

User manual

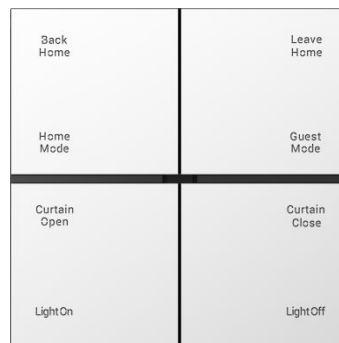
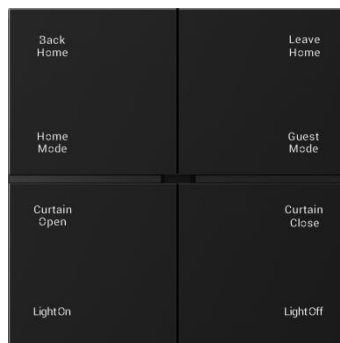
K-BUS KNX Push Button Sensor, 8 buttons_V1.0

Push button module: CHBRL-08/00.1.21 (Without relay)

CHBRL-08/04.1.21 (With 4 relays)

Push button accessory: CHKA-08/L.1.2x

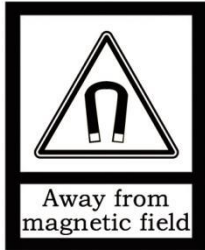
(x=1: Black; x=2: Silver; x=3: Gray; x=4: Golden)



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	1
Chapter 2 Technical Data	3
Chapter 3 Dimension and Structural Diagram	4
3.1. Dimension Diagram	4
3.2. Structural Diagram	4
Chapter 4 Project Design and Programming	5
Chapter 5 Parameter setting description in the ETS	7
5.1. Parameter window "General"	7
5.1.1. Parameter window "General setting"	7
5.1.2. Parameter window "Proximity setting"	10
5.2. Parameter window "Logic function"	12
5.2.1. "AND/OR/XOR"	14
5.2.2. "Gate forwarding"	17
5.2.3. "Threshold comparator"	19
5.2.4. "Format convert"	22
5.3. Parameter window "Scene Group function"	24
5.4. Parameter window "Button"	28
5.4.1. Switch	29
5.4.2. Dimming	31
5.4.3. RGB light	34
5.4.4. RGBW light	35
5.4.5. Colour temperature control	37
5.4.6. Value sender	38
5.4.7. Scene control	39
5.4.8. Blind	40
5.4.9. Multiple operation	42
5.4.10. LED Indication	43
5.5. Parameter window "Output"	48
5.5.1. Parameter window "Output X"	48

5.5.1.1. Parameter window"Scene"	52
Chapter 6 Communication Object Description	54
6.1. "General" Communication Object	54
6.2. "Logic function" Communication Object	56
6.2.1. "AND/OR/XOR" Communication Object	56
6.2.2. "Gate forwarding" Communication Object	57
6.2.3. "Threshold comparator" Communication Object	58
6.2.4. "Format convert" Communication Object	59
6.3. "Scene Group function" Communication Object	62
6.4. "Button" Communication Object	64
6.5. "Output" Communication Object	73

Chapter 1 Summary

KNX Push Button Sensor, 8 buttons is mainly applied in building control system, connected to the bus via KNX connection terminals and installed together with other devices on the bus to become a system. It's functionally simple and intuitive to operate. Users can plan according to their own needs to performs these functions in the system.

KNX Push Button Sensor, 8 buttons integrates the basic control functions of Switch, Dimming, RGB/RGBW lighting, Colour temperature control, Value sender, Scene control, Blind, Multiple operation and support proximity setting, LED indication function, meeting most daily applications.

In addition, support logic and scene Group function, provide more possibilities for special and complex applications.

KNX Push Button Sensor, 8 buttons powered from KNX bus, and need a 12-30V DC auxiliary supply voltage, which can be mounted on 86 type wall-mounted box. 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 KNX Push Button Sensor, 8 buttons for users as well as assembly and programming details, and explains how to use the device by the application examples.

The function of the KNX Push Button Sensor, 8 buttons is summarized as follows:

- Proximity sense
- Switch and dimming
- RGB, RGBW, colour temperature control
- Value sender
- Scene control
- Blind
- Multiple operation

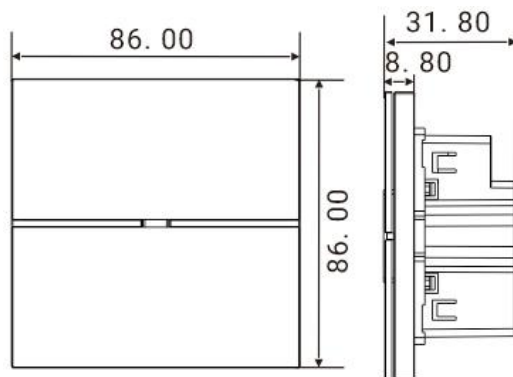
- LED indication function
- Supports 8 logic function, with AND, OR, XOR, Gate transfer, Threshold compare, Format Convert
- Switch output: connect some electrical loads, such as lighting, sockets and all channels support scene function (Only apply to CHBRL-08/04.1.21)

Chapter 2 Technical Data

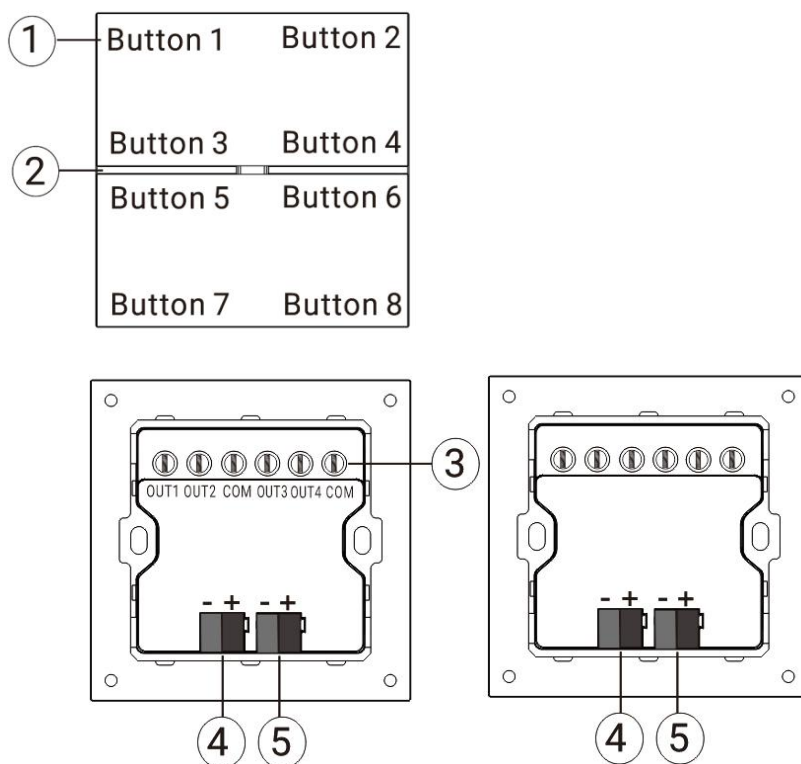
Power Supply	Bus voltage	21-30V DC, via the KNX bus
	Bus current	<12.0mA/24V; <9.2mA/30V
	Bus consumption	<0.3W
Auxiliary Supply	Voltage	12-30V DC
	Current	<45.0mA/24V; <30.0mA/30V
	Consumption	<1.2W
Output	U _n rated voltage	230V AC
	I _n rated current capacity	2A per channel(resistive load); 0.9A per channel(capacitive load)
	Electrical endurance	10 ⁵ (resistive load)
Connection	KNX	Bus connection terminal(Red/Black)
	Auxiliary Supply	Bus connection(Yellow/White)
Operation and display	Press buttons 1 and 8 at the same time, all button LED flashing	For assigning the physical address
Infrared sensing	Distance	Max. 1m (Sensor range up to 1m when passing through the front of the panel; up to 0.7m when approaching the front of the panel)
Temperature	Operation	-5 °C ... + 45 °C
	Storage	-25 °C ... + 55 °C
	Transport	-25 °C ... + 70 °C
Environment	Humidity	<93%, except dewing
Mounting	86 type wall-mounted box	
Dimension/Weight	86.0 x 86.0 x 31.8mm/0.2kg	

Chapter 3 Dimension and Structural Diagram

3.1. Dimension Diagram



3.2. Structural Diagram



① Button 1-8

② Proximity sensor

③ Output terminal

④ Auxiliary supply connection terminal

⑤ KNX bus connection terminal

Chapter 4 Project Design and Programming

Application	Maximum of communication objects	Maximum number of group addresses	Maximum number of associations
Button/Switch/F06F 1.1	210	300	300
Button/F088 1.1	210	300	300

General function

General function includes device In operation setting, KNX telegrams delay time setting, request device status after voltage recovery.

And support whether to enable extension functions, including proximity, central control for switch function.

Button function

Each button can be configured as independent function, and can activate/disable function. Support the functions, including switch, dimming, colour temperature control, value sender, scene control, blind, multiple operation.

For switch and scene functions, it is possible to configure whether long and short operation to select common 1 object or separate 2 objects.

Indication LED function

Brightness level of indication LED is adjustable, and adjusted according to low light/high light /standby status. And set the delay time for entering standby mode and for LED status all turned off.

