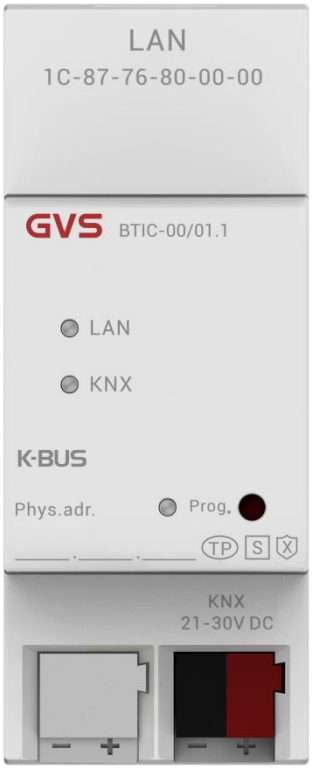
K-BUS KNX-MQTT-HA

KNX-MQTT-HA Gateway_V1.1

BTIC-00/01.1



KNX/EIB □ □ □

注意事项

1、请远离强磁场、高温、潮湿等环境：

2、不要将设备摔落在地上或使之受到强力冲击；

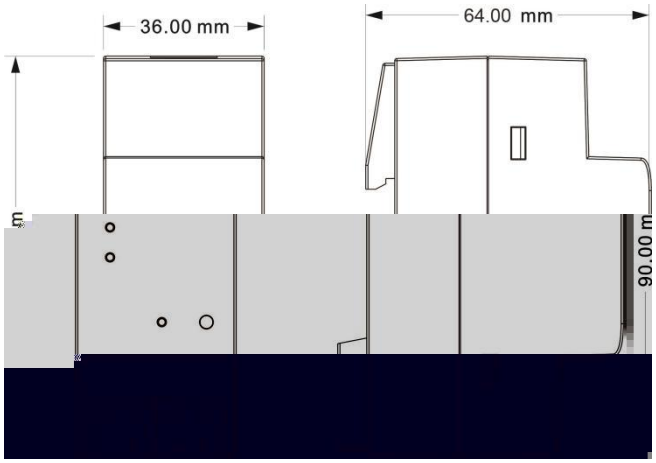
□ □ 1
□ 2
□ □ □ 3
3.1. 3
3.2. □ 3
□ □ □ □□ 4
□ □ ETS □□ □□□ 5
5.1. □□ □“General” 5
5.1.1. MQTT □□ 5
5.1.2. AC KNX □ □□□□ 6
5.2. □□ □“Select Options” 9
5.2.1. □□ □“Select Templa

□ □

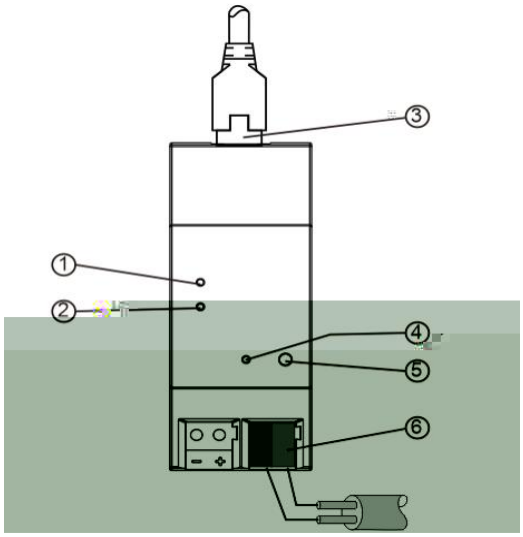
	□	21-30V DC, □ □ KNX □ □
	□	19.5mA/24V□15.5mA/30V
	□ □	470mW
□	KNX	□ □ □ (□/□)
	LAN	RJ45 □ 10/100 Base-T
	LAN LED	: □ □ □: □ □ □ □ □
	KNX LED	: □ KNX □ □ □: □ □
	□ □ □ □ □ LED	□
	□ □	– 5 °C ... 45 °C
		– 25 °C ... 55 °C
	□ □	– 25 °C ... 70 °C
		<93%□ □ □ □
□	DIN □ □ □35mm □ □ □	
	36 × 90 × 64mm	
□ □	0.1kg	

□ □ □

3.1.



3.2. □



LAN LED ϟ □ □ LED

ϝ KNX LED □ □ □

ϒ LAN □ ϡ KNX □ □ □

□ □ □ □ □ □ □ □ □ □ □ **4** □ □ □ **4** □ □ □ **3** □

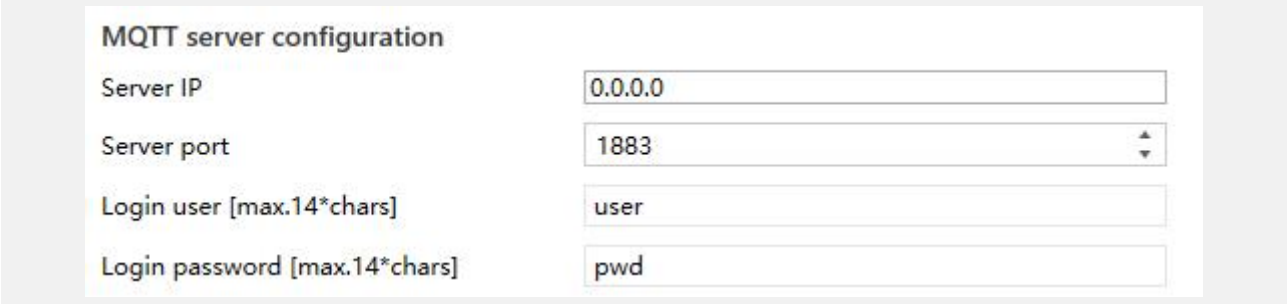
□ □ □ □□

□	□□ □	□	□	□
KNX-MQTT-HA Gateway/00D8 1.0	**1691**	**2048**	**2048**	**768**

□ □ ETS □ □ □ □ □

5.1. □ □ □ "General"

5.1.1.MQTT □ □



5.1.1 "General setting" □ □ □

MQTT server configuration MQTT □ □

"Server ip"

□ □ MQTT IP k

"Server port"

□ □ MQTT □ k

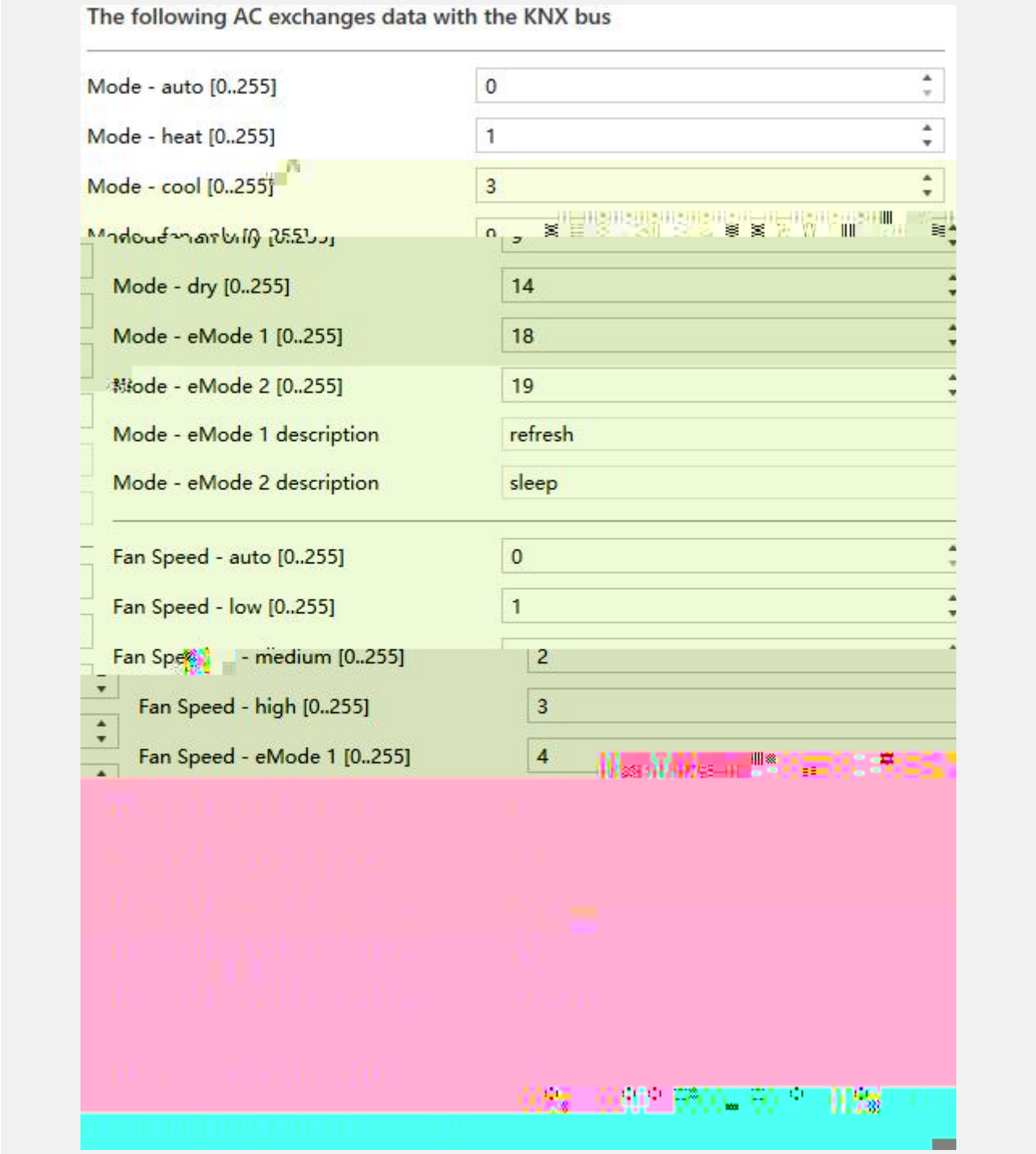
"Login user [14*chars]"

□ □ MQTT □ □ □ 14 □ k

"Login password [14*chars]"

□ □ MQTT □ □ □ 14 □ k

5.1.2.AC KNX □ □□□□


The following AC exchanges data with the KNX bus
Mode - auto [0..255]
0
Mode - heat [0..255]
1
Mode - cool [0..255]
3
Mode - dry [0..255]
14
Mode - eMode 1 [0..255]
18
Mode - eMode 2 [0..255]
19
Mode - eMode 1 description
refresh
Mode - eMode 2 description
sleep
Fan Speed - auto [0..255]
0
Fan Speed - low [0..255]
1
Fan Speed - high [0..255]
3
Fan Speed - eMode 1 [0..255]
4

5.1.2 “General setting” □ □ □

The following AC exchanges data with the KNX bus AC □ KNX □ □ □ □ □

“Mode - ... [0..255]”

□ □ □ □ □ □ □ □ **0..255**

“Fan Speed - ... [0..255]”

□ □ □ □ □ □ □ □ □ **0..255**

“Fan Swing - ... [0..255]”

□ □ □ □ □ □ □ □ □ **0..255**

“Temperature Min.[10..32]”

“Temperature Max.[10..32]”

□ □ □ □ □ □ □ k □ □ □ □ □ □ k

□ □ □ **10..32 -C**

□ □ □ □ □ k

"...eMode.x desc."

