery"

k

Disable

Enable

"Save input signal when gate close"

k

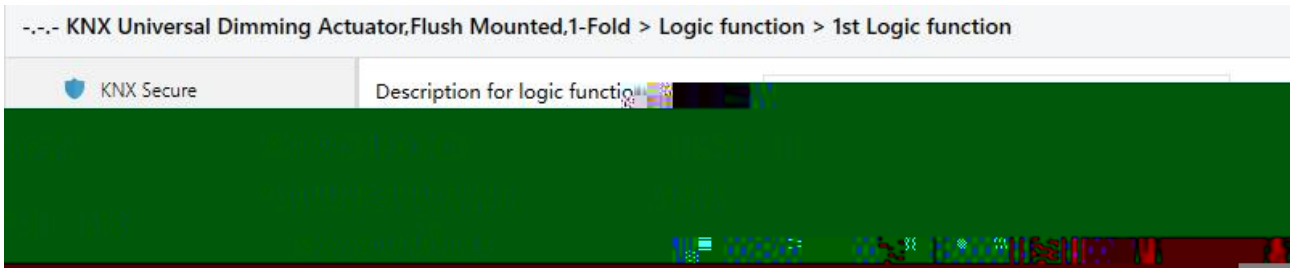
No

Yes

No

Yes k

5.5.6.“Delay function”



5.5.6 “Delay function”

“Object type of Input/Output”

/ k

1bit[On/Off]

1byte[0..100%]

1byte[0..255]

2byte[Float]

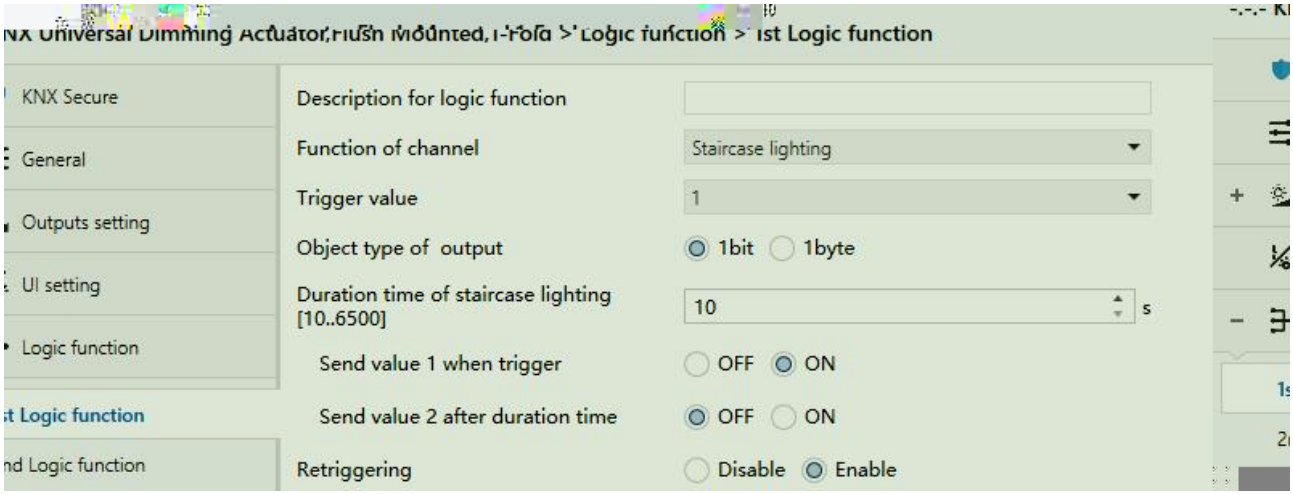
2byte[0..65535]

“Delay time [0..6500]s”

k **0..6500**

k

5.5.7.“Staircase lighting”



5.5.7 “Staircase lighting”

“Trigger value”

“Trigger value” k

0

1

0 or 1

“Object type of output”

k

1bit

1byte

“Duration time of staircase lighting[10..6500]s”

k **10..6500 s**

“Send value 1 when trigger”

“Send value 2 after duration time”

k 1 2 k

k

1bit

OFF

ON

1byte **0..255**

"Retriggering"

k

Disable

Enable

k

“C” **“W”** **“R”**

“T” **“U”** k

6.1.“General”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1	General	In operation			1 bit	C	-	-	T	-	switch	Low
5	General	Central: Safety			1 bit	C	-	W	-	-	alarm	Low

