# K-BUS® Push Button Sensor with LCD, 55mm\_V1.0

CHPBL-03/00.1.00 (White glossy finish) CHPBL-03/00.2.00 (White matt finish) CHPBL-03/00.2.01 (Black matt finish)



# 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.

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# **Chapter 1 Summary**

Push Button Sensor with LCD, 55mm 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.

Push Button Sensor with LCD, 55mm is designed based on the European standard 55mm system as any other European KNX manufacturers, which means it can be used in Push button sensor, Multifunction thermostat, and Audio control.

The manual provides detailed technical information about the Push Button Sensor with LCD, 55mm, including installation and programming details, and explains how to use the panel in conjunction with examples in actual use.

Push Button Sensor with LCD, 55mm is power via KNX bus, mounted in a standard 80 or 86-box wall mount. The physical address assignment and parameter settings can be used with the engineering tool software ETS (version ETS5.7 or above) with the .knxprod file.

The functions are summarized as followed:

- Panel lock, Proximity sense, Screen saver, Alarm function, Internal temperature / humidity sensor
- Display the function and status of buttons, optional with icon, text, status value etc.
- Push button sensor: select individual or rocker button, up to set 12 buttons

• Individual button support Switch, Dimming, RGB, RGBW, Colour temperature control, Value sender, Scene, Blind, Shift register, Multiple operation, Delay mode, RTC operation mode, String, Status display

• Rocker button only support Switch, Dimming, Scene, Blind, Setpoint adjustment

• Multifunction thermostat: Room temperature control function (Select FCU control or VRF control), Floor heating and Ventilation function. Each with 5 scenes, all can be set to function lock

- Audio function, support to display name, switch tracks, adjust volume and configure play mode
- Support 2 external input interfaces, used as dry contact detection or NTC temperature detection
- Support 8 Scene Group functions, and 8 outputs for per Scene Group

• Support 8 Logic functions, with AND, OR, XOR, Gate forwarding, Threshold comparator, Format convert, Gate function, Delay function and Staircase lighting

# Chapter 2 Technical Data

Power Supply	Bus voltage	21-30V DC, via the KNX bus
	Bus current	<18mA, 24V; <15mA, 30V
	Bus consumption	<450mW
Input	2 external inputs, as dry co	ontact input or 10K NTC input
Connection	KNX	Bus connection terminal
	Input	A three-wires connection terminal,
		cable length <5m
Operation and	Programming button and	For assigning the physical address,
display	red LED	LED off after download
	Orientation LED	Light up when screen off, to indicate device position
Proximity sensor	Normal sensitivity approximation Enhanced sensitivity approximation of the sensitity approximation of the sensitivity approximation	mately 15cm eximately 30cm
Temperature	Operation	– 5 °C 45 °C
	Storage	– 25 °C 55 °C
	Transport	– 25 °C 70 °C
Environment	Humidity	<93%, except dewing
Dimension	76.8 x 76.8 x 19.3 mm	
Mounting	In a conventional 80 or 86	mm wring box
Mounting	0.05kg	

# **Chapter 3 Dimension and Structural Diagram**

# **3.1.Dimension Diagram**





# **3.2.Structural Diagram**



Programming button and LED
 KNX bus connection terminal

<sup>(4)</sup>Proximity sensor, Orientation LED

⑤Internal temperature / humidity sensor

Note: Press the button2 + button5 at the same time for 5 seconds to enter the setting page, then press button3 to switchover programming mode status

Reset the device to the factory configuration: press the programming button and hold for 4 seconds then release, repeat the operation for 4 times, and the interval between each operation is less than 3 seconds

# **Chapter 4 Project Design and Programming**

Amplication	Maximum of	Maximum number	Maximum number	Secure group
Application	communication objects	of group addresses	of associations	addresses
Push Button Sensor with	256	500	500	220
LCD,55mm/1.0	330	500	500	338

#### **General function**

General function includes device In operation setting, date and time update, request device status after voltage recovery, and supports to lock the whole device.

Support to set other functions, including screen brightness, screen saver, proximity sense and alarm function.

#### Internal temperature and humidity measurement

Internal temperature and humidity measurement value is sent to the bus: respond after read only and respond after change.

Set temperature and humidity calibration, and send alarm telegram when the preset range of threshold value for temperature alarm is exceeded.

#### **External input interface function**

Up to support 2 channels, enable/disable each channel functions. Optional dry contact detection or NTC temperature detection.

When selecting dry contact detection, only supports the basic functions, including switch, scene send strings (press/release, short/long, send after voltage recovery, disable function).

When selecting NTC temperature detection, the external temperature probe can be connected to detect the external temperature and the B value data of temperature sensing probe needs to be set.

#### **Button function**

Push button sensor can be used as individual or rocker button, up to support 12 buttons. You can set for each button to display on screen with the icon, text, status and etc.

When used as individual button, you can configure: Switch, Dimming, RGB lighting, RGBW lighting, Colour temperature control, Value sender, Scene control, Blind, Shift register, Multiple operation, Delay mode,

RTC operation mode, String(14bytes), Status display.

When used as rocked button, you can configure: Switch, Dimming, Scene control, Blind, Setpoint adjustment.

#### **Room temperature control function**

FCU control: support to control mode input, heating/cooling system, operation mode and setpoint temperature, fan speed, window contact, presence detector, temperature threshold, 2 points and PI control algorithm and etc.;

VRF control: only to be suitable for VRF system, it needs to be controlled with the KNX to VRF air conditioner gateway, support to power on/off, setpoint temperature, mode, fan peed, vanes swing and etc.

Floor heating function: support to 2-point control and PI control to automatically switch floor heating according to temperature difference. In addition, it supports to the scene functions configuration and the setpoint temperature range adjustment.

Ventilation system: support auto control, it is linkage control with PM2.5/CO2/VOC. And support the output types of 1bit of 1byte.

Note: FCU control and VRF control can only choose one of them.

Each of the above functions comes with 5 scenes, all of which can be set for function locking, and support to delay time for exiting setting status, you can select °C or °F as the temperature unit.

#### Audion function

It is used to control background music playing, for example, power on/off, play/pause, previous song/next song, volume increase/decrease, mute, play modes, track name, artist name, album name, and so on.

#### 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, Format convert, Delay function and Staircase lighting.

#### 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.

# **Chapter 5** Parameter setting description in the ETS

## 5.1. KNX Secure

Push Button Sensor with LCD, 55mm is a KNX device that complies with the KNX secure standard. That is,

you can run the device in safe way.

Push Button Sensor with L	CD,55mm > KNX Secure
VKNX Secure	KNX Data Secure
🕨 🗮 General	KNX Data Secure is available in this device, it effectively protects user data against unauthorised access and manipulation by means of encryption and authentication for the installation.
1 Internal sensor measurem	ETS can active or deactive security function. Detailed specialist knowledge is required.
· 🌿 Input	Device certificate
Function setting	The device certificate label stick called FDSK is attached beside the device, and must use for
+ 7+ Logic function	security function, make sure keep securely.

Fig.5.1 (1) "KNX Secure" parameter window

The device with KNX secure will be displayed notes on ETS, as shown as Fig.5.1(1).

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

💙 Activated	•
Add Device Certificate	

✤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.5.1 (2) below.

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

Senar Namber 6005.2	3030002				
This device is configure If you do not have acc	red for secure co cess to this infor	ommissioning I mation now, ye	out its device ce ou can either sk	ertificate is missing ip the download c	ı. or
deactivate secure con	imissioning by s	electing "Plain			
		No camera	found!		
		K			
-	-	-	-	-	

Fig.5.1(2) Add Device Certificate window

♦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.5.1(3) below.

The certificates can be also added to the selected device in the project, as shown in Fig.5.1(4).

Overview Bus Catalogs	Settings		
rojects Archive ETS Inside		Test Secure demo	Import Date: 2022/4/27 16:49 Last Modified: 2022/5/26 13:55
► % ±   ±	Search	Details Security	y Project Log Project Files
lame	Last N		
est Secure demo	202.	Export	
est Project Push button sensor Plus with Secure	2022/	Export Keyring	
The second second second	2022/	Device Certificates	
server and the second se	2022/	+ Add × Delete	
COLUMN TRANSPORT	2022/	Serial Number A Factory Key (F	DSK) Device
NV Smart Touch with such button 2 game VI 1	2022/	0085:25110029 1B188D0478C0	C407E1C768F5AB88694BB 1.1.1 IP Interface with Secure
Add Devices        Add Devices        Devices	1.1.8 Push button se	ensor Plus with Secure,	Settings Comments Information Name Buck button cancer Dluc with Secure 1/2/2/dappa
Dynamic Folders	1/2/3/4gang > KNX	Secure	Push button sensor Plus with Secure, 1/2/3/4gang
I.1.1 IP Interface with Secure	KNX Secure	KNIX Data Secure	Individual Address
1.1.8 Push button sensor Plus	Kith Secure	KNA Data Secure	Description
	General setting	KNX Data Sec unauthorised	Description
	Temperature meas	urement installation.	
	Rocker 1	ETS can active	Last Modified 2022/5/26 13:52
	Rocker 2	Device certificate	Last Downloaded - Serial Number 0085:25090002
	Rocker 3	The device ce ecurity functic	' Secure Commissioning
	Group Objects / C	hannels Parameters	Activated
Diagnostics 🔻		∧ □ ×	Add Device Certificate
- Monitor	► Start •	Search D	Status
	E' 5 14		

Fig.5.1(4) Add Device Certificate

♦There 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.5.1(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).

Adding Device Certificate     Push Button Sensor with LCD,55mm  This device supports secure commissioning. If you have the certificate of the device available, you can scan the QR code or enter it now.	FDSK: 9085: 29090249 ACCSSC-ICJGUJ- NNLDU4-JJYMAK-
Initial FDSK ACCSSC - ICJGUJ - NNLDW4 - JJYM4K - R3I4GU - 4H2LXY ✓ Serial Number 0085:29090249 ETS assignedFactory Key A896856387129C338A8ED1C35387D2EF	R314GU-4H2LXY



#### 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.5.1(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.5.1(6)), and then the device can be successfully downloaded again.

	1.1.8 Push button sensor Plus with Sec
Download 1.1.8 Push button sensor Plus with Secure,	Device is secured with a key not known If you are sure you opened the correct you can get access again by performin v Download(All): Failed
1/2/3/4gang The device in the programming mode is not the same as the device previously programmed with address 1.1.8. If the device	Device is secured with a key not known within this project. If you are sure you opened the correct project and have the device certificate available, you can get access again by performing a factory reset on the device according to the
Yes No	product documentation.



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.5.1(7) below.



Fig.5.1(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.5.1(8) below, the file extension is .knxkeys.

Test Secure de	mo			Import Date: 2022/4/27 16:49	Last Mo
Details	Security	Project Log	Project Files		
Export					
Export Keyring					
Device Certificates					
🛨 Add   🗙 De	elete		2.87		
Serial Number A	Factory Key (FDSK)		Device		
0085:25090001	F25370641BEC1AAFF07	737BDE0F982C68			
0085:25090002	65175BED7A86206A36	8A8E2A64B935DC	1.1.8 Push button se	nsor Plus with Secure, 1/2/3/	4gang
0085:25110029	1B188D0478CC407E1C	768F5AB88694BB	1.1.1 IP Interface wit	h Secure	

Fig.5.1(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.

# 5.2. Parameter window "General"

#### 5.2.1.Parameter window "Setting page guideline"

Interface	preview		
		$\sim 10^{-10}$	
		1	2
		Di	ite Time
		3 15.1	5.255 Sys.info 4
		5	6
Button 1	enter into date adjustment interface	Button 2	enter into time adjustment interface
Button 3	active/inactive programming	Button 4	view system information of device
	Button 1 Button 3	Button 1     enter into date adjustment interface       Button 3     active/inactive programming mode status	Button 1 enter into date adjustment Button 2 Button 3 active/inactive programming Button 4

Fig.5.2.1 "KNX Secure" parameter window

This window displays the button operation of Setting page, specific UI please refer to chapter 7.5.

#### 5.2.2.Parameter window "General setting"

### -.-. Push Button Sensor with LCD,55mm > General > General setting

KNX Secure	Send delay after voltage recovery [015]	5	 \$ s
General	Send cycle of In operation telegram [1240,0=inactive]	0	* *
Satting page quideline	Date and Time can be changed via bus	$\checkmark$	
setting page guideline	Status object read request after restart	~	
General setting	Long operation for button after [5250]	5	\$ *0.1s
Screen saver setting		1	-
Night mode setting	Screen display setting		
Summer time setting	Interface Language	Chinese	•
Proximity setting	警告:请务必确保工程属性里的编码页	〔选项为UTF-8,否则中文显示将会异常	
Alarm setting	UI theme is	O Dark style Light style	
Advanced setting	Font size (only apply to push button	◎ Large ○ Small	

10



Alarin setting			
Advanced setting	Extension function		
	Screen saver	~	
🖞 Internal sensor measurem	Night mode	1	
+ 💷 Function setting	Proximity function	>	
	Alarm function	~	
+ 🕂 Logic function	Panel locking function	Unlock=1/Lock=0	•
+ 🕂 Scene Group function	Send extension scene command when locking at day		
	Send extension scene command when locking at night		
	Brightness setting		(3
	Screen brightness in normal mode	80	• %
	Screen brightness in night mode	30	• %
	Screen brightness can be changed via bus	~	
	Delay time for turn off screen[0255]	30	÷ 5
	Button command execute when screen is off		
			- 21
	Orientation LED active when screen is off	Enable only in night mode	- T.

#### arameter "Send delay after voltage recovery [0..15]s"

This parameter is for setting the delay time to send 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 excle of "In operation" telegram [1..240.0=inactive]s

This parameter is for setting the time interval when cyclically 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 setting 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 application requirement.

# Parameter "Date and Time can be changed via bus

This parameter is for setting whether the display of date/time on the interface can be modified by the bus.

If enabled, the object "Date" and the object "Time" are visible, date and time can be modified through the

two objects respectively.

#### Note: The device accuracy of RTC real-time clock inside the equipment is ± 10ppm.

## Parameter "Status object read request after restart"

This parameter is for setting whether to send status read request telegram when the device starts up. The sending time interval is fixed to 100ms.

Parameter \*Long operation for button after [5...250]\*0.1s

This parameter is for setting the valid time of long operation for button. Options: 5..250

# Screen display setting

Parameter "Interface Language

This parameter is for setting the interface language of screen. Options:

Chinese	
English	
German	
	_

1 Note: The codepage option in the property of project must select the Unicode (UTF-8)

🚺 警告:请务必确保工程属性里的编码页选项为UTF-8, 否则中文显示将会异常

#### UTF-8 setting as shown as follow:

F 🗶 🛓 🏦			Details Security	Project Log	Project Files
Name	Last Modified *	Status			
Push Button Sensor with LCD 55mm	2022/9/6 10:48	Unknown	Name		Password
			Push Button Sensor with LCD,55mm		Set Password
			Project Number		BCU Key
					Set Key
			Contract Number		Codepage
					Unicode (UTF-8)
			Start Date		Group Address Style
			Select a date	31	Free
			End Date		O Two Level
			Select a date		O Three Level
			Status		Commention
			Unknown	-	Hide extended group address range for plug-ins
			Comment		Use slowed bus communication

#### rameter "UI theme-

This parameter is for setting the UI theme. Options:

#### Dark style

#### Light style

Dark style is close to dark gray, light style is close to white, specific effect please refer to UI description.

Parameter "Font size (only apply to push button sensor function)"

This parameter is for setting the font size displayed on the screen, which is for describing the icon function. The setting is only applied to Push button sensor. Options:

Large

Small

### **Extension function**

Parameter "Screen saver

Setting interface of screen saver will be visible when the parameter enabled.

?arameter "Night mode"

Setting interface of night mode will be visible when the parameter enabled.

Parameter "Proximity function

Setting interface of proximity function will be visible when the parameter enabled.

Parameter "Alarm function"

Setting interface of alarm function will be visible when the parameter enabled.

'arameter "Panel locking function"

This parameter is for setting whether to enable panel locking function. Options:

Disable

Unlock=1/Lock=0

Unlock=0/Lock=1

arameter "Send extension scene command when locking

arameter "Send extension scene command when locking at day

arameter "Send extension scene command when locking at night

This parameter is for setting whether to enable send extension scene command when locking, you can set the scene number and scene object when enabled. If night mode is enabled, the scene numbers at day/night can be

configured independently.

When the panel is locking, operate any buttons to send the scene number.

#### ---Parameter "Scene NO."

This parameter is visible when previous parameter is enabled. Set the sending scene number, conrresponding

telegram is 0~63. Options:

Scene NO.1 Scene NO.2 Scene NO.3 ... Scene NO.64

#### **Brightness setting**

Parameter "Screen brightness in normal mode"

This parameter is for setting the screen brightness level when normal or day mode (some one proximity/operation). Options:

20% ... 90% 100%

User can change brightness via object "Screen brightness". Voltage failure or exit day mode, the new brightness value will also be stored.