□ □□ □ x□eMode.x□ □□ □ 8 □ k

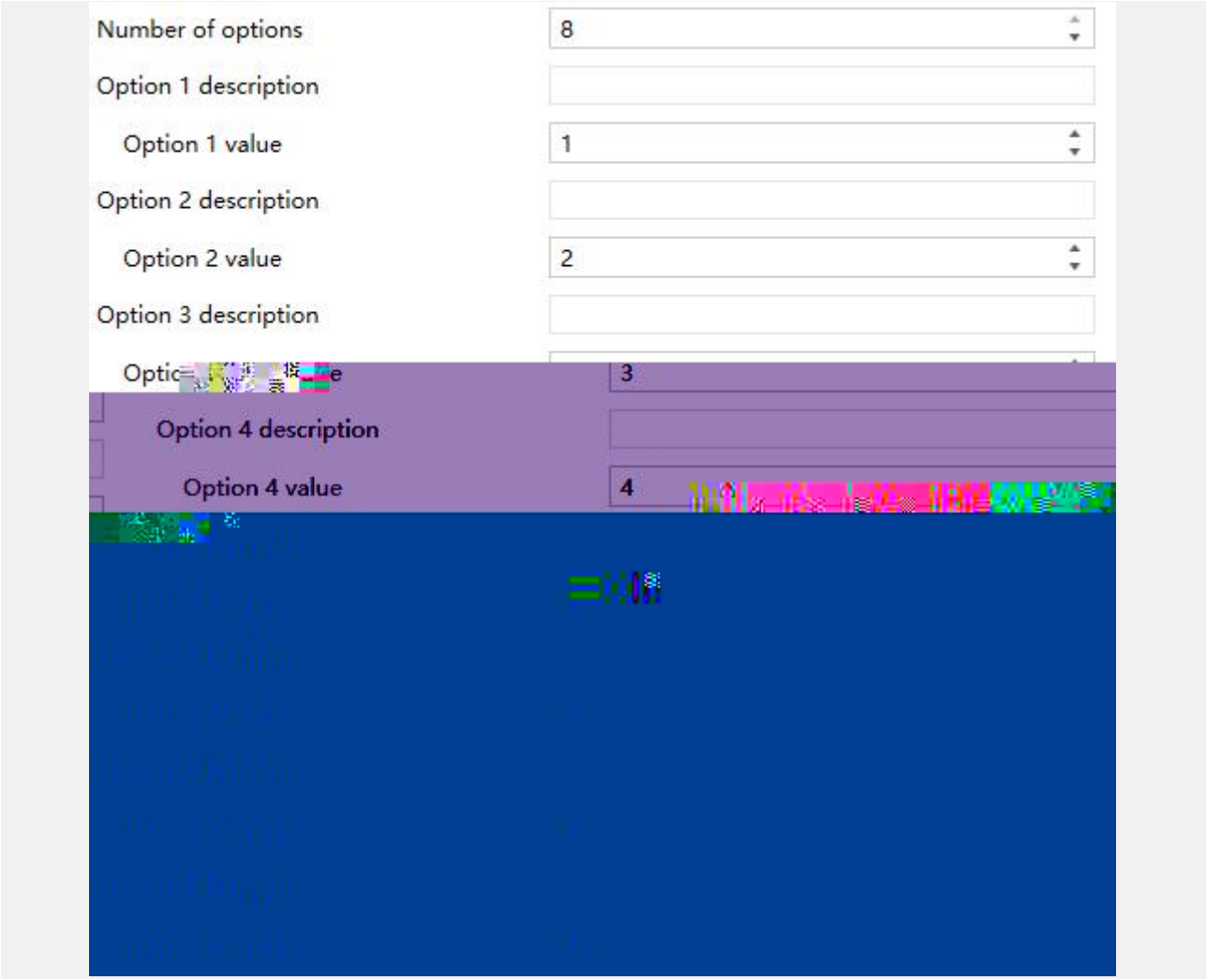
5.2. □□ □“Select Options”

5.2 “Select Options” □□ □

“Number of templates”

□□ KNX-MQTT-HA □ᵏ □□□**1...8**

5.2.1. □□ □“Select Template x□x=1~8□”



5.2.1 “Select Template x” □□ □

"Number of options"

□ □ □ □ □ k □ □ □ **1...8**

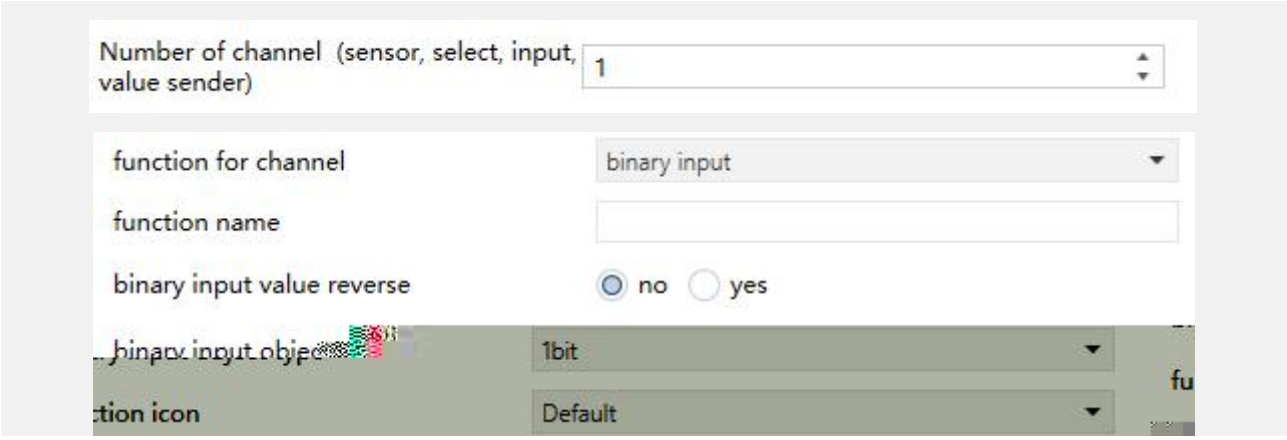
"Option x description"

□ □ □ □ □ □ □ 14 □ k

--- "Option x value"

□ □ □ □ KNX k □ □ **0...255**

5.3. □□ □“Sensor, Select...”



5.3 “Sensor, Select...” □□ □

“Number of channel (sensor, select, input, value sender)”

□□ □□ □k □□□**0...100**

“Function for channel”

□□ □□ □k □□□

No function □

Binary input □ □

Value sender □

Sensor

Select □

“Function name”

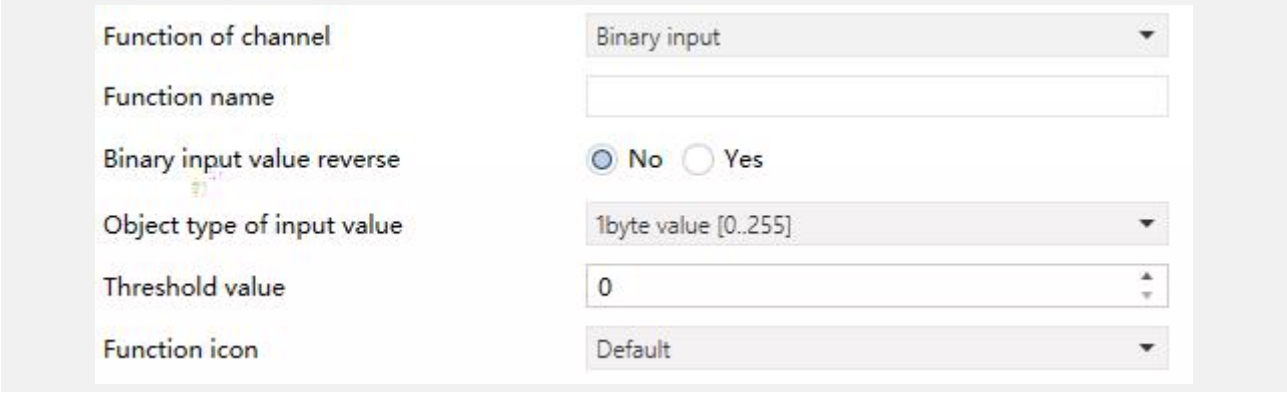
□□ □□ □ □□ □ 14 □k

“Function icon”

□□□□ □ k□□ □ “Home Assistant” k

□□ □□ □□□□□□ k

5.3.1.Binary input



5.3.1 “binary input” □ □ □

“Binary input value reverse”

□ □ □ □ k □ □ □

No

Yes

“Binary input object type”

□ □ □ □ □ □ k □ □ □

1bit

1byte value[0...255]

1byte value[-128...127]

2bytes value [0...65535]

2bytes value[-23768...32767]

