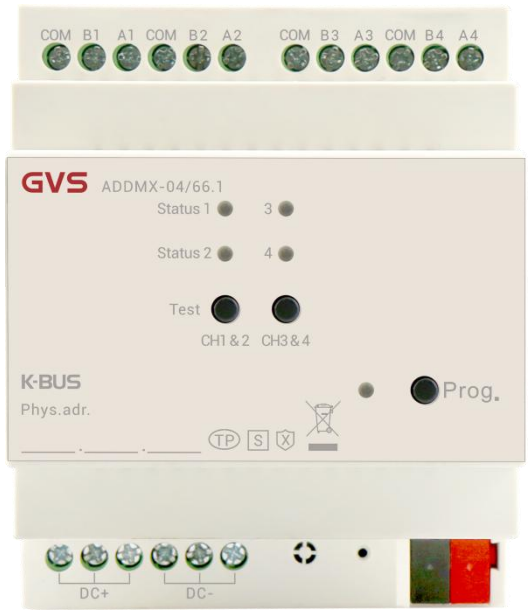
User Manual

K-BUS DMX512 Dimming Actuator, 4-Fold_V1.3

ADDMX-04/66.1



KNX/EIB Home and Building Control System

Attentions

1.Please keep devices away from strong magnetic field, high temperature, wet environment;

2.Do not fall the device to the ground or make them get hard impact;

3.Do not use wet cloth or volatile reagent to wipe the device;

4.Do not disassemble the devices.

Contents

Chapter 1 Summary

The DMX512 Dimming Actuator, 4-Fold is a module that integrates multiple dimming output functions, including dimming single, dimming CCT and dimming RGB. The corresponding output function can be configured according to actual application requirements.

DMX512 Dimming Actuator, 4-Fold is a modular mounting device. For easy installation in the distribution box, it can be mounted on a 35 mm D-rail according to EN 60 715. The device is screwed to the electrical connection and the bus connection is directly connected via KNX terminal connections, need a 9-30V DC auxiliary supply voltage. It is available to assign the physical address and configure the parameters by engineering design tools ETS with .knxprod (support edition ETS5.7 or higher).

This manual provides detailed technical information about the DMX512 Dimming Actuator, 4-Fold for users as well as assembly and programming details, and explains how to use the device by the application examples.

The function of the DMX512 Dimming Actuator, 4-Fold is summarized as follows:

- Support 4 DMX channels, max. 512 DMX devices per channel
- Support 3 output type: Dimming single, Dimming colour temperature, Dimming RGB
- Dimming single: support staircase lighting, scene and dimming
- Dimming RGB/colour temperature: support scene and dimming
- 16 scene templates for each output types, and 16 DMX scene for each device to recall, setting is referred to the template
- 16 dimming behaviour templates for each output types, configuration of each devices is referred to the template
- 16 staircase lighting templates for Dimming single, configuration of each devices is referred to the template
- 16 scene group output for dimming
- Support the KNX Data Secure

Chapter 2 Technical Data

Power Supply	Bus voltage	21~30V DC, via the KNX bus
	Bus current	<6mA
	Bus consumption	<180mW
Auxiliary Supply	Voltage	9~30V DC
	Current	<8.5mA/24V；<7.5mA/30V
	Consumption	0.23W
DMX Output	4 Channel	Max.512 DMX devices per channel
Connections	KNX	Bus connection terminal(Red/Black)
	Inputs and output	Using screw terminals
Operation and display	Programming button and Red LED	For assigning the physical address
	Green LED flashing	For indicate application layer running normally
	Channel Status LED	If there is no database: On - The current channel is on, Off - The current channel is off If download a database : On - The current channel communication normal, Off - No communication
	Channel Test button (only no database is available)	Press to send “ON” to all devices of channel 1/3, press again to send “OFF” Long press 1s to send “ON” to all devices of channel 2/4, long press again to send “OFF”
Temperature	Operation	−5 °C ... + 45 °C
	Storage	−25 °C ... + 55 °C
	Transport	−25 °C ... + 70 °C

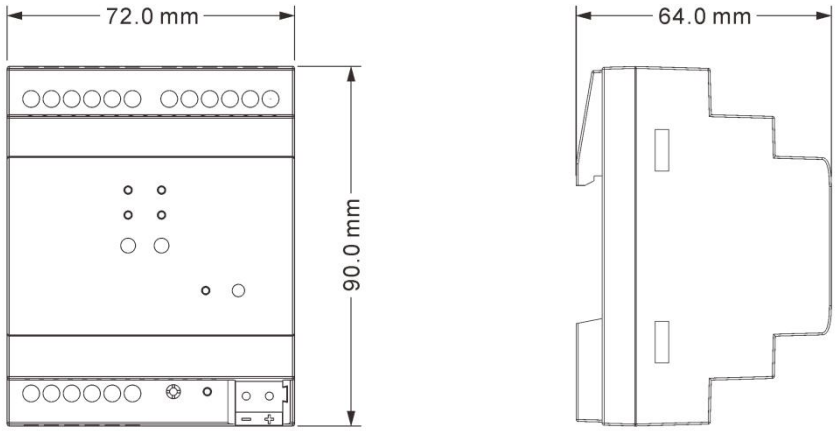
Ambient	Humidity	<93%, except dewing
Mounting	On 35mm mounting rail	
Dimension/ Weight	72×90×64mm/0.16Kg	

Application program:

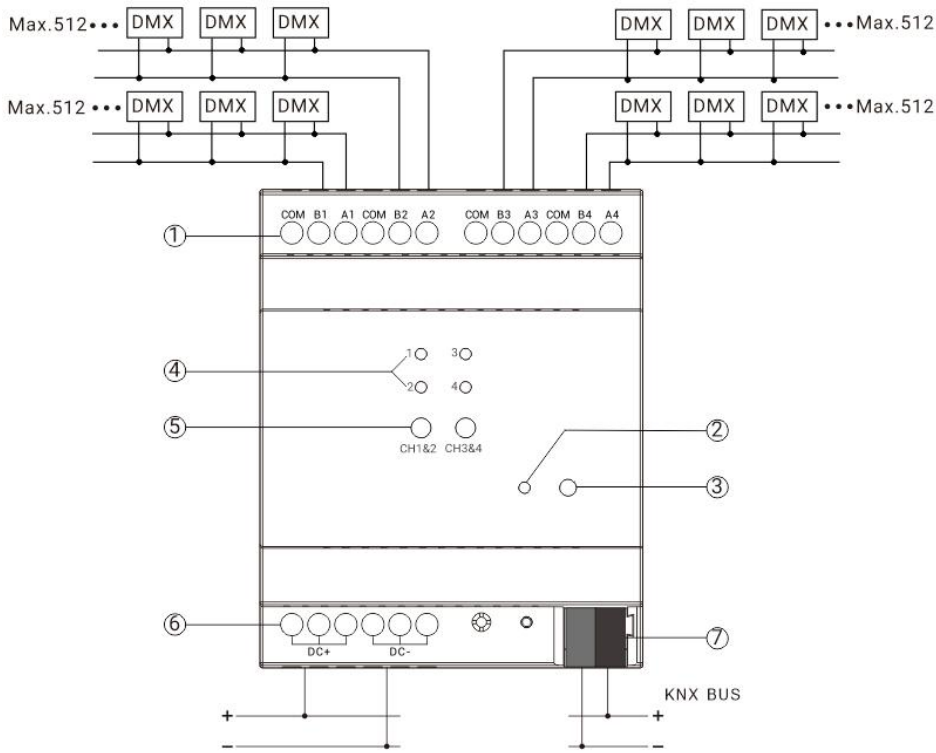
Application program	Max. number of communication objects	Max. number of group addresses	Max. number of associations	Secure group addresses
DMX512 Dimming Actuator, 4-Fold	2162	3243	3243	1730

Chapter 3 Dimension and Structural Diagram

3.1.Dimension Diagram



3.2.Structural Diagram



①DMX output interface

B1,A1 as DMX interface of Channel 1, other channels are in the same way

②Programming LED ③Programming button ④Channel Status LED ⑤Channel Test button

⑥Auxiliary power screw terminals ⑦KNX bus connection terminal

Please refer to the following additional notice for without database function:

1. When DC+ and DC- are normally powered, the channel status LED is on, indicating that the corresponding channel has output; when the channel status LED is off, it indicates that the corresponding channel has no output.

2. When DC+ and DC- voltage failure, the channel status LED will turn off within approximately 5s, and no DMX512 commands will be sent to the driver.

3. After DC+ and DC- voltage recovery, the channel status LED and each channel output are defaulted to off.

Chapter 4 Parameter setting description in the ETS

4.1.KNX Secure

DMX512 Dimming Actuator, 4-Fold is a KNX device that complies with the KNX secure standard. That is, you can run the device in safe way.

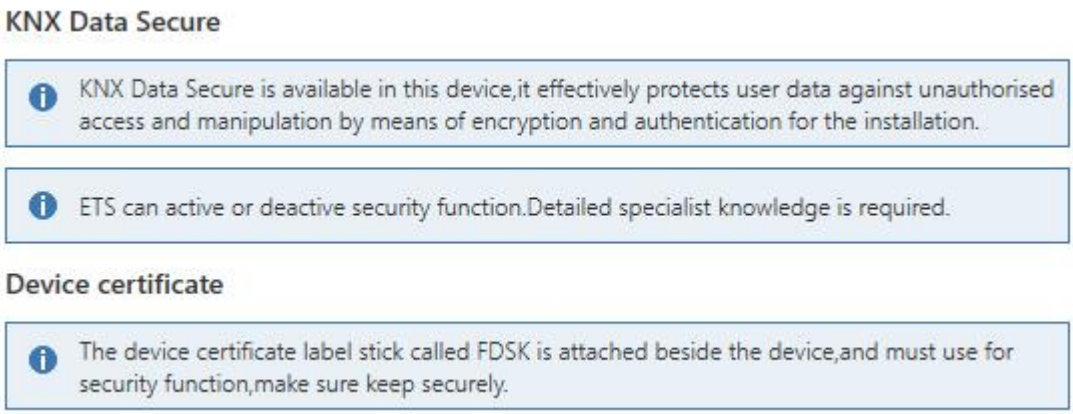


Fig.4.1 (1) Parameter window"KNX Secure"

The device with KNX secure will be displayed notes on ETS, as shown as Fig.4.1(1).

If secure commissioning is activated in ETS project, the following information must be considered during device debugging:

❖ It is essential to assign a project password as soon as a KNX Secure device is imported into a project. This will protect the project against unauthorized access.

The password must be kept in a safe place – access to the project is not possible without it (not even the KNX Association or device manufacturer will be able to access it)!

Without the project password, the commissioning key will not be able to be imported.

❖ A commissioning key is required when commissioning a KNX Secure device (first download). This key (FDSK = Factory Default Setup Key) is included on a sticker on the side of the device, and it must be imported into the ETS prior to the first download:

✧ On the first download of the device, a window pops up in the ETS to prompt the user to enter the key, as shown in Fig.4.1 (2) below.

The certificate can also be read from the device using a QR scanner (recommended).

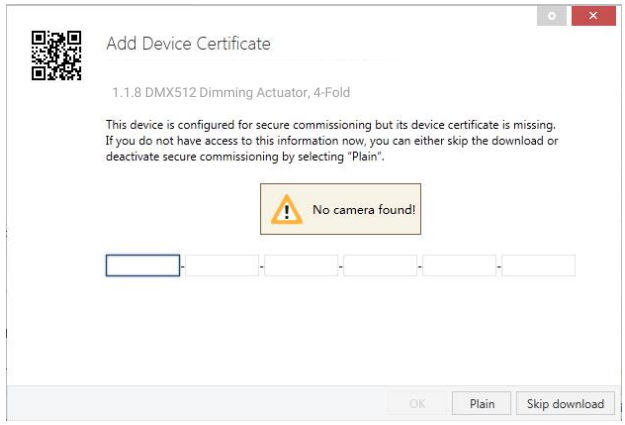


Fig.4.1(2) Add Device Certificate

✧ Alternatively, the certificates of all Secure devices can be entered in the ETS beforehand.