Parameter "Screen brightness in night mode"

This parameter is visible when night mode is enabled. Set the screen brightness level when night mode (some one proximity/operation). Options:

20% ... 90% 100% Unchanged

User can change brightness via object "Screen brightness". Voltage failure or exit night mode, the new brightness value will also be stored.

When "Unchanged" is selected, the brightness remains at the brightness of day mode, user can only change the brightness temporarily via the object. Voltage failure or exit night mode, the new brightness value will be not stored. KNX/EIB Push Button Sensor with LCD, 55mm

# Parameter "Screen brightness can be changed via bus

This parameter is for setting whether the screen brightness can be changed via bus.

If enabled, the object "Screen brightness" is visible. It is only used to change the brightness of current status.

E.g. if it is currently day mode, only the brightness settings in day mode are updated.

Brightness of screen saver can not be changed via the object.

Parameter "Delay time for turn off screen[0...255]s"

This parameter is for setting the delay time that off screen after no operation or enter screen saver.

Options: 0..255

When the value is 0, there is a object "Screen on/off" for controlling on/off screen via bus.

Parameter "Button command execute when screen is off"

This parameter is for setting whether the button command is executed when screen is off.

arameter "Orientation LED active when screen is off"

This parameter is for setting the orientation LED status when screen is off, which is used to indicate the location of device. Options:

Disable Enable only in night mode Enable always

When night mode is disabled, "Enable only in night mode" is not visible.

#### ---Parameter "Brightness of LED"

This parameter is visible when "Enable only in night mode" or "Enable always" is selected. Set the brightness of orientation LED. Options:

10% 20% ... 90% 100%

#### 5.2.3.Parameter window "Screen saver setting"

💙 KNX Secure	Screen brightness in screen saver	50	-	%
<b>፰</b> General	Delay time for normal to screen saver [5255]	10	÷	s
Setting page quideline	Date display format in screen saver	🔘 yyyy/mm/dd 🔵 dd/mm/yyyy		
General setting	Button command execute in screen save	r 🛄		
Screen saver setting	Items 1 display function	Int. temperature		•
Night mode setting	Function icon	Temperature		•
Summer time setting	Colour for icon	Foreground		•
Proximity setting	a Patrick and a			
Alarm setting	Items 2 display function	Int. numidity		
A.d	Function icon			•
Advanced setting	Colour for icon	Foreground		•
1 Internal sensor measurem	in a substance of the substance.			_
1/1 Input	Time period for request external sensor [0255]	0	‡ m	nir
	Object database of diselan CO2	Value in ppm(DPT_7.001)		
Function setting	Object datatype of display CO2	Float value in ppm(DPT_9.008)		
De Logis function		O Value in ug/m3(DPT_7.001)		
3+ Logic function	Object datatype of display VOC	Float value in ug/m3(DPT_9.030)		
← Scene Group function		Brightness in lux(DPT_7.013)		
	Object datatype of display brightness	Float value in lux(DPT_9.004)		
		O Value in m/s(DPT_9.005)		
	Object datatype of display wind speed	Eloat value in km/b(DPT 9.028)		

Fig.5.2.3 "Screen saver setting" parameter window

# Parameter "Screen brightness in screen saver

This parameter is for setting screen brightness level in screen saver. Options:

20%	
30%	
40%	
50%	

Parameter "Delay time for normal to screen saver [5.255]s"

This parameter is for setting the delay time for normal mode to screen saver. Options: 5..255

Parameter "Date display format in screen saver"

This parameter is for setting the date display format in screen saver. Options:

yyyy/mm/dd

#### dd/mm/yyyy

yyyy: year; mm: month; dd: day.

Parameter "Button command execute in screen saver"

This parameter is for setting whether the button command is executed in screen saver.

Parameter "Items x display function" (x=1~2)

This parameter is for setting the air quality information displayed in screen saver, up to 2 items. Options:

None	VOC
Int. temperature	CO2
Int. humidity	Brightness
Ext. temperature	Wind speed
Ext. humidity	

Parameters as follow are not visible when "None" is selected.

Parameter "Function icon"

This parameter is for setting the icon for air quality information using. Options:

Light on Light off ... PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

the appendix, please refer to chapter 8.1.

# Parameter "Colour for icon"

This parameter is for setting the icon colour for air quality information using. Options:

Cyan blue
Cyan
Coffee
Light orange
Customized colour 1
Customized colour 2

Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

This parameter is for setting the time period for device to send a control value read request to external sensor

after bus recovery or finish programming. Not send when value is 0. Options: 0..255

Parameter "Object datatype of display CO2"

This parameter is for setting the object datatype of display CO2. Options:

Value in ppm(DPT\_7.001)

arameter "Time period for request external sensor [0..255]min

#### Float value in ppm(DPT\_9.008)

'arameter "Object datatype of display VOC

This parameter is for setting the object datatype of display VOC. Options:

Value in ug/m3(DPT\_7.001)

#### Float value in ug/m3(DPT\_9.030)

arameter "Object datatype of display brightness"

This parameter is for setting the object datatype of display brightness. Options:

#### Brightness in lux(DPT\_7.013)

#### Float value in lux(DPT\_9.004)

Parameter "Object datatype of display wind speed"

This parameter is for setting the object datatype of display wind speed. Options:

Value in m/s(DPT\_9.005)

Float value in km/h(DPT\_9.028)

## 5.2.4. Parameter window "Night mode setting"

### -.-.- Push Button Sensor with LCD,55mm > General > Night mode setting

V KNX Secure	Polarity of normal/night mode	Normal=1/Night	=0 🔘 Normal=0/Night=	1
🛱 General	Switchover normal/night mode	Via object		•
Setting page guideline	Note: Default to normal mode if no response	onse when request afte	er startup	
	Via object			_
KNX Secure	Polarity of normal/night mode	Normal=1/Nigh	t=0 🔘 Normal=0/Night=	=1
General	Switchover normal/night mode	Depend to certain tin	ne	•
Setting page guideline	Note: Default to normal mode if no resp	oonse when request af	fter startup	
General setting	Time for switch to night at	18:00	hh:mm	
Screen saver setting	Time for switch to normal(day) at	06:00	hh:mm	
- 10 IN F	Depend to certain time			
KNX Secure	Polarity of normal/night mode	O Normal=1/Nigl	ht=0 🔘 Normal=0/Night	=1
茸 General	Switchover normal/night mode	Depend to sunrise&	sunset	•
Setting page guideline	Note: Default to normal mode if no res	ponse when request a	after startup	
General setting	Coordinates location setting			
Screen saver setting	Latitude langitude entire langting	Pelline Chine		
Night mode setting	Latitude longitude setting location	Beijing, China		
Summer time setting	Latitude	O North O Sou	ith	_
Provinity setting	Latitude in degrees [090]	39		÷
i toximity setting	Latitude in minutes [059]	56		*
Alarm setting	Longitude	◎ East ○ West		
Advanced setting	Longitude in degrees [0180]	116		÷
1 Internal sensor measurem	Longitude in minutes [059]	20		*
¼ Input	Time difference from Universal Time (UTC	C (UTC +08:00) Singap Taipei	oore, Beijing, Hong Kong,	•
Function setting				
<b>D</b>	Time calibration			
	Switching time move to night	0	÷	mi
← C Scene Group function	Switching time move to day	0	÷	mi
	Depend to sunrise&sunset	-		

This parameter for setting object value of normal/night mode. Options:

Normal=1/Night=0

Parameter "Polarity of normal night mode

Normal=0/Night=1

# Parameter "Switchover normal night mode"

This parameter for setting the switchover way of normal/night status, send status telegrams via object "Night mode" when status change. Options:

Via object

**Depend to certain time** 

#### Depend to sunrise&sunset

Via object: only switch status via object.

Depend to certain time: switch the normal/night status based on the specific time. Such as switch 18:30P.M.

to the night status, 6:30A.M. to the normal status.

Depend to sunrise&sunset: switch the normal/night status based on the sunrise and sunset. The coordinate position of the reference point of sunrise and sunset, such as Beijing, China, needs to be defined, with the center located at east longitude 160°20'and north latitude 39°56'.

1 Note: Default to normal mode if no response when request after startup

Note: default to normal mode if no response when request after startup. That is, screen backlight and LED status indication are according to normal (day) mode to display.

When "Depend to certain time" is selected, the following 2 parameters are visible, for setting the time to switch to the night or to the normal.

#### ---Parameter "Time for switch to night at"

This parameter for setting the time point to switch to the night status, accurate to minutes.

Options: 00:00-23:59

#### --Parameter "Time for switch to normal(day) at"

This parameter for setting the time point to switch to the normal status, accurate to minutes.

Options: 00:00-23:59

When "Depend to sunrise&sunset" is selected, the following parameters are visible, for setting the coordinate position of the reference point of sunrise and sunset.

#### **Coordinates location setting**

#### ---Parameter "Latitude longitude setting location"

Setting the reference point of sunrise and sunset, such as "Beijing, China".

#### --Parameter "Latitude"

Setting whether the reference point of sunrise and sunset is located at south latitude or north latitude.

Options:

North

South

#### ---Parameter "Latitude in degrees [0° ..90° ]"

---Parameter "Latitude in minutes [0'...59']"

These two parameters for setting latitude, such as Beijing located at north latitude 39°56'.

---Parameter "Longitude"

Setting whether the base point of sunrise and sunset is located at east longitude or west longitude. Options:

East

West

```
---Parameter "Longitude in degrees [0° ..180° ]"
```

```
---Parameter "Longitude in minutes [0'...59']"
```

These two parameters for setting longitude, such as Beijing located at east longitude116°20'.

## ---Parameter "Time difference from Universal Time (UTC + ...)"

This parameter for setting the time difference from Universal Time. Options:

#### (UTC -12: 00) International Date Line West

(UTC -11: 00) Samoa

•••••

(UTC +11: 00) Magadan, Salomon Islands, New Caledonia

(UTC +12: 00) Aukland, Wellington, Fiji

Time calibration

#### ---Parameter "Switching time move to night [-128..127]min"

This parameter for setting the delay time to switch to the night status after reaching to the time point of sunset. Options:-128..127

### ---Parameter "Switching time move to day [-128..127]min"

This parameter for setting the delay time to switch to the day status after reaching to the time point of sunrise.

#### Options:-128..127

For example, if setting -10min, it will switch to day status 10min earlier before the sunrise; if setting 10min, it will switch to day status 10min later after the sunrise.

Note: if summer time is set, then sunrise and sunset time will automatically adjust according to time interval of summer time. Details refer to section 5.2.5.

#### 5.2.5.Parameter window "Summer time setting"

#### -.-. Push Button Sensor with LCD,55mm > General > Summer time setting

V KNX Secure	Changeover of summer time	Customized		*
📑 General	Start at month	March		•
Carting and the line	Start at week	The last week		
Setting page guideline	Start at day	Sunday		•
General setting	Start at hour: minute	02:00	hh:mm	
Screen saver setting	End at month	October		
Night mode setting	End at week	The last week		
Summer time setting	End at day	Sunday		
Proximity setting	End at hour: minute	03:00	hh:mm	

Fig.5.2.5 "Summer time setting" parameter window

# Parameter : Changeover of summer time

This parameter is for setting the summer time. Options:

No active

Always

#### Customized

No: disable summer time.

Always: always enable summer time.

Customized setting: for customized setting the start/end time of summer time.

When "Customized setting" is selected, the following four parameters are visible, for setting the start

#### and end time of summer time.

#### ---Parameter "Start at month"

#### ---Parameter "End at month"

These parameters are for setting summer time start or end at month.Options:

January February ... December ——Parameter "Start at week" ——Parameter "End at week"

These parameters are for setting summer time start or end at week. Options:

The first week

The second week

•••

The last week

---Parameter "Start at day"

```
---Parameter "End at day"
```

These parameters are for setting summer time start or end at day. Options:

Monday

Tuesday

•••

Sunday

---Parameter "Start at hour: minute"

#### ---Parameter "End at hour: minute"

These parameters are for setting summer time start or end time, accurate to minutes. Options: 00:00-23:59

Take American time for example, setting summer time start from 02h: 00min, the second Sunday of March to

02h: 00min, the first Sunday of November each year, so during this summer time, when it comes to the start time,

system default time will be an hour faster, displayed time on the device will be 03h: 00min; when it comes to the end time, system default time will be an hour slower, displayed time on the device will be 02h:00min.

Note: if the start and end parameters are set to the same month, week and day, the configuration will be ignored and recovered to default. If only the month and week are set to the same will also be ignored.

#### 5.2.6. Parameter window "Proximity setting"

V KNX Secure	The Proximity function triggered via	Sensor	
🕂 General	Proximity Sensitivity	O Normal O Enhanced	
Satting page quidaling	Object type of output value	1bit[On/Off]	
General setting	Output value	OFF ON	
General setting	Delay time for sending [065535]	0	*

# 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 "Sensor sensitivity

This parameter is for setting the sensor sensitivity. Options:

#### Normal

#### Enhanced

Normal is approximately 15cm, enhanced is approximately 30cm.

# Parameter "Object type of output value"

This parameter is for setting the object type of output value sent to the bus when proximity is triggered.

Options:

#### No reaction

# 1bit[On/Off]

1byte[scene control]

1byte[0..255]

1byte[0..100%]

2byte[0..65535]

These two parameters are not visible when "No reaction" is selected.

#### ---Parameter "Output value"

This parameter is for setting the output value sent to the bus when proximity approaching/leaving, the range

of value is determined by the data type.

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

This parameter is for setting the delay time for sending telegram. Options: 0..65535

#### 5.2.7. Parameter window "Alarm setting"

KNX Secure	Alarm tone time period	10s	-
茸 General	Alarm tone time automatically repeat interval time	1min	•
Setting page guideline	When alarm active, warning message via	Fixed string 14 Bytes s	string from bus
General setting	Warning string(max 18char.)		
Screen saver setting	Send acknowledge after confirm the alarm	No Ves	
	Fig.5.2.7 "Alarm setting" parame	ter window	

This parameter is for setting the time period of alarm tone. When receive the alarm telegram, play alarm tone immediately, if currently playing and it will not be interrupted and will not be re-timed. If receive the cancel alarm telegram when playing, it will be interrupted immediately. Options:

Disable
10s
20s
•••
25min

----

#### 30min

Disable: disable the alarm tone playing function;

Other options: the playing period of alarm tone.

# arameter "Alarm tone time automatically repeat interval time

This parameter is visible when previous parameter is enabled. Set the interval at which alarm tone time automatically repeat, and the timing is only related to when the last play ended. Options:

Disable 10s 20s ... 25min 30min

Disable: disable the alarm tone repeate function;

Other options: when a playing period complete, it will automatically play again after a delay of the setting

time.

# Parameter "When alarm active, warning message via

When alarm activated, this parameter is for setting input type of warning message, either by displaying a

fixed string entered by ETS on the screen or by receiving a 14byte string from the bus. Options:

#### **Fixed string**

#### 14 Bytes string from bus

When it is selected "14 Bytes string from bus", display the information as follow:



The encode data of alarm telegram is associated with interface language, when it is selected Chinese, use UTF-8 or ASCII; while other languages, use ISO8859 or ASCII.

rameter "Warning string(max 18char.)"

This parameter is visible when previous parameter is selected "Fixed string". Set the indicate text when alarm activated.

Parameter "Send acknowledge after confirm the alarm"

This parameter is for setting whether to send a 1bit acknowledge telegram, the action that only needs to be processed when the user clicks on the screen to acknowledge the warning message.

## 5.2.8.Parameter window "Advanced setting"

Push Button Sensor w	vith LCD,55mm > General > Advanced	setting
KNX Secure	Input interface	$\checkmark$
- 🛱 General	Logic function	$\checkmark$
	Scene group function	1
	Fig.5.2.8 "Advanced setting	ng" parameter window
Parameter "Input inter	face"	
Setting page of inpu	at interface is visible after this para	meter enabled.

Parameter "Logic function"

Setting page of logic function is visible after this parameter enabled.

Parameter "Scene group function"

Setting page of scene group function is visible after this parameter enabled.

## 5.3. Parameter window "Internal sensor measurement"

-.-. Push Button Sensor with LCD,55mm > Internal sensor measurement KNX Secure Temperature sensor setting Temperature calibration 0.0 K \Xi General Send temperature when the result 1.0K change by Internal sensor measure... Cyclically send temperature ‡ min 10 [0...255,0=inactive] 1/1 Input Send alarm telegram for low/high Respond after read only temperature Function setting Threshold value for low temperature 0 • °C alarm [0..15] - Logic function Threshold value for high temperature 45 • °C alarm [30..45] ← Scene Group function Humidity sensor setting Humidity calibration 0 • % Send humidity when the result change by 5 \$ % [0..20] Cyclically send humidity ‡ min 10 [0..255,0=inactive] Send alarm telegram for low/high Respond after read only • humidity Threshold value for low humidity 5 \$ % alarm [5..20] Threshold value for high humidity 85 \$ % alarm [70..85] Fig.5.3 "Internal sensor measurement" parameter window

These parameters as follow are used for setting the calibration value, sending condition and error

report of internal sensor, if other functions select to use internal sensor, refer to the settings here.