2bytes float value

4bytes float value

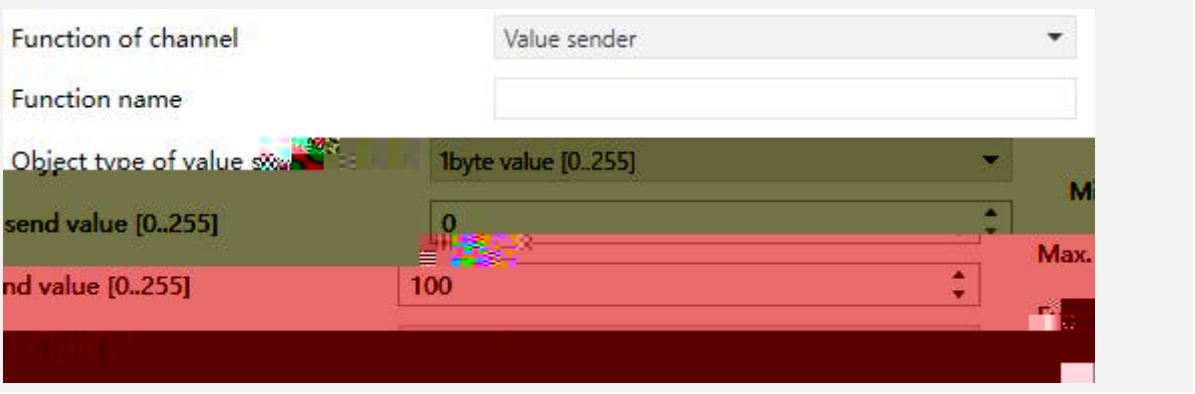
4bytes value[0...4294967295]

4bytes value[-2147483648...2147483647]

“Threshold value”

□ 1bit □ □ □ □ □ □ □ k □ □ □ □ □ k

5.3.2.Value sender



5.3.2 “number” □ □ □

“Object type of value send”

□ □ □ □ □ k □ □ □

1bit

1byte value[0...255]

2bytes value[0...65535]

4bytes value[0...4294967295]

“Min.send value[...]”

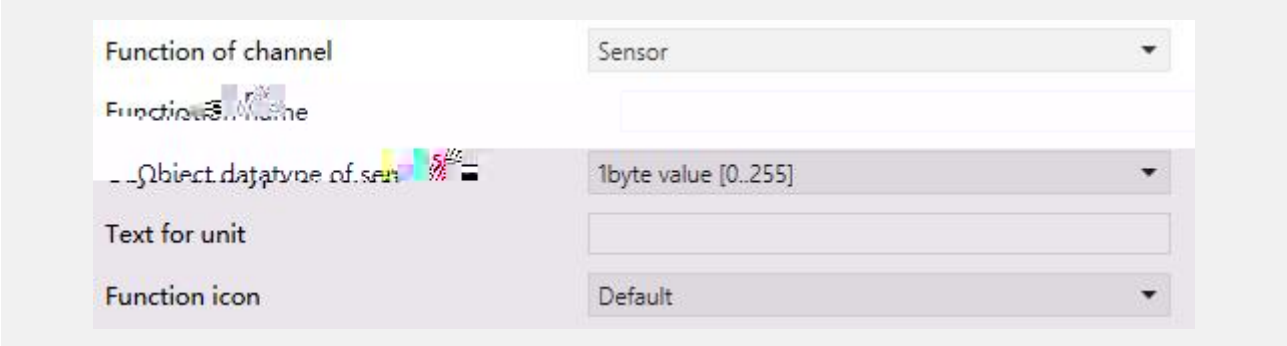
“Max.send value[...]”

□ □ 1bit □ □ □ □ □ / k □ □ □ □ □ k

□ □ □ □ □ k

□ □ □ k

5.3.3.Sensor



5.3.3 “sensor” □ □ □

“Object datatype of sensor”

□ □ □ □ k □ □ □

1bit

1byte value[0...255]

1byte value[-128...127]

2bytes value [0...65535]

2bytes value[-23768...32767]

2bytes float value

4bytes float value

4bytes value[0...4294967295]

4bytes value[-2147483648...2147483647]

“Text for unit”

□ □ □ □ 8 □ k

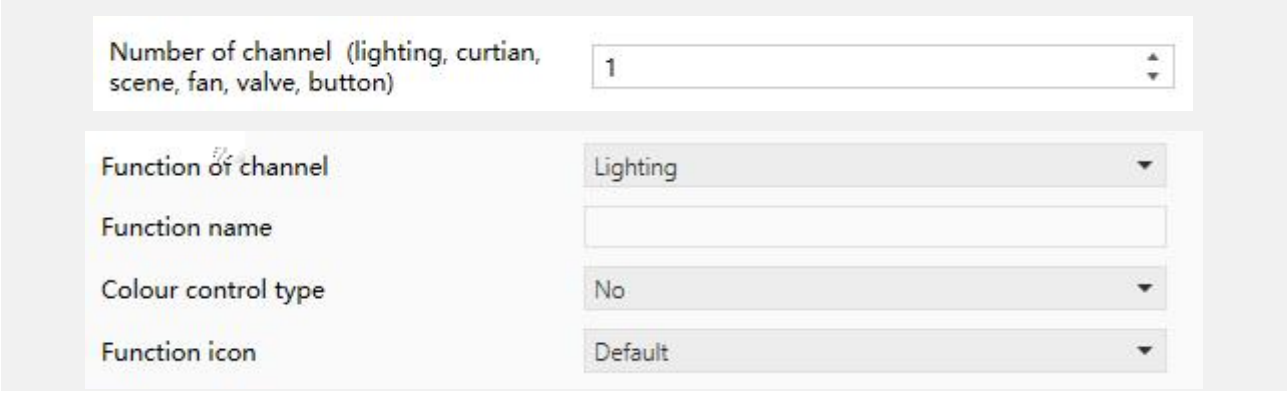
5.3.4.Select

5.3.4 “select” □ □ □

“Select template”

□ □ □ k □ □ □ **1...8**

5.4. □□ □“Lighting...x□x=1~200□”



5.4 “Lighting...x” □□ □

“Number of channel (lighting, curtain, scene, fan, valve, button)”

□□ □□ □k □□□**0...200**

“Function for channel”

□□ □□ □k □□□

No function □

Lighting

Curtain □

Scene

Fan □

Valve □□

Button □

“Function name”

□□ □□ □ □k □ 14 □k

"Function icon"

□ □ □ □ □ k □ □ □ "Home Assistant" k

□ □ □ □ □ □ □ □ □ □ □ k

5.4.1.Lighting

Function of channel	Lighting
Function name	
Colour control type	No
Function icon	Default

5.4.1 "lighting" □ □ □

"Colour control type"

□ □ □ □ □ □ □ □ □ □ □

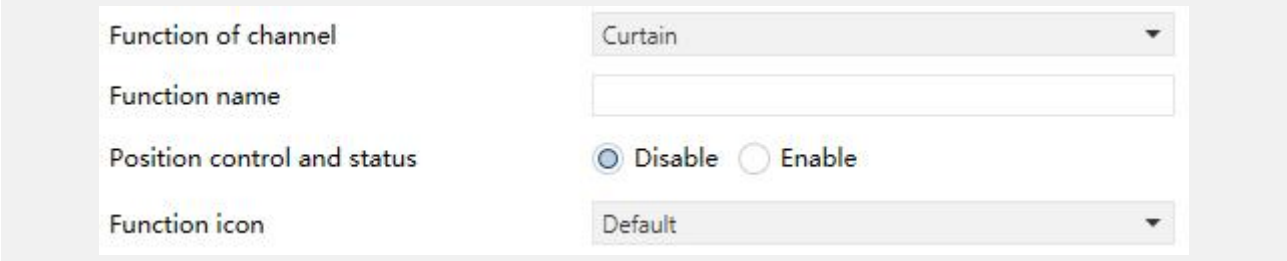
No □

Colour temperature □

RGB

RGBW

5.4.2.Curtain



5.4.2 “curtain” □ □ □

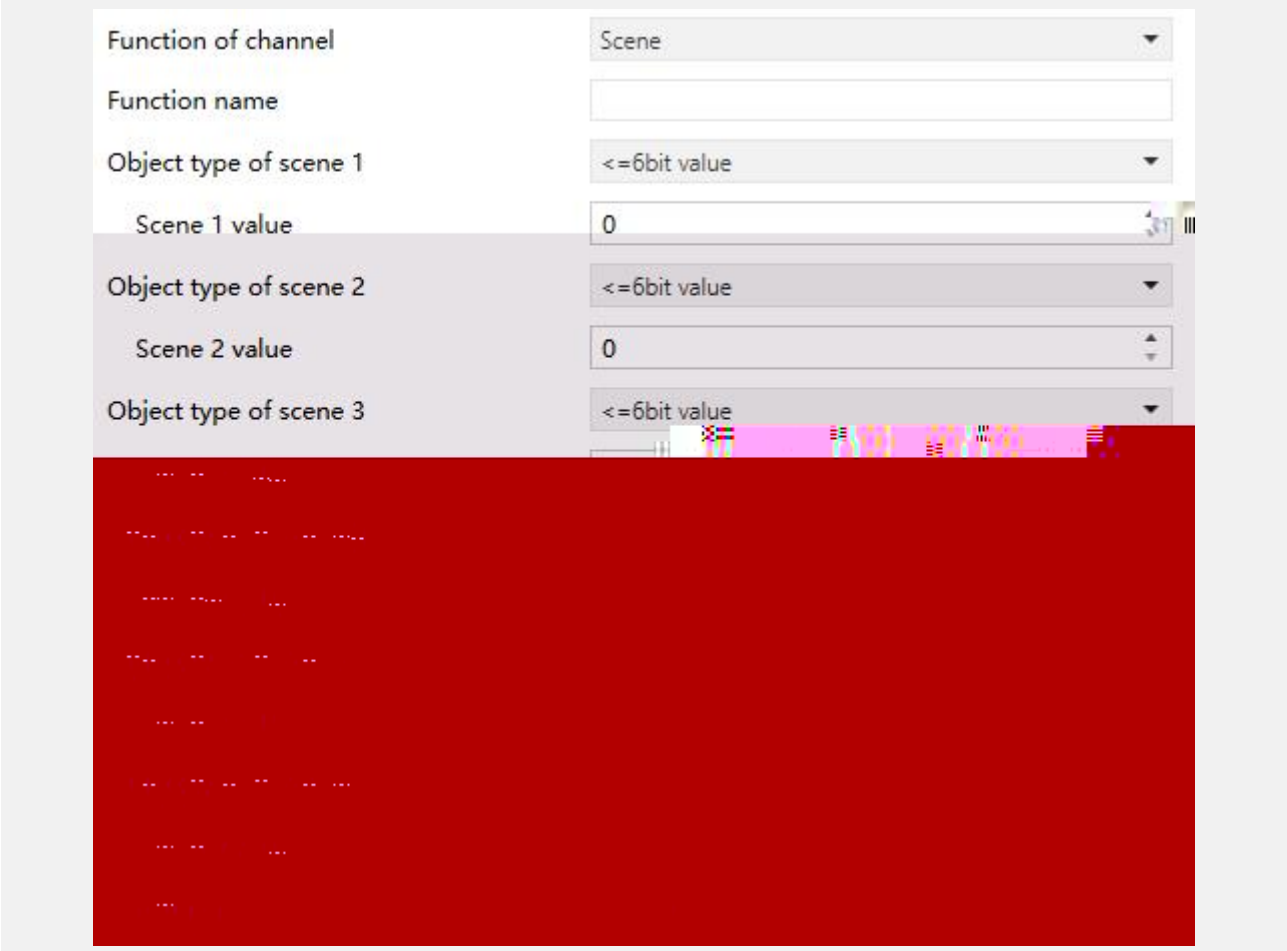
“Position control and status”