This is done on the "Security" tab on the project overview page, as shown in Fig.4.1(3) below.

The certificates can be also added to the selected device in the project, as shown in Fig.4.1(4).

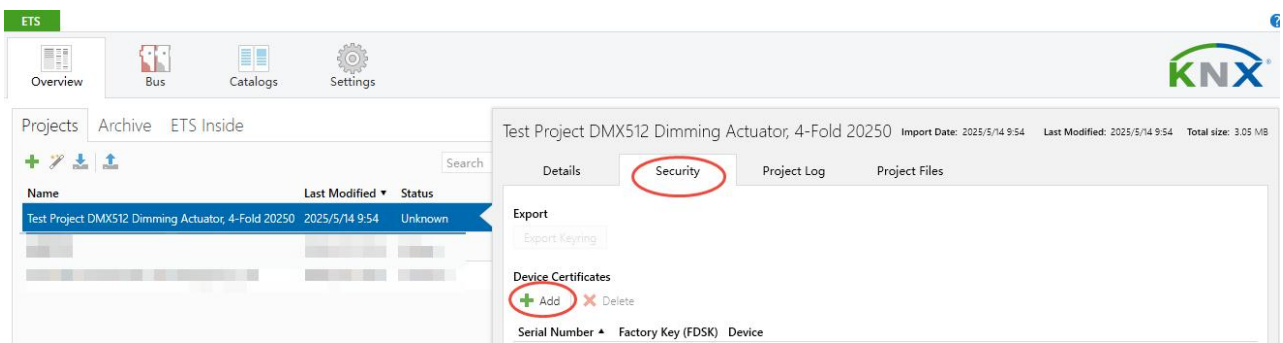


Fig.4.1(3) Add Device Certificate

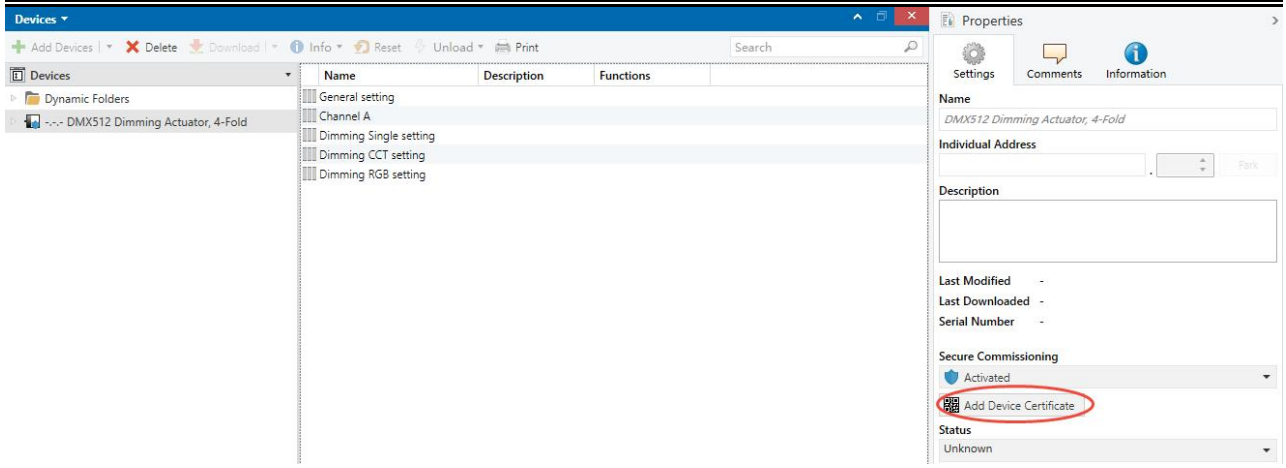


Fig.4.1(4) Add Device Certificate

✧ here is a FDSK sticker on the device, which is used for viewing FDSK number.

Without the FDSK, it will no longer be possible to operate the device in KNX Secure mode after a reset.

The FDSK is required only for initial commissioning. After entering the initial FDSK, the ETS will assign a new key, as shown in Fig.4.1(5) below.

The FDSK will be required again only if the device was reset to its factory settings (e.g. If the device is to be used in a different ETS project).

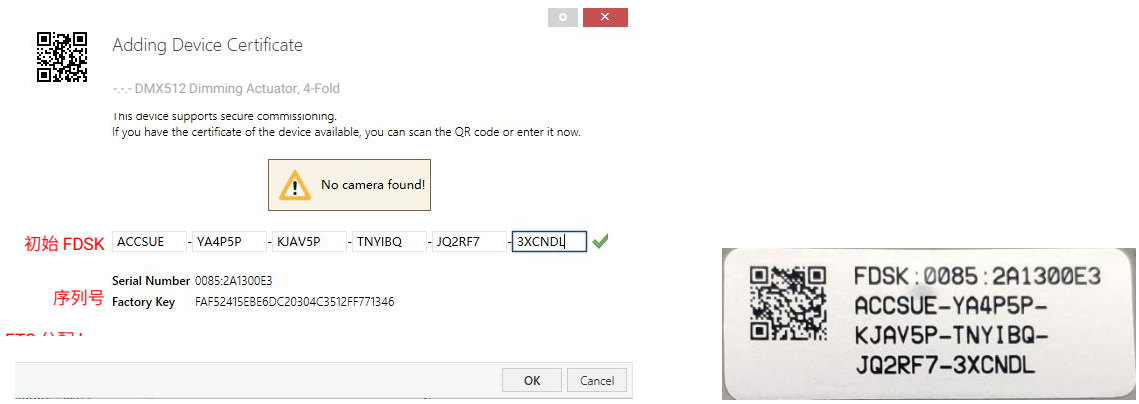


Fig.4.1(5)

Example:

If this application in the project needs to be tried with another device, it is no longer the original device. When the application is downloaded to a new device, the following prompt will appear on the left of Fig.4.1(6), click yes, the Add Device Certificate window will appear, then enter the initial FDSK of

the new device, and you need to reset the device to the factory settings (it is not required if the device is still factory default; If it has been used, it will be required to reset, otherwise the following error message will appear on the right of Fig.4.1(6)), and then the device can be successfully downloaded again.

Fig.4.1(6)

Whether the device is replaced in the same project, or the device is replaced in a different project, the processing is similar: **Reset the device to the factory settings, then reassign the FDSK.**

After the device is downloaded successfully, the label Add Device Certificate turns gray, indicating that the key for this device has been assigned successfully, as shown in Fig.4.1(7) below.

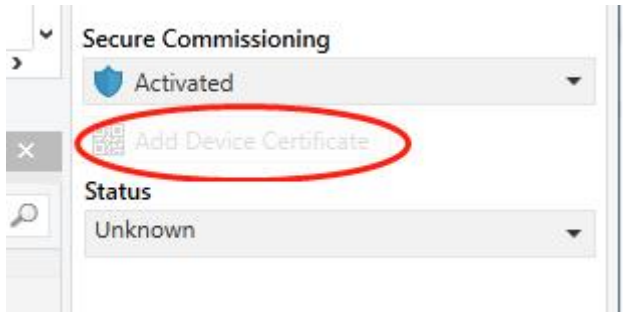


Fig.4.1(7)

ETS generates and manages keys:

Keys and passwords can be exported as needed to the use of security keys outside of the associated ETS projects. As shown in Fig.4.1(8) below, the file extension is .knxkeys.

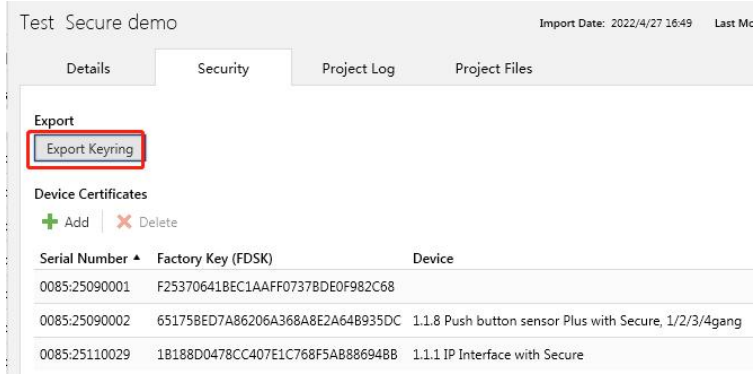


Fig.4.1(8)

Note: Any USB interface used for programming a KNX Secure device must support "long frames". Otherwise ETS will report a download failure information, as shown below.

4.2.Parameter window“General setting”

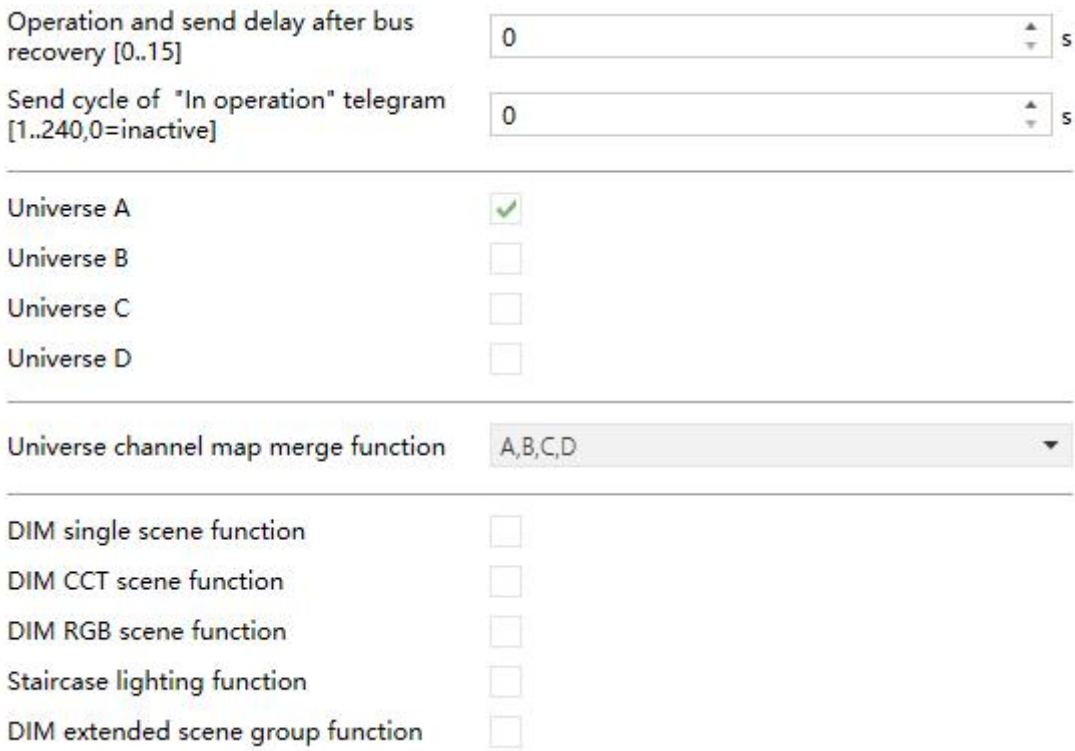


Fig.4.2 Parameter window“General setting”

Parameter "Operation and send delay after bus recovery [0..15]"

This parameter is for setting the delay time to send to bus after the device voltage recovery.

Options: **0..15s**

The setting dose not contain the device initialization time, and bus telegrams received during delay time will be recorded, if the delay is ignored, immediate behavior will not be recorded..

Parameter "Send cycle of "In operation" telegram [1..240,0=inactive]"

This parameter is for setting the time interval when this device cycle send telegrams through the bus to indicate this module in normal operation. When set to “0”, the object “in operation” will not send a telegram. If the setting is not “0”, the object “In operation” will send a telegram according to the set period time with logic “1” to the bus. Options: **0...240s, 0= inactive**

As to reduce the bus load as much as possible, the maximum time interval should be selected according to actual needs.