#### **Temperature sensor setting**

Parameter "Temperature calibration"

This parameter is for setting the temperature calibration value of the internal sensor, that is, to calibrate the

measured value of internal sensor to make it closer to the current ambient temperature. Options:

-5.0K ... 0.0K ... 5.0K

Note: after the device is powered on, the stability time of internal sensor detection will take 30 minutes, therefore, the detected temperature value in the early stage of device work may be inaccurate.

# Parameter "Send temperature when the result change b

This parameter is for setting when temperature turns to a certain value, whether to enable to send the current temperature value to the bus. Not send when disable. Options:

Disable 0.5K 1.0K ... 10.0K

## 'arameter "Cyclically send temperature [0...255.0=inactive]min"

Setting the time for cyclically sending the temperature detection value to the bus. Options: 0..255

This period is independent and starts time counting after programming completion or reset. Transmission

#### change has no affect on this period.

## neter "Send alarm telegram for low/high temperature

This parameter is for setting condition of sending telegram when low/high temperature alarm. Options:

#### No respond

#### **Respond after read only**

#### **Respond after change**

Respond after read only: only when the device receives a read alarm from other bus device or bus will the

object "Low temperature alarm"/" High temperature alarm" send the alarm status to the bus;

Respond after change: the object "Low temperature alarm"/"High temperature alarm" will immediately send the telegram to the bus to report the alarm value when the alarm status has changed.

These two parameters as follow are visible when "Respond after read only" or "Respond after change" are selected.

# --Parameter "Threshold value for low temperature alarm [0..15] ° C"

This parameter is for setting the threshold value for low temperature alarm. When the temperature lower than low threshold, low temperature alarm object will send telegram. Options:

0°C 1°C ...

#### 15°C

#### --Parameter "Threshold value for high temperature alarm [30..45] ° C"

This parameter is for setting the threshold value for high temperature alarm. When the temperature higher than high threshold, high temperature alarm object will send telegram. Options:

30°C 31°C ... 45°C

# Humidity sensor setting

# Parameter "Humidity calibration

This parameter is for setting the humidity calibration value of the internal sensor, that is, to calibrate the measured value of internal sensor to make it closer to the current ambient humidity.

Options: -20% / -15% / -10% / -5% / -3% / -1% / 0% / 1% / 3% / 5% / 10% / 15% / 20%

arameter "Send humidity when the result change by [0, 20] %

This parameter is for setting when humidity turns to a certain value, whether to enable to send the current humidity value to the bus. Not send when value is 0. Options: **0..20** 

Parameter "Cyclically send humidity [0, 255.0=mactive[min"]

Setting the time for cyclically sending the humidity detection value to the bus. Options: 0..255

This period is independent and starts time counting after programming completion or reset. Transmission change has no affect on this period.

## Parameter "Send alarm telegram for low/high humidity

This parameter is for setting condition of sending telegram when low/high humidity alarm. Options:

#### No respond

**Respond after read only** 

#### **Respond after change**

Respond after read only: only when the device receives a read alarm from other bus device or bus will the object " Low humidity alarm"/" High humidity alarm" send the alarm status to the bus;

Respond after change: the object "Low humidity alarm"/"High humidity alarm" will immediately send the telegram to the bus to report the alarm value when the alarm status has changed.

These two parameters as follow are visible when "Respond after read only" or "Respond after change" are selected.

## ---Parameter "Threshold value for low humidity alarm [5..20]%"

This parameter is for setting the threshold value for low humidity alarm. When the humidity lower than low threshold, low humidity alarm object will send telegram. Options: **5..20** 

## ---Parameter "Threshold value for high humidity alarm [70..85]%"

This parameter is for setting the threshold value for high humidity alarm. When the humidity higher than high threshold, high humidity alarm object will send telegram. Options: **70..85** 

# 5.4. Parameter window "Input"

💙 KNX Secure	Function of input 1	BI: Switch sensor	•
茸 General	Function of input 2	Disable	•
	Fig.5.4 "Input" pa	rameter window	

This parameter is for setting the function of external input interface. Support temperature detection and dry contact input (BI), setting page will be visible when select corresponding chosen. Also can be disable this channel function. Options:

Disable Temperature probe(NTC 10K) BI: Switch sensor BI: Scene control BI: Send String(14bytes)

When select Temperature probe(NTC 10K), can detect external temperature, which needs set B value of temperature probe.

When select dry contact input (BI), only supports the basic functions, including switch, scene send strings (press/release, short/long, send after voltage recovery, disable function).

Chapters as follow explain the functions of external input interface separately.
#### 5.4.1.Temperature probe

💙 KNX Secure	Description (max 30char.)			
<b>≓</b> General	B value of temperature sensor (must refer to the characteristic of component)	3950		•
1 Internal sensor measurem	Temperature calibration	0.0		• K
沁 Input	Send temperature when the result change by	1.0K		•
Input 1 - Temperature probe	Cyclically send temperature [0255]	0	÷	min
Function setting	Reply error of sensor measurement	Respond after read only		•
	Object value of error	◎ 0=no error/1=error ○ 1=no	o error/0=err	or
	Lower threshold value for error report	0	,	• •0
🕂 Scene Group function	Upper threshold value for error report	60		• °C

Fig.5.4.1 Parameter setting of temperature probe

# Parameter "Description (max 30char.)"

This parameter is for setting the name description of temperature probe.

Parameter "B value of temperature sensor(must refer to the characteristic of component)"

This parameter is for setting the B value of temperature sensor. Options:

3275
3380
•••
4200

Note: This value must refer to the characteristic of component, available from the instruction manual.

If selected B value is different from used sensor, it will effect detection result directly.

# rameter "Temperature calibration

This parameter is for setting the temperature calibration value of the temperature sensor, that is, to calibrate the measured value of sensor to make it closer to the current ambient temperature. Options:

-5.0K ... 0.0K ... 5.0K

# arameter "Send temperature when the result change b

This parameter is for setting when temperature turns to a certain value, whether to enable to send the current temperature value to the bus. Not send when disable. Options:

Disable 0.5K 1.0K ... 10.0K

## arameter "Cyclically send temperature [0...255.0=inactive]min"

Setting the time for cyclically sending the temperature detection value to the bus. Not send when value is 0.

Options: 0..255

### trameter "Reply error of sensor measurement"

This parameter for setting the condition of sending error status report when temperature exceeds the valid detection. options:

# No respond Respond after read only Respond after change

Respond after read only: only when the device receives a read error from other bus device or bus will the object "Temperature error report, Sensor" send the error status to the bus;

Respond after change: the object "Temperature error report, Sensor" will immediately send the telegram to the bus to report the error value when the error status has changed.

These three parameters as follow are visible when "Respond after read only" or "Respond after change" are selected.

#### ---Parameter "Object value of error"

This parameter for defining object value of error. Options:

#### 0=no error/1=error

#### 1=no error/0=error

0=no error/1=error: the object value for which sensor no error occurs is 0, and the object value for which sensor error occurs is 1;

1=no error/0=error: it has the opposite meaning.

#### ---Parameter "Upper threshold value for error report"

This parameter is for setting the upper threshold value for temperature error. When the temperature higher than the threshold, temperature error object will send telegram.

Options: 40°C / 45°C / 50°C / 55°C / 60°C / 70°C

#### ---Parameter "Lower threshold value for error report"

This parameter is for setting the lower threshold value for temperature error. When the temperature lower than the threshold, temperature error object will send telegram.

Options: 10°C / 5°C / 0°C / -5°C / -10°C / -20°C

#### 5.4.2.Binary input

🔍 KNX Secure	Description (max 30char.)		
⊦ 茸 General	Distinction between short and long operation	No Ves	
1 Internal sensor measurem	Long operation after [325]	5	*0.1s
. M Input	Connected contact type	Normally open Normally closed	
70 mpat	Reaction on short operation	TOGGLE	•
Input 1 - Switch sensor	Reaction on long operation	OFF	•
Function setting	Number of objects	◎ 1 ○ 2	
	Disable function	Disable	•

-.-.- Push Button Sensor with LCD,55mm > Input > Input 1 - Scene control

🔍 KNX Secure	Description (max 30char.)		
+ 🛱 General	Distinction between short and long operation	No Ves	
1 Internal sensor measurem	Long operation after [325]	5	‡ *0.1s
- Vi input	Connected contact type	Normally open ONOrmally closed	
28 mpar	Reaction on short operation	Recall scene	•
Input 1 - Scene control	8 bit scene number	Scene No.2	•
+ E Function setting	Reaction on long operation	Store scene	•
+ 🕂 Logic function	8 bit scene number	Scene No.2	•
1 For contain	Number of objects	◎ 1 ○ 2	
T Scene Group function	Disable function	Disable	•

Fig.5.4.2(2) Parameter setting of scene control

💙 KNX Secure	Description (max 30char.)		
₩ General	Distinction between short and long operation	No Ves	
1 Internal sensor measurem	Long operation after [325]	5	*0.1
V locut	Connected contact type	Normally open Normally closed	
28 mpar	Reaction on short operation	No reaction 🔘 Send Value	
Input 1 - Send String	String (14byte) value	Hello, world !	
Function setting	Reaction on long operation	○ No reaction	
➔ Logic function	String (14byte) value	Hello, world !	
Scene Group function	Number of objects	◎ 1 ○ 2	
	Disable function	Disable	*

Fig.5.4.2(3) Parameter setting of sending sting

# trameter "Description (max 30char.

This parameter is for setting the name description for binary input function.

ameter "Distinction between short and long operation"

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

No

Yes

#### --Parameter "Long operation after [3..25]\*0.1s"

This parameter is visible when distinction between short and long operation. Set the effective time of long

operation. When button operation out of the setting time, it is a long operation, otherwise it is a short operation.

Options: 3..25

#### ---Parameter "Connected contact type"

This parameter is visible when distinction between short and long operation. Set the connected contact type.

Options:

#### Normally open

Normally closed

When function is selected "BI: Switch sensor", the following parameters are visible, for setting switch

#### sensor.

#### ---Parameter "Reaction on short/long operation"

This parameter is visible when distinction between short and long operation, performing the action according to the settings of the short and long operations. Set the switch value to send when button operation. Options:

No reaction OFF ON TOGGLE

No action: No telegrams have been sent.

ON: Send the on telegram.

OFF: Send the off telegram.

TOGGLE: Each operation will switch between on and off.

#### ---Parameter "Reaction on close/open the contact"

This parameter is visible when no distinction between short and long operation. Judge the close and open operations, and perform the actions according to the settings. Set the switch value to send when button operation. Options:

No reaction
OFF
ON
TOGGLE

#### --Parameter "Send object value after voltage recovery (valid if reaction is not toggle)"

This parameter is visible when no distinction between short and long operation. This parameter is valid if not select "TOGGLE" or "No reaction", set whether to send object value after voltage recovery. Options:

No

Yes

When function is selected "BI: Scene control", the following parameters are visible, for setting scene control.

#### ---Parameter "Reaction on short/long operation"

This parameter is visible when distinction between short and long operation, performing the action according to the settings of the short and long operations. Set the scene command to send when button operation. Options:

No reaction Recall scene Store scene

#### ---Parameter "Reaction on close/open the contact"

This parameter is visible when no distinction between short and long operation. Judge the close and open operations, and send or storage scenes according to the settings. Set the scene command to send when button operation. Options:

No reaction Recall scene Store scene

---Parameter "8 bit scene number"

This parameter is visible when "Recall scene" or "Store scene" is selected. Set the scene number, range:

#### Scene NO.1~64, corresponding telegram is 0~63

When function is selected "BI: Send String(14bytes)", the following parameters are visible, for setting string sending.

#### ---Parameter "Reaction on short/long operation"

This parameter is visible when distinction between short and long operation, performing the action according to the settings of the short and long operations.Options:

No reaction

#### Send Value

#### ---Parameter "Reaction on close/open the contact"

This parameter is visible when no distinction between short and long operation. Judge the close and open

operations, and send strings according to the settings. Options:

No reaction

#### Send Value

#### ---Parameter "String (14byte) value"

This parameter is visible when "Send Value" is selected. Input the strings to send.

#### ---Parameter "Send object value after voltage recovery"

This parameter is visible when no distinction between short and long operation. Set whether to send object value after voltage recovery. Options:

No

Yes

#### Parameter "Number of objects"

This parameter is visible when the parameter "Reaction on long/open operation" is not selected "No reaction". Set whether to use a common object or two separate objects when open/close and long/short operations. Options:

1 2

## Parameter "Disable function"

This parameter is visible when binary input functions are selected. Set trigger value to disable/enable contacts. Options:

Disable Disable=1/Enable=0 Disable=0/Enable=1

# 5.5. Parameter window "Function setting"

KNX Secure	Function type	Push button sensor	•
	Fig.5.5 "Function set	tting" parameter window	
	Fig.5.5 "Function set	tting" parameter window	

This parameter is for setting the function type of device. Options:

Push button sensor Multifunction thermostat Audio control

Chapters as follow explain the above functions separately.

#### 5.5.1.Parameter window "Push button sensor"

VIX Secure	Function type	Push button sensor	*
🛱 General	Number of page	1	•
1 Internal sensor measurem	Interface preview		
浈 Input		<sup>1</sup>   Ф Т <sup>2</sup>	
Function setting		3 <del>Q</del> <u>Q</u> 4	
Button 1 - Switching			
Customized colour		5 6	
➔ Logic function	Delay time for auto exiting sub dimming	3	*
🕂 Scene Group function	dimming/Colour temperature dimming)	5	Ŧ
	Page 1 setting		
	Button 1& 2 use as	O Individual button O Rocker button	
	Button 3& 4 use as	Individual button Rocker button	
	Button 5& 6 use as	Individual button	
	Function of button 1	Switch	•
	Function of button 2	Disable	•
	Function of button 3	Disable	•
	Function of button 4	Disable	•
	Function of button 5	O Disable O Scene control	
	Eunction of button 6	Disable Control	

# Parameter "Number of page"

This parameter is for setting number of page for push button sensor. Options: 1 / 2 / 3

You can set 1 page with 4 buttons, 2 pages with 8buttons, or 3 pages with 12 buttons.

When 1 page is selected, the 2 buttons on the bottom of the device (Button 5 and Button 6) only support the scene function, and can only be configured as individual buttons and have no status display.

When 2 pages or 3 pages is selected, the 2 buttons on the bottom of the device (Button 5 and Button 6) are used to switch function pages.

Below the parameter, display the interface interview according to the options.



Parameter "Delay time for auto exiting sub domning page

Only apply to RGB dimming/RGBW dimming/Colour temperature dimming)"

This parameter is for setting the delay time for auto exiting sub dimming page, only apply to RGB dimming, RGBW dimming, Colour temperature dimming. Telegrams are sent immediately, such as brightness, colour temperature, specific definition is according to the UI. Options: **3..10s** 

#### Page x setting (x=1~3)

Parameter "Button y& z use as" (y=1/3/5/7/9/11; z=2/4/6/8/10/12)

This parameter is displayed according to the number of page. Set the work way of push button sensor. Options:

Individual button

#### **Rocker button**

Parameter "Function of button x" (x=1~12)

This parameter is visible when "Individual button" is selected. Set the function of individual button, up to 12 buttons. Options:

Disable	Shift register
Switch	Multiple operation
Dimming	Delay mode
RGB switching/send value	<b>RTC</b> operation mode
RGBW switching/send value	String(14bytes)
Colour temperature switching/send value	Status display
Value sender	RGB dimming
Scene control	RGBW dimming
Blind	Colour temperature dimming

When 1 page is selected, the 2 buttons on the bottom of the device (Button 5 and Button 6) only support the scene function.

The detail configuration of individual button please refer to chapter 5.5.1.1 and chapter 5.5.1.2.

# Parameter "Function of rocker x" -

This parameter is visible when "Rocker button" is selected. Set the function of rocker button, up to 6 buttons. Options:

Disable	Scene control
Switch	Blind
Dimming	Setpoint adjustment

The detail configuration of rocker button please refer to chapter 5.5.1.3 and chapter 5.5.1.4.

#### 5.5.1.1.Individual button

#### **1.Switch function**

-.-- Push Button Sensor with LCD,55mm > Function setting > Button 1 - Switching

🖤 KNX Secure	Description (max 12char.)		
+ 🛱 General	• Valid display space is up to 10 small	chars,while 4 Chinese chars	
1 Internal sensor measurem	Distinction between short and long operation	O No O Yes	
+ 🧏 Input	Reaction on press operation	TOGGLE	•
- 💷 Function setting	Reaction on release operation	No reaction	•
Button 1 - Switching	Disable function	Disable=1/Enable=0	¥
Customized colour	Lock Icon indicated when disabled	Small icon 🚫 Big icon	
+ 3 Logic function	Flashing function	Disable=1/Enable=0	•
+ f Scane Group function	Colour for flashing	Red	•

Fig.5.5.1.1(1) Parameter setting of switch function

# Parameter "Description (max 12char.)

This parameter is for setting the description of individual button, up to input 12 characters.

Valid display space is up to 10 small chars, while 4 Chinese chars

'arameter "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 telegrams have been sent.

ON: send the on telegram.

OFF: send the off telegram.