□ □ □ 1byte □ □ □ □ □ □ k □ □ □

Disable

Enable

5.4.3.Scene



5.4.3 “scene” □ □ □

"Object type of scene x"

□□ x □□ □x=1~6 k □□□

no

<=6bit value

1byte value[0...255]

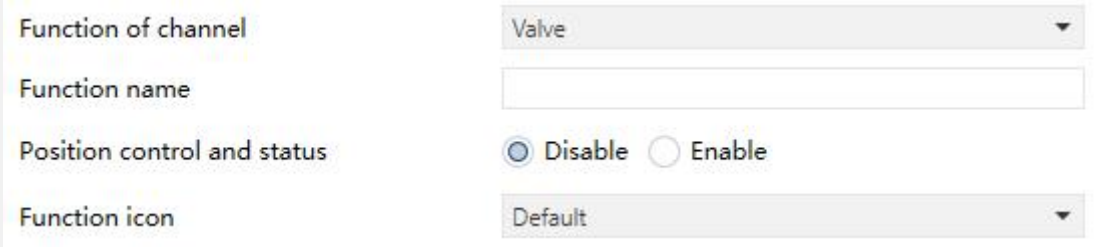
2byte value[0...65535]

2byte float value

"Scene x value"

□□ x □ k □□ □ □□ k

5.4.4.Valve



5.4.4 "valve" □□ □

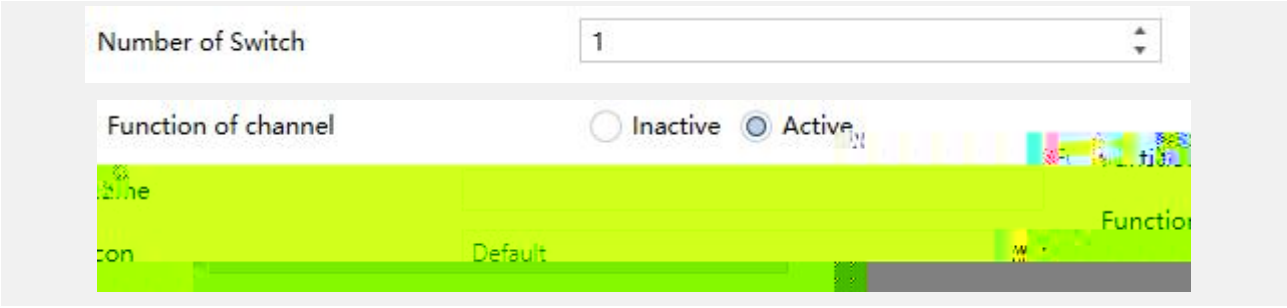
"Position control and status"

□□ □ 1byte □□ □ □□ □ k □□□

Disable

Enable

5.5. □□ □“Switch...x□x=1~100□”



5.5 “Switch...x” □□ □

“Number of Switch”

□□ □ □□ □k □□□**0...100**

“Function for channel”

□□ □ □□ □□ □□100 □ k □□□

Inactive □

Active

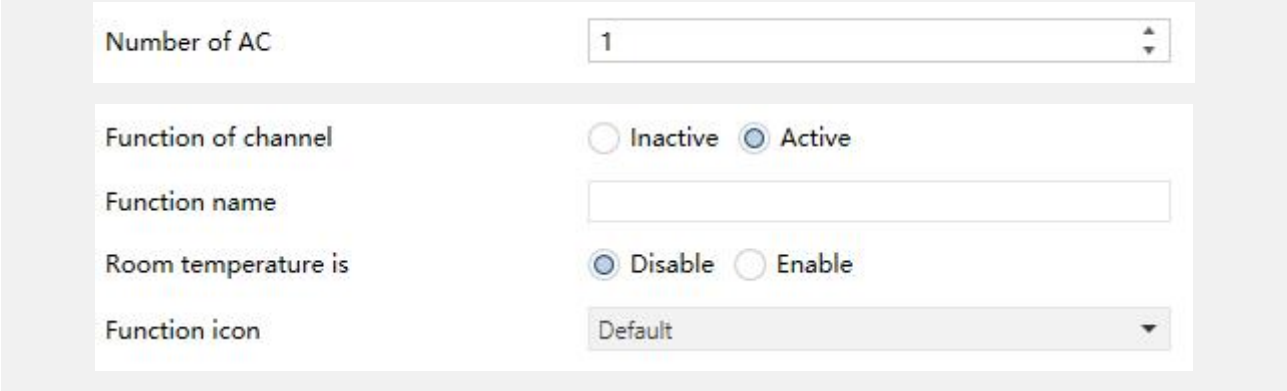
“Function name”

□□ □□ □ □k □ 14 □k

“Function icon”

□□□□ □ k□□ □ “Home Assistant” k

5.6. □□ □“AC...x□x=1~16□”



5.6 “AC...x” □□ □

“Number of AC”

□□ AC □□ □ᵏ □□□**0...16**

“Function for channel”

□□ □AC□□ □□ □□16 AC□ ᵏ □□□

Inactive □

Active

“Function name”

□□ AC□□ □ □ᵏ □ 14 □ᵏ

“Room temperature is”

□□ □ □ᵏ □□□

Disable

Enable

“Function icon”

□□□□ □ ᵏ□□ □ “Home Assistant” ᵏ

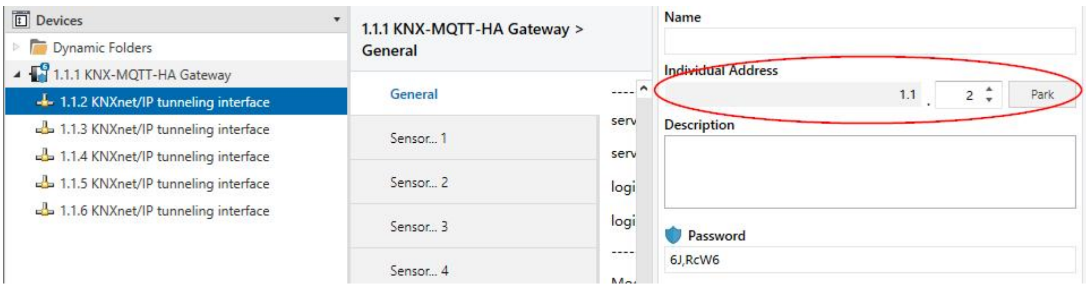
5.7.□ □ □(tunneling)

KNX-MQTT-HA 5 □ □ 5.7.1□ □ □ □ □ □ □ □ETS□□ □ □ □ □Visualization□ □ APP (Smartphone)□ □(Tablet)□ □ (Bus tool) k

5.7.1

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ k ETS5 □ □ □ □ □ □ □ 5 □ □ □ □ □ □ □ □ k

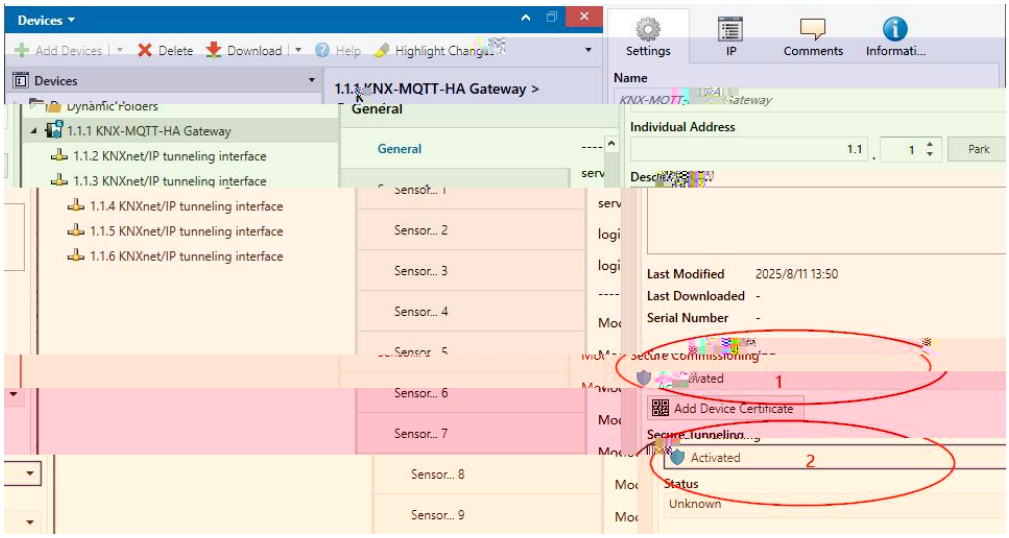
□ □ □ □ □ □Park□ □ 5.7.2□ □ □ □ □ □ □ 15.15.255□ □ □ □ □Park□ □ □ □ □ □ □ 15.15.255 k □15.15.255 □ □ □ □ □