Parameter "Universe A/B/C/D"

Setting page of Universe A/B/C/D setting is visible after this parameter enabled.This function is described in detail in Chapter 4.3.

参数"Universe channel map merge function"

Setting whether to enable universe channel map merge function. This function is described in detail in Chapter 4.3.1. Options:

A,B,C,D

A+B, C+D

A+B+C+D

A, B, C, D: Configure the mapping tables for Universe A, B, C, D independently. Each universe can be configured with a maximum of 66CH.

A+B, C+D: Universe A and B are merged into one group, universe C and D are merged into one group. Each group shares a single mapping table and can be configured with a maximum of 132CH.

Note: In A+B or C+D mode, CH1~CH66 are assigned sequentially. For example, Universe A maps to CH1~CH66, Universe B maps to CH67~CH132; Universe C maps to CH1~CH66, Universe D maps to CH67~CH132. Universe A+B and Universe C+D can each be configured with up to 132CH.

A+B+C+D: Universe A, B, C, D are are merged into one group, which shares a single mapping table and can be configured with a maximum of 255CH.

Note: In A+B+C+D mode, CH1~CH66 are assigned sequentially. For example, Universe A maps to CH1~CH66, Universe B maps to CH67~CH132; Universe C maps to CH133~CH198, Universe D maps to CH199~CH255. Universe A+B+C+D can be configured with up to 255 CH.

Parameter "DIM single scene function"

Setting page of Dimming Single setting is visible after this parameter enabled.This function is described in detail in Chapter 4.7.1.

Parameter "DIM CCT scene function"

Setting page of Dimming CCT setting is visible after this parameter enabled.This function is described in detail in Chapter 4.7.2.

Parameter "DIM RGB scene function"

Setting page of Dimming RGB setting is visible after this parameter enabled.This function is described in detail in Chapter 4.7.3.

Parameter "Staircase lighting function"

Setting page of Staircase lighting is visible after this parameter enabled.This function is described in detail in Chapter 4.8.

Parameter "DIM extended scene group function"

Setting page of Scene group function is visible after this parameter enabled.This function is described in detail in Chapter 4.9.

4.3.Parameter window“Universe A/B/C/D setting”

CH 1	CH 2	CH 3	CH 4	CH 5	CH 6
Dimming single	Disa... / Dim...	Disable	Disable	Disable	Disa... / Dim...

Template setting for CH 1

Description

Template No. of Dimming single setting: 1

Template No. of Staircase lighting for [0=inactive]: 0

Apply Dimming single scene template:

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5	Scene 6	Scene 7	Scene 8
✓	✓	✓	✓	✓	✓	✓	✓
Scene 9	Scene 10	Scene 11	Scene 12	Scene 13	Scene 14	Scene 15	Scene 16
☐	☐	☐	☐	☐	☐	☐	☐

Dimming single

CH 1~2		CH 3	CH 4	CH 5	CH 6
Dimming CCT		Disable	Disable	Disable	Disa... / Dim...

Template setting for CH 1~2

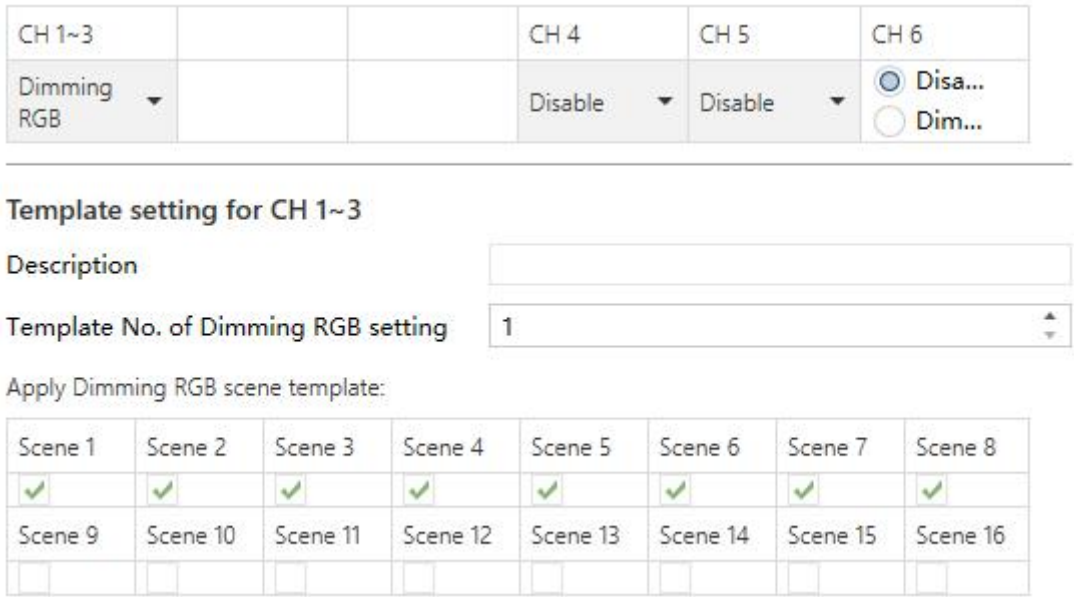
Description

Template No. of Dimming CCT setting: 1

Apply Dimming CCT scene template:

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5	Scene 6	Scene 7	Scene 8
✓	✓	✓	✓	✓	✓	✓	✓
Scene 9	Scene 10	Scene 11	Scene 12	Scene 13	Scene 14	Scene 15	Scene 16
☐	☐	☐	☐	☐	☐	☐	☐

Dimming CCT



Dimming RGB

Fig.4.3 Parameter window"Universe A/B/C/D"

The following table takesCH1~6 as an example to explanation of dimming single, dimming CCT and dimming RGB.

Dimming single	Dimming CCT	Dimming RGB
Support for CH1	Support for CH1~2	Support for CH1~3
Support for CH2		
Support for CH3	Support for CH3~4	
Support for CH4		Support for CH4~6
Support for CH5	Support for CH5~6	
Support for CH5		

Parameter "CH x"(x=1~66)

This parameter is for setting the dimming type of the DMX. Options:

Disable

Dimming single

Dimming CCT

Dimming

The following is an example of parameter settings for one of the DMXs:

Template setting for CH x(x=1~66)

Parameter "Description"

This parameter is for setting the name description of the DMX, up to input 30 characters.

Parameter "Template No. Of Dimming single setting"

This parameter is visible when "Dimming single" is selected. Set the template No. Of Dimming single setting.

Options: **1...16**

Parameter "Template No. Of Staircase lighting for [0=inactive]"

This parameter is visible when "Dimming single" is selected. Set the template No. Of staircase lighting.

Options: **0...16, 0=inactive**

Parameter "Template No. Of Dimming CCT setting"

This parameter is visible when "Dimming CCT" is selected. Set the template No. Of dimming CCT setting.

Options: **1...16**

Parameter "Template No. Of Dimming RGB setting"

This parameter is visible when "Dimming RGB" is selected. Set the template No. Of dimming RGB setting.

Options: **1...16**

Apply Dimming single/CCT/RGB scene template

Parameter "Scene x" (x=1~16)

This parameter is for setting the scene template No. Of dimming single/CCT/RGB.

Options: **1...16**

4.3.1.Parameter window“Universe x map setting”

Map function for DMX devices ☑

#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.	#	CH_No.
1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	0	9	0	10	0	11	0	12	0
17	0	18	0	19	0	20	0	21	0	22	0	23	0	24	0	25	0	26	0	27	0	28	0
33	0	34	0	35	0	36	0	37	0	38	0	39	0	40	0	41	0	42	0	43	0	44	0
49	0	50	0	51	0	52	0	53	0	54	0	55	0	56	0	57	0	58	0	59	0	60	0
65	0	66	0	67	0	68	0	69	0	70	0	71	0	72	0	73	0	74	0	75	0	76	0
81	0	82	0	83	0	84	0	85	0	86	0	87	0	88	0	89	0	90	0	91	0	92	0
97	0	98	0	99	0	100	0	101	0	102	0	103	0	104	0	105	0	106	0	107	0	108	0
113	0	114	0	115	0	116	0	117	0	118	0	119	0	120	0	121	0	122	0	123	0	124	0
129	0	130	0	131	0	132	0	133	0	134	0	135	0	136	0	137	0	138	0	139	0	140	0
145	0	146	0	147	0	148	0	149	0	150	0	151	0	152	0	153	0	154	0	155	0	156	0
161	0	162	0	163	0	164	0	165	0	166	0	167	0	168	0	169	0	170	0	171	0	172	0
177	0	178	0	179	0	180	0	181	0	182	0	183	0	184	0	185	0	186	0	187	0	188	0
193	0	194	0	195	0	196	0	197	0	198	0	199	0	200	0	201	0	202	0	203	0	204	0
209	0	210	0	211	0	212	0	213	0	214	0	215	0	216	0	217	0	218	0	219	0	220	0
225	0	226	0	227	0	228	0	229	0	230	0	231	0	232	0	233	0	234	0	235	0	236	0
241	0	242	0	243	0	244	0	245	0	246	0	247	0	248	0	249	0	250	0	251	0	252	0
257	0	258	0	259	0	260	0	261	0	262	0	263	0	264	0	265	0	266	0	267	0	368	0
273	0	274	0	275	0	276	0	277	0	278	0	279	0	280	0	281	0	282	0	283	0	284	0
289	0	290	0	291	0	292	0	293	0	294	0	295	0	296	0	297	0	298	0	299	0	300	0

Fig.4.3.1 Parameter window“Universe x map setting”

Parameter“Map function for DMX device”

This parameter is for setting whether to enable map function for DMX device.

When disable, CH1~66 defaults to corresponding with DMX1~66

When enable, CH1~66 can be user-defined to correspond with DMX1~512.

Duplicate configurations are allowed, and the duplicated DMX channels will execute the same lighting control commands.

4.4.Parameter window“Dimming Single setting”

The following parameters are used to set the dimming single output templates, and there are 16 templates to set.