TOGGLE: each operation will switch between on and off. For example, if the last telegram was sent (or received) for on, then the next operation will trigger a telegram for off. When the switch is operated again, it will send a telegram for on etc., So the switch will always remember the previous state and covert to opposite value during next operation.

arameter "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

arameter "Disable function"

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

Disable Disable=1/Enable=0

Disable=0/Enable=1

Parameter "Lock Icon indicated when disabled"

This parameter is visible when previous parameter is selected "Disable=1/Enable=0" or "Disable=0/Enable=1". Set the icon size when the button is in disable status. Options:

#### Small icon

#### **Big icon**

Big icon is the lock icon replaces the original icon, while small icon is the two icons coexist and the lock icon

is a small icon in right corner.

Specific effect please refer to UI description.

Note: disable function is applied to each of following functions except for "Status display".

arameter "Flashing function"

This parameter is for setting whether to enable flashing function. Options:

Disable

Disable=1/Enable=0

Disable=0/Enable=1

Parameter "Colour for flashing"

This parameter is visible when previous parameter is selected "Disable=1/Enable=0" or "Disable=0/Enable=1". Set the colour for flashing. Options:

Foreground	Cyan blue
Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

Note: flashing function is only used for "Switch", "Dimming" and "Blind".

The flashing function takes precedence over normal status indications, and return to normal indication when cancel flashing. Specific flashing effect please refer to Chapter 7.1.

Repeat parameters will not be illustrated below; the usage is similar.

#### **2.Dimming function**

-.-. Push Button Sensor with LCD,55mm > Function setting > Button 1 - Dimming

💙 KNX Secure	Description (max 12char.)		
≓ General	Valid display space is up to 10 sn	nall chars,while 4 Chinese chars	
1 Internal sensor measurem	Reaction on short operation	TOGGLE	•
⅓ Input	Reaction on long operation	Brighter/Darker	•
E Function setting	Dimming mode	Start-Stop dimming Step dimming	
Button 1 - Dimming	Disable function	Disable	
Customized colour	Flashing function	Disable	•
	Fig.5.5.1.1(2) Parameter setting	of dimming function	

# 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 telegrams have been sent.

ON: send the on telegram.

OFF: send the off telegram.

TOGGLE: each operation will switch between on and off.

# Parameter "Reaction on long operation"

This parameter is for setting the the relative dimming value to send when long operation, with dimming

brighter or darker; when release the contact stop dimming. Options:

No reaction

Brighter

Darker

#### **Brighter/Darker**

No action: no telegrams have been sent.

Brighter: the dimming up value will be sent.

Darker: the dimming down value will be sent.

Brighter/Darker: dimming up and down will be sent alternately.

Note: in "TOGGLE" mode of this parameter setting, the value sent will be linked. For example, if the last value is switching on status, then it will be dimmed down in next dimming operation; if the last value is switching off, then it will be dimmed up in next dimming operation.

arameter "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 telegrams cyclically sending dimming telegram. Options: **0..25**, **0=send once** 

## 3.RGB switching/send value

VX Secure	Description (max 12char.)		
<b>≓</b> General	Valid display space is up to 10 small ch	nars, while 4 Chinese chars	
10 Internal sensor measurem	Object datatype of absolute brightness	🔘 1x3byte 🔵 3x1byte	
1/4 Input	Reaction on short operation	TOGGLE	•
Eurotian setting	Reaction on long operation	Absolute value	•
Eg function setting	RGB Value	#FFFFFF	
Button 1 - RGB			A
Customized colour	Disable function	Disable	•
	Fig 5 5 1 1(3) Parameter setting of RGBs	switching/send value	

This parameter is for setting the object datatype of absolute brightness. Options:

#### 1x3byte

#### 3x1byte

Parameter "Reaction on short operation"

'arameter "Reaction on long operation"

These two parameters are for setting the sending value when long/short operation. Options:

No reaction OFF ON TOGGLE

#### Absolute value

Parameter as follow is visible when "Absolute value" is selected.

#### ---Parameter "RGB Value"

This parameter is for setting the RGB value when long/short operation. Options: #000000..#FFFFFF

#### 4.RGBW switching/send value

💙 KNX Secure	Description (max 12char.)		
- 🗮 General	• Valid display space is up to 10 small ch	ars,while 4 Chinese chars	
1 Internal sensor measurem	Object datatype of absolute brightness	O 1x6byte ○ 4x1byte	
- K Input	Reaction on short operation	Absolute value	•
Function setting	RGB Value	#FFFFFF	
	White Value	255	
Button 1 - RGBW	Development and the second second	Ma secolar	_
Customized colour		No reaction	
- 7 Logic function	Disable function	Disable	•

Fig.5.5.1.1(4) Parameter setting of RGBW switching/send value

Parameter "Object datatype of absolute brightness"

This parameter is for setting the object datatype of absolute brightness. Options:

#### 1x6byte

#### 4x1byte

Parameter "Reaction on short operation

Parameter "Reaction on long operation"

These two parameters are for setting the sending value when long/short operation. Options:

No reaction OFF ON TOGGLE Absolute value

Parameters as follow are visible when "Absolute value" is selected.

#### ---Parameter "RGB Value"

This parameter is for setting the RGB value when long/short operation. Options: #000000..#FFFFFF

#### --Parameter "White Value"

This parameter is for setting the white value when long/short operation. Options: 0..255

#### 5.Colour temperature switching/send value

-.-. Push Button Sensor with LCD,55mm > Function setting > Button 1 - Colour temperature

茸 General	Valid display space is up to 10 small	chars,while 4 Chinese chars		
lnternal sensor measurem	Reaction on short operation	Absolute value		•
🦌 Input	Send brightness value	100	÷	9
Eurotion setting	Send Colour temperature value	4000	÷	ŀ
(S. randon setting	Reaction on long operation	No reaction		•
Button 1 - Colour temperature				
Customized colour	Disable function	Disable		*

Parameter "Reaction on short operation

Parameter "Reaction on long operation"...

These two parameters are for setting the sending value when long/short operation. Options:

 No reaction

 OFF

 ON

 TOGGLE

 Absolute value

 Parameters as follow are visible when "Absolute value" is selected.

#### ---Parameter "Send brightness value"

This parameter is for setting the brightness value when long/short operation. Options: 0..100

#### ---Parameter "Send Colour temperature value"

This parameter is for setting the colour temperature value when long/short operation. Options: 1000..10000

#### 6.Value sender

KNX Secure	Description (max 12char.)		
<b>፰</b> General	• Valid display space is up to 10 sr	nall chars,while 4 Chinese chars	
1 Internal sensor measurem	Reaction on short operation	1bit value[ON/OFF]	•
⅓ Input	Value 1	OFF ON	
E Function setting	Reaction on long operation	No reaction	•
Button 1 - Value sender	Disable function	Disable	•
	Fig.5.5.1.1(6) Parameter set	ting of value sender	

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

No reaction	2byte value[065535]
1bit value[On/Off]	<b>2</b> byte float value
2bit value[03]	4byte value[04294967295]
4bit value[015]	4byte float value
1byte value[0255]	

Parameters as follow are visible when "No reaction" is not selected.

#### ---Parameter "Value 1/2"

This parameter is for setting the data value to send when perform short/long operation. Range of value is determined according to the previous parameter selected datatype.

#### 7.Scene control

💙 KNX Secure	Description (max 12char.)		
- 🛱 General	• Valid display space is up to 10 sr	nall chars,while 4 Chinese chars	
🖞 Internal sensor measurem	Reaction on short operation	Recall scene	÷
- 1⁄9 Input	8 bit scene number	Scene No.1	÷
Euroction setting	Reaction on long operation	Store scene	•
	8 bit scene number	Scene No.1	•
Button 1 - Scene	Number of objects	1 2	
Customized colour	3 <u>-</u>		
<b>D</b>	Disable function	Disable	•

Fig.5.5.1.1(7) Parameter setting of scene control

# Parameter "Reaction on short operation"

## Parameter "Reaction on long operation"

These two 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. Options:

1

2

#### 8.Blind function

💙 KNX Secure	Description (max 12char.)		
茸 General	• Valid display space is up to 10 sr	nall chars, while 4 Chinese chars	
1 Internal sensor measurem	Reaction on short operation	Stop(Adjust Up/Down)	•
沁 Input	Reaction on long operation	Up/Down	-
Function setting	Disable function	Disable	÷
Button 1 - Blind	Flashing function	Disable	•

Parameter "Reaction on short operation

#### rameter "Reaction on long operation"

These two 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 action is performed.

Up: the curtains/blinds will be opened or moved up.

Down: the curtains/blinds will be closed or moved down.

Up/Down: alternately open/close or move up/down the curtains/blinds.

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

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

Stop (Adjust Up/Down): stop the curtain movement or move up/down the angle of blinds alternately.

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

This parameter is visible when the parameter "Reaction on long operation" is selected "Stop...". Set the time

interval of cyclical blinds angle adjustment telegram sent. Options: 0..25,0=send once

#### 9.Shift register function

💙 KNX Secure	Description (max 12char.)		
General	• Valid display space is up to 10 small cl	nars,while 4 Chinese chars	
1 Internal sensor measurem	Shift type	Shift by step value Shift without step value	
⅓ Input	Value begin with		÷
E Function setting	Value end with(must be larger than value begin with)	10	÷
Button 1 - Shift register	Step size	2	÷
Customized colour	Direction	From lowest to highest and cyclically	•
Logic function	Reset function	O Disable C Enable by long operation	
- E Scene Group function	Disable function	Disable	

# Parameter "Shift type"

This parameter is for setting the shift type. Options:

#### Shift by step value

#### Shift without step value

Shift by step value: Here the starting value and stopping value of shift can be set, the value increased (from low to high) or decreased (from high to low) from every shift can also be set.

Shift without step value: When there's no step value, the actual value sent by each shift can be set (max. 10 value), in every operation one value will be sent.

#### Three parameters as follow are visible when "Shift by step value" is selected.

#### ---Parameter "Value begin with"

This parameter is for setting the starting value of the shift. Options: 0..240

#### ---Parameter "Value end with(must be larger than value begin with)"

This parameter is for setting the stopping value of the shift. Options: 1..250

#### Note: the values must meet the condition: end value> begin value, if not, they can not be modified on

#### ETS, and display red box warning, as shown as follow:

Value begin with	4	÷
Value end with(must be larger than value begin with)	1	* *

#### ---Parameter "Step size"

This parameter is for setting the increase (from low to high) or decrease (from high to low) value.

Options: 0..240

#### Parameters as follow are visible when "Shift without step value" is selected.

#### Parameter "Object datatype"

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

1byte unsigned value

Scene number

HVAC mode

#### ---Parameter "Shift number"

This parameter is for setting the number of shift, up to set 10 values.

When "1byte unsigned value" or "Scene number" is selected, options: 0/1/2../10

When "HVAC mode" is selected, options: 1/2/3/4

#### ---Parameter "Value x"(x=1~10 or x=1~4)

此 Parameter 用于每次移位操作所发送的值。

When "1byte unsigned value" is selected, options: 0..255

When "Scene number" is selected, options:

Scene NO.1

Scene NO.2

Scene NO.3

•••

#### Scene NO.64

When "HVAC mode" is selected, options:

**Comfort mode** 

Standby mode

#### Economy mode

#### **Frost/heat protection**

## Parameter "Direction"

This parameter is for setting the shift direction. Options:

From lowest to highest and stop to the end

From highest to lowest and stop to the begin

From lowest to highest and cyclically

#### From highest to lowest and cyclically

From lowest to highest and stop to the end: shift from low to high.

From highest to lowest and stop to the begin: shift from high to low.

From lowest to highest and cyclically: once to the end value, shift direction starts over again and constantly

cycling from low to high operation.

From highest to lowest and cyclically: once to the start value, shift direction starts over again and constantly cycling from high to low operation.

Parameter "Reset function"

This parameter is for setting whether to enable shift reset function. Options:

#### Disable

#### Enable by long operation

Disable: not possible to reset shift;

Enable by long operation: possible to reset shift by long operation, when reset, shift will start new.

#### **10.Multiple operation function**

-.-. Push Button Sensor with LCD,55mm > Function setting > Button 1 - Multiple operation

💙 KNX Secure	Description (max 12char.)		
+ 🛱 General	Valid display space is up to 10 sm	all chars, while 4 Chinese chars	
1 Internal sensor measurem	Object type for object1	1Bit_On/Off	•
+ 🧏 Input	Function of short operation	TOGGLE	*
- Eurotion setting	Function of long operation	No reaction	•
	Object type for object2	1Bit_On/Off	•
Button 1 - Multiple operation	Function of short operation	TOGGLE	•
Customized colour	Function of long operation	No reaction	•
+ 🕂 Logic function	Object type for object3	Disable	•
+ 🕂 Scene Group function	Object type for object4	Disable	*
	Disable function	Disable	•

Fig.5.5.1.1(10) Parameter setting of multiple operation function

# arameter "Object type for object s" (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 14Byte\_String Note: only object 1 and short operation support to send 14byte string.

#### ——Parameter "Function of short operation"

---Parameter "Function of long operation"

These two parameters are for setting the specific values to send when perform the operation, either no action

or sending value.

When "1Bit\_On/Off" is selected, options:

No reaction

OFF

### ON

#### TOGGLE

When "1Bit\_Up/Down" is selected, options:

No reaction

Up

Down

**Up/Down** 

When "1byte..." or "14Byte\_String" is selected, options:

No reaction

Send Value

#### ---Parameter "Value x..." (x=1~2)

This parameter is visible when "1byte..." is selected and previous parameter is selected "Send Value". Set sending values when perform operations. The range of value is up to the datatype selected by the parameter before last one.

---Parameter "String (10byte) value"

This parameter is visible when "14Byte\_String" is selected and previous parameter is selected "Send Value". Set sending string when perform operations, up to input 10 characters.

### **11.Delay mode function**

Push Button Sensor with LCI	D,55mm > Function setting > Butto	n 1 - Delay mode
VIX Secure	Description (max 12char.)	
• 茸 General	Valid display space is up to 10 sma	Il chars,while 4 Chinese chars
1 Internal sensor measurem	Object type for short operation	1Bit_On/Off
1/4 Input	Send mode	No action when operation,delay then send value1 🔹
Eurotion setting	Delay time [06500]	10 ‡
Es function setting	Value 1	OFF ON
Button 1 - Delay mode	Value 2	OFF ON
Customized colour	Object type for long operation	Disable 🔻
➔ Logic function	Disable function	Disable

Fig.5.5.1.1(11) Parameter setting of delay mode function

# Parameter "Object type for short operation Parameter "Object type for long operation"

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

#### Disable

1Bit\_On/Off

4Bit\_Dimming

#### 1Byte\_Unsigned value

These three parameters as follow are not visible when "Disable" is selected.

#### ---Parameter "Send mode"

This parameter is for setting the send mode. Options:

No action when operation, delay then send value1

No action when operation, delay then send value2

Send value1 when operation, delay then send value2

Send value2 when operation, delay then send value1

---Parameter "Delay time [0..6500]s"

This parameter is for setting the delay time. Options: 0..6500

#### ---Parameter "Value x" (x=1~2)

This parameter is for setting the value 1/2 to send. The range of value is up to the datatype selected by the parameters.

#### **12.RTC** operation mode

💙 KNX Secure	Description (max 12char.)		
General	• Valid display space is up to 10 sr	nall chars,while 4 Chinese chars	
1 Internal sensor measure	Object type for output	🔘 1bit 🔵 1byte	
· ½ Input	Reaction on short operation	○ No reaction ◎ Send Value	
• E Function setting	Operation mode	Comfort mode	•
	Reaction on long operation	O No reaction O Send Value	
Button 1 - RTC mode	Standby mode object	O Disable C Enable	
Customized colour		0	
<b>.</b>	Disable function	Disable	•

Fig.5.5.1.1(12) Parameter setting of RTC operation mode

# Parameter "Object type for output"

This parameter is for setting object datatype for output. Options:

1bit

1byte

Parameter "Reaction on short operation

arameter:"Reaction on long operation"

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

#### No reaction

Send Value

#### ---Parameter "Operation mode"

This parameter is visible when "Send Value" is selected. Set the operation mode of RTC. Options:

Auto

**Comfort mode** 

Standby mode

**Economy mode** 

#### **Frost/heat protection**

Activate corresponding modes when object telegram is 1, and not activated when object telegram is 0. It is standby mode when all objects telegrams are 0.

Note: There is no "Auto" selected when output object is 1 bit.

Parameter "Standby mode object"

Consider that some products will not have this object, so that set the object, send telegram 1 when standby

mode.

This parameter is visible when 1 bit is selected. Set whether to enable the object of standby mode. Options:

Disable

Enable

### **13.String(14bytes) function**

💙 KNX Secure	Description (max 12char.)		
<b>≓</b> General	Valid display space is up to 10 sr	nall chars, while 4 Chinese chars	
1 Internal sensor measurem	Reaction on short operation	No reaction 🔘 Send Value	
⅓ Input	String (14byte) value	Hello, world !	
Function setting	Reaction on long operation	No reaction Send Value	
Button 1 - String	Disable function	Disable	•

```
"arameter "Object type for short operation
"arameter "Object type for long operation"
```

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

No reaction

Send Value

---Parameter "String (14byte) value"

This parameter is visible when "Send Value" is selected. Set the sting value to send.