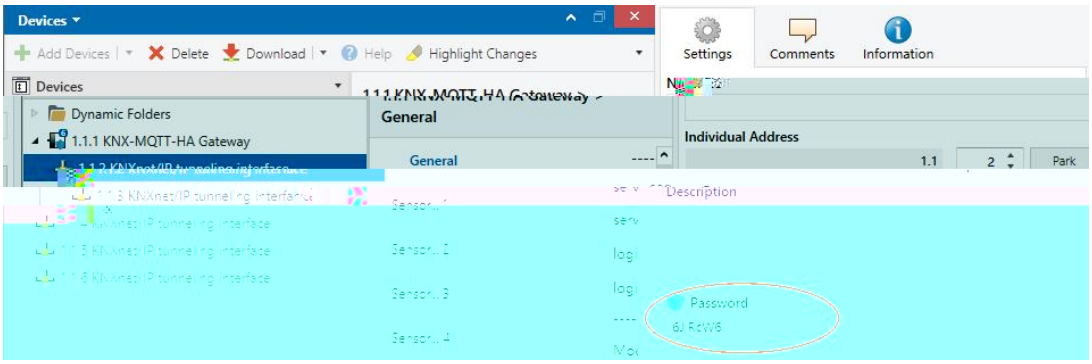
5.7.2

□□ □ □ KNX □ □ □□ □Secure Commissioning□□ □Secure Tunneling□ □ 5.7.3 k □Secure Tunneling" □ □ □ □ ETS □ □ □

5.7.4 □ □ □ k



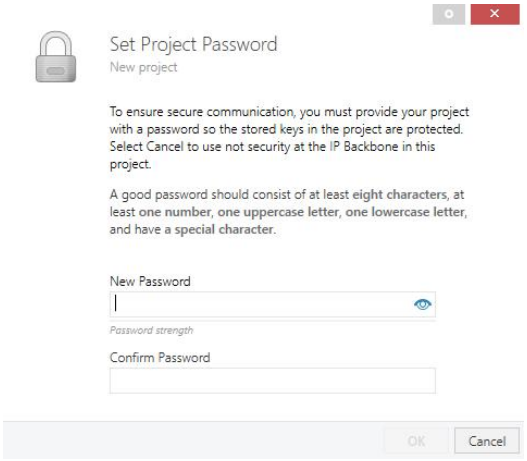
5.7.3



5.7.4

□ □ □ □Secure Commissioning□ □ □ □ □

5.7.5□ □ □ □ □ □Secure Commissioning□ k


Set Project Password
New project
To ensure secure communication, you must provide your project with a password so the stored keys in the project are protected. Select Cancel to use not security at the IP Backbone in this project.
A good password should consist of at least eight characters, at least one number, one uppercase letter, one lowercase letter, and have a special character.
New Password
Password strength
Confirm Password
OK
Cancel

5.7.5

5.8.KNX

KNX-MQTT-HA □ KNX KNX □ k □ □ □

□ □ □ □ □(Tunneling)□ k

ETS □ □ □ □ □ □ □ □ □ □ □ □

❖ KNX □ □ □ □ □ □ □ □ □ □ □ □ k

□ □ □ □ □ KNX □ □ □□

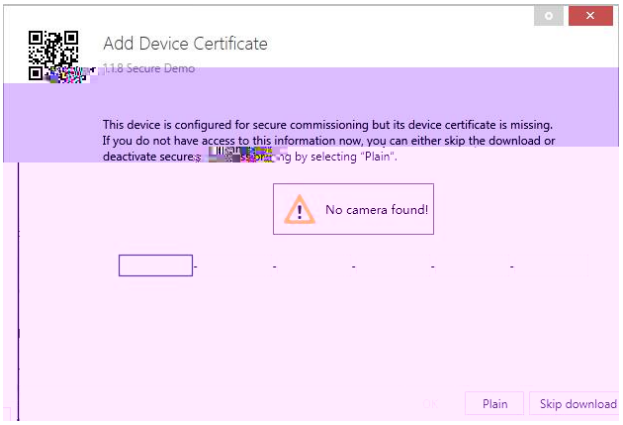
□ □ □ □ □ k

❖□ □ KNX □ □ □ □ □ □ □ □ k □ □FDSK = □ □ □ □ □ □

□ □ □ □ □ □ □ □ □ ETS□

✧□ □ □ □ETS □ □ □ □ □ 5.8.1 k

□ QR □ □ □ □ □ k

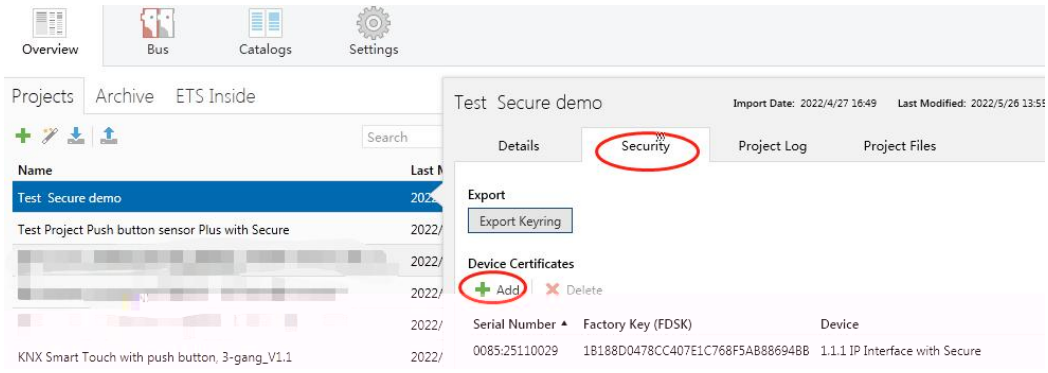


5.8.1 Add Device Certificate □

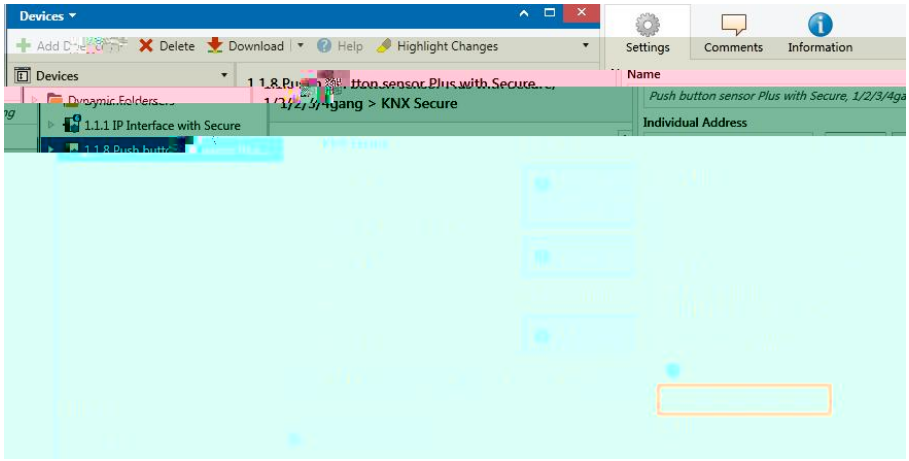
✧ □ □ □ □ □ □ ETS k

□ □ □ □ “Security”□ □ □ 5.8.2 k

□ □ □ □ □ □“Add Device Certificate”□ 5.8.3 k



5.8.2 Add Device Certificate



5.8.3 Add Device Certificate

✧□ □ □ □ □ FDSK k

FDSK□ □ □ KNX □ k

FDSK □ □ □ □ FDSK □ETS □ □ □ 5.8.4 k

□ □ □ □ □ □ □ □ □ □ ETS □ □ □ □ □

FDSK k

5.8.4

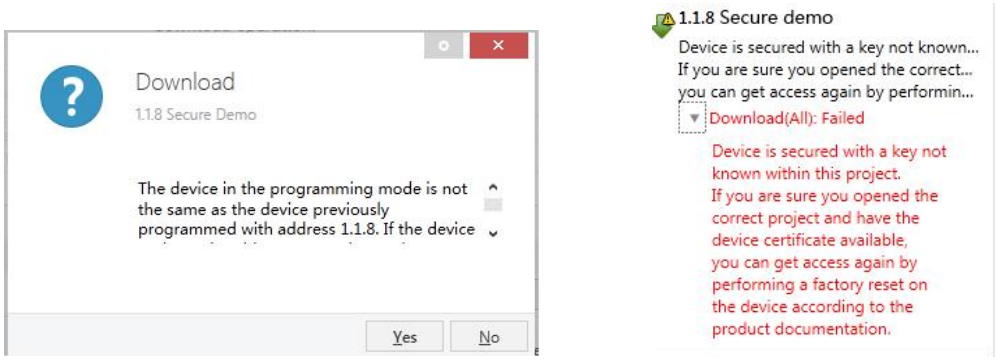
□

□ □ □ □ □ □ □ k □ □ □

□ 5.8.5 □ “Yes”□ “Add Device Certificate” □ □□ □ FDSK□ □

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

□ □ □ 5.8.5 □ □ k



5.8.5

□ □ □ □□ □ □ □ □ □ □ □ □ □ □ □

□ □ □ □ □ FDSK k

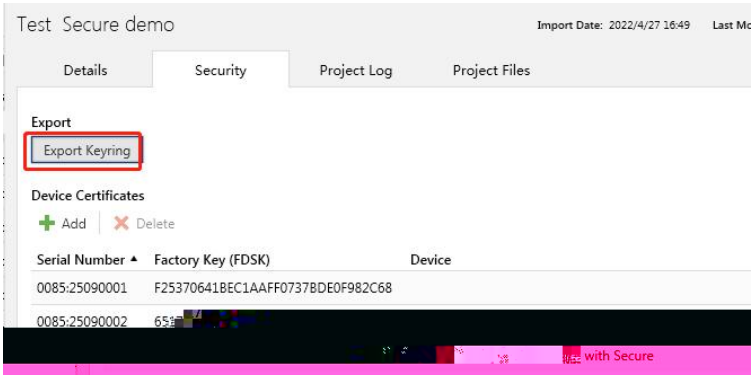
□ □ □ □“Add Device Certificate” □ □ □ □ □ □ k