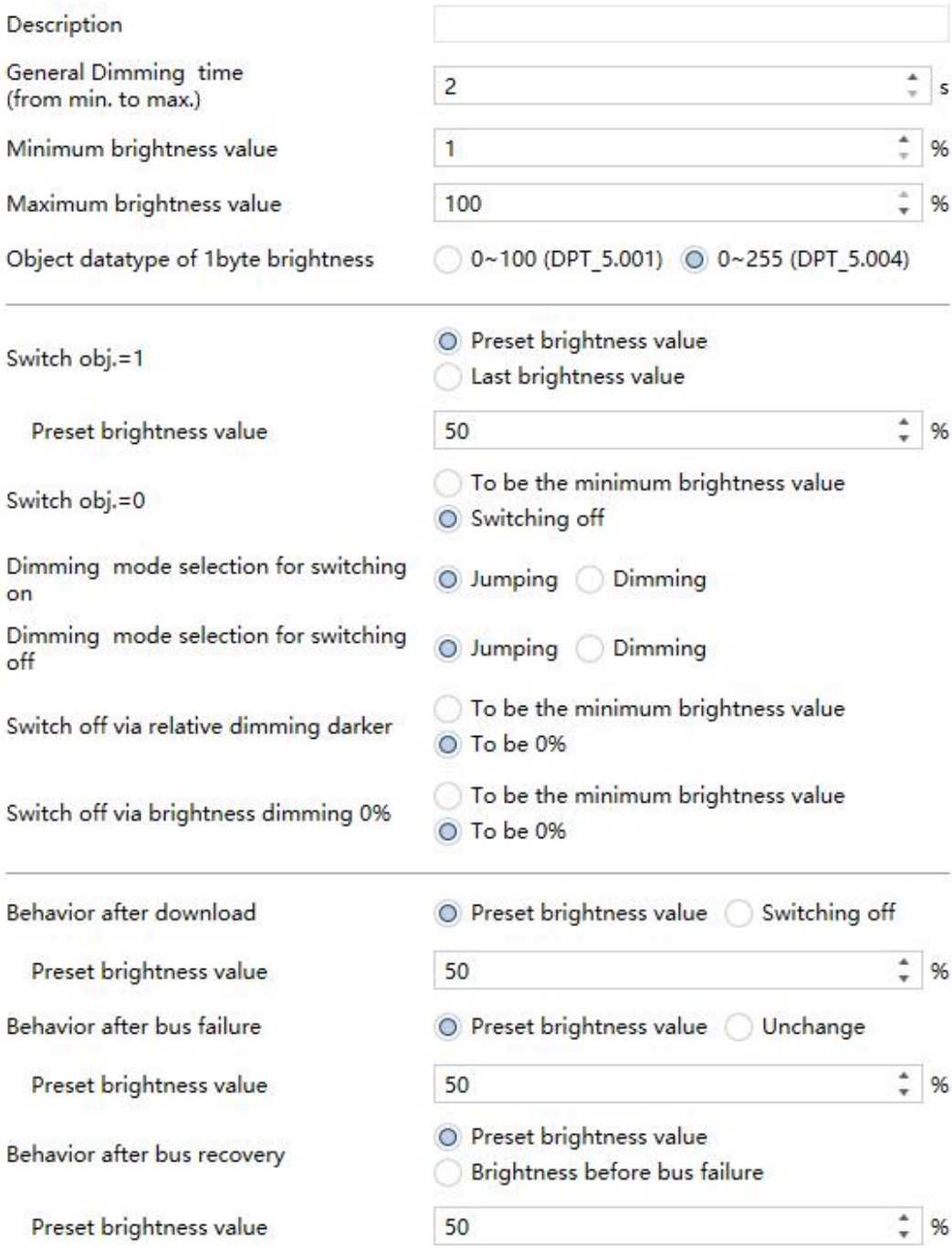


Fig.4.4Parameter window“Dimming Single setting”

The following is an example of parameter settings for one of the templates:

Parameter "Description"

This parameter is for setting the name description of the channel, up to input 30 characters.

Parameter "General Dimming time (from min. to max.)"

This parameter is for setting the time for the whole dimming process, which refers to the time from minimum to maximum value. Suppose the time is set as 6s, the min. Value is 0% and the max. is 100%, if the brightness is only dimmed from 0% to 50%, then the dimming time only takes 3s.

Options: **2...255 s**

If the channel function has not specified a dimming time, use the time set by this parameter, functions such as switch on/off lamps.

Parameter "Minimum brightness value"

Parameter "Maximum brightness value"

These parameters are for setting minimum and maximum brightness values individually, to limit the output range of dimming brightness, which is allow the lamps work in a better brightness range depending on the environment or lamps compatibility.

This range is not allowed to be exceeded in any status of lamps on. Output as min. value when the brightness is lower than the min., and output as max. value when it is higher than the max.

Options of the min. value: **1...49 %**; Options of the max. value: **50...100 %**

Parameter "Object datatype of 1byte brightness"

This parameter is for setting the object datatype of 1 byte brightness.

Options:

0~100 (DPT_5.001)

0~255 (DPT_5.004)

Note: This parameter is configured according to the actual driver.

Parameter "Switch obj.=1"

This parameter is for setting the brightness when the switch obj.=1. Options:

Preset brightness value

Last brightness value

Last brightness value: outputs 50% when the brightness value is uncertain.

——Parameter "Preset brightness value"

This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **1...100 %**

Parameter "Switch obj.=0"

This parameter is for setting the brightness when the switch obj.=0. Options:

To be the minimum brightness value

Switching off

Parameter "Dimming mode selection for switching on"

This parameter is for setting the dimming mode when the lamp is switched on. Options:

Jumping

Dimming

Jumping: switch on immediately and directly to the target brightness.

Dimming: switch on with dimming to the target brightness and use the general dimming time.

Parameter "Dimming mode selection for switching off"

This parameter is for setting the dimming mode when the lamp is switched off. Options:

Jumping

Dimming

Jumping: switch off immediately.

Dimming: switch off with dimming and use the general dimming time.

Parameter "Switch off via relative dimming darker"

This parameter is for setting whether allow to switch lamp off via relative dimming. Options:

To be the minimum brightness value

To be 0%

To be the minimum brightness value: output as min. value when the value is less than the min., even if the value is 0%.

To be 0%: switch the lamp off directly when the value is less than the min.

Parameter "Switch off via brightness dimming 0%"

This parameter is for setting whether allow to switch lamp off via absolute dimming value 0%.

Options:

To be the minimum brightness value

To be 0%

To be the minimum brightness value: output as min. value when the value is less than the min., even if the value is 0%.

To be 0%: switch the lamp off directly when the value is less than the min.

Parameter "Behavior after download"

This parameter is for setting the behaviour of channel after download. Options:

Preset brightness value

Switching off

Preset brightness value: dimming to a setting brightness, defined by next parameter.

——Parameter "Preset brightness value"

This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **1...100 %**

Parameter "Behavior after bus failure"

This parameter is for setting the behaviour of channel after bus failure. Options:

Preset brightness value

Unchange

Preset brightness value: dimming to a setting brightness, defined by next parameter.

——Parameter “Preset brightness value”

This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **0...100 %**

Parameter "Behavior after bus recovery"

This parameter is for setting the behaviour of channel after bus recovery. Options:

Preset brightness value

Brightness before bus failure

Preset brightness value: dimming to a setting brightness, defined by next parameter.

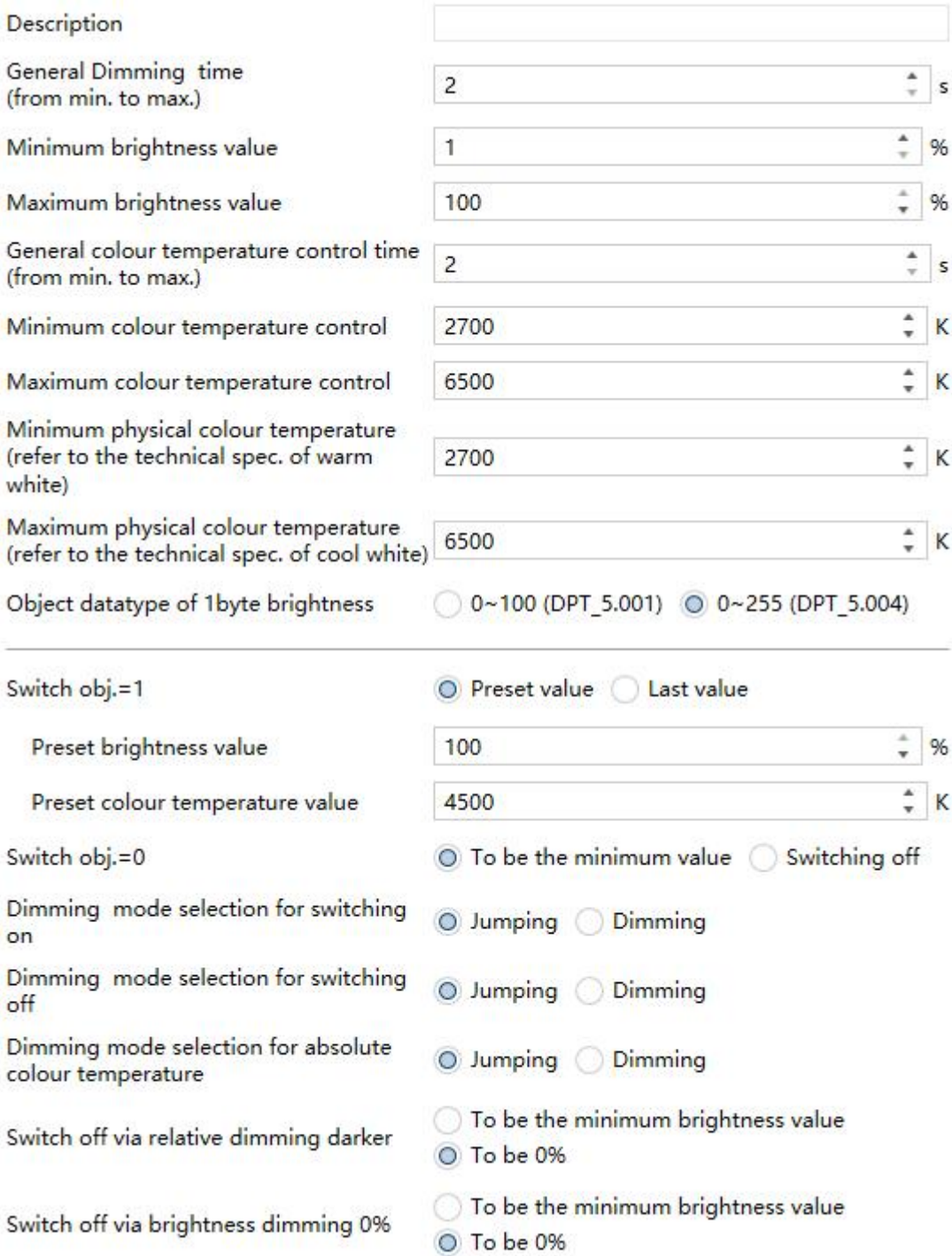
Brightness before bus failure: recover to the brightness value stored when the bus failure.

——Parameter “Preset brightness value”

This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **0...100 %**

4.5.Parameter window“Dimming CCT setting”

The following parameters are used to set the dimming CCT output templates, and there are 16 templates to set.



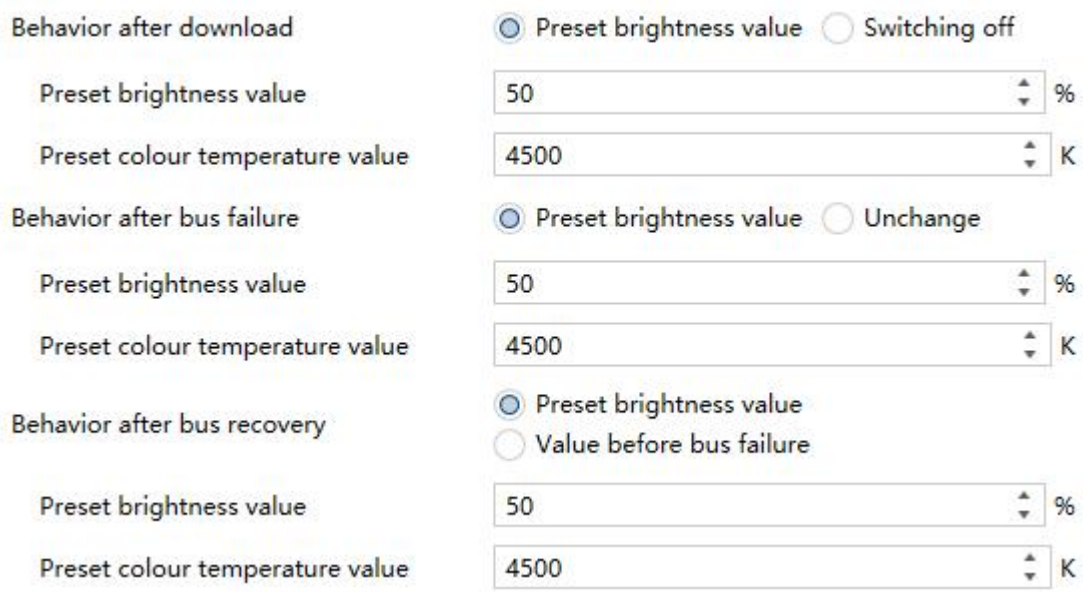


Fig.4.5Parameter window“Dimming CCT setting”

The following is an example of parameter settings for one of the templates:

Parameter "Description"

This parameter is for setting the name description of the channel, up to input 30 characters.

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

This parameter is for setting the time for the whole dimming process, which refers to the time from minimum to maximum value. Suppose the time is set as 6s, the min. Value is 0% and the max. is 100%, if the brightness is only dimmed from 0% to 50%, then the dimming time only takes 3s.