The indication settings for button functions: Disable, Control by button switch object, Control by external object (1bit/1byte), Indicate button press (On and Flashing), Always on(Low-light).

Logic function

Up to support 8 channels of logic, each channel up to support 8 inputs and 1 logic result.

Logic function support functions, including AND, OR, XOR, Gate forwarding, Threshold comparator and Format convert.

Scene group function

Up to support 8 channels of scene group forward, each group up to support 8 configurable output, datatype is optional 1bit/1byte/2byte/RGB/RGBW.

Output function

can connect some electrical loads, such as lighting, sockets and heating control.

Chapter 5 Parameter setting description in the ETS

5.1. Parameter window "General"

5.1.1. Parameter window "General setting"

Operation delay after bus recovery [0..250]	0	s
Send cycle of "In operation" telegram [1..240,0=inactive]	0	s
Device type	8-buttons, with relay output	
Button LED brightness setting for low-light in normal mode	10	%
Button LED brightness setting for high-light in normal mode	60	%
Button LED brightness setting in standby mode	5	%
Delay time after no operation for standby mode [0..255,0=inactive]	10	s
Delay time for turn off all button LED after standby mode [0..255,0=inactive]	0	s
Proximity function	☒	
Central control for switch function	☒	
Logic function	☒	
Scene group function	☒	

Fig.5.1.1 "General setting" Parameter window

Parameter "Operation delay after bus recovery [0..250]"

This parameter is for setting the delay time that sends status request telegram to bus after the device voltage recovery. Options: **0..15**

The setting dose not contain the device initialization time, and bus telegrams received during delay time will 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 device 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 "Device type"

This parameter displays the device type.

Default: **8-buttons, with relay output or 8-buttons, without relay output**

Parameter "Button LED brightness setting for low-light in normal mode"

This parameter is for setting the button LED brightness when indicated during low-light in normal mode. Options: **0...100%**

Note: The low-light value must be less than the high-light value, otherwise, the database cannot be set.

Parameter "Button LED brightness setting for high-light in normal mode"

This parameter is for setting the button LED brightness when indicated during high-light in normal mode. Options: **0...100%**

Parameter "Button LED brightness setting in standby mode"

This parameter is visible when the delay time for the normal mode to enter the standby mode is not 0. Set the button LED brightness when indicated during standby mode. Options: **5...100%**

Parameter "Delay time after no operation for standby mode [0..255,0=inactive]"

This parameter is for setting the delay time for the normal mode to enter the standby mode. When 0, it will not activate standby mode. Options: **0...255s**

——Parameter “Delay time for turn off all button LED [0..255,0=inactive]”

This parameter is visible when the delay time for the normal mode to enter the standby mode is 0. Set the delay time for turn off all button LED after normal mode. When 0, the command to turn off all LED will not be executed. Options: **0...255s**

——Parameter “Delay time for turn off all button LED after standby mode [0..255,0=inactive]”

This parameter is visible when the delay time for the normal mode to enter the standby mode is not 0. Set the delay time for turn off all button LED after standby mode. When 0, the command to turn off all LED will not be executed. Options: **0...255s**

Parameter “Proximity function”

When this parameter is enabled, the “Proximity setting” is visible. This function is described in detail in [chapter 5.1.2](#).

Parameter “Central control for switch function”

This parameter is visible when the device type is “8-buttons,with relay output”, used for setting whether to enable central control for switch function.

Parameter “Logic function”

When this parameter is enabled, the “Logic function” is visible. This function is described in detail in [chapter 5.2](#).

参数 “Scene group function”

When this parameter is enabled, the “Scene group function” is visible. This function is described in detail in [chapter 5.3](#).

5.1.2. Parameter window "Proximity setting"

The Proximity function triggered via	Sensor
Object type of output value	1bit[On/Off]
Reaction for proximity approaching	☐ No action ☒ Send a value
Output value [On/Off]	☐ OFF ☒ ON
Delay time for sending [0..65535]	0 s
Reaction for proximity leaving	☐ No action ☒ Send a value
Output value [On/Off]	☒ OFF ☐ ON
Delay time for sending [0..65535]	10 s

Fig.5.1.2 "Proximity setting" Parameter window

Parameter "The Proximity function triggered via"

This parameter is for setting the trigger way of proximity function. Options:

Sensor

Proximity object

Sensor or Proximity object

When "Sensor or Proximity object" is selected, not send output value when proximity triggered via object.

Parameters as follow are visible when "Sensor" or "Sensor or Proximity object" is selected.

Parameter "Object type of output value"

This parameter is for setting the object type of output value to the bus when proximity approaching or leaving. Options:

1bit[On/Off]

1byte[scene control]

1byte[0..255]

1byte[0..100%]

Parameter "Reaction for proximity approaching"

Parameter "Reaction for proximity leaving"

These parameters are setting whether to send telegram when proximity approaching or leaving.

Options:

No reaction

Send a value

——Parameter "Output value"

This parameter is visible when "Send a value" is selected. Set the output value sending to the bus when proximity approaching or leaving, the range of value is determined by the data type.

——Parameter "Delay time for sending [0..65535]s"

This parameter is visible when "Send a value" is selected. Set the delay time for sending telegram.

When proximity approaching/leaving. Options: **0..65535**

5.2. Parameter window "Logic function"

1st Logic function	☒
2nd Logic function	☒
3rd Logic function	☒
4th Logic function	☒
5th Logic function	☒
6th Logic function	☒
7th Logic function	☒
8th Logic function	☒

Description for logic function	
Function of channel	AND ▼

Fig.5.2 "Logic function setting" Parameter window

Parameter "1st/2nd/3rd... Logic function"

This parameter is for setting the setting interface of logic function, display corresponding logic function page when select. Up to enable 8 logic functions.

Parameter "Description for logic function"

This parameter is for setting the name description for logic function, up to input 30 characters.

Parameter "Function of channel"

This parameter is for setting function of the channel. Options:

AND

OR

XOR

Gate forwarding

Threshold comparator

Format convert

AND/OR/XOR: as the parameter is similar to the communication object (only the logic algorithm is different), the following parameters taking one options for example.

5.2.1. "AND/OR/XOR"

Description for logic function	
Function of channel	AND
Input a	Disconnected
Default value	☒ 0 ☐ 1
Input b	Disconnected
Default value	☒ 0 ☐ 1
Input c	Disconnected
Default value	☒ 0 ☐ 1
Input d	Disconnected
Default value	☒ 0 ☐ 1
Input e	Disconnected
Default value	☒ 0 ☐ 1
Input f	Disconnected
Default value	☒ 0 ☐ 1
Input g	Disconnected
Default value	☒ 0 ☐ 1
Input h	Disconnected
Default value	☐ 0 ☒ 1
Result is inverted	☒ No ☐ Yes
Read input object value after voltage recovery	☒ No ☐ Yes
Output send when	☐ Receiving a new telegram ☒ Every change of output object
Send delay time: Base	5s
Factor: 1..255	2

Fig. 5.2.1 "AND/OR/XOR"

Parameter "Input a/b/c/d/e/f/g/h"

This parameter is for setting whether input x to calculate, whether to normally calculate or inverted calculate. Options:

Disconnected

Normal

Inverted

Disconnected: not to calculate.

Normal: to directly calculate the input value.

Inverted: invert the input value, then to calculate.

Note: not to invert the initiate value.

Parameter "Default value"

This parameter is for setting the initial value of logic input x. Options:

0

1

Parameter "Result is inverted"

This parameter is for setting whether to invert the logic calculation result. Options:

No

Yes

No: output directly.

Yes: output after inverting.

Parameter "Read input object value after bus voltage recovery"

This parameter is for setting whether to send the read request to the logic input object after device voltage recovery or finish programming. Options:

No

Yes

Parameter "Output send when"

This parameter is for setting the condition of sending logic result. Options:

Receiving a new telegram

Every change of output object

Receiving a new telegram: every time the object received a new input value will the logic result be sent to the bus.

Every change of output object: only when logic result has changed will it be sent to the bus.

Tip: when in the first time to logic calculate, the logic result will be sent even if it has no change.

Parameter "Send delay time"

Base: **None**

0.1s

1s

...

10s

25s

Factor: **1..255**

This parameter is for setting the delay time for sending the logic calculation result to the bus.

Delay time = Base × Factor, if option "None" of Base is selected, then there is no delay.

5.2.2. "Gate forwarding"

Description for logic function	
Function of channel	Gate forwarding ▼
Object type of Input/Output	1bit ▼
Default scene NO. of Gate after startup [1~64,0=inactive]	0 ▲▼
1->Gate trigger scene NO. is [1~64,0=inactive]	0 ▲▼
Input A send on	Output A ▼
Input B send on	Output B ▼
Input C send on	Output C ▼
Input D send on	Output D ▼
2->Gate trigger scene NO. is [1~64,0=inactive]	0 ▲▼
Input A send on	Output A ▼
Input B send on	Output B ▼
Input C send on	Output C ▼
Input D send on	Output D ▼

Fig.5.2.2 "Gate forwarding"

Parameter "Object type of Input/Output"

This parameter is for setting the object type of input/output. Options:

1bit

4bit

1byte

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

This parameter is for setting the initial scene where logical gate forwarding can be performed by default after device starts, which needs to be configured in the parameters. Options: **1..64, 0=inactive**

Note: gate scene is recommended to be selected before operating, or it will enable the initiate scene by default.