5.8.6

ETS □ □ □

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ 5.8.7□

□ .knxkeys k



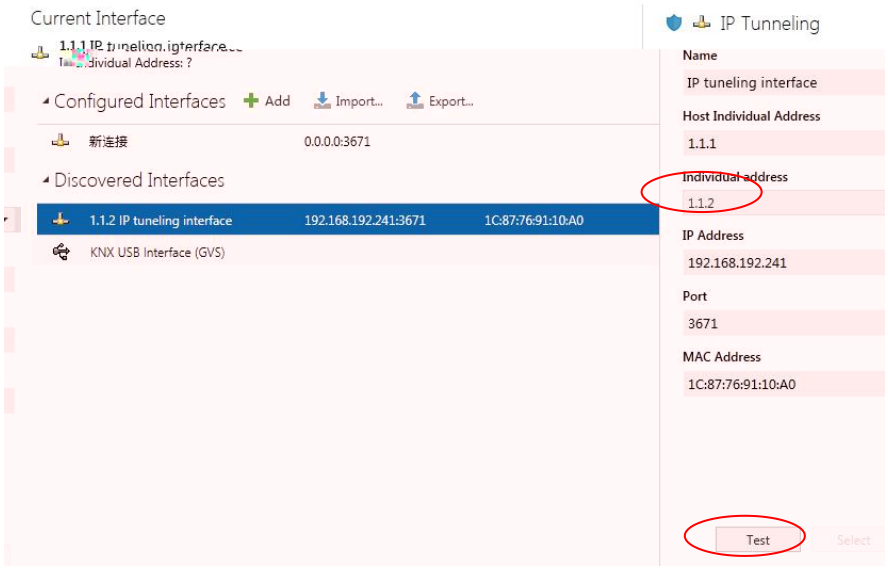
5.8.7

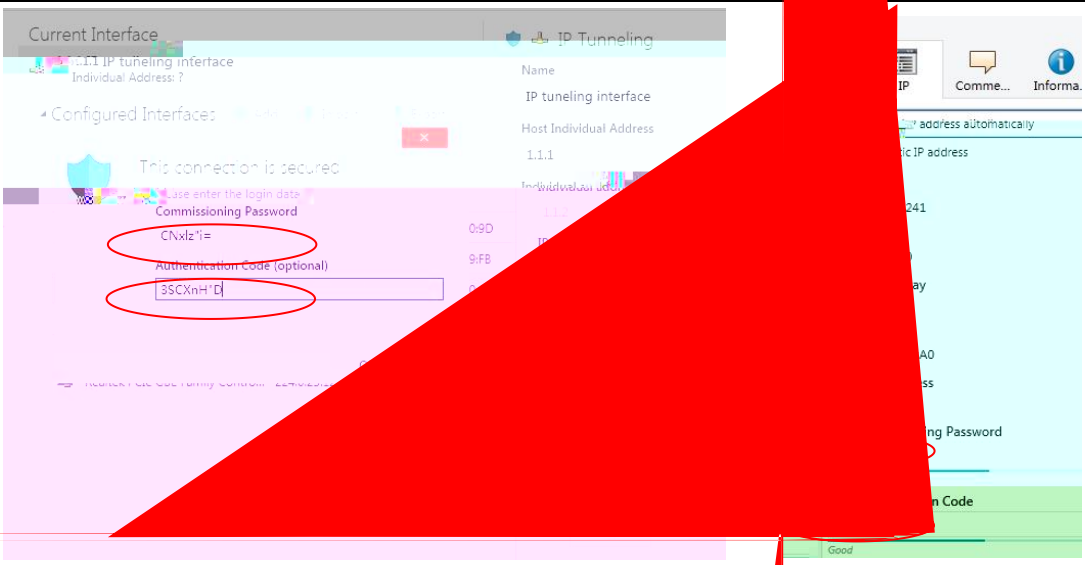
ETS □ IP □ □ □

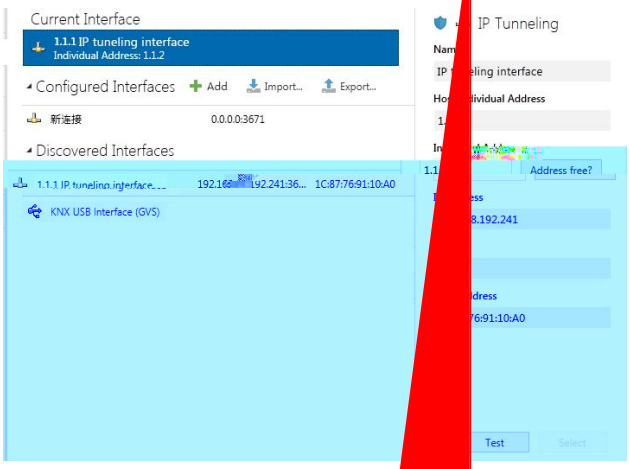
□ IP □ □ □ □ □ 1.1.2□ □ Test □ □ □ □ □

□ □ □ IP □ □ □ □ □ □ OK □Test □ □ Ok

□ Select □ k □ □ 5.8.8 k







5.8.8 IP □ □ □

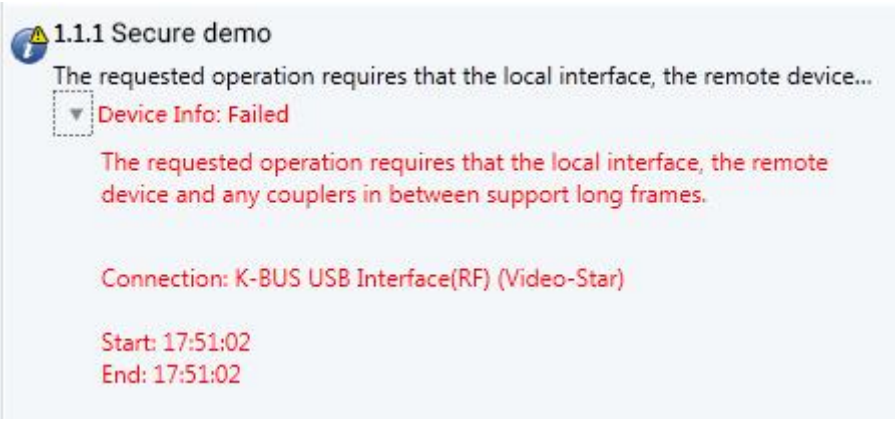
5.8.8 □ □Secure Tunneling□ □ □ □ □ □ □ □ □

□Secure Tunneling□ □ □ ETS □ □ □ □ k

□ □ KNX-MQTT-HA □ □ □ □ □ □ □ □ k

□ **KNX** □ □ □ □ □ **USB** □ □ □, **ETS** □ □

□ k


1.1.1 Secure demo
The requested operation requires that the local interface, the remote device...
Device Info: Failed
The requested operation requires that the local interface, the remote device and any couplers in between support long frames.
Connection: K-BUS USB Interface(RF) (Video-Star)
Start: 17:51:02
End: 17:51:02

5.8.9

5.9. □ □

□ □ □ k □ □ □ □

□ KNX □ □ □ ETS □ □ □ □ □ □

□ □ □ □ ETS □ k

□ □ □ □ ETS □ □ □ □ □ k

□ □ :