6.1 “General”

					DPT
1	**In operation**	**General**	**1bit**	**C,R,T**	**1.001 switch**
“1” k k					
5	**Central: Safety**	**General**	**1bit**	**C,W**	**1.005 alarm**
! 1bit k k 0 k k					

6.1 “General”

6.2.“Output setting”

6.2 “Output setting”

					DPT
78	**Switching**	**Channel A-{{...}}**	**1bit**	**C,W**	**1.001 switch**
/ k 1 ˚ 0 ˚ “Description (max 30char.)” “Channel A-...” k k					
79	**Relative dimming**	**Channel A-{{...}}**	**4bit**	**C,W**	**3.007 dimming**
k 1~7 1 7 0 9~15 9 15 8 k					
80	**Absolute dimming**	**Channel A-{{...}}**	**1byte**	**C,W**	**5.001 percentage**
k 0...100%					

81	**Switching, status**	**Channel A-{{...}}**	**1bit**	**C,R,T**	**1.001 switch**

k 0 1

0 0 k k

82	**Brightness value, status**	**Channel A-{{...}}**	**1byte**	**C,R,T**	**5.001 percentage**

k k

83 Short-circuit, status

8bit k 8bit k

8bit ( ) FXNNNNNN

F ‘0’ ‘1’

X 0

NNNNNN 0…63 k

0	1
1	2
2	3
…	…
63	64
128	1
129	2
130	3
…	…
191	64

1~64 “Scene” 0~63 k

1 “Scene” 0 k

89	**Delay switch**	**Channel A-{{...}}**	**1bit**	**C,W**	**1.001 switch**

91	**Staircase lighting Prewarning**	**Channel A-{{...}}**	**1bit**	**C,R,T**	**1.005 alarm**
Staircase lighting k k 1 0					
92	**Threshold input**	**Channel A-{{...}}**	**1byte** **2byte**	**C,W**	**5.010 counter pulses(0..255)** **5.001 percentage** **9.001 temperature** **9.004 brightness (lux)**
k k					
93	**Threshold value 1**	**Channel A-{{...}}**	**1byte** **2byte**	**C,W,R**	**5.010 counter pulses(0..255)** **5.001 percentage** **9.001 temperature** **9.004 brightness (lux)**
94	**Threshold value 2**	**Channel A-{{...}}**	**1byte** **2byte**	**C,W,R**	**5.010 counter pulses(0..255)** **5.001 percentage** **9.001 temperature** **9.004 brightness (lux)**
k 1/2 k ETS k 1 2 k					
95	**Forced operation**	**Channel A-{{...}}**	**1bit** **2bit**	**C,W**	**1.003 enable** **2.001 DPT_Switch control**
k k 1bit 1 0 k 2bit 3 2 1 0 k k					

6.3.“UI setting”

6.3.1.“Input x”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
190	Input 1-...	Switch			1 bit	C	-	W	T	U	switch	
190	Input 1-...	Press, Switch			1 bit	C	-	W	T	U	switch	Low
191	Input 1-...	Release, Switch			1 bit	C	-	W	T	U	switch	Low
190	Input 1-...	Short, Switch			1 bit	C	-	W	T	U	switch	Low
191	Input 1-	Long, Switch			1 bit	C	-	W	T	U	switch	Low

Switch

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
190	Input 1-...	Short, Switch			1 bit	C	-	W	T	U	switch	Low
191	Input 1-...	Long, Dimming			4 bit	C	-	W	T	-	dimming control	Low
	Input 1-...	Disable			1 bit							

Dimming

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
190	Input 1-...	Press, 1bit value			1 bit	C	-	-	T	-	switch	Low
191	Input 1-...	Release, 2bit value			2 bit	C	-				contro	Low
190	Input 1-	Short, 1bit value			1 bit	C	-	-	T			

Value output

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
190	Input 1-...	Scene			1 byte	C	-	-	T	-	scene control	Low
194	Input 1-...	Disable			1 bit	C	-	W	-	-	enable	Low
190	Input 1-...	Press, Scene			1 byte	C	-	-	T	-	scene control	Low
191	Input 1-...	Release, Scene			1 byte	C	-	-	T	-	scene control	Low
190	Input 1-...	Short, Scene			1 byte	C	-	-	T	-	sc	Low
191	Input 1-	Long, Scene			1 byte	C	-	-	T	-	scene control	Low
		Disable			1 bit	C	-	W	-	-	enable	Low