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

This parameter is for setting scene number of logic gate forwarding. Up to 8 trigger scene number can be set for each logic. Options: **1..64, 0=inactive**

——Parameter "Input A/B/C/D send on"

This parameter is for setting the output of input X (X=A/B/C/D) after gate forwarding. Options:

Output A

Output B

...

Output B,C,D

According to the options, one input can be forwarded into one or more outputs, the output value is the same as the input value.

5.2.3. "Threshold comparator"

Description for logic function	
Function of channel	Threshold comparator ▼
Threshold value data type	1byte unsigned value (DPT5.010) ▼
Threshold value	0 ▲▼
If Object value < Threshold value	Do not send telegram ▼
If Object value = Threshold value	Do not send telegram ▼
If Object value ≠ Threshold value	Do not send telegram ▼
If Object value > Threshold value	Do not send telegram ▼
If Object value ≤ Threshold value	Do not send telegram ▼
If Object value ≥ Threshold value	Do not send telegram ▼
Output send when	☐ Receiving a new telegram ☒ Every change of output object
Send delay time: Base	5s ▼
Factor: 1..255	2 ▲▼

Fig.5.2.3 "Threshold comparator"

Parameter "Threshold value data type"

This parameter is for setting the threshold value data type. Options:

- | | |
|--|--|
| 4bit value (DPT3.007) | 4byte unsigned value[0..4294967295] |
| 1byte unsigned value (DPT5.010) | Ext. temperature value (DPT 9.001) |
| 2byte unsigned value (DPT7.001) | Ext. humidity value (DPT 9.007) |
| 2byte signed value (DPT8.x) | Illuminance value (DPT 9.004) |
| 2byte float value (DPT9.x) | |

Parameter "Threshold value"

This parameter is for setting threshold value, the range depends on the data type.

Options:

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

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

2byte float value (DPT9.x) -670760...670760 /

4byte unsigned value[0..4294967295] 0..4294967295 /

Ext. temperature value (DPT 9.001) -20..95°C / Ext. humidity value (DPT 9.007) 0..100% /

Illuminance value (DPT 9.004) 0..65535lux

Parameter "Hysteresis threshold value"

This parameter is visible when object datatype is selected "2byte float value (DPT9.x)",
"Illuminance value (DPT 9.004)". Set the hysteresis threshold value. Options: **0..500**

Parameter "If Object value<Threshold value"

Parameter "If Object value=Threshold value"

Parameter "If Object value!=Threshold value"

Parameter "If Object value>Threshold value"

Parameter "If Object value<=Threshold value"

Parameter "If Object value>=Threshold value"

This parameter is for setting the logic result value that should be sent when threshold value Less than, equal to, not equal to, greater than, less than or equal to the setting valve. When object datatype is selected "2byte float value (DPT9.x)", can only set the object value less than or greater than threshold value. Options:

Do not send telegram

Send value "0"

Send value "1"

Do not send telegram: not consider to select this option.

Send value "0"/"1": when condition is satisfied, send telegram 0 or 1.

If there is a conflict between the setting options between parameters, the base on the value that should be sent when reach the final parameter condition.

For example: parameter "If Object value=Threshold value" is set to be "Send value "0" ";
parameter "If Object value<=Threshold value" is set to be "Send value "1" "; when object value is
equal to the threshold value, then the logic result will send "1".

Parameter "Output send when"

This parameter is for setting the condition of sending logic result. Options:

Receiving a new telegram

Every change of output object

Receiving a new telegram: every time the object received a new input value will the logic result be sent to the bus;

Every change of output object: only when logic result has changed will it be sent to the bus.

Note: when in the first time to logic algorithm, the logic result will be sent even if it has no change.

Parameter "Send delay time"

Base:	None
	0.1s
	...
	10s
	25s
Factor:	1..255

This parameter is for setting the delay time for sending the logic algorithm result to the bus. Delay time = Base x Factor, if option "None" of Base is selected, then there is no delay.

5.2.4. "Format convert"

Description for logic function	
Function of channel	Format convert ▼
Function	2x1Bit-->1x2Bit ▼
Output send when	☐ Receiving a new telegram ☒ Every change of output object

Fig.5.2.4 "Format convert"

Parameter "Function"

This parameter is for setting the format convert type. Options:

2x1bit-->1x2bit

8x1bit-->1x1byte

1x1byte-->1x2byte

2x1byte-->1x2byte

2x2byte-->1x4byte

1x1byte-->8x1bit

1x2byte-->2x1byte

1x4byte-->2x2byte

1x3byte-->3x1byte

3x1byte-->1x3byte

Parameter "Output send when"

This parameter is for setting the condition of sending logic result. Options:

Receiving a new telegram

Every change of output object

Receiving a new telegram: every time the object received a new input value will the logic result be sent to the bus;

Every change of output object: only when logic result has changed will it be sent to the bus.

Note: when in the first time to logic algorithm, the logic result will be sent even if it has no change.

5.3. Parameter window"Scene Group function"

Scene Group 1 Function	☒
Scene Group 2 Function	☐
Scene Group 3 Function	☐
Scene Group 4 Function	☐
Scene Group 5 Function	☐
Scene Group 6 Function	☐
Scene Group 7 Function	☐
Scene Group 8 Function	☐

Fig.5.3(1) "Scene Group function"Parameter window

Output 1 Function	☒
Output 2 Function	☐
Output 3 Function	☐
Output 4 Function	☐
Output 5 Function	☐
Output 6 Function	☐
Output 7 Function	☐
Output 8 Function	☐

Fig.5.3(2) "Group X"Parameter window

Description for Output 1 function	
Object type of Output 1	1bit
1->Output 1 trigger scene NO. is [1~64,0=inactive]	0
Object value of Output 1	☒ 0 ☐ 1
Delay time for sending [0..255]	0 *0.1s
2->Output 1 trigger scene NO. is [1~64,0=inactive]	0
Object value of Output 1	☒ 0 ☐ 1
Delay time for sending [0..255]	0 *0.1s

Fig.5.3(3) "Output Y function"Parameter window

Parameter "Scene Group x Function,(x=1-8)"

This parameter is for setting whether to enable scene group x function, up to 8 scene groups.

Parameter "Output y Function,(y=1-8)"

This parameter is for setting whether to enable output y of scene group x, up to 8 output functions for each scene group.

As 8 group functions are the same, and 8 output functions of each group as well, the following description only about one output of a group.

Parameter "Description for Output y function,(y=1-8)"

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

Parameter "Object type of Output y,y=(1-8)"

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

1bit

1byte

2byte

RGB

RGBW

—Parameter “Object datatype”

This parameter is for setting the datatype of 1byte or 2byte.

When the datatype is 1byte, options:

1byte unsigned value

HVAC mode

When the datatype is 2byte, options:

2byte unsigned value

Temperature value

Parameter “z->Output 1 trigger scene NO. is [1~64,0=inactive],(z=1-8)”

This parameter is for setting the triggered scene number of output y of group x. Up to 8 triggered scene of each output can be configured. Options: **1..64, 0=inactive**

—Parameter “Object value of Output y”

This parameter is for setting the output value, the range depends on the data type of output y.

When the datatype is 1bit, options: **0..1**

When the datatype is 1byte-1byte unsigned value, options: **0..255**

When the datatype is 1byte-HVAC mode, options:

Comfort mode

Standby mode

Economy mode

Frost/heat protection

When the datatype is 2byte-2byte unsigned value, options: **0..65535**

When the datatype is 2byte-Temperature value, options:

-5°C

-4°C

...

45°C

——Parameter “RGB value of Output y”

When the datatype is RGB/RGBW this parameter is visible, used for setting the RGB value of output y. Options: #000000...#FFFFFF

——Parameter “White value of Output y”

When the datatype is RGBW this parameter is visible, used for setting the white value of output y. Options: 0.255

——Parameter “ Delay time for sending [0...255]*0.1s”

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

0..255

5.4. Parameter window "Button"

Long operation for button after [3..250] *0.1s

Function of button

Description (max 30char.)

Fig.5.4 "Button" Parameter window

Parameter "Long operation for button after [3..250]*0.1s"

Button operation is distinguished between long and short operation as default, this parameter is for setting the valid time for long operation. So, when you press longer than the time set here, it will be identified as long operation, otherwise, it will be taken as short operation. Options: **3..250**

Parameter "Function of button"

This parameter is for setting the function of button. Options:

- | | |
|----------------------|-----------------------------------|
| Disable | Colour temperature control |
| Switch | Value sender |
| Dimming | Scene control |
| RGB lighting | Blind |
| RGBW lighting | |

Parameter "Description (max 30 char.)"

This parameter is for setting the name description for the current button function, up to input 30 chapters.

Chapters as follow explain the button function separately.

5.4.1. Switch

Function of button	Switch
Description (max 30char.)	
Distinction between short and long operation	☒ No ☐ Yes
Reaction on press operation	TOGGLE
Reaction on release operation	ON
Number of objects	☒ 1 ☐ 2
Disable function	Disable=1/Enable=0

Fig.5.4.1 Switch

Parameter "Distinction between short and long operation"

This parameter is for setting whether to distinction the contact operation between short and long operation. Options:

No

Yes

When select "Yes", the operation reaches a certain time to determine whether the operation is a long or short operation before the contact performs the setting action.