' IP

□ □ □□ □□

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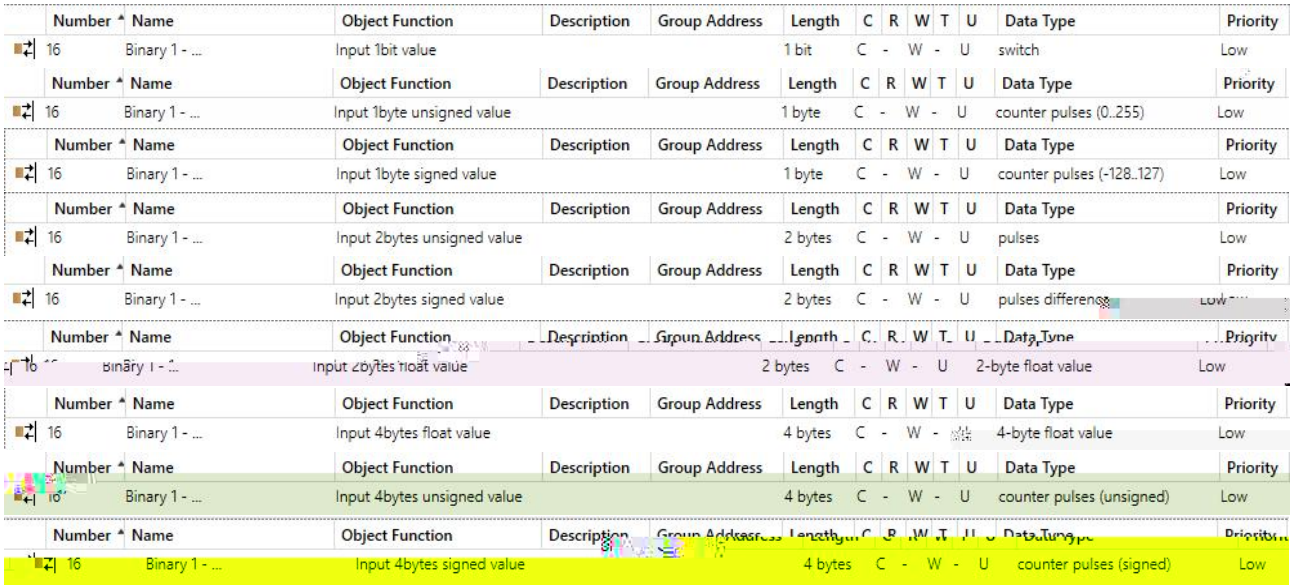
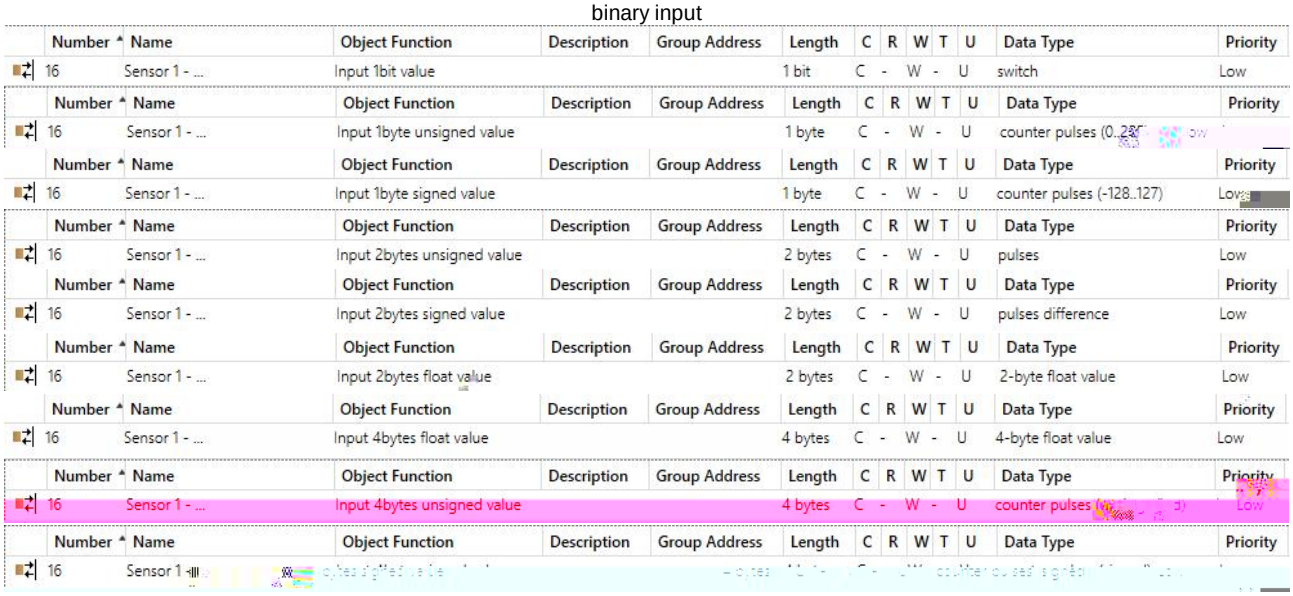
□ □ “C” □□ □ □□ □ □□“W” □□ □ □□□ □ □“R”

□□ □ □□□ □□ □“T” □□ □ □ □□“U” □□ □ □□ k

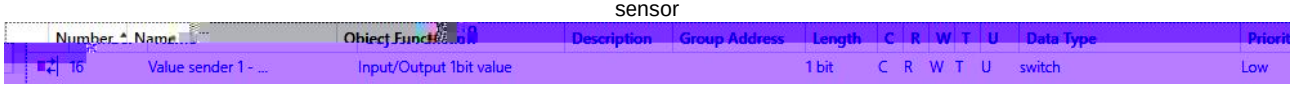
6.1.“Sensor...x□x=1~100□”□□ □



binary input



sensor



Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
16	Value sender 1 - ...	Input/Output 1byte value			1 byte	C	R	W	T	U	counter pulses (0..255)	Low

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
16	Value sender 1 - ...	Input/Output 2bytes value			2 bytes	C	R	W	T	U	pulses	Low

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
16	Value sender 1 - ...	Input/Output 4bytes value			4 bytes	C	R	W	T	U	counter pulses (unsigned)	Low

Value sender

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
16	Select 1 - ...	Input/Output 1byte value			1 byte	C	R	W	T	U	counter pulses (0..255)	Low

Select

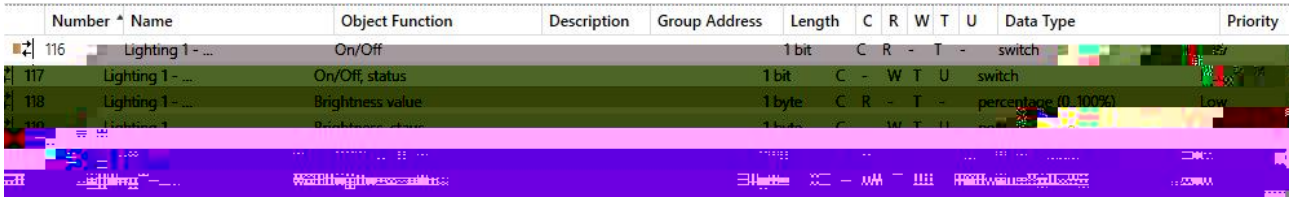
6.1 “Sensor...x”□ □ □

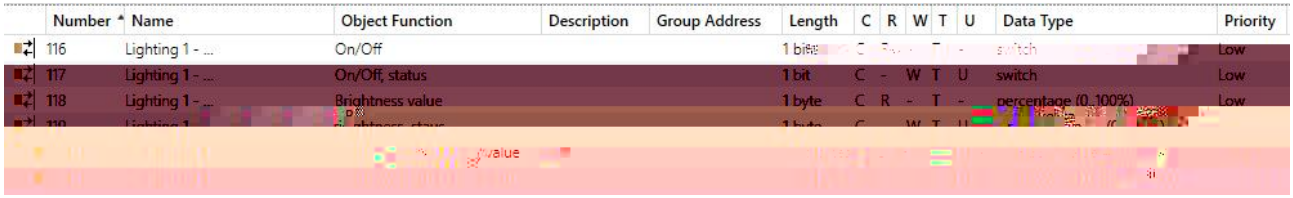
□	□ □	ü	□		DPT
16	**Input ...**	**Binary or sensor1 - {{}}**	**1bit** **1byte** **1byte** **2byte** **2byte** **2byte** **4byte** **4byte** **4byte**	**C,W,U**	**1.001 switch** **5.010 counter pulses (0..255)** **6.010 counter pulses (-128..127)** **7.001 pulses** **8.001 pulses difference** **9.*2-byte float value** **14.*4-byte float value** **12.001 counter pulses(unsigned)** **13.001 counter pulses(signed)**
□ □ □ □ □ □ □ k ü □ □Function name□ □ □ □ □ □ □ □Binary or sensor1 - □□ k					
16	**Input/Out ...**	**Value sender or select 1 - {{}}**	**1bit** **1byte** **2byte** **4byte**	**C,W,T,U, R**	**1.001 switch** **5.010 counter pulses (0..255)** **7.001 pulses** **12.001 counter pulses(unsigned)**
□ □ □ □ □ □ □ k					

□ 6.1 “Sensor...x”□ □ □

6.2.“Lighting...x□x=1~200□”□□ □

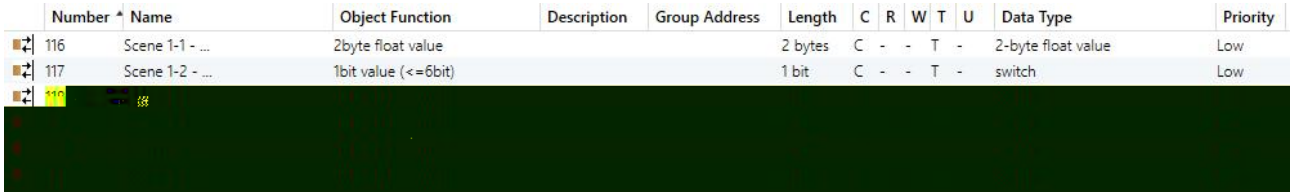
Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
116	Lighting 1 - ...	On/Off			1 bit	C	R	-	T	-	switch	Low
117	Lighting 1 - ...	On/Off, status			1 bit	C	-	W	T	U	switch	Low
118	Lighting 1 - ...	Brightness value			1 byte	C	R	-	T	-	percentage (0..100%)	Low
119	Lighting 1 - ...	Brightness, staus			1 byte	C	-	W	T	U	percentage (0..100%)	Low
120	Lighting 1 - ...	Colour temperature			2 bytes	C	R	-	T	-	absolute colour temperature (K)	Low
121	Lighting 1 - ...	Colour temperature, status			2 bytes	C	-	W	T	U	absolute colour temperature (K)	Low





lighting

curtain



scene

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
116	Fan 1 - ...	On/Off			1 bit	C	R	-	T	-	switch	Low
117	Fan 1 - ...	On/Off, status			1 bit	C	-	W	T	U	switch	Low
118	Fan 1 - ...	Fan speed			1 byte	C	R	-	T	-	percentage (0..100%)	Low
119	Fan 1 - ...	Fan speed, status			1 byte	C	-	W	T	U	percentage (0..100%)	Low

fan

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
116	Valve 1 - ...	On/Off			1 bit	C	R	-	T	-	switch	Low
117	Valve 1 - ...	On/Off, status			1 bit	C	-	W	T	U	switch	Low
118	Valve 1 - ...	Position			1 byte	C	R	-	T	-	percentage (0..100%)	Low
119	Valve 1 - ...	Position, status			1 byte	C	-	W	T	U	percentage (0..100%)	Low

valve

6.2 “lighting...x”□□ □

□	□ □	ü	□		DPT
116	**On/Off**	**Lighting1 - {{}}** **Fan1 - {{}}** **Valve1 - {{}}**	**1bit**	**C,R,T**	**1.001 switch**
117	**On/Off,status**	**Lighting1 - {{}}** **Fan 1 - {{}}** **Valve1 - {{}}**	**1bit**	**C,W,T,U**	**1.001 switch**