Scene control

Number	Name	Object Function	Description	Group Addr

Blind

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
190	Input 1-...	Register value			1 byte	C	-	W	T	-	counter pulses (0..255)	Low
194	Input 1-...	Disable			1 bit	C	-	W	-	-	enable	Low

Shift register

Multiple operation

Delay mode

6.3.1 “Input x”

					DPT
190	**Switch**	**Input 1-{{...}}**	**1bit**	**C,W, T,U**	**1.001 DPT_Switch**
190	**Press, Switch**	**Input 1-{{...}}**	**1bit**	**C,W, T,U**	**1.001 DPT_Switch**
190	**Short, Switch**	**Input 1-{{...}}**	**1bit**	**C,W, T,U**	**1.001 DPT_Switch**
191	**Release, Switch**	**Input 1-{{...}}**	**1bit**	**C,W, T,U**	**1.001 DPT_Switch**
191	**Long, Switch**	**Input 1-{{...}}**	**1bit**	**C,W, T,U**	**1.001 DPT_Switch**
k / 1 2 k 1 “Switch” k 2 “Press/Release” “Short/Long” k 0 ˚ 1 ˚ Description (max 30char.) Input 1-... k k					
190	**Short, Switch**	**Input 1-{{...}}**	**1bit**	**C,W, T,U**	**1.001 DPT_Switch**
191	**Long, Dimming**	**Input 1-{{...}}**	**4bit**	**C,W,T**	**3.007 DPT_Dimming control**
/ k Obj.190 k					

0

1

Obj.191 k

1~7 1

7 0 9~15

9 15 8 k

190	**Press, 1bit/.../2byte value**	**Input 1-{{...}}**	**1bit**	**C,T**	**1.001 DPT_Switch**
190	**Short, 1bit/.../2byte value**	**Input 1-{{...}}**	**2bit**	**C,T**	**2.001 DPT_Switch control**
191	**Release, 1bit/.../2byte value**	**Input 1-{{...}}**	**4bit**	**C,T**	**3.007 DPT_Dimming control**
191	**Long, 1bit/.../2byte value**	**Input 1-{{...}}**	**1byte**	**C,T**	**5.010 DPT_counter pulses**
			2byte	**C,T**	**7.001 DPT_pulses**

“Press/Release”

“Short/Long” k k

190	**Scene**	**Input 1-{{...}}**	**1byte**	**C,T**	**18.001 DPT_SceneControl**
190	**Press, Scene**	**Input 1-{{...}}**	**1byte**	**C,T**	**18.001 DPT_SceneControl**
190	**Short, Scene**	**Input 1-{{...}}**	**1byte**	**C,T**	**18.001 DPT_SceneControl**
191	**Release, Scene**	**Input 1-{{...}}**	**1byte**	**C,T**	**18.001 DPT_SceneControl**
191	**Long, Scene**	**Input 1-{{...}}**	**1byte**	**C,T**	**18.001 DPT_SceneControl**

8bit k / 1

2 k

1 “Scene” k 2 “Press/Release”

“Short/Long” k

8bit k

8bit ( ) FXNNNNNN

F '0' '1'

X 0

NNNNNN 0…63 k

0 1 2 … 63	1 2 3 … 64
128 129 130 … 191	1 2 3 … 64

1~64 "Scene" 0~63 k

1 "Scene" 0 k

190	**Up/Down, Blind**	**Input 1-{{...}}**	**1bit**	**C,W,T**	**1.008 DPT_up/down**
191	**Stop/Adjust, Blind**	**Input 1-{{...}}**	**1bit**	**C,W,T**	**1.007 DPT_Step**

! ! k

Obj.190 / k

1

0

Obj.191 k

1——

190	**Register value**	**Input 1-{{...}}**	**1bit**	**C,W,T**	**5.010 counter pulses** **17.001 scene number** **20.102 HVAC mode**

k k

	Object x-On/Off		**1bit**	**C,W,T**	**1.001 DPT_Switch**
190/					
	Object x-Up/Down		**1bit**	**C,W,T**	**1.008 DPT_up/down**
191/					
	Object x-SceneControl	**Input 1-{{...}}**	**1byte**	**C,T**	**18.001 DPT_SceneControl**
192/					
	Object x-Percentage		**1byte**	**C,T**	**5.001 DPT_Scaling**
193/					
	Object x-Unsigned value		**1byte**	**C,T**	**5.010 DPT_counter pulses**