Parameter "Reaction on short/press operation"

Parameter "Reaction on long/release operation"

These parameters are for setting the performed actions when press/release the contact or long/short operation. The object value is updated when the input is determined. Options:

No reaction

OFF

ON

TOGGLE

No action: no telegram to be sent.

ON: send on telegram.

OFF: send off telegram.

TOGGLE: each operation will toggle the switch between on and off. For example, if send an On telegram(or received) at the last, then the next operation will trigger an Off telegram. When the contact is operated again, it will send an On telegram, etc. So the contact will always remember the previous status and covert to opposite value during next operation. When the device is powered on for the first time or restarted after downloading, the default value for " Switch" is 0, meaning the first operation is ON.

Parameter "Number of objects"

This parameter is visible when the parameter "Reaction on long/release operation" is not selected "No reaction". Set the number of objects when short/long or press/release operation:

1

2

Parameter "Disable function"

This parameter is for setting trigger value to disable/enable contacts. Options:

Disable

Disable=1/Enable=0

Disable=0/Enable=1

5.4.2. Dimming

Function of button	Dimming
Description (max 30char.)	
Reaction on short operation	TOGGLE
Reaction on long operation	Brighter/Darker
Dimming mode	☒ Start-Stop dimming ☐ Step dimming

Fig.5.4.2 Dimming

Parameter "Reaction on short operation"

This parameter is for setting the the switch value to send when short operation. Options:

No reaction

OFF

ON

TOGGLE

No action: no telegram to be sent.

ON: send on telegram.

OFF: send off telegram.

TOGGLE: each operation will toggle the switch between on and off. When the device is powered on for the first time or restarted after downloading, the default value for " Switch" is 0, meaning the first operation is ON.

Parameter "Reaction on long operation"

This parameter is for setting the the relative dimming value to send when long operation, with dimming brightness or darker; when release the contact stop dimming. Options:

No reaction

Brighter

Darker

Brighter/Darker

No action: no telegram to be sent.

Brighter: send the dimming up value.

Darker: send the dimming down value.

Brighter/darker: each operation will toggle the dimming between up and down. When the device is powered on for the first time or restarted after downloading, the default value for "Dimming" is 0, meaning the first operation is dim up the brightness.

Note: In the options of "TOGGLE" and "Brighter/Darker", there are a linkage between the received switch status and the dimming. For example, if receive an On value from object "Switch" at the last, then it will dim down the brightness in next dimming operation. If receive an Off value first, then it will dim up the brightness in next dimming operation.

Parameter "Dimming mode"

This parameter is visible when previous parameter is not "No reaction". Set the way of relative dimming. Options:

Start-Stop dimming

Step dimming

Start-stop dimming: The dimming mode will be start-stop, a dimming up or down telegram will be sent when the dimming starts, and a stop telegram will be sent when dimming ends. Here the dimming telegram will not be sent cyclically.

Steps dimming: The dimming mode will be a step one and the dimming telegram will be sent cyclically. When dimming ends, a stop dimming telegram will be sent immediately.

—Parameter "Step size"

This parameter is visible when the dimming way is selected "Step dimming". Set a cyclically sending dimming telegram which changes the brightness percentage, Options:

100%

50%

...

1.56%

——Parameter “Interval of tele. cyclic send [0..25,0=send once]*0.1s”

This parameter is visible when the dimming way is selected “Step dimming”. Set intervals of two cyclically sending dimming telegram. Options: **0..25, 0=send once**

5.4.3. RGB light

Function of button	RGB lighting ▾
Description (max 30char.)	
Object datatype of absolute brightness	☒ 1x3byte ☐ 3x1byte
Reaction on short operation	TOGGLE ▾
Reaction on long operation	Absolute value ▾
RGB Value	#FFFFFF 

Fig.5.4.3 RGB light

Parameter "Object datatype of absolute brightness"

This parameter is for setting the object datatype for RGB lighting. Options:

1x3byte

3x1byte

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These parameters are for setting the performed actions when long/short operation. Options:

No reaction

OFF

ON

TOGGLE

Absolute value

Parameter "RGB value"

This parameter is visible when previous parameter is selected "Absolute value". Set the sending RGB value when long/short operation. Options: **#0000..#FFFF**

5.4.4. RGBW light

Function of button	RGBW lighting
Description (max 30char.)	
Object datatype of absolute brightness	☒ 1x6byte ☐ 4x1byte
Reaction on short operation	TOGGLE
Reaction on long operation	Absolute value
RGB Value	#FFFFFF
White Value	255

Fig.5.4.4 RGBW light

Parameter "Object datatype of absolute brightness"

This parameter is for setting the object datatype for RGBW lighting. Options:

1x6byte

4x1byte

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These parameters are for setting the performed actions when long/short operation. Options:

No reaction

OFF

ON

TOGGLE

Absolute value

Parameter "RGB value"

This parameter is visible when previous parameter is selected "Absolute value". Set the sending RGB value when long/short operation. Options: **#0000..#FFFF**

Parameter "White Value"

This parameter is visible when previous parameter is selected "Absolute value". Set the sending white brightness value when long/short operation. Options: **0..255**

5.4.5. Colour temperature control

Function of button	Colour temperature control ▼
Description (max 30char.)	
Reaction on short operation	TOGGLE ▼
Reaction on long operation	Absolute value ▼
Send brightness value	100 ▼ %
Send Colour temperature value	4000 ▼ K

Fig.5.4.5 Colour temperature control

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These parameters are for setting the performed actions when long/short operation. Options:

No reaction

OFF

ON

TOGGLE

Absolute value

——Parameter "Send brightness value"

This parameter is visible when previous parameter is selected "Absolute value". Set the sending brightness value when long/short operation. Options: **0..100%**

——Parameter "Send Colour temperature value"

This parameter is visible when previous parameter is selected "Absolute value". Set the sending colour temperature value when long/short operation. Options: **1000...10000K**

5.4.6. Value sender

Function of button	Value sender
Description (max 30char.)	
Reaction on short operation	1bit value[ON/OFF]
Value 1	☐ OFF ☒ ON
Reaction on long operation	No reaction

Fig. 5.4.6 Value sender

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These parameters are for setting the datatype to send when long/short operation. Options:

No reaction

1bit value[On/Off]

2bit value[0..3]

4bit value[0..15]

1byte value[0..255]

2byte value[0..65535]

2byte float value

4byte value[0..4294967295]

4byte float value

Parameter "Value 1/2"

These parameters are visible when "No reaction" is not selected. Set the data value to send when perform short/long operation. Range of value is determined according to the previous parameter selected datatype.

5.4.7. Scene control

Function of button	Scene control ▼
Description (max 30char.)	
Reaction on short operation	Recall scene ▼
8 bit scene number	Scene No.1 ▼
Reaction on long operation	Store scene ▼
8 bit scene number	Scene No.1 ▼
Number of objects	☒ 1 ☐ 2

Fig.5.4.7 Scene control

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These parameters are for setting to recall or storage scene when long/short operation. Options:

No reaction

Recall scene

Store scene

——Parameter "8 bit scene number"

This parameter is visible when "No reaction" is not selected. Set the scene number. Options:

Scene NO.1

Scene NO.2

Scene NO.3

...

Scene NO.64

Corresponding telegram is 0~63

Parameter "Number of objects"

This parameter is visible when the parameter "Reaction on long operation" is not selected "No reaction". Set the number of objects when short/long operation:

1

2

5.4.8. Blind

Function of button	Blind
Description (max 30char.)	
Reaction on short operation	Stop(Adjust Up/Down)
Reaction on long operation	Up/Down

Fig.5.4.8 Blind

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These parameters are for setting to performed actions when long/short operation. Options:

No reaction

Up

Down

Up/Down

Stop(Adjust Up)

Stop(Adjust Down)

Stop(Adjust Up/Down)

No action: no telegram to be sent.

Up: the blinds will be opened or moved up.

Down: the blinds will be closed or moved down.

Up/Down: alternately open/close or move up/down the blinds. When the device is powered on for the first time or restarted after downloading, the default value for "Up/Down, Blind" is 0, meaning the first operation is closing or moving down the blinds.

Stop (Adjust Up): stop the blind movement or move up the angle of blinds.

Stop (Adjust Down): stop the blind movement or move down the angle of blinds.

Stop (Adjust Up/Down): stop the blind movement or move up/down the angle of blinds alternately. When the device is powered on for the first time or restarted after downloading, the default value for "Stop/Adjust Blind" is 0, meaning the first operation is stop or move down the angle of blinds.

——Parameter "Interval of tele. cyclic send [0..25,0=send once]*0.1s"

This parameter is visible when previous parameter is selected "Stop...". Set the time interval of cyclical blinds angle adjustment telegram sent. Options: **0..25,0=send once**

5.4.9. Multiple operation

Function of button	Multiple operation ▼
Description (max 30char.)	
Object type for object1	1Bit_On/Off ▼
Function of short operation	TOGGLE ▼
Function of long operation	No reaction ▼
Object type for object2	1Bit_On/Off ▼
Function of short operation	TOGGLE ▼
Function of long operation	No reaction ▼

Fig.5.4.9 Multiple operation

Parameter "Object type for object x"(x=1~4)

This parameter is for setting the datatype when long/short operation to send. Options:

- Disable
- 1Bit_On/Off
- 1Bit_Up/Down
- 1Byte_RecallScene
- 1Byte_StoreScene
- 1Byte_Percentage
- 1Byte_Unsigned value

——Parameter "Function of short operation"

——Parameter "Function of long operation"

This parameter is for setting the specific values to send when perform the operation, either no action or sending value (the specific value will be set in next parameter).