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#### 14.Status display

VX Secure	Description (max 12char.)		
- 茸 General	• Valid display space is up to 1	10 small chars, while 4 Chinese chars	
1 Internal sensor measurem	Display function	Int. temperature value (DPT 9.001)	•
¥	Text for unit	°C	

Fig.5.5.1.1(14) Parameter setting of status display

# Parameter "Display function"

This parameter is for setting the datatype of status display. Options:

Int. temperature value (DPT 9.001)	2byte unsigned value (DPT 7.001)
Int. humidity value (DPT 9.007)	2byte lux value (DPT 9.004)
Ext. temperature value (DPT 9.001)	2byte float value (DPT 9.x)
Ext. humidity value (DPT 9.007)	4byte unsigned value (DPT 12.001)
1byte percent value (DPT 5.001)	4byte float value (DPT 14.x)
1byte unsigned value (DPT 5.010)	14byte strings (DPT 16.001)

There are no unit and time period for request external value when "14byte strings (DPT 16.001)" is selected,

following two parameters are not visible.

#### ---Parameter "Text for unit"

This parameter is for setting the unit of the selected object datatype.

When "...temperature..." is selected, the unit is fixed as °C

When "...humidity..." or "1byte percent value..." is selected, the unit is fixed as %

When the other options are selected, up to input 5 characters.

## 'arameter "Time period for request external value [0...255]m

This parameter is visible when the datatype of external sensor is selected. Set the time period for read request external temperature sensor. Options: **0..255** 

Note: when internal sensor is selected, it will not send read request to the bus after voltage recovery and download completion.

#### 15.RGB dimming

VIX Secure	Description (max 12char.)				
<b>≓</b> General	1 Vali	d display space is up to 10 small ch	ars,while 4 C	hinese chars	
lnternal sensor measurem	Reaction on short operation		Switch tog	ggle	
⅓ Input	Reaction on long operation Sub dimming page preview		Enter into the sub dimming page		
Function setting					
Button 1 - RGB dimming					
Customized colour			3	4	
➔ Logic function			5	6	
← Scene Group function	Button 1	press to select to adjust H value	Button 2	press to select to adjust S value	
	Button 3	press to select to adjust V value	Button 4	NA	
	Button 5	press to decrease value	Button 6	press to increase value	
	Object da	tatype	1x3byte		
	Reaction on "off" operation		<ul> <li>Only switch object send value 0</li> <li>Brightness objects send value 0</li> </ul>		
	Reaction	on "on" operation	Only so Only s	witch object send value 1 colour brightness value	
	Step of	f H (hue)	10	•	
	Step of	S (saturation)	5	•	
	Step of	<sup>f</sup> V (value)	5	•	
			S. 11		

图 5.5.1.1(15) Parameter setting of RGB dimming

Parameter "Reaction on short operation"

#### ameter "Reaction on long operatio

These two parameters are for explaining the reaction on short/long operation. Short operation default to switch between on and off, and long operation is to enter the sub dimming page.

Display sub dimming page preview and the button operations below these parameters, specific UI description

please refer to Chapter 7.1.1.

# Parameter "Object datatype

This parameter is for setting the object datatype of RGB dimming. Option is only 1x3byte

# Parameter "Reaction on "off" operation

This parameter is for setting the sent telegram when "off" operation, you can choose only switch object send value 0, or the brightness objects send value 0. Options:

Only switch object send value 0

#### Brightness objects send value 0

### Parameter "Reaction on "on" operation"

This parameter is for setting the sent telegram when "on" operation, you can choose only switch object send

value 1, or the colour brightness objects send presetting value. Options:

#### Only switch object send value 1

#### Preset colour brightness value

#### ---Parameter "RGB value"

This parameter is visible when "Preset colour brightness value" is selected. Set the sending RGB value.

Options: #000000 ....#FFFFFF

<sup>p</sup>arameter "Step of H (hue)"

This parameter is for setting the step value of Hue. Options:

	10°
	40°
	60°
ar "Stand	r Staatuurinn S

This parameter is for setting the step value of Saturation. Options:

5%	)
109	%
209	%

Parameter "Step of V (value)

This parameter is for setting the step value of Value. Options:

5%		
10%		
20%		

#### **16.RGBW dimming**

💗 KNX Secure	Descriptio	on (max 12char.)				
General	Valid display space is up to 10 small ch		ars, <mark>whil</mark> e 4 Cl	ninese chars		
1 Internal sensor measurem	Reaction on short operation		Switch tog	gle		_
炎 Input	Reaction on long operation Sub dimming page preview		Enter into	the sub dimming page		
E Function setting			1	2		
Button 1 - RGBW dimming						
Customized colour			3	4		
➔ Logic function			5	6		
← Scene Group function	Button 1	press to select to adjust H value	Button 2	press to select to adjust S value		
	Button 3	press to select to adjust V value	Button 4	press to select to adjust W value		
	Button 5	press to decrease value	Button 6	press to increase value		
	Object da	tatype	0 1x6byt	e 🔵 3byte+1byte		
	Reaction	on "off" operation	Only sv Brightr	vitch object send value 0 ness objects send value 0		
	Reaction	on "on" operation	Only sv Preset	vitch object send value 1 colour brightness value		
	Step of	H (hue)	10		•	
	Step of	S (saturation)	5		•	96
	Step of	V (value)	5		•	%
	Step of	W(white brightness)	5		•	9
			Disable			-

Parameter "Reaction on short operation"

Parameter "Reaction on long operation"

These two parameters are for explaining the reaction on short/long operation. Short operation default to switch between on and off, and long operation is to enter the sub dimming page.

Display sub dimming page preview and the button operations below these parameters, specific UI description please refer to Chapter 7.1.2.

Parameter "Object datatype"

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

#### 1x6byte

'arameter "Reaction on "off" operation

#### 3byte+1byte

This parameter is for setting the sent telegram when "off" operation, you can choose only switch object send

value 0, or the brightness objects send value 0. Options:

Only switch object send value 0

#### Brightness objects send value 0

Parameter "Reaction on "on" operation"

This parameter is for setting the sent telegram when "on" operation, you can choose only switch object send

value 1, or the colour brightness objects send presetting value. Options:

#### Only switch object send value 1

Preset colour brightness value

--Parameter "RGB value"

This parameter is visible when "Preset colour brightness value" is selected. Set the sending RGB value.

Options: #000000 ....#FFFFFF

---Parameter "White brightness value"

This parameter is visible when "Preset colour brightness value" is selected. Set the sending white brightness

value. Options: 0..100%

Parameter "Step of H (hue)"

This parameter is for setting the step value of Hue. Options:

	10°
	•••
	40°
	60°
arameter "Step o	of S (saturation)

This parameter is for setting the step value of Saturation. Options:

5%

10%

	20%
Parameter "Step (	of V (value)"
This paramete	r is for setting the step value of Value. Options:
	5%
	10%
	20%
Parameter "Step (	of W(white brightness)
This paramete	r is for setting the step value of white brightness. Options:

5% 10% 20%

### **17.Colour temperature dimming**

-.-- Push Button Sensor with LCD,55mm > Function setting > Button 1 - Colour Temp. dimming 💙 KNX Secure Description (max 12char.) \Xi General Valid display space is up to 10 small chars, while 4 Chinese chars Reaction on short operation Switch toggle 1 Internal sensor measurem... Reaction on long operation Enter into the sub dimming page 1/2 Input Sub dimming page preview Function setting Button 1 - Colour Temp. dim... Customized colour - Logic function ← Scene Group function press to decrease colour Button 1 Button 2 press to increase colour temperature temperature Button 3 press to decrease brightness Button 4 press to increase brightness Button 5 NA Button 6 NA 1byte percentage value Object datatype of colour temperature 2byte absolute value Only switch object send value 0 Reaction on "off" operation Brightness objects send value 0 Only switch object send value 1 Reaction on "on" operation Preset colour brightness value

图 5.5.1.1(17) Parameter setting of colour temperature dimming

# arameter "Reaction on short operation

## arameter: Reaction on long operation

These two parameters are for explaining the reaction on short/long operation. Short operation default to switch between on and off, and long operation is to enter the sub dimming page.

Display sub dimming page preview and the button operations below these parameters, specific UI description please refer to Chapter 7.1.3.

### rameter "Object datatype of colour temperature"

This parameter is for setting the object datatype of colour temperature dimming. Options:

#### 1byte percentage value

#### 2byte absolute value

When "1byte percentage value" is selected, it applies to the products of colour temperature with 0/1-10V drive. Control telegram is percentage type, and the step value is set via ETS, show the absolute colour temperature on the screen instead of percent value. Telegram range is  $0\sim100\%$ .

While "2byte absolute value" is selected, it applies to the products that support KNX colour temperature.

Control telegram is absolute colour temperature type, and the step value is set via ETS, show directly the absolute

colour temperature on the screen. Telegram range is depend on the configuration of Max./Min. parameters.

## Parameter "Reaction on "off" operation"

This parameter is for setting the sent telegram when "off" operation, you can choose only switch object send value 0, or the brightness objects send value 0. Options:

#### Only switch object send value 0

#### Brightness objects send value 0

## Parameter "Reaction on "on" operation"

This parameter is for setting the sent telegram when "on" operation, you can choose only switch object send

value 1, or the colour brightness objects send presetting value. Options:

#### Only switch object send value 1

#### Preset colour brightness value

#### ---Parameter "Brightness is"

This parameter is visible when "Preset colour brightness value" is selected. Set the sending brightness value.


#### Options: 0..100%

Parameter "Min. Max, colour temperature [2000, 7000]K

These two parameters are for setting the adjustable range of colour temperature. Options: 2000..7000

For colour temperature, the Min. value must less than the Max., if not, if not, they can not be modified

on ETS, and display red box warning, as shown as follow:

Min. colour temperature [20007000]	6500	‡ k	(
Max. colour temperature [20007000]	6500	‡ k	¢

Parameter "Step of colour temperature"

This parameter is for setting the step value of colour temperature. Options:

	100K	
	200K	
	500K	
	1000K	
rameter "Step (	of brightness"	
This paramete	er is for setting the step value of brightness. Options:	

5%	
10%	
20%	

#### 5.5.1.2. Status indication of individual button

+ 🕂 Logic function	Status indication	Via button switch status object		•
+ 🕂 Scene Group function	Indication type	Icon + Description of button		•
	Icon for object value=1	: 💭: Light on		•
	Colour for object value=1	Orange		•
	Icon for object value=0	8 Light off		•
	Colour for object value=0	Foreground		•
	Via button switch s	tatus object		
+ 🕂 Logic function	Status indication	Via external status object 1 bit		•
+ 🕂 Scene Group function	Indication type	Icon + Description of button		•
	Icon for object value=1	: 🛱 Light on		•
	Colour for object value=1	Orange		•
	Icon for object value=0	🖏 Light off		•
	Colour for object value=0	Foreground		-
	Via external status	object 1 bit		
<b>.</b>	Status indication	Via external status object 1 byte		•
+ P Logic function	Indication type	Icon + Description of button		•
+ 🕂 Scene Group function	Object datatype			
	Threshold compare type	<ul> <li>Between the threshold value</li> <li>Equal to the threshold value</li> </ul>		
	Number of threshold	2		•
	Threshold value 1 is	0	* *	%
	Threshold value 2 is	20	÷	%
				-
	If object value<=threshold val	ue i		
	Icon is	·॑॑Q <sup>+</sup> Light on		•
	Colour is	Foreground		•
	If threshold value 1< object val	ue<=threshold value 2		
	lcon is	- Ö:- Light on		•
	Colour is	Red		•
	If object value>threshold valu	e 2		
	Icon is	- Ø: Light on		•
	Colour is	Dark green		•
_	Via external status o	bject 1 byte		
+ 🕂 Logic function	Status indication	Always		•
+ 🕂 Scene Group function	Indication type	Icon + Description of button	-	•
	Icon for indication	ें <b>़</b> Light on		•
	Colour for indication	Foreground		•

Always

Fig.5.5.1.2 Parameter setting of status indication of individual button

Note: when 1 page is selected, Button 5 and Button 6 only support the scene function, and not support to the following configuration.

Parameter "Status indication"

This parameter is for setting the status indication of button.

When button with switch function, including switch, dimming, RGB switching/send value, RGB switching/send value, colour temperature switching/send value, RGB dimming, RGBW dimming or colour temperature dimming. Options:

Via button switch status object

Via external status object 1 bit

Via external status object 1 byte

#### Always

When button without switch function, including value sender, scene control, blind, shift register, multiple operation, delay mode or RTC operation mode. Options:

#### Via external status object 1 bit

Via external status object 1 byte

Always

#### **Indicate button press**

When string(14bytes) is selected, options:

Always

#### **Indicate button press**

When status display is selected, option is only Always

Via button switch status object: indicate the status via the value feed back form the switch status object;

Via external status object 1 bit: indicate the status via the value feed back form the 1 bit external object;

Via external status object 1 byte: indicate the status via comparing the value feed back form the 1 byte external object to the threshold value;

Always: always indicate in the same status.

Indicate button press: flashing twice (0.5s on and 0.5s off) when press button, then return to normal indication, if there is another press during the flashing cycle, not reset the cycle.

K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

### Parameter "Indication type

This parameter is for setting the indication type of button.

When you select the function: switch,dimming, RGB switching/send value, RGB switching/send value, colour temperature switching/send value, value sender, scene control, blind, shift register, multiple operation, delay mode, RTC operation mode, RGB dimming, RGBW dimming or colour temperature dimming. Options:

#### **Description of button**

Icon only

#### Icon + Description of button

When string(14bytes) or status display is selected, there is no **Icon + Description of button** in the above options.

The description of button is configured via the parameter "Description (max 12char.)".

Parameters as follow are visible when status indication is selected "Via button switch status object" or "External status object 1 bit":

Parameter "Icon for object value=1" Parameter "Icon for object value=0"

These two parameters are visible when indication type is selected "Icon...". Set the icon for object value=1 or

value =0. Options:

Light on Light off ...

PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

chapter 8.1.

Parameter "Colour for object value—1 Parameter "Colour for object value=0

These two parameters are for setting the colour of icon and text when status object telegram value is 1 or 0.

Options:

Foreground

Cyan blue

Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

Parameters as follow are visible when status indication is selected "Via external status object 1 byte":

#### Parameter "Object datatype

This parameter is for setting the object datatype of status indication. Options:

1byte[0..255]

1byte[0..100%]

# Parameter "Threshold compare type

This parameter is for setting the threshold compare type, you can select to display when between the threshold value, or equal to the threshold value. Options:

#### Between the threshold value

#### Equal to the threshold value

#### irameter "Number of threshold"

This parameter is for setting the number of threshold compare.

When "Between the threshold value" is selected, options: 1/2/3/4

When "Equal to the threshold value" is selected, options: 1/2/3/4/5

Parameter "Threshold value x is" (x=1+5)

This parameter is for setting threshold value, status indication is via comparing between input value and threshold value.

Options display according to the object datatype: 0..255 / 0..100

According to the threshold compare type and the number of threshold compare, you can set the icon and

colour to display which match the threshold compare. Parameters as follow:

#### --Parameter "Icon is"

This parameter is visible when indication type is selected "Icon...". Set the icon to display which matches the threshold compare. Options:

Light on Light off ... PM10

The default icons corresponding to the function and the icons corresponding to the options are described in chapter 8.1.

#### --Parameter "Colour is"

This parameter is for setting the colour of icon and text which matches the threshold compare. Options:

Foreground	Cyan blue
Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

#### Parameters as follow are visible when status indication is selected "Always":

Parameter "Icon for indication"

This parameter is visible when indication type is selected "Icon...". Set the icon to display for status indication. Options:

Light on Light off ...

#### PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

chapter 8.1.

## Parameter "Colour for indication"

This parameter is for setting the colour for status indication. Options:

Foreground	Cyan blue
Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

#### 5.5.1.3.Rocker button

#### **1.Switch function**

VX Secure	Description (max 12char.)		
茸 General	Valid display space is up to 8 small d	chars,while 3 Chinese chars	
1 Internal sensor measurem	Distinction between short and long operation	O No 🔿 Yes	
况 Input	Reaction on press operation (for left of rocker)	ON	•
Function setting	Reaction on release operation (for left of rocker)	No reaction	•
Rocker 1 - Switching	Reaction on press operation (for right of rocker)	OFF	
Customized colour	Reaction on release operation (for right of rocker)	No reaction	•
➔ Logic function	Number of objects	0 1 0 2	
← Scene Group function	Disable function	Disable=1/Enable=0	
	Lock Icon indicated when disabled	O Small icon O Big icon	
	Flashing function	Disable=1/Enable=0	•
	Colour for flashing	Red	

#### Fig.5.5.1.3(1) Parameter setting of switch function

# Parameter "Description (max 12char.

This parameter is for setting the description of rocker button, up to input 12 characters

Valid display space is up to 8 small chars, while 3 Chinese chars

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

Parameter "Reaction on short/press operation (for left/right of rocker)"

Parameter "Reaction on long/release operation (for left/right of rocker)"

These parameters are for setting the performed actions for left/right of rocker buttons 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 telegrams have been sent.