4 x=1,2,3,4

4 k k

190	**Press, Delay mode**	**Input 1-{{...}}**	**1bit**	**C,T**	**1.001 DPT_Switch**
190	**Short, Delay mode**	**Input 1-{{...}}**	**4bit**	**C,T**	**3.007 DPT_Dimming control**
191	**Long, Delay mode**	**Input 1-{{...}}**	**1byte**	**C,T**	**5.010 DPT_counter pulses**

“Press” “Short/Long” k

k

194	**Disable**	**Input 1-{{...}}**	**1bit**	**C,W**	**1.003 DPT_enable**

/ k

6.3.2.“LED x”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
234	LED 5-...	Status			1 bit	C	-	W	T	U	switch	Low
234	LED 5-...	Status			byte	C	-	W	T	U	counter pulses (0..255)	Low

6.3.2 “LED x”

					DPT
234	**Status**	**LED 5-{{...}}**	**1bit** **1byte**	**C,W,T,U**	**1.001 DPT_Switch** **5.010 DPT_counter pulses**
1bit/1byte LED k Description (max 30char.) LED 5-... k					

6.3.2 “LED x”

6.4.“Logic”

6.4.1.“AND/OR/XOR”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input a			1 bit	C	-	W	T	U	boolean	Low
7	1st Logic	Input b			1 bit	C	-	W	T	U	boolean	Low
8	1st Logic	Input c			1 bit	C	-	W	T	U	boolean	Low
9	1st Logic	Input d			1 bit	C	-	W	T	U	boolean	Low
10	1st Logic	Input e			1 bit	C	-	W	T	U	boolean	Low
11	1st Logic	Input f			1 bit	C	-	W	T	U	boolean	Low
12	1st Logic	Input g			1 bit	C	-	W	T	U	boolean	Low
13	1st Logic	Input h			1 bit	C	-	W	T	U	boolean	Low
14	1st Logic	Logic result			1 bit	C	-	-	T	-	boolean	Low

6.4.1 “AND/OR/XOR”

					DPT
6/.../13	**Input a/b/../h**	**{{1st Logic}}**	**1bit**	**C,W,T,U**	**1.002 boolean**
Input a/b/../h k “Description for logic function” “1st Logic” k k					
14	**Logic result**	**{{1st Logic}}**	**1bit**	**C,T**	**1.002 boolean**
k					

6.4.1 “AND/OR/XOR”

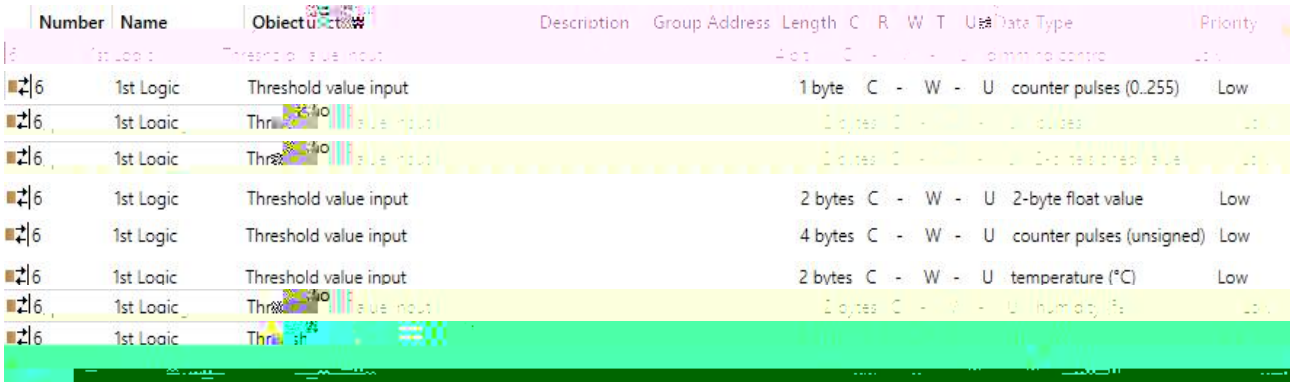
6.4.2.“Gate forwarding”

6.4.2 “Gate forwarding”