□ □ □ □ ! □ ! □ □ k □

0——

1——

Obj.116 □ □ / □ □ ! □ □ □ □ / k

Obj.117 □ □ □ / □ ! □ □ □ □ k

ü □ □Function name □ □ □ □ □ □ □ □ □Lighting1 - □ □

k

118	**Brightness value**	**Lighting1 - {{}}**	**1byte**	**C,R,T**	**5.001 percentage(0..100%)**
119	**Brightness,status**	**Lighting1 - {{}}**	**1byte**	**C,W,T,U**	**5.001 percentage(0..100%)**

□ □ □ □ □ k □0...100%

Obj.118 □ □ □ □ □ k

Obj.119 □ □ k

120	**Colour temperature**	**Lighting1 - {{}}**	**2byte**	**C,R,T**	**7.600 absolute color temperature**
121	**Colour temperature,status**	**Lighting1 - {{}}**	**2byte**	**C,W,T,U**	**7.600 absolute color temperature**

□ □ □ □ □ k □2000..7000 K

Obj.120 □ □ □ k

Obj.121 □ □ □ k

120	**RGB dimming value**	**Lighting1 - {{}}**	**3byte**	**C,R,T**	**232.600 RGB value 3x(0..255)**
121	**RGB brightness,status**	**Lighting1 - {{}}**	**3byte**	**C,W,T,U**	**232.600 RGB value 3x(0..255)**

□ □□ □□ RGB □ k

Obj.120□ □ RGB □ □ k

Obj.121□ □ RGB □ k

3 □ RGB □ □ □ □ □ U8 U8 U8□□ □

3_{MSB}	2	1_{LSB}
R	G	B
UUUUUUUU	UUUUUUUU	UUUUUUUU

R: □□□ □G: □□□ □B: □□□ k

120	**RGBW dimming value**	**Lighting1 - {{}}**	**6byte**	**C,R,T**	**251.600 DPT_Colour_RGBW**
121	**RGBW brightness,status**	**Lighting1 - {{}}**	**6byte**	**C,W,T,U**	**251.600 DPT_Colour_RGBW**

□ □□ □□ RGBW □ k

Obj.120□ □ RGBW □ □ k

Obj.121□ □ RGBW □

6 □ RGBW □ □ □ □ □ U8 U8 U8 U8 R8 R4 B4□□ □

6_{MSB}	5	4	3	2	1_{LSB}
R	G	B	W		r r r r mR mG mB mW
UUUUUUUU	UUUUUUUU	UUUUUUUU	UUUUUUUU	00000000	0000BBBB

R: □□□ □G: □□□ □B: □□□ □W: □□ □

mR: □□ □ , 0= , 1= □

mG: □□ □ , 0= , 1= □

mB: □□ □ , 0= , 1= □

mW: □ □ , 0= , 1= k

116	**Open/Close**	**Curtain1 - {{}}**	**1bit**	**C,R,T**	**1.008 up/down** **1.009 open/close**
120	**Open/Close,status**	**Curtain1 - {{}}**	**1bit**	**C,W,T,U**	**1.008 up/down** **1.009 open/close**

□ □□ □□ □ k □

1—— □ □

0—— □

Obj.116 □ □ □ / □ □ k

Obj.120 □ □ □ □ / □ k

117	**Stop**	**Curtain1 - {{}}**	**1bit**	**C,R,T**	**1.007 step**

□ □ □ □ □ □ □ □ □ □ □ k □

1——

118	**Position**	**Curtain1 - {{}}** **Valve1 - {{}}**	**1byte**	**C,R,T**	**5.001 percentage(0..100%)**
119	**Position,status**	**Curtain1 - {{}}** **Valve1 - {{}}**	**1byte**	**C,W,T,U**	**5.001 percentage(0..100%)**

□ □ □ □ □ ! □ □ k □0...100%

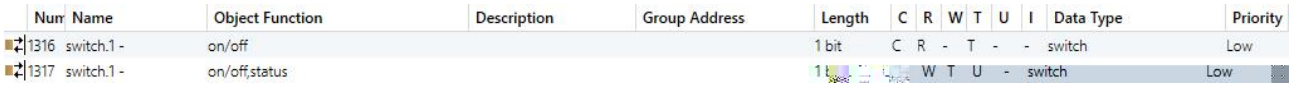
Obj.118 □ □ □ □ □ □ □ k

Obj.119 □ □ □ □ □ □ □ k

116	**1 bit value(<=6bit)** **1byte value** **2byte value** **2byte float value**	**Scene.1 - {{}}**	**1byte** **1bit** **2byte** **2byte**	**C,R,T**	**1.001 switch** **5.001 percentage(0..100%)** **7.001 pulses** **9.001 temperature**

□ □ □ □ □ □ □ □ k □ □ □ k

6.3.“Switch...x□x=1~100□”□□ □



Num	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	I	Data Type	Priority
1316	switch.1 -	on/off			1 bit	C	R	-	T	-	-	switch	Low
1317	switch.1 -	on/off,status			1 bit	C	-	W	T	U	-	switch	Low

6.3 “Switch...x”□□ □

□	□ □	ü	□		DPT
1316	**On/Off**	**Switch1 - {{}}**	**1bit**	**C,R,T**	**1.001 switch**
1317	**On/Off,status**	**Switch1 - {{}}**	**1bit**	**C,W,T,U**	**1.001 switch**

□ □□ □ k □

0——

1——

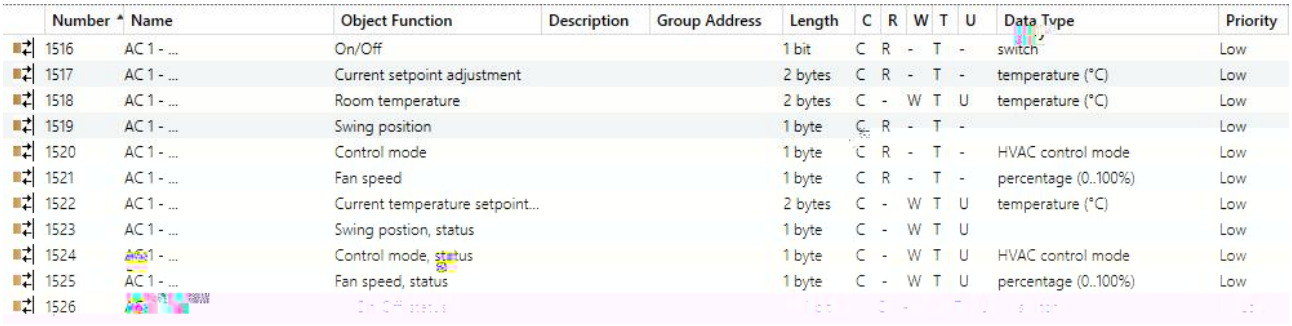
Obj.1316□ □ / □ / k

Obj.1317□ □□ / k

ü □ □Function name□ □ □ □ □□ □□ □Switch1 - □ k

□ 6.3 “Switch...x”□□ □

6.4.“AC...x□x=1~16□”□ □ □



Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1516	AC 1 - ...	On/Off			1 bit	C	R	-	T	-	switch	Low
1517	AC 1 - ...	Current setpoint adjustment			2 bytes	C	R	-	T	-	temperature (°C)	Low
1518	AC 1 - ...	Room temperature			2 bytes	C	-	W	T	U	temperature (°C)	Low
1519	AC 1 - ...	Swing position			1 byte	C	R	-	T	-		Low
1520	AC 1 - ...	Control mode			1 byte	C	R	-	T	-	HVAC control mode	Low
1521	AC 1 - ...	Fan speed			1 byte	C	R	-	T	-	percentage (0..100%)	Low
1522	AC 1 - ...	Current temperature setpoint...			2 bytes	C	-	W	T	U	temperature (°C)	Low
1523	AC 1 - ...	Swing postion, status			1 byte	C	-	W	T	U		Low
1524	AC 1 - ...	Control mode, status			1 byte	C	-	W	T	U	HVAC control mode	Low
1525	AC 1 - ...	Fan speed, status			1 byte	C	-	W	T	U	percentage (0..100%)	Low
1526	[illegible]	[illegible]			[illegible]	[illegible]						

6.4 “AC...x”□ □ □

□	□ □	ü	□		DPT
1516	**On/Off**	**AC1 - {{}}**	**1bit**	**C,R,T**	**1.001 switch**
1526	**On/Off,status**	**AC1 - {{}}**	**1bit**	**C,W,T,U**	**1.001 switch**
□ □ □ □ □ □ □ k □ 0—— 1—— Obj.1516□ □ / □ / k Obj.1526□ □ □ / k ü □ □Function name□ □ □ □ □ □ □ □ □AC1 - □ □ k					
1517	**Current setpoint temperature**	**AC1 - {{}}**	**2bytes**	**C,R,T**	**9.001 temperature**
1522	**Current setpoint temperature, status**	**AC1 - {{}}**	**2bytes**	**C,W,T,U**	**9.001 temperature**
□ □ □ □ □ □ □ k □ □ k Obj.1517□ □ □ □ □ □ k Obj.1522□ □ □ □ □ □ k					
1518	**Room temperature**	**AC1 - {{}}**	**2bytes**	**C,W,T,U**	**9.001 temperature**
□ □ □ □ □ □ □ □ □ □ □ □ □ k					
1519	**Swing position**	**AC1 - {{}}**	**1byte**	**C,R,T**	**5.001 percentage**

□ □ □□

KNX-MQTT-HA □□ □□ □

	15.15.254
IP □□□IP tunneling□□	15.15.241 15.15.242 15.15.243 15.15.244 15.15.245
IP □□	
IP	192.168.2.200
	255.255.255.0
□□	192.168.2.1

□□□□ IP □ □□□□□ □□ k

□□□ □□ □

□ □□ □□ 4 □□□ 4 □ □□ 3 □□LAN ¦ KNX □□ □ □

LAN ¦ KNX □□ □ □ □□ □□ k

FDSK□ □□□□ □□ □□ □□ 5.8 □ KNX k