Options: **2...255 s**

If the channel function has not specified a dimming time, use the time set by this parameter, functions such as switch on/off lamps.

Parameter "Minimum brightness value"

Parameter "Maximum brightness value"

These parameters are for setting minimum and maximum brightness values individually, to limit the output range of dimming brightness, which is allow the lamps work in a better brightness range depending on the environment or lamps compatibility.

This range is not allowed to be exceeded in any status of lamps on. Output as min. value when the brightness is lower than the min., and output as max. value when it is higher than the max.

Options of the min. value: **1...49 %**; Options of the max. value: **50...100 %**

Parameter "General colour temperature control time (from min. to max.)"

This parameter is for setting the time for the whole colour temperature control process, which refers to the time from minimum to maximum value. Suppose the time is set as 6s, the min. Value is 2000K and the max. is 7000K, if the brightness is only dimmed from 2000K to 4500K, then the dimming time only takes 3s.

Options: **2...255 s**

If the channel function has not specified a dimming CCT time, use the time set by this parameter, functions such as switch on/off lamps.

Parameter "Minimum colour temperature control"

Parameter "Maximum colour temperature control"

These parameters are for setting minimum and maximum colour temperature values individually, to limit the output range of colour temperature.Options: **2000...7000K**

This range is not allowed to be exceeded in any status of lamps on. Output as min. value when the colour temperature is lower than the min., and output as max. value when it is higher than the max.

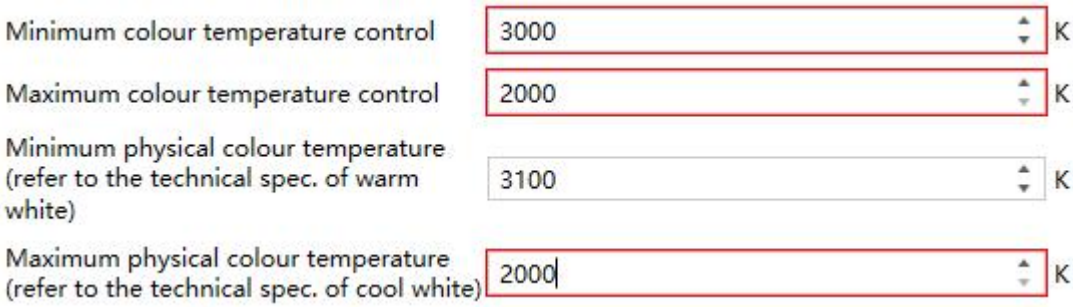
Note：Needs to be configured within the range of physical colour temperatures.

Parameter "Minimum physical colour temperature (refer to the technical spec. of warm white)"

Parameter "Maximum physical colour temperature (refer to the technical spec. of cool white)"

These parameters are for setting minimum and maximum physical colour temperature, which is derived from the technical parameters of the lamps. Options: **2000...7000K**

Lamps output colour temperature: Minimum Physical Colour Temperature ⩽ Minimum Colour Temperature⩽ light output colour temperature⩽ Maximum Colour Temperature ⩽ Maximum Physical Colour Temperature. Otherwise it can not be set on the ETS.



Parameter "Object datatype of 1byte brightness"

This parameter is for setting the object datatype of 1 byte brightness.

Options:

0~100 (DPT_5.001)

0~255 (DPT_5.004)

Note: This parameter is configured according to the actual driver.

Parameter "Switch obj.=1"

This parameter is for setting the brightness and colour temperature when the switch obj.=1.

Options:

Preset value

Last value

Last value: outputs 50% when the brightness value is uncertain; Outputs 4500K when the colour temperature value is uncertain.

——Parameter "Preset brightness value"

This parameter is visible when "preset value" is selected. Set the preset brightness value.

Options: **1...100 %**

——Parameter "Preset colour temperature value"

This parameter is visible when "preset value" is selected. Set the preset colour temperature value.

Options: **2000...7000K**

Parameter "Switch obj.=0"

This parameter is for setting the brightness and colour temperature when the switch obj.=0.

Options:

To be the minimum value

Switching off

Parameter "Dimming mode selection for switching on"

This parameter is for setting the dimming mode when the lamp is switched on. Options:

Jumping

Dimming

Jumping: switch on immediately and directly to the target brightness.

Dimming: switch on with dimming to the target brightness and use the general dimming time.

Parameter "Dimming mode selection for switching off"

This parameter is for setting the dimming mode when the lamp is switched off. Options:

Jumping

Dimming

Jumping: switch off immediately.

Dimming: switch off with dimming and use the general dimming time.

Parameter "Dimming mode selection for absolute colour temperature"

This parameter is for setting the dimming mode selection for absolute colour temperature.

Options:

Jumping

Dimming

Jumping: adjust to the target color temperature immediately.

Dimming: adjust to the target color temperature and use the general colour temperature control time.

Parameter "Switch off via relative dimming darker"

This parameter is for setting whether allow to switch lamp off via relative dimming. Options:

To be the minimum brightness value

To be 0%

To be the minimum brightness value: output as min. value when the value is less than the min., even if the value is 0%.

To be 0%: switch the lamp off directly when the value is less than the min.

Parameter "Switch off via brightness dimming 0%"

This parameter is for setting whether allow to switch lamp off via absolute dimming value 0%.

Options:

To be the minimum brightness value

To be 0%

To be the minimum brightness value: output as min. value when the value is less than the min., even if the value is 0%.

To be 0%: switch the lamp off directly when the value is less than the min.

Parameter "Behavior after download"

This parameter is for setting the behaviour of channel after download. Options:

Preset brightness value

Switching off

Preset brightness value: dimming to a setting brightness, defined by next parameter.

——Parameter "Preset brightness value"

This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **1...100 %**

——Parameter "Preset colour temperature value"

This parameter sets the initial color temperature value for each channel after download.

Options: **2000...7000K**

Parameter "Behavior after bus failure"

This parameter is for setting the behaviour of channel after bus failure. Options:

Preset brightness value

Unchange

Preset brightness value: dimming to a setting brightness and colour temperature value, defined by next parameter.

——Parameter "Preset brightness value"

This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **0...100 %**

——Parameter "Preset colour temperature value"

This parameter is visible when "preset brightness value" is selected. Set the preset colour temperature value. Options: **2000...7000K**

Parameter "Behavior after bus recovery"

This parameter is for setting the behaviour of channel after bus recovery.Options:

Preset brightness value

Value before bus failure

Preset brightness value: dimming to a setting brightness and colour temperature value, defined by next parameter.

Value before bus failure: recover to the brightness and colour temperature value stored when the bus failure.

——Parameter "Preset brightness value"

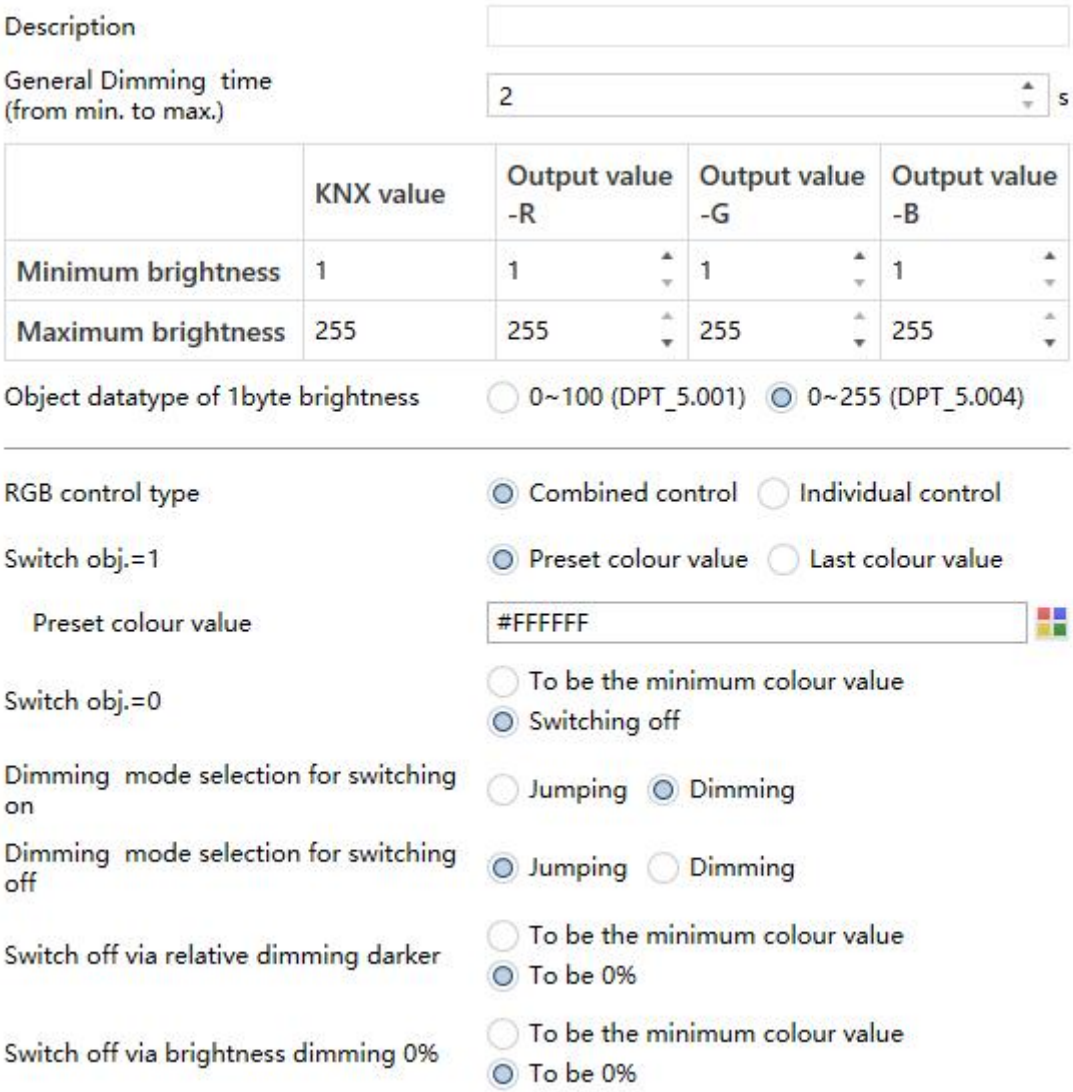
This parameter is visible when "preset brightness value" is selected. Set the preset brightness value. Options: **0...100 %**

——Parameter"Preset Colour temperature value"

This parameter is visible when "preset brightness value" is selected. Set the preset colour temperature value. Options: **2000...7000K**

4.6.Parameter window“Dimming RGB setting”

The following parameters are used to set the dimming RGB output templates, and there are 16 templates to set.



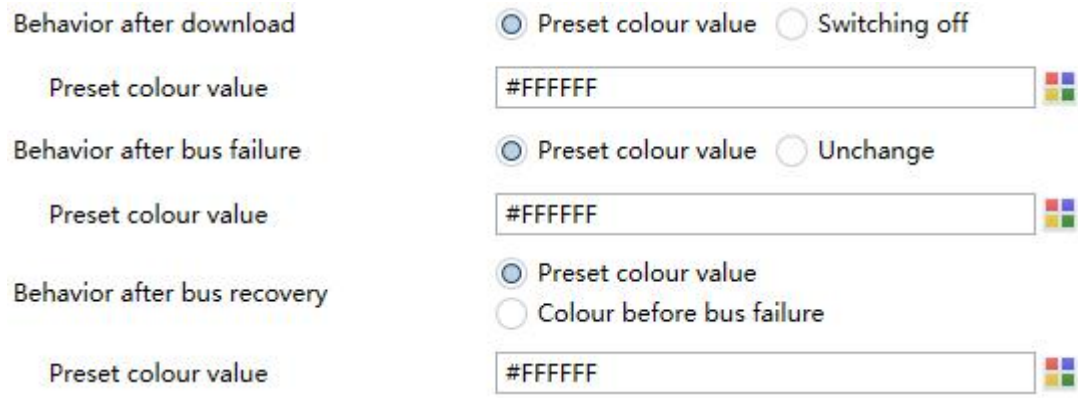


Fig.4.6Parameter window“Dimming RGB setting”

The following is an example of parameter settings for one of the templates:

Parameter "Description"

This parameter is for setting the name description of the channel, up to input 30 characters.