					DPT
6	**Gate value select**	**{{1st Logic}}**	**1byte**	**C,W**	**17.001 scene number**
k					
7/.../10	**Input x**	**{{1st Logic}}**	**1bit** **4bit** **1byte**	**C,W**	**1.001 switch** **3.007 dimming control** **5.010 counter pulses(0..255)**
Input x k					
11/../14	**Output x**	**{{1st Logic}}**	**1bit** **4bit** **1byte**	**C,T**	**1.001 switch** **3.007 dimming control** **5.010 counter pulses(0..255)**
k k					

6.4.2 “Gate forwarding”

6.4.3.“Threshold comparator”

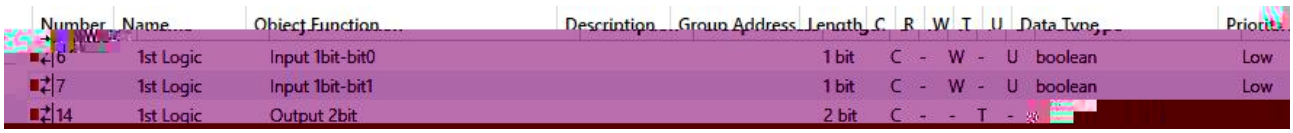


6.4.3 “Threshold comparator”

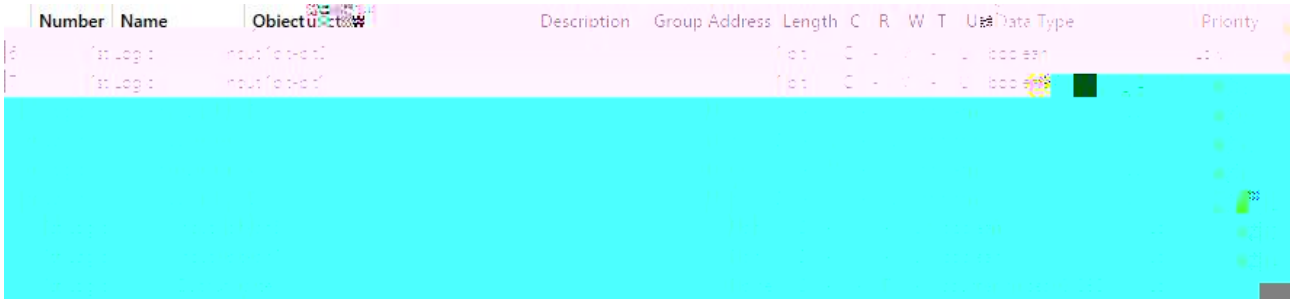
					DPT
6	**Threshold value input**	**{{1st Logic}}**	**4bit** **1byte** **2byte** **4byte**	**C,W, U**	**3.007 dimming** **5.010 counter pulses** **7.001 pulses** **12.001 counter pulses**
k					
14	**Logic result**	**{{1st Logic}}**	**1bit**	**C,T**	**1.002 boolean**
k					k

6.4.3 “Threshold comparator”

6.4.4.“Format convert”



“2x1bit --> 1x2bit” 2 1bit 2bit Input bit1=1, bit0=0--> Output 2bit=2



“8x1bit --> 1x1byte” : 8 1bit 1byte Input bit2=1, bit1=1, bit0=1, 0--> Output 1byte=7

Number	Name	O	Desc	Gr	ddress	Length	C	R	W	T	U	Data Type	Priority
6	1s	Inp	te			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
14	1	Out	byte			2 bytes	C	-	-	T	-	pulse	

byte --> 1x2byte 1byte 2byte Input 1byte=125--> Output 2byte=125,

Number	Name	Object Function	Description	Group Add

“2x1byte --> 1x2byte” 2 1byte 2byte Input 1byte-low = 255 ($FF), Input 1byte-high = 100 ($64) --> Output 2byte = 25855 ($64 FF)

Number	Name	Object	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input 2byte-low			2 bytes	C	-	W	-	U	pulses	Low
7	1st Logic	Input 2byte-high			2 bytes	C	-	W	-	U	pulses	Low
14	1st Logic	Output 4byte			4 bytes	C	-	-	T	-	counter pulses (unsigned)	Low

“2x2byte --> 1x4byte” 2 2byte 4byte Input 2byte-low = 65530 ($FF FA), Input 2byte-high = 32768 ($80 00)--> Output 2byte = 2147549178 ($80 00 FF FA)