——Parameter "Value x..."(x=1~2)

This parameter is visible when object type is selected "1byte_RecallScene", "1byte_StoreScene", "1byte_Percentage", "1byte_Unsigned value". Set sending values when perform operations. The range of value is up to the datatype selected by the parameter before last one.

5.4.10.LED Indication

Status LED indication	Control by button switch object
When object value="0", LED is	ON(Low-light)
When object value="1", LED is	ON(High-light)
Control by button switch object	
Status LED indication	Control by external object
External object datatype	☒ 1bit ☐ 1byte
When object value="0", LED is	ON(Low-light)
When object value="1", LED is	ON(High-light)
Status LED indication	Control by external object
External object datatype	☐ 1bit ☒ 1byte
Threshold value is	50
If object value<threshold value, LED is	OFF
If object value=threshold value, LED is	ON(Low-light)
If object value>threshold value, LED is	OFF
Control by external object	
Status LED indication	Indicate button press
When press the button,indicator is	☒ On(High-light) ☐ Flashing(High-light)
On duration time is	1s
Indicate button press-On	

Status LED indication Indicate button press

When press the button, indicator is ☐ On(High-light) ☒ Flashing(High-light)

Flashing period time is 0.8 s

Normal indication is OFF

Status LED indication Indicate button press-Flashing

Always on

Always on(Low-light)

Fig.5.4.10 LED indication

Parameter "Status LED indication"

This parameter is for setting the LED indication status. When button function set with switch function, such as switch, dimming function. Options:

- Disable**
- Control by button switch object**
- Control by external object**
- Indicate button press**
- Always on(Low-light)**

There is no option "Control by button switch object" when not with switch function, such as RGB light, RGBW light, scene, Colour temperature control, value sender, scene control, blind and etc.

Parameters as follow are visible when LED indication status is selected "Control by button switch object":

——Parameter "When object value="0", LED is"

——Parameter "When object value="1", LED is"

These parameters are for setting the LED indication status according to switch function and dimming function. Options:

OFF

ON(Low-light)

ON(High-light)

Parameters as follow are visible when LED indication status is selected "Control by external object":

——Parameter "External object datatype"

This parameter is for setting the external object datatype. Options:

1bit

1byte

Note: The object will send read request when the device power on, indicate according to the response value, and no handled when no receive a response.

Two parameters as follow are visible when 1 bit is selected.

——Parameter "When object value="0", LED is"

——Parameter "When object value="1", LED is"

These parameters are for setting the LED indication status according to 1 bit object value from the bus. Options:

OFF

ON(Low-light)

ON(High-light)

Four parameters as follow are visible when 1 byte is selected:

——Parameter "Threshold value is"

This parameter is for setting the threshold value. Options: **1..255**

——Parameter "If object value<threshold value, LED is"

——Parameter "If object value=threshold value, LED is"

——Parameter "If object value>threshold value, LED is"

These parameters are for setting the LED indication status according to the comparison of both the object value and the threshold value. Options:

OFF

ON(Low-light)

ON(High-light)

Parameters as follow are visible when LED indication status is selected "Indicate button press":

——Parameter "When press the button indicator is"

This parameter is for setting the LED indication status when press the button. Options:

On(High-light)

Flashing(Hight-light)

Parameter as follow is visible when On(High-light) is selected:

——Parameter "On duration time is"

This parameter is for setting the LED on duration time. Options:

500ms

1s

2s

3s

Parameters as follow are visible when Flashing(High-light) is selected:

——Parameter "Flashing period time is"

This parameter is for setting the LED flashing period time. options:

0.4s

0.8s

...

2.0s

——Parameter "Normal indication is"

This parameter is for setting the LED normal indication when finish flashing. Options:

OFF

ON(Low-light)

ON(High-light)

5.5. Parameter window "Output"

Parameters as follow are visible when "8-buttons, with relay output" is selected:

Output 1	☒
Output 2	☒
Output 3	☒
Output 4	☒

Fig.5.5 "Output" Parameter window



This parameter is for setting whether the output 1~4 is enabled.

5.5.1.Parameter window "Output X"

The parameter setting interface "Switch actuator: Output X" is shown in Fig. 5.5.1(1). The setting of this interface acts on the entire channel of the relay. In addition to setting the commonly used switching functions, it can also set the report of system power-on and switch status.

Description (max 30char.)	
Central function of channel	☒
If power recovery,output status is	Unchange ▼
After downloading,output status is	☒ Contact open ☐ As bus recovery
Set the reply mode of switch status	☐ Respond after read only ☒ Respond after change
Object value of switch status	☐ 0=contact close;1=contact open ☒ 1=contact close;0=contact open
Output status for the telegram "1" (telegram "0" is opposite of selection)	☐ Contact open ☒ Contact close
Function of "Scene"	☒

Fig.5.5.1(1) Output X Switch" Parameter window

Parameter "Description(max 30char.)"

This parameter is used to set the custom description of channel, up to input 30 characters.

Parameter "Central function of channel"

This parameter sets whether the centralized control of this channel is enabled.

When enabled, the channel will be controlled by the central control object "Central control for all switch".

参数 "If bus recovery,output status is"

The Parameter sets the position of the relay contacts when the device bus is powered up.

Options:

Unchange

Contact open

Contact close

When selecting "Unchange", the contact will not change when bus power on.

When selecting "Contact open", the contact will be opened when bus power on.

When selecting "Contact close", the contact will be closed when bus power on.

参数 "After downloading, output status is"

This parameter set the contact position of the output after downloading. Options:

Contact open

As bus recovery

When selecting "Contact open", the contact is open after application downloading;

When selecting "As bus recovery", the contact will action according to the setting of parameter "If bus recovery, contact is" after application downloading.

Parameter "Set the reply mode of switch status"

This parameter defines how to respond the current switch status to the bus. There are two options to select. Options:

Respond after read only

Respond after change

If selecting "Respond after read only", the status telegram will not be sent out until receiving a read request telegrams via the object "Switch status" from the bus.

If selecting "Respond after change", when switch status of the channel changes, object "Switch status" will immediately send the current report telegram to the bus.

Parameter "Object value of switch status"

Options:

0=contact close; 1=contact open

1=contact close; 0=contact open

When setting "0=contact close; 1=contact open", the value of object "switch status" is 0 indicates the contact of the relay will be closed; when is 1, indicates the contact of the relay will be closed will be open.

When setting "1=contact close; 0=contact open" indicates the opposite meaning.

Note: After programming or system reset, the switch status is determined, the object "switch status" will send status messages to the bus; if not, it will not be sent.

Parameter "Output status for the telegram"1"(telegram "0" is opposite of selection)"

This parameter defines the contact position when switch on the switch, which will be triggered by the communication object "Switch". Options:

Contact open

Contact close

When select "Contact open", the contact position is open, when receive telegram "1", the contact will be open; when receive telegram "0", the contact close;

When select "Contact close", the contact position is close, when receive telegram "1", the contact will be closed; when receive telegram "0", the contact open.

Parameter "Function of "Scene""

When this parameter is enabled, the "Ox: Scene" is visible. This function is described in detail in [chapter 5.5.1.1](#).

5.5.1.1. Parameter window "Scene"

The parameter window "Ox: Scene" setting interface shown in Fig. 5.5.1.1 will be visible when "Function of 'Scene'" is enabled in Fig. 5.5.1. Here can set 8 scenes.

Overwrite scene stored values during download	☒
1> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
2> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
3> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
4> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
5> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
6> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
7> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close
8> channel is assigned to (1...64, 0=no assignment)	0
Output status is	☒ Contact open ☐ Contact close

Fig.5.5.1.1 Parameter window "Output X: Scene"

Parameter "Overwrite scene stored values during download"

This parameter sets whether to override the scene save value during application download.

If it is disabled, the stored values before the download can be not overwritten by the parameterized scene value. When the scene is called, the scene saved before the download is still enabled until it is replaced by the new storage scene.

If it is enabled, the stored values will be overwritten by the parameterized scene value during the download. When the scene is called, the scene will be set according to the parameters until it is replaced by the new storage scene.

Parameter "X > channel is assigned to [1...64, 0= no assignment], (X=1-8)"

It is able to allocate 64 different scene numbers to every output. There are 8 various scenes can be set per output. Options: **1...64, 0=no assignment**

Note: 1-64 in the parameter setup corresponds to the scene number 0-63 received by the communication object "Scene". If a scene is stored via a learning telegram, the new scene will be active immediately and still be valid even if power failure.

Parameter "Output status is"

This parameter defines the switch output status when recall the scene. Options:

Contact open

Contact close

Chapter 6 Communication Object Description

The communication object is the medium to communicate other device on the bus, namely only the communication object can communicate with the bus.

Note: “C” in “Flag” column in the below table means enable the communication function of the object; “W” means value of object can be written from the bus; “R” means the value of the object can be read by the other devices; “T” means the object has the transmission function; “U” means the value of the object can be updated.