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

This parameter is for setting the time for the whole RGB dimming process.Options: **2...255 s**

Note: When RGB adjustment values or the channel function has not specified a dimming time, use the time set by this parameter, functions such as switch on/off lamps.

Parameter "Minimum KNX brightness value"

Parameter "Maximum KNX brightness value"

This parameter is for display the min/max value of KNX brightness telegram. The range of KNX values is 1-100%, while the output range of KNX corresponding R/G/B values is set by the following parameters.

The conversion between KNX value and RGB value adopts the relationship of linear mapping. For example, if the KNX value is 1-100%, the R range setting value is 30-90%; when the KNX value is 1%, the R value outputs 30%; when the KNX value is 50%, the R value outputs 60%; when the KNX value is 100%, the R value outputs 90%.

Note: The preset RGB values in the parameter and the RGB values received by the bus are KNX values.

--Parameter "Minimum brightness value-R (0.4%~49.9%)"

--Parameter "Minimum brightness value-G (0.4%~49.9%)"

--Parameter "Minimum brightness value-B (0.4%~49.9%)"

--Parameter "Maximum brightness value-R (50.2%~100%)"

--Parameter "Maximum brightness value-G (50.2%~100%)"

--Parameter "Maximum brightness value-B (50.2%~100%)"

These parameters are for setting minimum and maximum RGB values individually, to limit the output range of RGB. his range is not allowed to be exceeded in any status of lamps on. Output as min. value when the brightness is lower than the min., and output as max. value when it is higher than the max.

Options of the min. value: **1...49/1...127, displayed according to the parameter "Object datatype of 1byte brightness"**

Options of the max. value: **50...100/128...255, displayed according to the parameter "Object datatype of 1byte brightness"**

Parameter "Object datatype of 1byte brightness"

This parameter is for setting the object datatype of 1 byte brightness.

Options:

0~100 (DPT_5.001)

0~255 (DPT_5.004)

Note: This parameter is configured according to the actual driver.

Parameter "RGB control type"

This parameter is for setting the RGB control type.Options:

Combined control

Individual control

Parameter "Switch obj.=1"

This parameter is for setting the RGB when the switch obj.=1. Options:

Preset value

Last value

Last value: outputs #808080 when the RGB value is uncertain.

——Parameter "Preset colour value"

This parameter is visible when "preset value" is selected. Set the preset colour value.

Options: **#000000...#FFFFFF**

Parameter "Switch obj.=0"

This parameter is for setting the RGB when the switch obj.=0. Options:

To be the minimum value

Switching off

Parameter "Dimming mode selection for switching on"

This parameter is for setting the dimming mode when the lamp is switched on. Options:

Jumping

Dimming

Jumping: switch on immediately and directly to the target brightness.

Dimming: switch on with dimming to the target brightness and use the general dimming time.

Parameter "Dimming mode selection for switching off"

This parameter is for setting the dimming mode when the lamp is switched off. Options:

Jumping

Dimming

Jumping: switch off immediately.

Dimming: switch off with dimming and use the general dimming time.

Parameter "Switch off via relative dimming darker"

This parameter is for setting whether allow to switch lamp off via relative dimming. Options:

To be the minimum colour value

To be 0%

To be the minimum colour value: output as min. value when the value is less than the min., but the value is 0% is to switch the lamp off.

To be 0%: switch the lamp off directly when the value is less than the min.

Parameter "Switch off via brightness dimming 0%"

This parameter is for setting whether allow to switch lamp off via absolute dimming value 0%.

Options:

To be the minimum colour value

To be 0%

To be the minimum colour value: output as min. value when the value is less than the min., but the value is 0% is to switch the lamp off.

To be 0%: switch the lamp off directly when the value is less than the min.

Parameter "Behavior after download"

This parameter is for setting the behaviour of channel after download. Options:

Preset colour value

Switching off

Preset colour value: dimming to a setting colour value, defined by next parameter.

——Parameter "Preset colour value"

This parameter is visible when "preset colour value" is selected. Set the preset colour value.

Options: **#000000 ....#FFFFFF**

Parameter "Behavior after bus failure"

This parameter is for setting the behaviour of channel after bus failure. Options:

Preset colour value

Unchange

Preset colour value: dimming to a setting colour value, defined by next parameter.

——Parameter “Preset colour value”

This parameter is visible when "preset colour value" is selected.Set the preset colour value.

Options: **#000000 ....#FFFFFF**

Parameter "Behavior after bus recovery"

This parameter is for setting the behaviour of channel after bus recovery.

Preset colour value

Colour before bus failure

Preset colour value: dimming to a setting colour value, defined by next parameter.

Colour before bus failure: recover to the colour value stored when the bus failure.

——Parameter “Preset colour value”

This parameter is visible when "preset colour value" is selected.Set the preset colour value.

Options: **#000000 ....#FFFFFF**

4.7.Parameter window“Scene setting”

4.7.1.Parameter window“Dimming single”

Scenes	Description	Scene NO.	Brightness value	Dimming time	Delay time
Scene 1		1	50 %	4 s	0 s
Scene 2		2	50 %	4 s	0 s
Scene 3		3	50 %	4 s	0 s
Scene 4		4	50 %	4 s	0 s
Scene 5		5	50 %	4 s	0 s
Scene 6		6	50 %	4 s	0 s
Scene 7		7	50 %	4 s	0 s
Scene 8		8	50 %	4 s	0 s
Scene 9		9	50 %	4 s	0 s
Scene 10		10	50 %	4 s	0 s
Scene 11		11	50 %	4 s	0 s
Scene 12		12	50 %	4 s	0 s
Scene 13		13	50 %	4 s	0 s
Scene 14		14	50 %	4 s	0 s
Scene 15		15	50 %	4 s	0 s
Scene 16		16	50 %	4 s	0 s

Fig.4.7.1Parameter window“Dimming single”

Scene x （x=1~16）

Parameter "Description"

This parameter is for setting the name description of the corresponding scene, up to 30 characters.

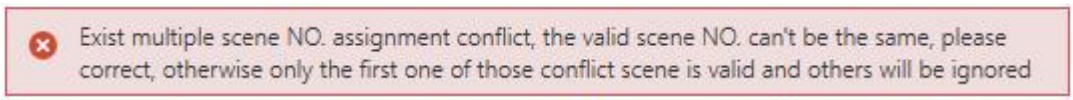
Parameter "Scene NO."

This parameter is for setting the triggered scene number, up to 16 scenes. Options: **0...64**

When scene number is 0, it is invalid, and the brightness, dimming time and delay time cannot be set, as shown as following:

Scenes	Description	Scene NO.	Brightness value	Dimming time	Delay time
Scene 1		0	NA	NA	NA

When scene numbers are greater than 0, if there are same scene numbers, display following error message:



Parameter "Brightness value"

This parameter is for setting the brightness of the corresponding scene. Options: **0...100 %**

Parameter "Dimming time"

This parameter is for setting the dimming time of the corresponding scene. Options: **2...255 s**

Parameter "Delay time"

This parameter is for setting the delay time for triggering the corresponding scene.

Options: **2...255 s**

4.7.2.Parameter window“Dimming CCT”

Scenes	Description	Scene NO.	Brightness control	Brightness value	Colour control	Colour temp.	Dimming time	Delay time
Scene 1		1	✓	50 %	✓	2700 K	4 s	0 s
Scene 2		2	✓	50 %	✓	2700 K	4 s	0 s
Scene 3		3	✓	50 %	✓	2700 K	4 s	0 s
Scene 4		4	✓	50 %	✓	2700 K	4 s	0 s
Scene 5		5	✓	50 %	✓	2700 K	4 s	0 s
Scene 6		6	✓	50 %	✓	2700 K	4 s	0 s
Scene 7		7	✓	50 %	✓	2700 K	4 s	0 s
Scene 8		8	✓	50 %	✓	2700 K	4 s	0 s
Scene 9		9	✓	50 %	✓	2700 K	4 s	0 s
Scene 10		10	✓	50 %	✓	2700 K	4 s	0 s
Scene 11		11	✓	50 %	✓	2700 K	4 s	0 s
Scene 12		12	✓	50 %	✓	2700 K	4 s	0 s
Scene 13		13	✓	50 %	✓	2700 K	4 s	0 s
Scene 14		14	✓	50 %	✓	2700 K	4 s	0 s
Scene 15		15	✓	50 %	✓	2700 K	4 s	0 s
Scene 16		16	✓	50 %	✓	2700 K	4 s	0 s

Fig.4.7.1Parameter window“Dimming CCT”

Scene x （x=1~16）

Parameter "Description"

This parameter is for setting the name description of the corresponding scene, up to 30 characters.

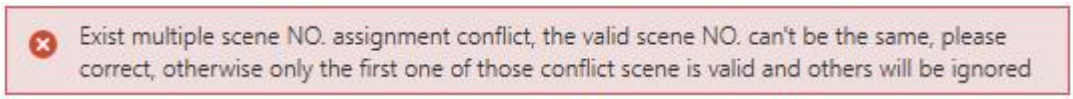
Parameter "Scene NO."

This parameter is for setting the triggered scene number, up to 16 scenes. Options: **0...64**

When scene number is 0, it is invalid, and the brightness control, brightness value, colour control, colour temp., dimming time and delay time cannot be set, as shown as following:

Scenes	Description	Scene NO.	Brightness control	Brightness value	Colour control	Colour temp.	Dimming time	Delay time
Scene 1		0	NA	NA	NA	NA	NA	NA

When scene numbers are greater than 0, if there are same scene numbers, display following error message:



Parameter "Brightness control"

This parameter sets whether to enable scene brightness control

Parameter "Brightness value"

This parameter is for setting the brightness of the corresponding scene. Options: **0...100 %**

Parameter "Colour control"

This parameter sets whether to enable scene colour control.

Parameter "Colour temp."

This parameter is for setting the colour temperature of the corresponding scene. Options: **2000...7000K**

Parameter "Dimming time"

This parameter is for setting the dimming time of the corresponding scene. Options: **2...255 s**

Parameter "Delay time"

This parameter is for setting the delay time for triggering the corresponding scene.

Options: **2...255 s**

4.7.3.Parameter window“Dimming RGB”

Scenes	Description	Scene NO.	RGB	Dimming time	Delay time
Scene 1		1	#FFFFFF	4 s	0 s
Scene 2		2	#FFFFFF	4 s	0 s
Scene 3		3	#FFFFFF	4 s	0 s
Scene 4		4	#FFFFFF	4 s	0 s
Scene 5		5	#FFFFFF	4 s	0 s
Scene 6		6	#FFFFFF	4 s	0 s
Scene 7		7	#FFFFFF	4 s	0 s
Scene 8		8	#FFFFFF	4 s	0 s
Scene 9		9	#FFFFFF	4 s	0 s
Scene 10		10	#FFFFFF	4 s	0 s
Scene 11		11	#FFFFFF	4 s	0 s
Scene 12		12	#FFFFFF	4 s	0 s
Scene 13		13	#FFFFFF	4 s	0 s
Scene 14		14	#FFFFFF	4 s	0 s
Scene 15		15	#FFFFFF	4 s	0 s
Scene 16		16	#FFFFFF	4 s	0 s

Fig.4.7.1Parameter window“Dimming RGB”

Scene X（X=1~16）

Parameter "Description"

This parameter is for setting the name description of the corresponding scene, up to 30 characters.

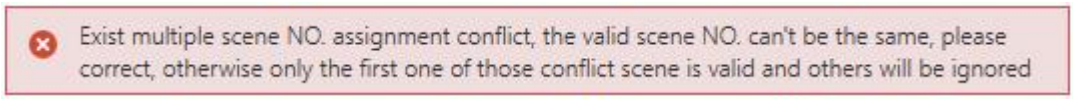
Parameter "Scene NO."