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input 1byte			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
7	1st Logic	Output 1bit-bit0			1 bit	C	-	-	T	-	boolean	Low
8	1st Logic	Output 1bit-bit1			1 bit	C	-	-	T	-	boolean	Low
9	1st Logic	Output 1bit-bit2			1 bit	C	-	-	T	-	boolean	Low
10	1st Logic	Output 1bit-bit3			1 bit	C	-	-	T	-	boolean	Low
11	1st Logic	Output 1bit-bit4			1 bit	C	-	-	T	-	boolean	Low
12	1st Logic	Output 1bit-bit5			1 bit	C	-	-	T	-	boolean	Low
13	1st Logic	Output 1bit-bit6			1 bit	C	-	-	T	-	boolean	Low
14	1st Logic	Output 1bit-bit7			1bit	C					Boolean	Low

“1x1byte --> 8x1bit” 1 1byte 8 1bit Input 1byte=200 --> Output bit0=0, bit1=0, bit2=0, bit3=1, bit4=0, bit5=0, bit6=1, bit7=1

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input 2byte			2 bytes	C	-	W	-	U	pulses	Low
13	1st Logic	Output 1byte-low			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
14	1st Logic	Output 1byte-high			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

“1x2byte --> 2x1byte” 1 2byte 2 1byte Input 2byte = 55500 ($D8 CC) --> Output 1byte-low = 204 ($CC), Output 1byte-high =216 ($D8)

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input 4byte			4 bytes	C	-	W	-	U	counter pulses (unsigned)	Low
13	1st Logic	Output 2byte-low			2 bytes	C	-	-	T	-	pulses	Low
14	1st Logic	Output 2byte-high			2 bytes	C	-	-	T	-	pulses	Low

“1x4byte --> 2x2byte” 1 "+ 4byte 2 2byte Input 4byte = 78009500 ($04 A6 54 9C) --> Output 2byte-low = 21660 ($54 9C), Output 2byte-high =1208 n 1

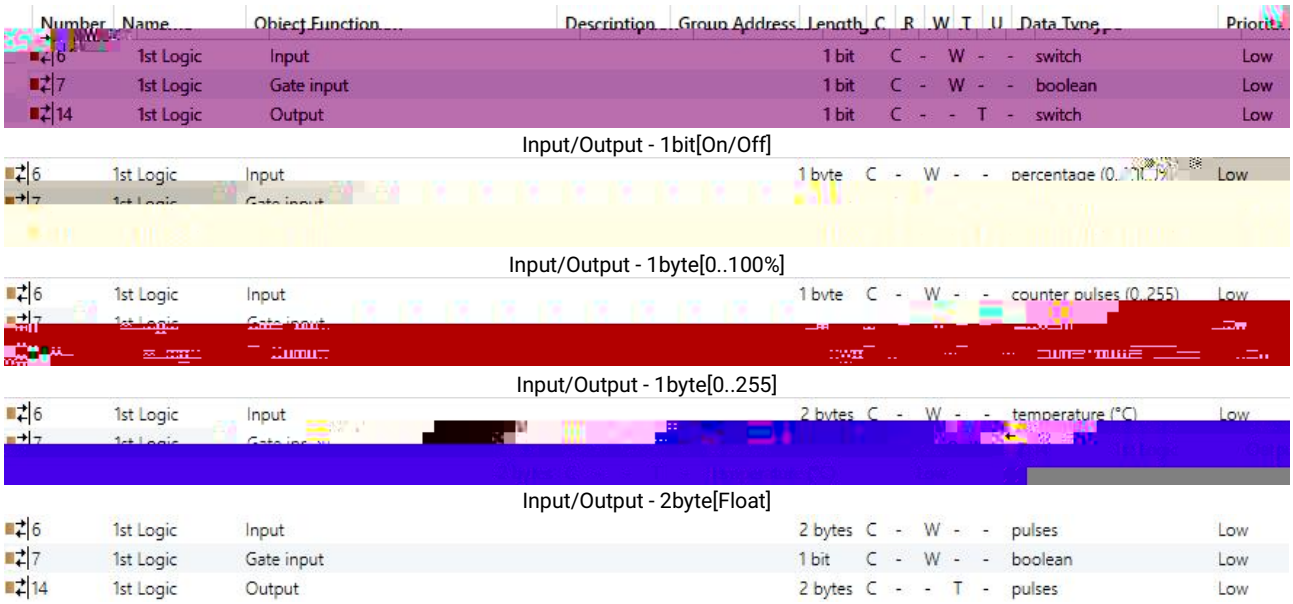
Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input 1byte-low			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
7	1st Logic	Input 1byte-middle			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
8	1st Logic	Input 1byte-high			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
14	1st Logic	Output 3byte			3 byte							