ON: send the on telegram.

OFF: send the off telegram.

TOGGLE: each operation will switch between on and off. For example, if the last telegram was sent (or received) for on, then the next operation will trigger a telegram for off. When the switch is operated again, it will send a telegram for on etc., So the switch will always record the previous state and covert to opposite value during next operation.

Parameter:"Number of objects

This parameter is for setting 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

'arameter "Lock Icon indicated when disabled"

This parameter is visible when "Disable=1/Enable=0" or "Disable=0/Enable=1" is selected. Set the icon size when the button is in disable status. Options:

#### Small icon

#### **Big icon**

Big icon is the lock icon replaces the original icon, while small icon is the two icons coexist and the lock icon is a small icon in right corner. Specific effect please refer to UI description.

# rameter "Plashing function

This parameter is for setting whether to enable flashing function. Options:

Disable

Disable=1/Enable=0

Disable=0/Enable=1

#### Parameter "Colour for flashing"

This parameter is visible when previous parameter is selected "Disable=1/Enable=0" or

"Disable=0/Enable=1". Set the colour for flashing. Options:

Foreground	Cyan blue
Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

Note: flashing function is only used for "Switch", "Dimming" and "Blind".

The flashing function takes precedence over normal status indications, and return to normal indication when cancel flashing. Specific flashing effect please refer to Chapter 7.1.

Repeat parameters will not be illustrated below; the usage is similar.

#### **2.Dimming function**

	THE REPORT OF A DESCRIPTION		
KNX Secure	Description (max 12char.)		
茸 General	• Valid display space is up to 8 sm	all chars, while 3 Chinese chars	
1 Internal sensor measurem	Reaction on short operation (for left of rocker)	ON	•
· ½ Input	Reaction on long operation (for left of rocker)	Brighter	•
• 🔳 Function setting	Reaction on short operation (for right of rocker)	OFF	*
Rocker 1 - Dimming	Reaction on long operation (for right of rocker)	Darker	*
Customized colour	Dimming mode	Start-Stop dimming Step dimming	
- 🗗 Logic function	Disable function	Disable	•
← Group function	Flashing function	Disable	•

Fig.5.5.1.3(2) Parameter setting of dimming function

Parameter "Reaction on short operation (for left/right of rocker)

These two parameters are for setting the sending switch value for left/right of rocker buttons when short

operation. Options:

No reaction OFF ON TOGGLE

No action: no telegrams have been sent.

ON: send the on telegram.

OFF: send the off telegram.

TOGGLE: each operation will switch between on and off.

Parameter "Reaction on long operation (for left/right of rocker)"

These two parameters are for setting the sending relative dimming value for left/right of rocker buttons when

long operation, with dimming brighter or darker; when release the contact stop dimming. Options:

No reaction Brighter

8 ...

Darker

#### **Brighter/Darker**

No action: no telegrams have been sent.

Brighter: the dimming up value will be sent.

Darker: the dimming down value will be sent.

Brighter/Darker: dimming up and down will be sent alternately.

Note: in "TOGGLE" mode of this parameter setting, the value sent will be linked. For example, if the last value is switching on status, then it will be dimmed down in next dimming operation; if the last value is switching off, then it will be dimmed up in next dimming operation.

Parameter "Dimming mode"

This parameter is for setting 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 telegram cyclically sending dimming telegram. Options: **0..25**, **0=send once** 

#### **3.Scene control**

-.-. Push Button Sensor with LCD,55mm > Function setting > Rocker 1 - Scene KNX Secure Description (max 12char.) 🕂 General Valid display space is up to 8 small chars, while 3 Chinese chars 1 Internal sensor measurem... Reaction on short operation Recall scene (for left of rocker) 1/2 Input 8 bit scene number Scene No.1 Reaction on long operation Store scene Function setting (for left of rocker) 8 bit scene number Scene No.1 Rocker 1 - Scene Reaction on short operation Recall scene Customized colour (for right of rocker) 8 bit scene number Scene No.2 - Logic function Reaction on long operation Store scene (for right of rocker) ← Scene Group function 8 bit scene number Scene No.2 01 02 Number of objects **Disable function** Disable

Fig.5.5.1.3(3) Parameter setting of dimming function

Parameter "Reaction on short operation (for left right of rocker)

arameter "Reaction on long operation (for left/right of rocker)"

These two parameters are for setting to recall or storage scene for left/right of rocker buttons 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 for setting the number of objects when short/long operation. Options:

1 2

#### **4.Blind function**

🔍 KNX Secure	Description (max 12char.)		
General	Valid display space is up to 8 sm	all chars, while 3 Chinese chars	
1 Internal sensor measurem	Reaction on short operation (for left of rocker)	Stop(Adjust Up)	•
· 汎 Input	Reaction on long operation (for left of rocker)	Up	•
Function setting	Reaction on short operation (for right of rocker)	Stop(Adjust Down)	•
Rocker 1 - Blind	Reaction on long operation (for right of rocker)	Down	•
Customized colour	Interval of tele. cyclic send [025,0=send once]	0	‡ *0.1s
- 🕂 Logic function			
• E Scene Group function	Disable function	Disable	•
	Flashing function	Disable	*

Fig.5.5.1.3(4) Parameter setting of blind function

# Parameter "Reaction on short operation (for left/right of rocker)" Parameter "Reaction on long operation (for left/right of rocker)"

These parameters are for setting the performed actions for left/right of rocker buttons when long/short operation. The object value is updated when the input is determined. Options:

No reaction Up Down Up/Down Stop(Adjust Up) Stop(Adjust Down) Stop(Adjust Up/Down)

No action: no action is performed.

Up: the curtains/blinds will be opened or moved up.

Down: the curtains/blinds will be closed or moved down.

Up/Down: alternately open/close or move up/down the curtains/blinds.

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

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

Stop (Adjust Up/Down): stop the curtain movement or move up/down the angle of blinds alternately.

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

This parameter is for setting the time interval of cyclical blinds angle adjustment telegram sent. Options:

#### 0..25,0=send once

#### 5.Setpoint adjustment

-.-. Push Button Sensor with LCD,55mm > Function setting > Rocker 1 - Setpoint

VNX Secure	Description (max 12char.)		
+ 🛱 General	• Valid display space is up to 8 small cha	rs,while 3 Chinese chars	
🖞 Internal sensor measurem	Reaction on operation	Setpoint adjustment(absolute)	•
+ 1/2 Input	Rocker operation mode	O Increase/Decrease O Decrease/Increase	
- 💷 Function setting	Setpoint adjustment step	О 0.5К ○ 1К	
	Initial value when no response in startup	20 🗸	°C
Rocker 1 - Setpoint	Min. setpoint temperature	19 💌	°C
Customized colour	Max. setpoint temperature	26 👻	°C
+ 🕂 Logic function	Disable function	Disable	•

#### Fig.5.5.1.3(5) Parameter setting of setpoint adjustment

#### Parameter "Reaction on operation"

This parameter is for setting the adjustment type of setpoint temperature. Options:

#### Setpoint adjustment(absolute)

**Offset Increase/Decrease(relative)** 

#### **Offset setpoint adjustment(relative)**

Setpoint adjustment(absolute): apply to absolute adjust the setpoint temperature;

Offset Increase/Decrease(relative): apply to relative adjust the offset of setpoint temperature via 1 bit object;

Offset setpoint adjustment(relative): apply to relative adjust the offset of setpoint temperature.

### rameter "Rocker operation mode

This parameter is for setting the operation mode of rocker button. Options:

#### Increase/Decrease

#### Decrease/Increase

Increase/Decrease: the left of rocker button to increase setpoint temperature, and the right to decrease setpoint temperature;

Decrease/Increase: the left of rocker button to decrease setpoint temperature, and the right to increase setpoint temperature.

#### Parameter "Setpoint adjustment step"

This parameter is visible when the setpoint temperature adjustment is selected "Setpoint adjustment (absolute)" or "Offset setpoint adjustment (relative)". Set the step value of setpoint adjustment. Options:

#### 0.5K

#### 1K

For absolute adjustment, if current setpoint temperature is 21°C, increase 0.5°C, then the current setpoint temperature is change to 21.5°C and sent to the bus; while decrease 0.5°C, then the current setpoint temperature is change to 20.5°C and sent to the bus.

For relative adjustment, if step value is 1K, current offset is 0K, increase per time to send 1K offset to the bus, if current offset is -1K, decrease per time to send -2K offset to the bus.

# Parameters as follow are visible when the setpoint temperature adjustment is selected "Setpoint adjustment (absolute)":

### Parameter "Initial value when no response in startup"

This parameter is for setting the initial value of setpoint temperature after voltage recovery or download completion, that is, the used initial value when no response received in startup. Options:

5°C 6°C ... 37°C K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

### ieter "Min./Max. setpoint temperature

These two parameters are for setting the adjustable range of the setpoint temperature. Options:

5°C 6°C ... 37°C

If the setpoint temperature beyond the limited range, it will output the limited temperature.

For setpoint temperature, the Min. value must less than the Max., if not, it can not be modified on ETS.

Parameters as follow are visible when the setpoint temperature adjustment is selected "Offset setpoint adjustment (relative)":

Parameter "Initial value when no response in startup (K)"

This parameter is for setting the initial value of setpoint temperature offset after voltage recovery or

download completion, that is, the used initial value when no response received in startup. Options: -10..10

Parameter "Min. setpoint offset [-10..0]K"

This parameter is for setting the maximum offset when setpoint temperature offset decrease (negative offset).

Options: -10..0

数: Max. setpoint offset [0..10]]s.

This parameter is for setting the maximum offset when setpoint temperature offset increase (forward offset).

#### Options: 0..10

For the offset, the Min. value and the Max. Value cannot be equal to 0 at the same time, if not, they

can not be modified on ETS, and display red box warning, as shown as follow:

Min. setpoint offset [-100]	0	÷ H
Max. setpoint offset [010]	0	‡

#### 5.5.1.4. Status indication of rocker button

#### Left/Right field display

e	Left field display		
+ + Scene Group function	Indication type	O Description only O Icon only	
	lcon	-\$-Light on	•
	Colour for indication	Foreground	•
	Right field display		
	Indication type	O Description only O Icon only	
	lcon	ैं, Light on	•
	Colour for indication	Foreground	•
	Fig.5.5.1.4(1) Parameter settin	g of left/right field display	

#### arameter "Indication type"

This parameter is for setting the indication type for left/right field of rocker buttons. Options:

#### **Description only**

Icon only

#### Parameter "Description (max 7char.)

This parameter is for setting the description for for left/right field of rocker buttons, up to input 7 characters.

#### Parameter "Icon

This parameter is visible when indication type is selected "Icon only". Set the icon of status indication. Options:

> Light on Light off ... PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

chapter 8.1.

Parameter "Colour for indication"

This parameter is for setting the colour of status indication. Options:

Foreground

Cyan blue

Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

### Middle field display

	Middle field display		
	Status indication	Via button switch status object	•
	Indication type	Icon + Description of button	•
	Icon for object value=1	·Ĉ: Light on	•
	Colour for object value=1	Orange	•
	Icon for object value=0	Ô Light off	•
	Colour for object value=0	Foreground	•
	Via button switch s	tatus object	
	Middle field display		
	Status indication	Via external status object 1 bit	•
	Indication type	Icon + Description of button	•
	Icon for object value=1	·\$: Light on	٠
	Colour for object value=1	Orange	•
	Icon for object value=0	පී Light off	٠
	Colour for object value=0	Foreground	•
0	Via external status Middle field display	object 1 bit	
+ ½ Input	Status indication	Via external status object 1 byte	•
- Eurotion setting	Indication type	lcon+status value	•
~	Object datatype	1byte[0.,255] 0 1byte[0.,100%]	
Rocker 1 - Dimming			
Customized colour	Threshold compare type	Equal to the threshold value	
+ 🕂 Logic function	Number of threshold	2	•
	Threshold value 1 is	0	, %
+ 🛨 Scene Group function	Threshold value 2 is	20	<b>%</b>

Via external status object 1 byte(1)

If object value<=threshold value	ue 1	
Icon is	·ڳ Light on	*
Colour is	Foreground	•
If threshold value 1 <object td="" value<=""><td>ue&lt;=threshold value 2</td><td></td></object>	ue<=threshold value 2	
Icon is	- Ř: Light on	•
Colour is	Red	*
If object value>threshold value	2	
Icon is	-Â: Light on	•
Colour is	Dark green	•
Via external status ob Middle field display	ject 1 byte(2)	
Status indication	Via external status object 2 byte	•
Indication type	lcon+status value	•
Icon for indication	·Ĉ: Light on	•
Colour for indication	Foreground	•
Via external status o Middle field display	bject 2 byte	
Status indication	Via external status object 2 byte float	•
Indication type	lcon+status value	•
Temperature display units	Celsius(°C)	•
Icon for indication	¦Ø; Light on	•
Colour for indication	Foreground	•
Via external status obje	ect 2 byte float	
Status indication	Abusaue	•
	Aiways	
indication type	vicon + Description of button	•
Icon for indication	्रम् Light on	•
Colour for indication	Foreground	•
Always		

Fig.5.5.1.4(2) Parameter setting of middle field display

### Parameter "Status indication"

This parameter is for setting the status indication of button.

When button function is switch, options:

Via button switch status object

- Via external status object 1 bit
- Via external status object 1 byte
- Always

When button function is selected scene control or blind, there is no Via button switch status object in the

above options;

When button function is selected dimming, in addition to the above options you can also select Via external

#### status object 2 byte;

When button function is selected setpoint adjustment, options:

#### Via external status object 1 bit

#### Via external status object 2 byte float

#### Always

Via button switch status object: indicate the status via the value feed back form the switch status object;

Via external status object 1 bit: indicate the status via the value feed back form the 1 bit external object;

Via external status object 1 byte: indicate the status via comparing the value feed back form the 1 byte

external object to the threshold value;

Via external status object 2 byte: display the received integer value, such as colour temperature;

Via external status object 2 byte float: display the received float value, such as temperature;

Always: always indicate in the same status.

#### Parameter "Indication type

This parameter is for setting the indication type of button. Options:

Description of button Icon only Icon + Description of button Status value Icon+status value Int.temp + status value

When button function is selected switch or scene control, there are no option about status, that is, the options have no "Status value" and "...status value";

When button function is selected dimming or blind, not support to the option "Int.temp + status value", and the options have no "Status value" and "...status value" when status indication is selected "Via button switch status object", "Via external status object 1 bit" or "Always";

When button function is selected setpoint adjustment, there are no option about status when status indication is selected "Via external status object 1 bit" or "Always", that is, the options have no "Status value" and "...status value"; While "Via external status object 2 byte float" is selected, only support to the options about status.

#### Parameters as follow are visible when status indication is selected "Via button switch status object" or

#### "External status object 1 bit":

Parameter "Icon for object value=1" Parameter "Icon for object value=0"

These two parameters are visible when indication type is selected "Icon...". Set the icon for object value=1 or value =0. Options:

Light on Light off ... PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

chapter 8.1.

Parameter "Colour for object value=1" Parameter "Colour for object value=0"

These two parameters are for setting the colour of icon and text when status object telegram value is 1 or 0.

Options:

Cyan blue
Cyan
Coffee
Light orange
Customized colour 1
Customized colour 2
Customized colour 3
Customized colour 4
Customized colour 5

K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

#### Parameters as follow are visible when status indication is selected "Via external status object 1 byte":

Parameter "Object datatype"

This parameter is for setting the object datatype of status indication. Options:

#### 1byte[0..255]

#### 1byte[0..100%]

Parameter "Threshold compare type"

This parameter is for setting the threshold compare type, you can select to display when between the threshold value, or equal to the threshold value. Options:

#### Between the threshold value

#### Equal to the threshold value

irameter "Threshold compare type"

This parameter is for setting the number of threshold compare.

When "Between the threshold value" is selected, options: 1/2/3/4

When "Equal to the threshold value" is selected, options: 1 / 2 / 3 / 4 / 5

Parameter "Threshold value x is" (x=1~5)

This parameter is for setting threshold value, status indication is via comparing between input value and threshold value.

Options display according to the object datatype: 0..255 / 0..100

According to the threshold compare type and the number of threshold compare, you can set the icon and colour to display which match the threshold compare. Parameters as follow:

---Parameter "Icon is"

This parameter is visible when indication type is selected "Icon...". Set the icon to display which matches the threshold compare. Options:

Light on Light off ... PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

#### chapter 8.1.

#### --Parameter "Colour is"

This parameter is for setting the colour of icon and text which matches the threshold compare. Options:

Foreground	Cyan blue
Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

Parameters as follow are visible when status indication is selected "Via external status object 2 byte

#### float":

# Parameter = lemperature display units

This parameter is for setting the temperature unit displayed on the screen, and the object datatype is all DPT 9.001 temperature. Options:

Celsius(°C) Fahrenheit(°F) Kelvins(K)

The temperature accuracy is to 0.1 on the screen, specific effect please refer to UI description.