This parameter is for setting the triggered scene number, up to 16 scenes. Options: **0...64**

When scene number is 0, it is invalid, and the RGB value, dimming time and delay time cannot be set, as shown as following:

Scenes	Description	Scene NO.	RGB	Dimming time	Delay time
Scene 1		0	NA	NA	NA

When scene numbers are greater than 0, if there are same scene numbers, display following error message:



Parameter "RGB value"

This parameter is for setting the RGB value of the corresponding scene.

Options: **#000000 ....#FFFFFF**

Parameter "Dimming time"

This parameter is for setting the dimming time of the corresponding scene. Options: **2...255 s**

Parameter "Delay time"

This parameter is for setting the delay time for triggering the corresponding scene.

Options: **2...255 s**

4.8.Parameter window“Staircase lighting”

Staircase lightings	Description	Duration time	Brightness value in duration time
Staircase lighting 1		00:02:00 hh:mm:ss	20 %
Staircase lighting 2		00:02:00 hh:mm:ss	20 %
Staircase lighting 3		00:02:00 hh:mm:ss	20 %
Staircase lighting 4		00:02:00 hh:mm:ss	20 %
Staircase lighting 5		00:02:00 hh:mm:ss	20 %
Staircase lighting 6		00:02:00 hh:mm:ss	20 %
Staircase lighting 7		00:02:00 hh:mm:ss	20 %
Staircase lighting 8		00:02:00 hh:mm:ss	20 %
Staircase lighting 9		00:02:00 hh:mm:ss	20 %
Staircase lighting 10		00:02:00 hh:mm:ss	20 %
Staircase lighting 11		00:02:00 hh:mm:ss	20 %
Staircase lighting 12		00:02:00 hh:mm:ss	20 %
Staircase lighting 13		00:02:00 hh:mm:ss	20 %
Staircase lighting 14		00:02:00 hh:mm:ss	20 %
Staircase lighting 15		00:02:00 hh:mm:ss	20 %
Staircase lighting 16		00:02:00 hh:mm:ss	20 %

Fig.4.8Parameter window“Staircase lighting”

Staircase lighting X（X=1~16）

Parameter "Description"

This parameter is for setting the name description of the staircase lighting, up to 30 characters.

Parameter "Duration time"

This parameter describes the duration time when switching on the staircase light function.

Options: **00:00:05...23:59:59**

Parameter "Brightness value in duration time"

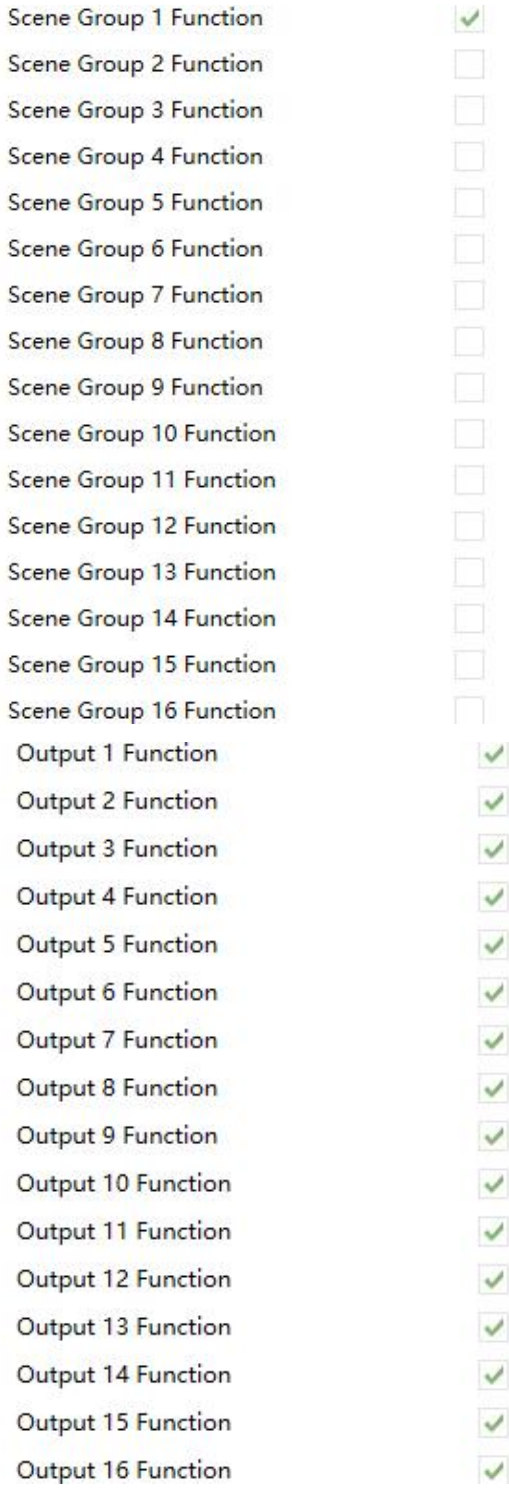
This parameter sets the brightness value in duration time. Options: **1...100%**

Note: The brightness value after the duration ends is associated with the dimming single setting template.

Such as: If the dimming single setting template are configured with "Minimum brightness value=30%" and "Switch off via brightness dimming 0%=To be 0%", the staircase light will switch off once the duration ends.

If the dimming single setting template are configured with "Minimum brightness value=30%" and "Switch off via brightness dimming 0%=To be 0%", the staircase light will remain at the min. Brightness of 30% after the duration ends.

4.9.Parameter window“Scene group function”



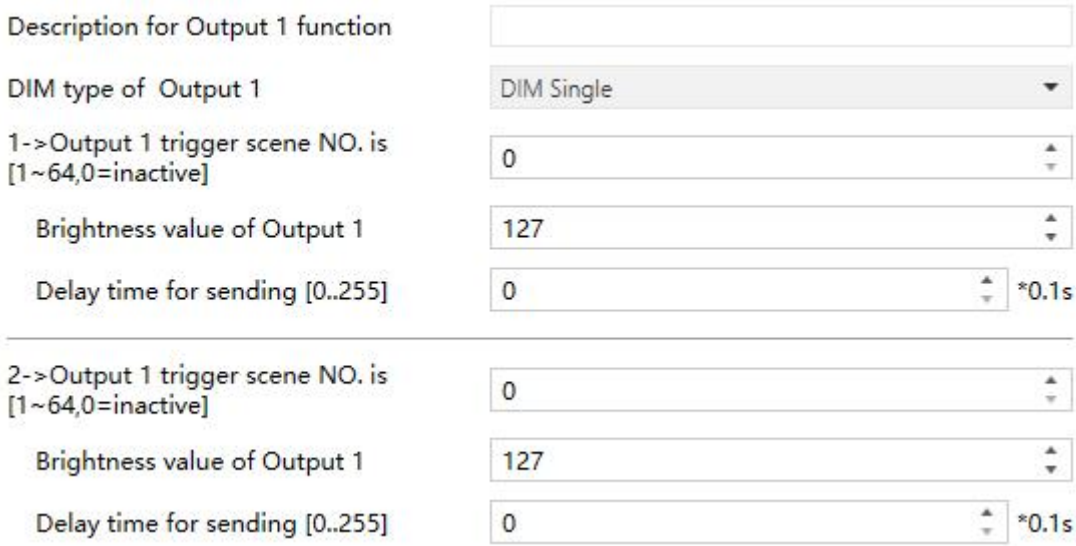


Fig.4.9 Parameter window"Scene Group function"

Parameter "Scene Group x Function"(x=1~16)

This parameter is for setting whether to enable scene group x function, up to 16 scene groups.

Parameter "Output y Function"(y=1~16)

This parameter is for setting whether to enable output y of scene group x, up to 16 output functions for each scene group.

As 16 group functions are the same, and 16 output functions of each group as well, the following description only about one output of a group.

Parameter "Description for Output y function"(y=1~16)

This parameter is for setting the name description for output y of group x, up to input 30 characters.

Parameter "DIM type of Output y"(y=1~16)

This parameter is for setting the object type of output y of group x. Options:

DIM Single

DIM CCT

RGB

Parameter "z->Output y trigger scene NO. is [1~64,0=inactive]"(z=1~16)

This parameter is for setting the triggered scene number of output y of group x. Up to 16 triggered scene of each output can be configured.

Options:**0..64, 0=inactive**

——Parameter "Brightness value of Output y"(y=1~16)

This parameter is visible when "DIM Single" or "DIM CCT" is selected.Set the output value of brightness.

Options: **0...255**

——Parameter "Colour Temperature value of Output y"(y=1~16)

This parameter is visible when "DIM CCT" is selected.Set the output value of colour temperature.

Options: **2000...7000K**

——Parameter "RGB value of Output y"

This parameter is visible when "RGB" is selected.Set the output value of RGB.

Options: **#000000..#FFFFFF**

——Parameter "Delay time for sending [0....255]"

This parameter is for setting the delay time for sending the output value to the bus.

Options: **0..255 *0.1s**

Chapter 5 Description of Communication Object

The communication object is the medium through which the device communicates with other devices on the bus, that is, only the communication object can perform bus communication.

The function of each communication object of each function block is described in detail below.

Note: "C" in the property bar of the table below represents the communication function of the communication object.

"W" represents the value of the communication object can be rewritten by the bus.

"R" represents the value of the communication object can be read through the bus.

"T" stands for communication object with transmission function.

"U" means that the value of the communication object can be updated.

5.1.Communication object of"General"

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

Fig.5.1Communication object of"General"

NO.	Object Function	Name	Data Type	Flag	DPT
1	**In operation**	**General**	**1bit**	**C,R,T**	**1.001 switch**
The communication object is used to periodically send a telegram "1" to the bus to indicate that the device is working properly.					

Table5.1Communication object of"General"

5.2.Communication object of“Universe A/B/C/D”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
2	Universe A CH 1-...	Switch			1 bit	C	-	W	-	-	switch	Low
3	Universe A CH 1-...	Relative dimming			4 bit	C	-	W	-	-	dimming control	Low
4	Universe A CH 1-...	Absolute dimming			1 byte	C	-	W	-	-	percentage (0..255%)	Low
5	Universe A CH 1-...	Switching, status			1 bit	C	R	-	T	-	switch	Low
6	Universe A CH 1-...	Brightness value, status			1 byte	C	R	-	T	-	percentage (0..255%)	Low

Dimming single

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
2	Universe A CH 1~2-...	Switch			1 bit	C	-	W	-	-	switch	Low
3	Universe A CH 1~2-...	Relative dimming			4 bit	C	-	W	-	-	dimming control	Low
4	Universe A CH 1~2-...	Absolute dimming			1 byte	C	-	W	-	-	percentage (0..255%)	Low
5	Universe A CH 1~2-...	Switching, status			1 bit	C	R	-	T	-	switch	Low
6	Universe A CH 1~2-...	Brightness value, status			1 byte	C	R	-	T	-	percentage (0..255%)	Low
7	Universe A CH 1~2-...	Relative colour temperatu...			4 bit	C	-	W	-	-	dimming control	Low
8	Universe A CH 1~2-...	Absolute colour temperat...			2 bytes	C	-	W	-	-	absolute colour temperature (K)	Low
9	Universe A CH 1~2-...	Colour temperature, status			2 bytes	C	R	-	T	-	absolute colour temperature (K)	Low

Dimming CCT

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
2	Universe A CH 1~3-...	Switch			1 bit	C	-	W	-	-	switch	Low
4	Universe A CH 1~3-...	RGB dimming value			3 bytes	C	-	W	-	-	RGB value 3x(0..255)	Low
5	Universe A CH 1~3-...	Switching, status			1 bit	C	R	-	T	-	switch	Low
6	Universe A CH 1~3-...	RGB Brightness value, stat...			3 bytes	C	R	-	T	-	RGB value 3x(0..255)	Low