“3x1byte --> 1x3byte” 3 1byte 1 3byte Input 1byte-low = 150 ($96), Input 1byte-middle = 100 ($64), Input 1byte-high = 50 ($32)--> Output 3byte = $32 64 96

6.4.4 “Format convert” □ □

					DPT
6	**Input ...**	**{{1st Logic}}**	**1bit** **1byte** **2byte** **3byte** **4byte**	**C,W,U**	**1.001 switch** **5.010 counter pulses(0..255)** **7.001 pulses** **232.600 RGB value 3x(0..255)** **12.001 counter pulses**
k					
14	**Output ...**	**{{1st Logic}}**	**1bit** **2bit** **1byte** **2byte** **3byte** **4byte**	**C,T**	**1.001 switch** **2.001 switch control** **5.010 counter pulses(0..255)** **7.001 pulses** **232.600 RGB value 3x(0..255)** **12.001 counter pulses**
k					

6.4.5.“Gate function”



Input/Output - 1bit[On/Off]

Input/Output - 1byte[0..100%]

Input/Output - 1byte[0..255]

Input/Output - 2byte[Float]

Input/Output - 2byte[0..65535]

6.4.5 “Gate function”

					DPT
6	**Input**	**{{1st Logic}}**	**1bit** **1byte** **2byte**	**C,W**	**1.001 switch** **5.001 percentage** **5.010 counter pulses** **9.001 temperature** **7.001 pulses**
k					
7	**Gate input**	**{{1st Logic}}**	**1bit**	**C,W**	**1.002 boolean**
k k					
14	**Output**	**{{1st Logic}}**	**bit** **1byte** **2byte**	**C,T**	**1.001 switch** **5.001 percentage** **5.010 counter pulses** **9.001 temperature** **7.001 pulses**
k					“Gate input” k

6.4.5 “Gate function”

6.4.6.“Delay function”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Input			1 bit	C	-	W	-	-	switch	Low
14	1st Logic	Output			1 bit	C	-	-	T	-	switch	Low
			1bit[On/Off]									
6	1st Logic	Input			1 byte	C	-	W	-	-	percentage (0..100%)	Low
14	1st Logic	Output			1 byte	C	-	-	T	-	percentage (0..100%)	Low
			1byte[0..100%]									
6	1st Logic	Input			1 byte	C	-	W	-	-	counter pulses (0..255)	Low
14	1st Logic	Output			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
			1byte[0..255]									
6	1st Logic	Input			2 bytes	C	-	W	-	-	temperature (°C)	Low
14	1st Logic											
			2byte[Float]									
6	1st Logic	Input			2 bytes	C	-	W	-	-	pulses	Low
14	1st Logic	Output			2 bytes	C	-	-	T	-	pulses	Low
			2byte[0..65535]									

6.4.6 “Delay function”

					DPT
6	**Input**	**{{1st Logic}}**	**1bit** **1byte** **2byte**	**C,W**	**1.001 switch** **5.001 percentage** **5.010 counter pulses** **9.001 temperature** **7.001 pulses**
k					
14	**Output**	**{{1st Logic}}**	**1bit** **1byte** **2byte**	**C,T**	**1.001 switch** **5.001 percentage** **5.010 counter pulses** **9.001 temperature** **7.001 pulses**
k					

6.4.6 “Delay function”

6.4.7.“Staircase lighting”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
6	1st Logic	Trigger value			1 bit	C	-	W	-	-	trigger	Low
7	1st Logic	Light-on duration time			2 bytes	C	-	W	-	-	time (s)	Low
14	1st Logic	Output			1 bit	C	-	-	T	-	switch	Low
14	1st Logic	Output			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

6.4.7 “Staircase lighting”

					DPT
6	**Trigger value**	**{{1st Logic}}**	**1bit**	**C,W**	**1.017 trigger**
		k			
7	**Light-on duration time**	**{{1st Logic}}**	**2byte**	**C,W**	**7.005 time(s)**
					k
14	**Output**	**{{1st Logic}}**	**1bit** **1byte**	**C,T**	**1.001 switch** **5.010 counter pulses**
		1	2 k		k

6.4.7 “Staircase lighting”