6.1. “General” Communication Object

	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
	2	General	Dis/En Proximity function			1 bit	C	-	W	-	-	enable	Low
	3	General	Proximity input			1 bit	C	-	W	-	-	switch	Low
	4	General	Proximity sense, 1bit value			1 bit	C	-	-	T	-	switch	Low
	145	General	Central control for all of switch			1 bit	C	-	W	-	-	switch	Low

Fig.6.1 “General” Communication Object

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.					
2	Dis/En Proximity function	General	1bit	C,W	1.003 enable
The communication object is used to enable/disable proximity function.					
3	Proximity input	General	1bit	C,W	1.001 switch
The communication object is visible when proximity function is triggered by the object. Receive the telegram value from bus:					
1——Trigger proximity function					
0——Leaving (No proximity)					

4	Proximity scene, 1bit value Proximity scene, scene NO. Proximity scene, 1byte value Proximity scene, 1byte value	General	1bit 1byte	C,T	1.001 switch 17.001 scene number 5.010 counter pulses 5.001 percentage
The communication object is determined by the parameter “Object type of output value”. When detect the reaction for proximity approaching, the object can send the parameter setting value(1 byte) or ON(1 bit) to the bus separately. The range of value is determined by the selected data type.					
145	Central control for all of switch	General	1bit	C,W	1.001 switch
This communication object is used for centralized control of the switch output. Only the switch output channel with centralized control can be used for centralized control through this object. 0 — off 1 — on					

Table 6.1 "General" Communication Object

6.2. “Logic function” Communication Object

6.2.1. “AND/OR/XOR” Communication Object

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	5	1st Logic - ...	Input a			1 bit	C	-	W	T	U	boolean	Low
➡	6	1st Logic - ...	Input b			1 bit	C	-	W	T	U	boolean	Low
➡	7	1st Logic - ...	Input c			1 bit	C	-	W	T	U	boolean	Low
➡	8	1st Logic - ...	Input d			1 bit	C	-	W	T	U	boolean	Low
➡	9	1st Logic - ...	Input e			1 bit	C	-	W	T	U	boolean	Low
➡	10	1st Logic - ...	Input f			1 bit	C	-	W	T	U	boolean	Low
➡	11	1st Logic - ...	Input g			1 bit	C	-	W	T	U	boolean	Low
➡	12	1st Logic - ...	Input h			1 bit	C	-	W	T	U	boolean	Low
➡	13	1st Logic - ...	Logic result			1 bit	C	-	-	T	-	boolean	Low

Fig.6.2.1 “AND/OR/XOR” Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
5/...	Input x	{{1st Logic}}	1bit	C,W,T,U	1.002 boolean
The communication object is used to receive the value of logical input Input x. The name in parentheses changes with the parameter “Description for logic function”. If description is empty, display “1st Logic” by default. The same below.					
13	Logic result	{{1st Logic}}	1bit	C,T	1.002 boolean
The communication object is used to send the results of logical operation.					

Table 6.2.1 “AND/OR/XOR” Communication Object

6.2.2. "Gate forwarding" Communication Object

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	5	1st Logic - ...	Gate value select			1 byte	C	-	W	-	-	scene number	Low
➡	6	1st Logic - ...	Input A			1 bit	C	-	W	-	-	switch	Low
➡	7	1st Logic - ...	Input B			1 bit	C	-	W	-	-	switch	Low
➡	8	1st Logic - ...	Input C			1 bit	C	-	W	-	-	switch	Low
➡	9	1st Logic - ...	Input D			1 bit	C	-	W	-	-	switch	Low
➡	10	1st Logic - ...	Output A			1 bit	C	-	-	T	-	switch	Low
➡	11	1st Logic - ...	Output B			1 bit	C	-	-	T	-	switch	Low
➡	12	1st Logic - ...	Output C			1 bit	C	-	-	T	-	switch	Low
➡	13	1st Logic - ...	Output D			1 bit	C	-	-	T	-	switch	Low

Fig.6.2.2 "Gate forwarding" Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
5	Gate value select	{{1st Logic}}	1byte	C,W	17.001 scene number
The communication object is used to select the scene of logical gate forwarding.					
6/.../9	Input x	{{1st Logic}}	1bit 4bit 1byte	C,W	1.001 switch 3.007 dimming control 5.010 counter pulses(0..255)
The communication object is used to receive the value of the logic gate input Input x.					
10/.../13	Output x	{{1st Logic}}	1bit 4bit 1byte	C,T	1.001 switch 3.007 dimming control 5.010 counter pulses(0..255)
The communication object is used to output the value forwarded by the logic gate. The output value is the same as the input value, but one input can be forwarded into one or more outputs, set by parameters.					

Table 6.2.2 "Gate forwarding" Communication Object

6.2.3. "Threshold comparator" Communication Object

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	5	1st Logic - ...	Threshold value input			4 bit	C	-	W	-	U	dimming control	Low
	13	1st Logic - ...	Logic result			1 bit	C	-	-	T	-	boolean	Low
	5	1st Logic - ...	Threshold value input			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
	5	1st Logic - ...	Threshold value input			2 bytes	C	-	W	-	U	pulses	Low
	5	1st Logic - ...	Threshold value input			2 bytes	C	-	W	-	U	2-byte signed value	Low
	5	1st Logic - ...	Threshold value input			2 bytes	C	-	W	-	U	2-byte float value	Low
	5	1st Logic - ...	Threshold value input			4 bytes	C	-	W	-	U	counter pulses (unsigned)	Low
	5	1st Logic - ...	Threshold value input			2 bytes	C	-	W	-	U	temperature (°C)	Low
	5	1st Logic - ...	Threshold value input			2 bytes	C	-	W	-	U	humidity (%)	Low
	5	1st Logic - ...	Threshold value input			2 bytes	C	-	W	-	U	lux (Lux)	Low

Fig.6.2.3 "Threshold comparator" Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
5	Threshold value input	{{1st Logic}}	4bit 1byte 2byte 4byte	C,W, U	3.007 dimming 5.010 counter pulses 7.001 pulses 12.001 counter pulses 8.x signed value 9.x float value 9.001 temperature 9.007 humidity 9.004 lux
The communication object is used to input threshold value.					
13	Logic result	{{1st Logic}}	1bit	C,T	1.002 boolean
The communication object is used to send the results of logical operation. That is, the value that should be sent after the object input threshold is compared with the setting threshold value.					

Table 6.2.3 "Threshold comparator" Communication Object

6.2.4. "Format convert" Communication Object

	Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	5	1st Logic - ...	Input 1bit-bit0			1 bit	C	-	W	-	U	boolean	Low
	6	1st Logic - ...	Input 1bit-bit1			1 bit	C	-	W	-	U	boolean	Low
	13	1st Logic - ...	Output 2bit			2 bit	C	-	-	T	-	switch control	Low

"2x1bit -> 1x2bit"function: converts two 1bit values to a 2bit value, such as Input bit1=1, bit0=0->

Output 2bit=2

	Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	5	1st Logic - ...	Input 1bit-bit0			1 bit	C	-	W	-	U	boolean	Low
	6	1st Logic - ...	Input 1bit-bit1			1 bit	C	-	W	-	U	boolean	Low
	7	1st Logic - ...	Input 1bit-bit2			1 bit	C	-	W	-	U	boolean	Low
	8	1st Logic - ...	Input 1bit-bit3			1 bit	C	-	W	-	U	boolean	Low
	9	1st Logic - ...	Input 1bit-bit4			1 bit	C	-	W	-	U	boolean	Low
	10	1st Logic - ...	Input 1bit-bit5			1 bit	C	-	W	-	U	boolean	Low
	11	1st Logic - ...	Input 1bit-bit6			1 bit	C	-	W	-	U	boolean	Low
	12	1st Logic - ...	Input 1bit-bit7			1 bit	C	-	W	-	U	boolean	Low
	13	1st Logic - ...	Output 1byte			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

"8x1bit -> 1x1byte"function: converts eight 1bit values to a 1byte value, such as Input bit2=1, bit1=1, bit0=1,other bits are 0-> Output 1byte=7

	Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	5	1st Logic - ...	Input 1byte			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
	13	1st Logic - ...	Output 2byte			2 bytes	C	-	-	T	-	pulses	Low

"1x1byte -> 1x2byte"function: converts one 1byte values to a 2byte value, such as Input 1byte=125->

Output 2byte=125.Although the value remains the same, the data type of the value is different.

	Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	5	1st Logic - ...	Input 1byte-low			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
	6	1st Logic - ...	Input 1byte-high			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
	13	1st Logic - ...	Output 2byte			2 bytes	C	-	-	T	-	pulses	Low

"2x1byte -> 1x2byte"function: converts two 1byte values to a 2byte value, such as Input 1byte-low = 255 (\$FF), Input 1byte-high = 100 (\$64) -> Output 2byte = 25855 (\$64 FF)

	Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	5	1st Logic - ...	Input 2byte-low			2 bytes	C	-	W	-	U	pulses	Low
	6	1st Logic - ...	Input 2byte-high			2 bytes	C	-	W	-	U	pulses	Low
	13	1st Logic - ...	Output 4byte			4 bytes	C	-	-	T	-	counter pulses (unsigned)	Low

"2x2byte -> 1x4byte"function: converts two 2 byte values to a 4byte value, such as Input 2byte-low = 65530 (\$FF FA), Input 2byte-high = 32768 (\$80 00)-> Output 2byte = 2147549178 (\$80 00 FF FA)

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔧	5	1st Logic - ...	Input 1byte			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
🔧	6	1st Logic - ...	Output 1bit-bit0			1 bit	C	-	-	T	-	boolean	Low
🔧	7	1st Logic - ...	Output 1bit-bit1			1 bit	C	-	-	T	-	boolean	Low
🔧	8	1st Logic - ...	Output 1bit-bit2			1 bit	C	-	-	T	-	boolean	Low
🔧	9	1st Logic - ...	Output 1bit-bit3			1 bit	C	-	-	T	-	boolean	Low
🔧	10	1st Logic - ...	Output 1bit-bit4			1 bit	C	-	-	T	-	boolean	Low
🔧	11	1st Logic - ...	Output 1bit-bit5			1 bit	C	-	-	T	-	boolean	Low
🔧	12	1st Logic - ...	Output 1bit-bit6			1 bit	C	-	-	T	-	boolean	Low
🔧	13	1st Logic - ...	Output 1bit-bit7			1 bit	C	-	-	T	-	boolean	Low

“1x1byte -> 8x1bit” function: converts one 1byte values to eight 1bit value, such as Input 1byte=200 --> Output bit0=0, bit1=0, bit2=0, bit3=1, bit4=0, bit5=0, bit6=1, bit7=1

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔧	5	1st Logic - ...	Input 2byte			2 bytes	C	-	W	-	U	pulses	Low
🔧	12	1st Logic - ...	Output 1byte-low			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
🔧	13	1st Logic - ...	Output 1byte-high			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

“1x2byte -> 2x1byte”function: converts one 2byte values to two 1byte value, such as Input 2byte = 55500 (\$D8 CC) --> Output 1byte-low = 204 (\$CC), Output 1byte-high =216 (\$D8)

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔧	5	1st Logic - ...	Input 4byte			4 bytes	C	-	W	-	U	counter pulses (unsigned)	Low
🔧	12	1st Logic - ...	Output 2byte-low			2 bytes	C	-	-	T	-	pulses	Low
🔧	13	1st Logic - ...	Output 2byte-high			2 bytes	C	-	-	T	-	pulses	Low

“1x4byte -> 2x2byte”function: converts one 4byte values to two 2byte value, such as Input 4byte = 78009500 (\$04 A6 54 9C) --> Output 2byte-low = 21660 (\$54 9C), Output 2byte-high =1190 (\$04 A6)

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔧	5	1st Logic - ...	Input 3byte			3 bytes	C	-	W	-	U	RGB value 3x(0..255)	Low
🔧	11	1st Logic - ...	Output 1byte-low			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
🔧	12	1st Logic - ...	Output 1byte-middle			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
🔧	13	1st Logic - ...	Output 1byte-high			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

“1x3byte -> 3x1byte”function: converts one 3byte values to three 1byte value, such as Input 3byte = \$78 64 C8--> Output 1byte-low = 200 (\$C8) , Output 1byte-middle = 100 (\$64) , Output 1byte-high =120 (\$78)

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔧	5	1st Logic - ...	Input 1byte-low			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
🔧	6	1st Logic - ...	Input 1byte-middle			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
🔧	7	1st Logic - ...	Input 1byte-high			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
🔧	13	1st Logic - ...	Output 3byte			3 bytes	C	-	-	T	-	RGB value 3x(0..255)	Low

“3x1byte -> 1x3byte”function: converts three 1byte values to a 3byte value, such as Input 1byte-low = 150 (\$96), Input 1byte-middle = 100 (\$64), Input 1byte-high = 50 (\$32)--> Output 3byte = \$32 64 96

Fig.6.2.4 “Format convert”Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
5	Input ...	{{1st Logic}}	1bit	C,W,U	1.001 switch
			1byte		5.010 counter pulses(0..255)
			2byte		7.001 pulses
			3byte		232.600 RGB value 3x(0..255)
			4byte		12.001 counter pulses
The communication object is used to input a value that needs to be converted.					
13	Output ...	{{1st Logic}}	1bit	C,T	1.001 switch
			2bit		2.001 switch control
			1byte		5.010 counter pulses(0..255)
			2byte		7.001 pulses
			3byte		232.600 RGB value 3x(0..255)
4byte	12.001 counter pulses				
The communication object is used to output the converted value.					

Table 6.2.4 "Format convert" Communication Object

6.3. "Scene Group function" Communication Object

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	1bit value			1 bit	C	-	-	T	-	switch	Low

1 bit value

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	1byte unsigned value			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

1 byte_1byte unsigned value

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	HVAC mode			1 byte	C	-	-	T	-	HVAC mode	Low

1 byte_HVAC mode

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	2byte unsigned value			2 bytes	C	-	-	T	-	pulses	Low

2 byte_2byte unsigned value

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	Temperature			2 bytes	C	-	-	T	-	temperature (°C)	Low

2 byte_Temperature

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	RGB value			3 bytes	C	-	-	T	-	RGB value 3x(0..255)	Low

RGB value

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
➡	146	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
➡	147	1st Scene Group-Output 1	RGBW value			6 bytes	C	-	-	T	-	RGBW value 4x(0..100%)	Low

RGBW value

Fig.6.3 "Scene Group setting" Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
146	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					
147	1bit value 1byte unsigned value HVAC mode 2byte unsigned value Temperature RGB value RGBW value	1st Scene Group-{{Output X}}	1bit 1byte 2byte 3byte 6byte	C,T	1.001 switch 5.010 counter pulses 20.102 HVAC mode 7.001 pulses 9.001 temperature 232.600 RGB value 3x(0..255) 251.600 DPT_Colour_RGBW
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 8 scene groups can be set up, with 8 outputs per group. The name in parentheses changes with the parameter "Description (max 30char.)". If description is empty, display "1st Scene Group-Output x -{{...}}" by default.					

Table 6.3 "Scene Group setting" Communication Object

6.4. "Button" Communication Object

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Switch			1 bit	C	-	W	T	U	switch	Low
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Press, Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	Release, Switch			1 bit	C	-	W	T	U	switch	Low
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Short, Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	Long, Switch			1 bit	C	-	W	T	U	switch	Low
🔌	82	Button 1 - ...	Disable			1 bit	C	-	W	-	-	enable	Low
🔌	83	Button 1 - ...	LED status			1 bit	C	-	W	T	U	switch	Low

Switching

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Short, Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	Long, Dimming			4 bit	C	-	W	T	-	dimming control	Low
🔌	82	Button 1 - ...	Disable			1 bit	C	-	W	-	-	enable	Low

Dimming

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	RGB dimming value			3 bytes	C	-	-	T	-	RGB value 3x(0..255)	Low
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	Red dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
🔌	79	Button 1 - ...	Green dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
🔌	80	Button 1 - ...	Blue dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low

RGB lighting

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	RGBW dimming value			6 bytes	C	-	-	T	-	RGBW value 4x(0..100%)	Low
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	Red dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
🔌	79	Button 1 - ...	Green dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
🔌	80	Button 1 - ...	Blue dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
🔌	81	Button 1 - ...	White dimming value			1 byte	C	-	-	T	-	percentage (0..100%)	Low

RGBW lighting

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Switch			1 bit	C	-	W	T	U	switch	Low
🔌	78	Button 1 - ...	Brightness value			1 byte	C	-	-	T	-	percentage (0..100%)	Low
🔌	79	Button 1 - ...	Colour temperature val...			2 bytes	C	-	-	T	-	absolute colour temper...	Low

Colour temperature control

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
🔌	77	Button 1 - ...	Short, 1bit value			1 bit	C	-	-	T	-	switch	Low
🔌	78	Button 1 - ...	Long, 1bit value			1 bit	C	-	-	T	-	switch	Low
	序号 ^	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型	优先级
🔌	77	Button 1 - ...	Short, 2bit value			2 bit	C	-	-	T	-	switch control	低
🔌	78	Button 1 - ...	Long, 2bit value			2 bit	C	-	-	T	-	switch control	低

77	Button 1 - ...	Short, 4bit value	4 bit	C - - T -	dimming co... 低
78	Button 1 - ...	Long, 4bit value	4 bit	C - - T -	dimming co... 低
77	Button 1 - ...	Short, 1byte value	1 byte	C - - T -	counter puls... 低
78	Button 1 - ...	Long, 1byte value	1 byte	C - - T -	counter puls... 低
77	Button 1 - ...	Short, 2byte value	2 bytes	C - - T -	pulses 低
78	Button 1 - ...	Long, 2byte value	2 bytes	C - - T -	pulses 低
77	Button 1 - ...	Short, 2byte float value	2 bytes	C - - T -	2-byte float... 低
78	Button 1 - ...	Long, 2byte float value	2 bytes	C - - T -	2-byte float... 低
77	Button 1 - ...	Short, 4byte value	4 bytes	C - - T -	counter pulses (unsigned) 低
78	Button 1 - ...	Long, 4byte value	4 bytes	C - - T -	counter pulses (unsigned) 低
77	Button 1 - ...	Short, 4byte float value	4 bytes	C - - T -	4-byte float value 低
78	Button 1 - ...	Long, 4byte float value	4 bytes	C - - T -	4-byte float value 低

Value sender

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
77	Button 1 - ...	Scene			1 byte	C	-	-	T	-	scene control	Low
Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
77	Button 1 - ...	Short, Scene			1 byte	C	-	-	T	-	scene control	Low
78	Button 1 - ...	Long, Scene			1 byte	C	-	-	T	-	scene control	Low

Scene

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
77	Button 1 - ...	Up/Down, Blind			1 bit	C	-	W	T	-	up/down	Low
78	Button 1 - ...	Stop/Adjust, Blind			1 bit	C	-	W	T	-	step	Low

Blind

Fig.6.4 "Button" Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
77	Switch	Button 1 - {...}	1bit	C,W,T, U	1.001 switch
77	Press/Short, Switch	Button 1 - {...}	1bit	C,W,T, U	1.001 switch
78	Release/Long, Switch	Button 1 - {...}	1bit	C,W,T, U	1.001 switch

These communication objects are used to trigger a switching operation. Use a common object or two separate objects is according to the parameter setting when press/release and long/short operation.