Dimming RGB_Combined control

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
7	Universe A CH 1~3-...	R Switching			1 bit	C	-	W	-	-	switch	Low
8	Universe A CH 1~3-...	G Switching			1 bit	C	-	W	-	-	switch	Low
9	Universe A CH 1~3-...	B Switching			1 bit	C	-	W	-	-	switch	Low
10	Universe A CH 1~3-...	R Relative dimming			4 bit	C	-	W	-	-	dimming control	Low
11	Universe A CH 1~3-...	G Relative dimming			4 bit	C	-	W	-	-	dimming control	Low
12	Universe A CH 1~3-...	B Relative dimming			4 bit	C	-	W	-	-	dimming control	Low
13	Universe A CH 1~3-...	R Absolute dimming			1 byte	C	-	W	-	-	percentage (0..255%)	Low
14	Universe A CH 1~3-...	G Absolute dimming			1 byte	C	-	W	-	-	percentage (0..255%)	Low
15	Universe A CH 1~3-...	B Absolute dimming			1 byte	C	-	W	-	-	percentage (0..255%)	Low
16	Universe A CH 1~3-...	R Brightness value, status			1 byte	C	R	-	T	-	percentage (0..255%)	Low
17	Universe A CH 1~3-...	G Brightness value, status			1 byte	C	R	-	T	-	percentage (0..255%)	Low
18	Universe A CH 1~3-...	B Brightness value, status			1 byte	C	R	-	T	-	percentage (0..255%)	Low

Dimming RGB_Individual control

Fig.5.2Communication object of“Universe A/B/C/D”

NO.	Object Function	Name	Data Type	Flag	DPT
2	**Switching**	**Universe A CH-{{...}}**	**1bit**	**C,W**	**1.001 switch**
The communication object is used to receive a command of switching on/off lamps. Telegrams: 1——Switch on 0——Switch off					

The name in parentheses changes with the parameter "Description". If description is empty, display "Universe A CH-..." by default. The same below.

3	**Relative dimming**	**Universe A CH-{{...}}**	**4bit**	**C,W**	**3.007 dimming**

This communication object is visible when “dimming single” or “dimming CCT” is selected. Used to receive a command of relative dimming, to dim up or dim down.

Dimming down when telegram is 1~7, and the larger this range the adjust step is smaller. That is, the maximum step of dimming down when is 1, and the minimum step of dimming down when is 7, stop dimming when is 0;

Dimming up when telegram is 9~15, and the larger this range the adjust step is smaller. That is, the maximum step of dimming up when is 9, and the minimum step of dimming up when is 15, stop dimming when is 8.

The correspondence between the value of the relatively dimming telegram and brightness chance is as follows:

Telegram value	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Decrease	stop	(100%)	(50%)	(25%)	(12%)	(6%)	(3%)	(1%)
Telegram value	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Increase	stop	(100%)	(50%)	(25%)	(12%)	(6%)	(3%)	(1%)

4	**Absolute dimming**	**Universe A CH-{{...}}**	**1byte**	**C,W**	**5.001 percentage**

This communication object is visible when “dimming single” or “dimming CCT” are selected. Used to receive a command of absolute dimming.Telegrams: 0...100%

5	**Switching, status**	**Universe A CH-{{...}}**	**1bit**	**C,R,T**	**1.001 switch**

The communication object is used to report the status of the current switch to the bus. Send "1" to the bus when the value of the brightness is larger than 0, send "0" to the bus with value of "0".

Send the status when voltage recovery.

6	**Brightness value, status**	**Universe A CH-{{...}}**	**1byte**	**C,R,T**	**5.001 percentage**

This communication object is visible when “dimming single” or “dimming CCT” is selected. Used to report the status of the current brightness value to the bus.

Send the status when voltage recovery.

7	**Relative colour temperature control**	**Universe A CH-{{...}}**	**4bit**	**C,W**	**3.007 dimming**

This communication object is visible when “dimming CCT” is selected. Used to receive a command of relative colour temperature control, the new colour temperature=current colour temperature±(maximum physical colour temperature - minimum. physical colour temperature)*adjustment percentage .For example, the maximum physical colour temperature is 7000K, the minimum physical colour temperature is 2000K, the current colour temperature value is 3000K, and the decrease the colour temperature 50%, the new color temperature value is 5500K.

Note:Output as minimum value when the new colour temperature value is lower than the set minimum, and output as maximum value when it is higher than the set maximum.

The correspondence between the value of the relatively dimming telegram and colour temperature chance is as follows:

Telegram value	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Decrease the colour temperature value	stop	(100%)	(50%)	(25%)	(12%)	(6%)	(3%)	(1%)
Telegram value	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Increase the colour temperature value	stop	(100%)	(50%)	(25%)	(12%)	(6%)	(3%)	(1%)

8	**Absolute colour**	**Universe A CH-{{...}}**	**2byte**	**C,W**	**7.600 Absolute**

	temperature control				**colour temperature**
This communication object is visible when “dimming CCT” is selected. Used to receive a command of absolute colour temperature control. Telegrams: 2000...7000K					
9	**Colour temperature, status**	**Universe A CH-{{...}}**	**2byte**	**C,R,T**	**7.600 Absolute colour temperature**
This communication object is visible when “dimming CCT” is selected. Used to report the status of the current colour temperature value to the bus. Send the status when voltage recovery.					
4	**RGB dimming value**	**Universe A CH-{{...}}**	**3byte**	**C,W**	**232.600 RGB value 3x(0...255)**
This communication object is visible when “dimming RGB” and “combined control” are selected. Used to receive a command of absolute dimming. Telegrams: 0...255					
6	**RGB Brightness value, status**	**Universe A CH-{{...}}**	**3byte**	**C,R,T**	**232.600 RGB value 3x(0...255)**
This communication object is visible when “dimming RGB” and “combined control” are selected. Used to report the status of the current RGB brightness to the bus. Send the status when voltage recovery.					
7/ 8/ 9	**R Switching G Switching B Switching**	**Universe A CH-{{...}}**	**1bit**	**C,W**	**1.001 switch**
This communication object is visible when “dimming RGB” and “individual control” are selected. Obj.7: Used to receive a command of R switching on/off lamps. Obj.8: Used to receive a command of G switching on/off lamps. Obj.9: Used to receive a command of B switching on/off lamps. Telegrams:					

1——Switch on

0——Switch off

10/ 11/ 12	**R Relative dimming G Relative dimming B Relative dimming**	**Universe A CH-{{...}}**	**4bit**	**C,W**	**3.007 dimming**

These communication object is visible when “dimming RGB” and “individual control” are selected. Use to receive a command of relative dimming, to dim up or dim down.

Dimming down when telegram is 1~7, and the larger this range the adjust step is smaller. That is, the maximum step of dimming down when is 1, and the minimum step of dimming down when is 7, stop dimming when is 0.

Dimming up when telegram is 9~15, and the larger this range the adjust step is smaller. That is, the maximum step of dimming up when is 9, and the minimum step of dimming up when is 15, stop dimming when is 8.

Obj.10: Used to receive a command of R relative dimming.

Obj.11: Used to receive a command of G relative dimming.

Obj.12: Used to receive a command of B relative dimming.

13/ 14/ 15	**R Absolute dimming G Absolute dimming B Absolute dimming**	**Universe A CH-{{...}}**	**1byte**	**C,W**	**5.001 percentage**

These communication object is visible when “dimming RGB” and “individual control” are selected.

Telegrams:0...100%

Obj.13: Used to receive a command of R absolute dimming.

Obj.14: Used to receive a command of G absolute dimming.

Obj.15: Used to receive a command of B absolute dimming.

16/ 17/	**R Brightness value, status**	**Universe A CH-{{...}}**	**1byte**	**C,R,T**	**5.001 percentage**

18	**G Brightness value,** **status** **B Brightness value,** **status**				
These communication object is visible when “dimming RGB” and “individual control” are selected. Send the status at power-up when voltage recovery. Obj.16: Used to report the status of the current R brightness value to the bus. Obj.17: Used to report the status of the current G brightness value to the bus. Obj.18: Used to report the status of the current B brightness value to the bus.					

Table5.2Communication object of“Universe A/B/C/D”

5.3.Communication object of“Scene setting”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1602	Dimming single-...	Scene			1 byte	C	-	W	-	-	scene number	Low
1618	Dimming CCT-...	Scene			1 byte	C	-	W	-	-	scene number	Low
1634	Dimming RGB-...	Scene			1 byte	C	-	W	-	-	scene number	Low

Fig.5.3Communication object of“Scene setting”

NO.	Object Function	Name	Data Type	Flag	DPT
1602	**Scene**	**Dimming single-{{...}}**	**1byte**	**C,W**	**17.001 scene number**
The communication object recall the dimming single setting through a scene number. The name in parentheses changes with the parameter "Description". If description is empty, display "Dimming single/CCT/RGB x-..." by default. The same below.					
1618	**Scene**	**Dimming CCT-{{...}}**	**1byte**	**C,W**	**17.001 scene number**
The communication object recall the dimming CCT setting through a scene number.					
1634	**Scene**	**Dimming RGB-{{...}}**	**1byte**	**C,W**	**17.001 scene number**
The communication object recall the dimming RGB setting through a scene number.					

Table5.3Communication object of“Scene setting”

5.4.Communication object of“Staircase lighting”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1586	Staircase lighting 1-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1587	Staircase lighting 2-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1588	Staircase lighting 3-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1589	Staircase lighting 4-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1590	Staircase lighting 5-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1591	Staircase lighting 6-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1592	Staircase lighting 7-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1593	Staircase lighting 8-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1594	Staircase lighting 9-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1595	Staircase lighting 10-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1596	Staircase lighting 11-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1597	Staircase lighting 12-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1598	Staircase lighting 13-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1599	Staircase lighting 14-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1600	Staircase lighting 15-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low
1601	Staircase lighting 16-...	Staircase lighting			1 bit	C	-	W	-	-	start/stop	Low

Fig.5.4Communication object of“Staircase lighting”

NO.	Object Function	Name	Data Type	Flag	DPT
1586...1601	**Staircase lighting**	**Staircase lighting x-{{...}}**	**1bit**	**C,W**	**1.010 start/stop**
The communication object is used to turn on the function of staircase lighting. The name in parentheses changes with the parameter "Description". If description is empty, display "Staircase lighting x-..." by default. The same below.					

Table5.4Communication object of“Staircase lighting”

5.5.Communication object of“Scene group function”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1650	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
1651	1st Scene Group - Output 1 - ...	Brightness Value			1 byte	C	-	-	T	-	percentage (0..100%)	Low

DIM Single

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1650	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
1651	1st Scene Group - Output 1 - ...	Brightness Value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
1652	1st Scene Group - Output 1 - ...	Colour Temperature			2 bytes	C	-	-	T	-	absolute colour temperature (K)	Low

DIM CCT

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1650	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
1651	1st Scene Group - Output 1 - ...	RGB value			3 bytes	C	-	-	T	-	RGB value 3x(0..255)	Low

DIM RGB

Fig.5.5Communication object of“Scene group function”

NO.	Object Function	Name	Data Type	Flag	DPT
1650	**Main scene trigger**	**Scene Group**	**1byte**	**C,W**	**17.001 scene number**
This communication object triggers each output in the scene group to send a specific value to the bus by recalling the scene number. Telegrams: 0.. 63					
1651 /.../ 1682	**Brightness Value Colour Temperature RGB value**	**1st Scene Group-{{Output x}}**	**1byte 2byte 3bytes**	**C,T**	**5.001 percentage(0...100) 7.600 Absolute colour temperature 232.600 RGB value 3x(0..255)**
When a scene is recalled, the communication object is used to send the corresponding output value of the scene to the bus. If the output is not set to this scene, it will not be sent. A total of 16 scene groups can be set up, with 16 outputs per group for dimming single, 8 outputs per group for dimming CCT and dimming RGB . The name in parentheses changes with the parameter “Description for Output x function”. If description is empty, display “1st Scene Group-Output x” by default. The same below.					

Table5.5Communication object of“Scene group function”