#### Parameters as follow are visible when status indication is selected "Via external status object 2 byte..."

or "Always":

Parameter "Icon for indication"

This parameter is visible when indication type is selected "Icon...". Set the icon to display for status indication. Options:

Light on

#### Light off

•••

#### PM10

The default icons corresponding to the function and the icons corresponding to the options are described in

chapter 8.1.

# Parameter \* Colour for indication.

This parameter is for setting the colour for status indication. Options:

Foreground	Cyan blue
Red	Cyan
Dark green	Coffee
Blue	Light orange
Yellow	Customized colour 1
Orange	Customized colour 2
Purple	Customized colour 3
Grey	Customized colour 4
Pink	Customized colour 5

#### 5.5.1.5.Parameter window "Customized colour"

💗 KNX Secure	Customized colour 1		
🛱 General	RGB value	#D00070	
1 Internal sensor measurem	Customized colour 2 RGB value	#706010	
峛 Input	Customized colour 3		
Function setting	RGB value	#007040	
Button 1 - Delay mode	Customized colour 4 RGB value	#D03000	
Customized colour	Customized colour 5		
	RGB value	#000000	

Fig.5.5.1.5 "Customized colour" parameter window

#### Customized colour x (x=1~5)

### Parameter "RGB value"

This parameter is for setting the customized colour of status indication, user up to define 5 colours.

Options: #000000 ....#FFFFFF

#### 5.5.2. Parameter window "Multifunction thermostat"

💙 KNX Secure	Function	Function type		ion thermostat 🔹
General	Room ten	nperature control function as	FCU contro	ol 👻
1 Internal sensor measurem	Interface	preview		
⅓ Input			1	
Function setting				0505
+ FCU				
➔ Logic function	-		5	6
🕂 Scene Group function	Button 1	press to switch power on/off	Button 2	if enable multiple functions, press to switchover function page
	Button 3	short press to switch fan speed, long press to switch auto status	Button 4	if operation mode disable, press to switch heating/cooling mode; if operation mode enable, short press to switch operation mode, long press to switch heating/cooling mode
	Button 5	press to decrease temperature	Button 6	press to increase temperature
	Floor heat	ting function		
	Ventilatio	n function		
	Delay tim	e for exiting setting status	3.0	•
	Temperat	ura display units	Celsius	(°C) Eabranheit(°E)

Fig.5.5.2 "Function setting"-"Multifunction thermostat" parameter window

arameter "Room temperature control function as

This parameter is for setting whether to enable the setting interface of room temperature control function,

FCU control and VRF control can only choose one of them, select to display corresponding interface. Options:

Disable FCU control

**VRF** control

#### Parameter "Floor heating function"

This parameter is for setting whether to enable the setting interface of floor heating function, select to display corresponding interface.

## arameter "Ventilation function

This parameter is for setting whether to enable the setting interface of ventilation function, select to display corresponding interface.

#### Parameter "Delay time for exiting setting status"

This parameter is for setting the delay time to auto-exit setting status, mainly used for the sub function settings of RTC, floor heating and ventilation. Telegrams are sent immediately, such as setpoint temperature, specific definition is according to the UI. Options:

0.5s 1.0s 2.0s 3.0s

When Room temperature control function, Floor heating function and Ventilation function are enabled, this window displays the corresponding button operation, specific UI please refer to chapter 7.2.

# 5.5.2.1.Parameter window "FCU setting"

	۲	KNX Secure	Indication function icon	~		
	<b></b>	C1	Icon	1 Temperature		٠
	=	General	Interface display internal humidity	~		
	8	Internal <mark>sensor measurem</mark>				
-	%	Input	Work mode	Master		-
. (		Function setting	Combination ratio	50% Internal to 50% External		•
			Period for request external sensor	5	-	min
	FCU	J	[0255]	3	•	mir
		Setpoint	Send temperature when the result change by	1.0K		٠
		Heating/Cooling control	Cyclically send temperature [0255,0=inactive]	0	* *	mir
		Fan	Control value after temp. error [0100] (If			
		Scene	2-point control, set value '0'=0, set value '>0'=1)	0	* *	9
	₽	Logic function				
	-F-	Scene Group function	Interface display temperature	Actual temperature		
	-	occile oroup function	Setpoint temperature adjustment step	0 0.5K 1K		
			Min. setpoint temperature [537]	16	•	•(
			Max. setpoint temperature [537]	32	•	°(
			Power on/off function	Via both button and object		•
			Power on/off status after download	OFF ON		
			Power on/off status after voltage recovery	As before voltage failure		•
		Setpoint	Room temperature control mode	Heating and Cooling		•
		Heating/Cooling control	Heating/Cooling switchover	Via both button and object		•
		Fan	Heating/Cooling status after download	O Heating Cooling		
		Scene	Heating/Cooling status after voltage recovery	As before voltage failure		•
- ;	₽	Logic function	Room temperature control system	🔵 2 pipes system 🔘 4 pipes system		
	Æ	Scene Group function	Room temperature operation mode	~		
			Controller status after download	Standby mode		*
			Controller status after voltage recovery	As before voltage failure		•
			controller status after voltage recovery			
			Extended comfort mode	0	-	mir
			Extended comfort mode [0255,0=inactive]	0	÷	mir

Fig.5.5.2.1(1) "FCU setting" parameter window



Window contact input function		
Delay for window contact [065535]	15	ţ
Operation mode for open window	Economy mode O Frost/heat prot	tection
Bus presence detector function		
Fan	~	
Scene	1	

ameter "Indication function ico

This parameter is for setting whether to display the icon of FUC control on the screen.

When enabled, parameter as follow is visible:

---Parameter "Icon"

This parameter is for setting the function icon. Options:

Air conditioner Floor heating ... Temperature

The default icons corresponding to the function and the icons corresponding to the options are described in the appendix, please refer to chapter 8.2.

Parameter "Interface display internal humidity"

This parameter is for setting whether to display the internal humidity on the screen, the humidity is determined by the setting of the "Internal sensor measurement" in the parameter interface, more details refer to chapter 5.3.

Parameter "Work mode

This parameter is for setting the work mode of FCU control. Options:

Single

Master

Slave

Single: FCU control of the device is set to single control and with a temperature control algorithm, the output directly controls the actuator;

Master: FCU control of the device is set to multi-control and with a temperature control algorithm, the output

is dominated by the device. When the device restarts, it sends the current status to the bus, such as power on/off, setpoint temperature, control mode, operation mode, and fan speed read request;

Slave: FCU control of the device is set to slave control, at this time FCU is only used as touch and display, no temperature control algorithm, when the device restarts, it will send the status read request, such as power on/off, setpoint temperature, control mode, operation mode, fan speed.

#### ?arameter "Room temperature reference from"

This parameter is for setting the resource of the room temperature reference. Options:

**Internal sensor** 

**External sensor** 

#### Internal sensor combine with External sensor

When selecting the reference internal sensor, the temperature is determined by the setting of the "Internal sensor measurement" in the parameter interface, more details refer to chapter 5.3.

#### ---Parameter "Period for request external sensor [0...255]min"

This parameter is visible when "... External sensor" is selected. Set the time period for read request external

temperature sensor. Options: 0..255

#### Parameters as follow are visible when "Internal sensor combine with External sensor" is selected.

---Parameter "Combination ratio"

This parameter is for setting the internal sensor and the external sensor to measure the specific gravity of the temperature. Options:

10% Internal to 90% External

20% Internal to 80% External

•••

#### 90% Internal to 10% External

For example, if the option is "40% internal to 60% external", then the internal sensor accounts for 40%, the external sensor accounts for 60%, and the control temperature = (internal sensor's temperature  $\times$  40%) + (external sensor's temperature  $\times$  60%), the RTC function of the device will control and display the temperature according to the calculated temperature.

When two sensors are combined for detection, when one sensor is in error, the temperature value detected by

the other sensor is used.

#### --Parameter "Send temperature when the result change by [0...10]K"

This parameter is for setting when temperature turns to a certain value, whether to enable to send the current temperature value to the bus. Not send when disable. Options:

> Disable 0.5K 1.0K ...

10.0K

#### ---Parameter "Cyclically send temperature [0...255,0=inactive]min"

Setting the time for cyclically sending the temperature detection value to the bus. Not send when value is 0.

Options: 0..255

Note: cyclically sending and change sending are independent of each other.

'arameter "Control value after temp. error[0..100]% (if 2-point control, set value '0'=0, set value '>0'=1)"

When the work mode is "Slave", this parameter is not visible.

Set the control value when temperature error occur. Options: 0..100

If 2-Point control, then the parameter value is 0, as well as the control value; if the parameter value is more

than 0, then the control value will be 1.

Parameter "Interface display temperature

This parameter is for setting the interface display temperature under the normal status. Options:

#### **Setpoint temperature**

#### **Actual temperature**

If display actual temperature, it just to wake up when firstly adjust setpoint temperature, and not send telegram.

ameter "Setpoint temperature adjustment step"

This parameter is for setting the step value of setpoint temperature. Options:

0.5K

1K

# arameter - "Min. Max. setpoint temperature [5..

These parameters are for setting the adjustable range of the setpoint temperature. The minimum value should be less than the maximum value. Options:

5°C 6°C ... 37°C

If the setpoint temperature beyond the limited range, it will output the limited temperature.

For setpoint temperature, the Min. value must less than the Max., if not, it can not be modified on

#### ETS.

#### Parameter "Power on/off function

This parameter is for setting whether to enable power on/off function of controller. Options:

Disable

Via button only

Via object only

#### Via both button and object

Disable: power on/off function of controller is disabled;

Via button only: control power on/off only via the panel button;

Via object only: control power on/off only via the object;

Via both button and object: control power on/off both via the panel button and object.

These two parameter as follow and objects are visible when enabled:

Parameter "Power on/off status after download

When the work mode is "Slave", this parameter is not visible.

Set the power on/off status of FCU control interface after download. Options:

OFF

ON

#### Parameter "Power on/off status after voltage recovery

When the work mode is "Slave", this parameter is not visible.

Set the power on/off status of FCU control interface after device voltage recovery. Options:

OFF

ON

#### As before voltage failure

OFF: FCU control interface is off when device is powered on, this interface is not operational, and FCU is

not running;

ON: FCU control interface is on when device is powered on, this interface is operational, FCU will calculate internally according to the control type to determine the current controlling status;

As before voltage failure: FCU control interface will recover to the status before voltage failure, if it is on,

then FCU will calculate internally according to the control type to determine the current controlling status.

Parameter "Room temperature control mode"

This parameter is for setting the room temperature control mode. Options:

Heating

Cooling

**Heating and Cooling** 

Parameters as follow are visible when "Heating and Cooling" is selected.

---Parameter "Heating/Cooling switchover"

This parameter is for setting the switchover way of Heating/Cooling. Options:

Only via button

Only via object

Via both button and object

#### Automatic changeover

When the work mode is "Slave", the option is only **Only via object** 

---Parameter "Heating/Cooling status after download"

When the work mode is "Slave", this parameter is not visible.

Set the heating/cooling control mode of device after download. Options:

Heating

Cooling

#### -Parameter "Heating/Cooling status after voltage recovery"

When the work mode is "Slave", this parameter is not visible.

Set the heating/cooling control mode of device after voltage recovery. Options:

Heating

Cooling

#### As before voltage failure

As before voltage failure: the control mode will recover as before voltage failure after voltage recovery. If it is the first time the device is used or a newly enabled function page, the control mode after the device is started is in an uncertain state, and it needs to be manually selected at this time.

#### ---Parameter "Room temperature control system"

When the work mode is "Slave", this parameter is not visible.

Set the type of room temperature control system, that is, pipe types of fan coil water inlet/outlet. Options:

#### 2 pipes system

#### 4 pipes system

2 pipes system: shares an inlet and outlet pipe for heating and cooling, that is, both hot and cold water are controlled by a valve.

4 pipes system: has its own inlet and outlet pipes for heating and cooling, and two valves are needed to control the entry and exit of hot water and cold water respectively.

Parameter "Room temperature operation mode"

This parameter is for setting whether to enable room temperature operation mode.

When enabled, support 4 modes with comfort, standby, economy and frost/heat protection. Support datatype

of 1byte, and preset a operation mode when download and voltage recovery.

#### Parameters as follow are visible when operation mode is enabled.

#### ---Parameter "Controller status after download"

When the work mode is "Slave", this parameter is not visible.

Set the operation mode when power on FCU after download. Options:

#### **Comfort mode**

#### Standby mode

#### **Economy mode**

#### ---Parameter "Controller status after voltage recovery"

When the work mode is "Slave", this parameter is not visible.

Set the operation mode when power on FCU after voltage recovery. Options:

Comfort mode

Standby mode

Economy mode

**Frost/heat protection** 

As before voltage failure

#### ---Parameter "Extended comfort mode [0..255,0=inactive]min"

When the work mode is "Slave", this parameter is not visible.

Set the extended time of comfort mode. When value >0, activate the extended, and 1 bit object "Extended comfort mode" is visible. Options: **0..255** 

When object receives telegram 1, comfort mode is activated. If receive telegram 1 again during the delay time, the time is retiming. And comfort mode will return to previous operation mode once finish the timing. Exit the comfort mode when a new operation mode in delay time.

Change the operation mode will quit the timing, and heating/cooling switchover will not.

#### --Parameter "1 bit object function for operation mode"

When the work mode is "Master", this parameter is visible.

Set whether to enable 1 bit object function for operation mode.

When enabled, the 1 bit object function for operation mode is visible, send telegram 1 to activate corresponding mode.

If receive the telegram 0 of comfort, economy and protection mode from the bus, current mode will be updated to standby mode.

#### ---Parameter "1 bit object for standby mode"

This parameter is visible when previous parameter is enabled. Set whether to enable 1 bit object for standby mode.

When enabled, the 1 bit object function for standby mode is visible.
#### Parameters as follow are visible when operation mode is disabled.

#### ---Parameter "Initial setpoint temperature (° C)"

When the work mode is "Slave", this parameter is not visible.

Set the initial value of setpoint temperature. Options:

10.0 10.5 ... 35.0

When initial setpoint temperature is less than the min. setpoint temperature, display following warning:

😢 The setpoint is less than minimum,so minimum will regard as setpoint in fact

When initial setpoint temperature is greater than the max. setpoint temperature, display following warning:

O The setpoint is greater than maximum, so maximum will regard as setpoint in fact

#### Automatic H/C mode changeover dead zone

#### ---Parameter " Upper/Lower dead zone"

When the work mode is "Slave", these two parameters are not visible.

These two parameters are visible when control mode is selected "Heating and Cooling", and "Automatic changeover" is selected. Setting the dead zone range of auto switchover heating/cooling. Options:

0.5K 1.0K

•••

#### 10.0K

Under heating control, when the actual temperature(T) greater than or equal to the setpoint temperature + the upper dead zone, then mode heating switch to cooling;

Under cooling control, when the actual temperature(T) less than or equal to the setpoint temperature + the upper dead zone, then mode cooling switch to heating.

# Parameter "Window contact input function

When the work mode is "Slave", this parameters is not visible.

This parameter is visible when operation mode is enabled. Set whether to link to window contact status.

When window contact input function is enabled, these two parameters as follow are visible:

#### --Parameter "Delay for window contact [0..65535]s"

This parameter is visible when operation mode and window contact input function are enabled. Set the delay time to window contact detection. That is, when receive a telegram "window open", the controller will regard that as a valid signal and execute the behaviour after this delay time. Options: **0..65535** 

#### ---Parameter "Controller mode for open window"

If window status is open, perform corresponding operation according to configuration. (For the operation mode, the Switch and Setpoint temperature, as well as Heating/Cooling mode are recorded in the background if control telegrams are received, and performed after the window is closed. If there is no telegram receiving during timing, return to the mode before the window was opened.) Options:

#### **Economy mode**

#### **Frost/heat protection**

# Parameter "Bus presence detector function"

When the work mode is "Slave", this parameter is not visible.

This parameter is visible when operation mode is enabled. Set whether to link to bus presence detector status.

If presence is detected, enter the comfort mode and it will be restored to original mode after leaving. If there is a telegram/manual operation to adjust the mode during the period, the telegram is logged in the background, and it will be exited comfort mode and restored to the mode after leaving. If there is no telegram receiving during timing, return to original mode. (If receive the presence status cyclically, comfort mode can not be re-triggered, and only can be after leaving.)

#### Parameter "Fan"

This parameter is for setting whether to enable fan control interface is visible.

#### Parameter "Scene

When the work mode is "Slave", this parameter is not visible.

Set whether to enable scene function is visible. When enabled, link to power on/off, operation mode, setpoint temperature.