Only the object "Switch" is visible when use a common object. If use two separate objects, "Press/Release" is visible when there is no distinction for short/long operation; "Short/Long" is visible

when there is distinction for short/long operation. Telegrams:

0—Off

1—On

The name in parentheses changes with the parameter “Description (max 30char.)”. If description is empty, display “Button 1 - ...” by default. The same below.

77	Short, Switch	Button 1 - {...}	1bit	C,W,T, U	1.001 switch
78	Long, Dimming	Button 1 - {...}	4bit	C,W,T	3.007 dimming

These two communication objects are used to switch/dimming operation, with distinction for long/short operation.

Obj.77: Used to trigger switch operation. Telegrams:

0—off

1—on

Obj.78: Used to trigger a relative dimming operation.

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.

77	Switch	Button 1 - {...}	1bit	C,W,T, U	1.001 switch
78	RGB dimming value	Button 1 - {...}	3byte	C,T	232.600 RGB value 3x(0..255)
78	Red dimming value	Button 1 - {...}	1byte	C,T	5.001

					percentage(0..100%)
79	Green dimming value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)
80	Blue dimming value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)

Obj.77: Used to trigger switch operation. Telegrams:

0—off

1—on

Obj.78: The communication object is visible when 1x3byte for the RGB object type is selected.

Apply to control brightness of multi-colour lamp, used for sending brightness value of RGB three-colour lamp to the bus.

3-Byte Code for RGB Dimming Object Data Type: U8 U8 U8, as follows:

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

Obj.78、Obj.79、Obj.80: These three communication objects are visible when 3x1byte for the RGB object type is selected. Apply to control brightness of multi-colour lamp, used for sending brightness value of the control R(red) / G(green) / B (blue) channel to the bus. Telegrams: 0...100%

77	Switch	Button 1 - {...}	1bit	C,W,T, U	1.001 switch
78	RGBW dimming value	Button 1 - {...}	6byte	C,T	251.600 DPT_Colour_RGBW
78	Red dimming value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)

79	Green dimming value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)
80	Blue dimming value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)
81	White dimming value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)

Obj.77: Used to trigger switch operation. Telegrams:

0—off

1—on

Obj.78: The communication object is visible when 1x6byte for the RGBW object type is selected.

Apply to control brightness of multi-colour lamp, used for sending brightness value of RGBW

four-colour lamp to the bus.

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

R: red dimming value; G: green dimming value; B: blue dimming value; W: white dimming value;

mR: determines whether the red dimming value is valid, 0 = invalid, 1 = valid;

mG: determines whether the green dimming value is valid, 0 = invalid, 1 = valid;

mB: determines whether the blue dimming value is valid, 0 = invalid, 1 = valid;

mW: Determines whether the white dimming value is valid, 0 = invalid, 1 = valid.

Obj.78、Obj.79、Obj.80、Obj.81: These four communication objects are visible when 4x1byte for the RGBW object type is selected. Apply to control brightness of multi-colour lamp, used for sending brightness value of the control R(red) / G(green) / B (blue) / W(White) channel to the bus.

Telegrams: 0...100%

77	Switch	Button 1 - {...}	1bit	C,W,T,U	1.001 switch
----	--------	------------------	------	---------	--------------

78	Brightness value	Button 1 - {...}	1byte	C,T	5.001 percentage(0..100%)
79	Colour temperature value	Button 1 - {...}	2byte	C,T	7.600 absolute colour temperature
Obj.77: Used to trigger switch operation. Telegrams: 0—off 1—on Obj.78: Used for sending the dimming telegram of the colour temperature to the bus, that is, sending the brightness value. Telegrams: 0...100% Obj.79: Used for sending the control telegram of the colour temperature to the bus. Telegrams: 1000...10000 K					
77	Short, 1bit value Short, 2bit value Short, 4bit value Short, 1byte value Short, 2byte value Short, 2byte float value Short, 4byte value Short, 4byte float value	Button 1 - {...}	1bit 2bit 4bit 1byte e 2byte e	C,T	1.001 switch 2.001 switch control 3.007 dimming 5.010 counter pulses 7.001 pulses 9.x float value 12.001 counter pulses 14.x float value
78	Long, 1bit value Long, 2bit value Long, 4bit value Long, 1byte value	Button 1 - {...}	1bit 2bit 4bit 1byte	C,T	1.001 switch 2.001 switch control 3.007 dimming 5.010 counter pulses

	Long, 2byte value		e		7.001 pulses
	Short, 2byte float value		2byte		9.x float value
	Short, 4byte value		e		12.001 counter pulses
	Short, 4byte float value				14.x float value

These two communication objects are used for sending a fixed value to the bus, distinguish long and short operation. Range of values that can be sent are determined by the datatype, and the datatype is determined by the parameter setting.

77	Scene	Button 1 - {{...}}	1byte	C,T	18.001 scene control
77	Short, Scene	Button 1 - {{...}}	1byte	C,T	18.001 scene control
78	Long, Scene	Button 1 - {{...}}	1byte	C,T	18.001 scene control

These communication objects are used to send a 8 bit command to recall or storage scene. Use a common object or two separate objects is according to the parameter setting when long and short operation.

Only the object "Scene" is visible when use a common object. If use two separate objects, "Short/Long" is visible when there is distinction for short/long operation. Telegrams:

Detailed 8bit the meaning of the directive.

Set up a 8bit Orders for the (Binary code): FXNNNNNN

F: '0' recall scene; '1' for storage scene;

X : 0 ;

NNNNNN: Scene number(0... 63).

As follows:

Object message value	Description
0	Recall scene 1
1	Recall scene 2

2	Recall scene 3
...	...
63	Recall scene 64
128	Store scene 1
129	Store scene 2
130	Store scene 3
...	...
191	Store scene 64

Parameter setting Options are 1~64, actually communication object "Scene" corresponds to the telegram received is 0~63 . Such as parameter settings is the scene 1, communication object "Scene" sends the scene for 0.

77	Up/Down, Blind	Button 1 - {{...}}	1bit	C,W, T	1.008 up/down
78	Stop/Adjust, Blind	Button 1 - {{...}}	1bit	C,W, T	1.007 step

This two communication objects are used to control the blind up,down, stop:

Obj.77: Used for sending the telegram to the bus, to control blind up/down. Telegrams:

1—move up

0—move down

Obj.78: Used for sending the telegram to the bus, to stop curtain movement. Telegrams:

1—stop

82	Disable	Button 1 - {{...}}	1bit	C,W	1.003 enable
The communication object is used to disable/enable the function of contact input, apply to all the above functions.					
83	LED status	Button 1 - {{...}}	1bit 1byte	C,W, T,U	1.001 switch 5.010 counter pulses

The communication object is used to control LED status via the bus, and also can receive status feedback. Range of values that can be sent are determined by the datatype, and the datatype is determined by the parameter setting.

Table 6.4 "Button" Communication Object

6.5. "Output" Communication Object

Communication object as follow are visible when "8-buttons, with relay output" is selected:

序号 ^	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型	优先级
133	Output 1-...	Switch			1 bit	C	-	W	-	-	switch	低
134	Output 1-...	Switch status			1 bit	C	R	-	T	-	switch	低
135	Output 1-...	Scene			1 byte	C	-	W	-	-	scene control	低

Fig.6.5 "Output" Communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
133	Switch	Output X Switch	1bit	C,W	1.001 DPT_Switch
This communication object is used to trigger the switch operation.					
134	Switch status	Output X Switch	1bit	C,R,T	1.001 DPT_Switch
The value of this communication object (Specifically set in the parameter "Object value of switch status" in Figure 4.4 "Output X") Can directly indicate the status of the relay contacts. If you choose "Respond after read only", only when the device receives a request from the bus to read the status of the channel switch, this object sends the current switch state to the bus; If you choose "Respond after change", when the switching state of the channel changes, This object immediately sends the current switch state to the bus.					
135	Scene	Output X Switch	1byte	C,W	18.001 DPT_SceneControl
The scene can be called or stored by sending an 8-bit instruction through this communication object. This communication object is enabled as long as the scene function is enabled. The meaning of the 8-bit instruction is explained in detail below. Set an 8-bit instruction to (binary code): FXNNNNNN F: "0" is the calling scene; "1" is the storage scene; X: 0; NNNNNN: Scene no. (0...63)					

The parameter setting option is 1~64. In fact, the scene message received by the communication object "Scene" corresponds to 0~63. If scene 1 is set in the parameter, the communication object "Scene" should receive the scene message 0. As follows:

Object message value	Description
0	recall scene1
1	recall scene2
2	recall scene3
...	...
63	recall scene64
128	storage scene1
129	storage scene2
130	storage scene3
...	...
191	storage scene64

Table 6.5 "Output" Communication Object