#### 5.5.2.1.1.Parameter window "Setpoint"

#### -.-.- Push Button Sensor with LCD,55mm > Function setting > FCU > Setpoint

		KNX Secure	Setpoint method for operating mode	Relative Absolute		
+	≓	General	Base setpoint temperature	20.0	+	°C
	8	Internal sensor measurem	Automatic H/C mode changeover dea (only for comfort mode)	d zone		
+	K	Input	Upper dead zone	2.0	•	к
		Function setting	Lower dead zone	2.0	•	K
	-mm-	-	Heating			
-	FC	U	Reduced heating in standby mode [010]	2	Ŧ	K
		Setpoint	Reduced heating in economy mode	4	•	к
		Fan	Setpoint temperature in frost protection	7	•	°C
		Scene	Cooling			
+	₽	Logic function	Increased cooling in standby mode [010]	2	•	к
	÷E	Scene Group function	Increased cooling in economy mode [010]	4		к
F.						
F.	-		Setpoint temperature in heat protection [3037]	35	•	°C
+	-		Setpoint temperature in heat protection [3037] Parameter setting of relative adju	35 istment	•	°C
ł	•	KNX Secure	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode	35 Instruent Relative O Absolute	*	°C
+	• #	KNX Secure General	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating	35 Instment Relative O Absolute	·	°C
+	• = = = = = = = = = = = = = = = = = = =	KNX Secure General Internal sensor measurem	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537]	35 Instruent Relative O Absolute	•	°C °C
+	- • = 1 1 2 1 %	KNX Secure General Internal sensor measurem Input	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537]	35 Instruent Relative O Absolute 21 19	•	°C °C
+++	• = 1 3 次 ■	KNX Secure General Internal sensor measurem Input Function setting	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537]	35 Instruent Relative O Absolute 21 19 17	•	°C °C °C
+++	● == 1 次 == FC	KNX Secure General Internal sensor measurem Input Function setting	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in economy mode [537]	35 Instruent Relative Absolute 21 19 17 7	• • •	°C °C °C °C
+	● == 3 ½ == FC	KNX Secure General Internal sensor measurem Input Function setting	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in frost protection [510] Cooling	35 Instant Relative Absolute 21 19 17 7	• • •	°C °C °C °C
+	● ==== 	KNX Secure General Internal sensor measurem Input Function setting U Setpoint Heating/Cooling control	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in frost protection [510] Cooling Setpoint temperature in comfort mode [537]	35 istment Relative Absolute 21 19 17 7 23	•	°C °C °C °C
+	● == 1 次 FC	KNX Secure General Internal sensor measurem Input Function setting U Setpoint Heating/Cooling control Fan	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in frost protection [510] Cooling Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537]	35 istment Relative Absolute 21 19 17 7 23 25	•	°C °C °C °C °C
+	● ====================================	KNX Secure General Internal sensor measurem Input Function setting U Setpoint Heating/Cooling control Fan Scene	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in frost protection [510] Cooling Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in standby mode [537]	35 istment Relative Absolute 21 19 17 7 23 25 27	• • • • •	°C °C °C °C °C °C
+	● ====================================	KNX Secure General Internal sensor measurem Input Function setting U Setpoint Heating/Cooling control Fan Scene Logic function	Setpoint temperature in heat protection [3037] Parameter setting of relative adju Setpoint method for operating mode Heating Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in frost protection [510] Cooling Setpoint temperature in comfort mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in standby mode [537] Setpoint temperature in economy mode [537] Setpoint temperature in heat protection [3037]	35 istment Relative Absolute 21 19 17 7 23 25 27 35	* * * * *	°C °C °C °C °C °C °C

Fig.5.5.2.1.1 "Setpoint" parameter window

When the work mode is "Slave", this parameter window is not visible.

This parameter window is visible when operation mode is enabled, and display according to control mode.

# Parameter "Setpoint method for operating mode

This parameter is for setting the setpoint method for operating mode. Options:

#### Relative

#### Absolute

Relative: relative adjustment, the setpoint temperature of economy mode and standby mode will refer to the

defined temperature setpoint.

Absolute: absolute adjustment, each mode has its independent temperature setpoint.

#### Parameters as follow are visible when the setpoint temperature adopts the relative adjustment

#### method.

### Parameter "Base setpoint lemperature (°. C)"

This parameter is for setting the base setpoint temperature, from which the setpoint temperature of the room comfort mode is obtained. Options:

10.0 10.5 ... 35.0

The setpoint value will be modified through object "Base temperature setpoint, status", then the new value will be stored after the device power off.

When base setpoint temperature is less than the min. setpoint temperature, display following warning:

😢 The setpoint is less than minimum,so minimum will regard as setpoint in fact

When base setpoint temperature is greater than the max. setpoint temperature, display following warning:

8 The setpoint is greater than maximum, so maximum will regard as setpoint in fact.

#### Automatic H/C mode changeover dead zone (only for comfort mode)

Parameter "Upper/Lower dead zone"

These two parameters are visible when control mode "Heating and Cooling" and "Automatic changeover" are selected. Set the dead zone range of auto switchover heating/cooling. Options:

0.5K

1.0K

•••

#### 10.0K

Under heating control, when the actual temperature(T) > or = the setpoint temperature + the upper dead zone, then mode heating switch to cooling;

Under cooling control, when the actual temperature(T) < or = the setpoint temperature + the lower dead zone, then mode cooling switch to heating.

Parameter "Reduced heating in standby mode [0...10]K" Parameter "Increased cooling in standby mode [0...10]K"

These two parameters are for setting the setpoint of standby mode. Options:

0K 1K ... 10K

Heating: the setpoint of standby mode is the temperature setpoint minus the reference value;

Cooling: the setpoint of standby mode is the temperature setpoint plus the reference value.

arameter "Reduced heating in economy mode [0...10]K

Parameter "Increased cooling in economy mode [0...10]K

These two parameters are for setting the setpoint of economy mode. Options:

0K 1K ...

10K

Heating: the setpoint of economy mode is the temperature setpoint minus the reference value;

Cooling: the setpoint of economy mode is the temperature setpoint plus the reference value.

Parameter "Setpoint temperature in frost protection mode  $\left[5...10
ight]^{\circ}$  C

This parameter is for setting the setpoint of frost protection mode for Heating. Options:

5°C

6°C

•••

#### 10°C

Under the frost protection mode, when room temperature reduce to the setpoint, the controller will trigger a control telegram so that related heating controller will output heating control to prevent the temperature from being too low.

Parameter "Setpoint temperature in heat protection mode [30...37]\*

This parameter is for setting the setpoint of heat protection mode for Cooling. Options:

30°C 31°C ... 37°C

Under the heat protection mode, when room temperature raise to the setpoint, the controller will trigger a control telegram so that related cooling controller will output cooling control to prevent the temperature from being too high.

Parameters as follow are visible when the setpoint temperature adopts the absolute adjustment method.

```
Parameter "Setpoint temperature in comfort mode [5...37] C
Parameter "Setpoint temperature in standby mode [5...37] C
Parameter "Setpoint temperature in economy mode [5...37] C
```

These parameters are for setting the setpoint temperature in comfort, standby and economy mode when heating or cooling. Options:

5°C 6°C ... 37°C

Parameter "Setpoint temperature in frost protection mode [5...10] <sup>2</sup>. (

This parameter is for setting the setpoint temperature in frost protection mode when heating. Options:

5°C
6°C
•••
10°C

meter "Setpoint temperature in heat protection mode [30...37

This parameter is for setting the setpoint temperature in heat protection mode when cooling. Options:

31°C	
37°C	

For absolute adjustment mode, when "Heating and Cooling" is selected, whether it is manual changeover, either bus changeover or automatic changeover, the heating setpoint value must be less than or equal to the cooling of the same operation mode, if not, it can not be modified on ETS.

1. When the ambient temperature is higher than the setpoint temperature of current mode in cooling, it is changed to cooling mode; When the ambient temperature is lower than the setpoint temperature of current mode in heating, it is changed to heating mode.

2.In the same operation mode, the setpoint temperature difference between cooling and heating remains constant, whether it is written on the bus or adjusted on the panel. That is, when adjust the setpoint temperature, it need to update cooling and heating setpoint temperature of current operation mode at the same time.

3. When user operates on the panel or the bus is received setpoint temperature, it is still necessary to limit the value according to the high and low thresholds, that is heating and cooling temperature neither can not be lower than the min., or can not be higher than the max.. If parameters configuration of ETS is not met the condition, it will be noted warnings:

When the setpoint temperature of comfort/standby/economy mode is less than the min. setpoint temperature, display following warning:

X The setpoint is less than minimum, so minimum will regard as setpoint in fact.

When the setpoint temperature of comfort/standby/economy mode is greater than the max. setpoint temperature, display following warning:

8 The setpoint is greater than maximum, so maximum will regard as setpoint in fact.

Note: for relative/absolute adjustment, in protection mode, the setpoint temperature is only configured via ETS, and not limited with the min./max. value, and user can not change it on screen via the button.

## 5.5.2.1.2.Parameter window "Heating/Cooling control"

KNX Secure	Type of heating/cooling control	Switching on/off(use 2-point control)		*
<b>፰</b> General	Invert control value			
1 Internal sensor measurem	Heating			
1 Input	Lower Hysteresis [0200]	10	\$	*0.11
Eurotion setting	Upper Hysteresis [0200]	10	÷	*0.1
E function setting	Cooling			
- FCU	Lower Hysteresis [0200]	10	÷	*0.1
Setpoint	Upper Hysteresis [0200]	10	÷	* <mark>0.1</mark>
Heating/Cooling control		17-17-17-17-17-17-17-17-17-17-17-17-17-1		-
Fan	Cyclically send control value[0255] Parameter setting of "Switching on/off()	0 use 2-point control)"	-	mi
VIX Secure	Type of heating/cooling control	Switching PWM(use PI control)		
<b>፰</b> General	Invert control value			
lnternal sensor measurem	PWM cycle time [1255]	15	;	m
场 Input	Heating speed	User defined		
Function setting	Proportional range [10100]	40	* *	*0.1
- FCU	Reset time [0255]	150		m
Setpoint	Cooling speed	User defined		
Heating/Cooling control	Proportional range [10100]	40	÷	*0.1
Fan	Reset time [0255]	150	;	m
Scene	Cyclically send control value[0255]	0 (///control)?	;	m
VIX Secure	Type of heating/cooling control	Continuous control(use PI control)		
茸 General	Invert control value			
lnternal sensor measurem	Heating speed	User defined		
1/2 Input	Proportional range [10100]	40	÷	*0.1
Function setting	Reset time [0255]	150		m
	Cooling speed	User defined		
- FCU	Proportional range [10100]	40	÷	*0.1
Setpoint	Reset time [0, 255]	150		m

-.-.- Push Button Sensor with LCD,55mm > Function setting > FCU > Heating/Cooling control

Parameter setting of "Continuous control(use PI control)" (1)

• K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

Fan	Send control value on change by [0100,0=inactive]	4	4 7	9
Scene	Cyclically send control value[0255]	0	* *	mi

Fig.5.5.2.1.2(1) "Heating/Cooling control" parameter window

When the work mode is "Slave", this parameter window is not visible.

This parameter window displays according to control mode and control system (2 pipe or 4pipe).

arameter "Type of heating/cooling control"

This parameter is for setting the type of heating/cooling control. Different control types are suitable for

controlling different temperature controllers. Options:

Switching on/off(use 2-point control)

Switching PWM(use PI control)

**Continuous control(use PI control)** 

Parameter "Invert control valu

This parameter is for setting whether to invert control value or normal sending control value, so that the control value will be suitable for the valve type.

When enabled, send the control value to the bus through objects after inverting the control value.

#### These two parameters as follow are suitable for 2 point control:

-Parameter "Lower Hysteresis 10...200]\*0.1K\*

#### ---Parameter "Upper Hysteresis [0...200]\*0.1K"

These two parameters are for setting the lower/upper hysteresis temperature in FCU heating or cooling.

Options: 0..200

Under heating control,

When the actual temperature(T) > the setpoint temperature + the upper hysteresis temperature, then will stop heating;

win stop neating,

When the actual temperature(T) < the setpoint temperature - the lower hysteresis temperature, then will start heating.

For example, the lower hysteresis temperature is 1K, the upper hysteresis temperature is 2K, the setpoint temperature is 22°C, if T is higher than 24°C, then it will stop heating; if T is lower than 24°C, then it will start heating; if T is between 21~24°C, then it will maintain the previous status.

Under the cooling control,

When the actual temperature (T) < the setpoint temperature -the lower hysteresis temperature, then will stop cooling;

When the actual temperature (T) > the setpoint temperature +the upper hysteresis temperature, then will start cooling.

For example, the lower hysteresis temperature is 1K, the upper hysteresis temperature is 2K, the **setpoint** temperature is 26°C, if T is lower than 25°C, then it will stop cooling; if T is lower than 28°C, then it will start cooling; if T is between 28~25°C, then it will maintain the previous status.

2-point control mode is a very simple control mode. When adopting this control mode, it is necessary to set the upper hysteresis temperature and the lower hysteresis temperature through parameters. When setting the hysteresis temperature, the following effects need to be considered

1. When hysteresis interval is small, the temperature range will be small, however, frequent sending of control value will bring large load to the bus;

2. When hysteresis interval is large, the switch switching frequency will be low, but it is easy to cause uncomfortable temperature change.



Fig.5.5.2.1.2(2) Effects of hysteresis on control value switch action(heating) under2-point control mode

#### These two parameters as follow are suitable for PI control:

----Parameter "PWM evcle time [1...255]min

This parameter is only visible when the control type is "Switching PWM(use PI control)". Set the period of the control object cycle to send the switch value, the object sends the switch value according to the duty cycle of the control value. For example, if the set period is 10 min and the control value is 80%, then the object will send an open telegram for 8 min. If the control value is changed, the time duty ratio of the on/ off telegram of the object will also change, but the period is still the time of parameter setting.

Options: 1..255

The PI values of "Switching PWM (use PI control)" and "Continuous control (use PI control)" are the same, only different in control objects, the control object of "Continuous control" output PI value(1byte) directly, while the control value of "Switching PWM" output a "on/off" telegram according to the duty cycle of the control value.

-Parameter "Heating speed "

---Parameter "Cooling speed"

These two parameters are for setting the responding speed of heating or cooling controller. Different responding speeds are suitable for different environments.

**Options:** 

Hot water heating (5K/150min) Underfloor heating (5K/240 min) Electrical heating (4K/100min) Split unit (4K/90min) Fan coil unit (4K/90min) User defined

Options:

Cooling ceiling (5K/240min) Split unit (4K/90min) Fan coil unit(4K/90min) User defined

#### --Parameter "Proportional range [10..100]\*0.1K"(P value)

#### ---Parameter "Reset time [0..255]min"(I value)

These two parameters are visible when "User defined" is selected. Set the PI value of PI controller.

Options: 10..100 (P value)

Options: 0..255 (I value)

"Parameter "Send control value on change by [0., 100.0=inactive]"

This parameter is visible when control type is "Continuous control (use PI control)", for setting the changing value of the control value to be sent to the bus. Options: 0..100, 0 = inactive

In PI control mode, the predefined control parameters of each PI controller in heating or cooling system are recommended as follows:

#### (1)Heating

Heating type	P value	I value(integration	Recommended	Recommended PWM
		time)	PI control type	period
Hot water Heating	5K	150min	Continuous/PWM	15min
Underfloor heating	5K	240min	PWM	15-20min
Electrical heating	4K	100min	PWM	10-15min
Split unit	4K	90min	PWM	10-15min
Fan coil unit	4K	90min	Continuous	

#### (2)Cooling

Cooling type	P value	I value(integration time)	Recommended	Recommended PWM
			PI control type	period
Cooling ceiling	5K	240min	PWM	15-20mIn
Split unit	4K	90min	PWM	10-15min
Fan coil unit	4K	90min	Continuous	

#### (3)User defined

When the parameter "Heating/Cooling speed" is set to "User defined", the parameter value of P (scale factor) and I (integration time) can be set through the parameter. When adjusting the parameters, refer to the fixed PI value mentioned in the above table. Even if the control parameters are adjusted slightly, the control behavior will be significantly different.

In addition, the integration time should be set properly. If the integration time is too long, the adjustment will be slow, and the oscillation will not be obvious; if the integration time is too small, the adjustment will be fast, but the oscillation will occur. 0 means the integral term is not used.



Fig.5.5.2.1.2(3) Control value of PI control mode

Y: control value

Y1: last control value

X1: temperature deviation = set temperature - actual temperature

X2: last temperature deviation = set temperature - actual temperature

T<sub>N</sub>: integration time

K: scale factor (the scale factor is not zero)

PI control algorithm:  $Y = K * (X1-X2) + X1 * K * t / T_N + Y1$ 

When the integration time is set to zero, the PI control algorithm is: Y = K (X1-X2) + Y2

## Setting and influence of user-defined parameters:

Parameter setting	Effect
K: If the scale range is too small	Quick adjustment, and overshoot will occur
K: If the scale range is too small	Slow adjustment, but no overshoot
T <sub>N</sub> : If the integration time is too short	Quick adjustment, but there will be oscillation
T <sub>N</sub> : If the integration time is too long	Slow adjustment, no obvious oscillation

# Parameter "Cyclically send control value (0...255)mm

This parameter is for setting the period for cyclically sending the control value to the bus. Options: 0..255

#### 5.5.2.1.3.Parameter window "Fan"

Push Button Sensor with LCD,55mm > F	Function setting > FCU > Fan
--------------------------------------	------------------------------

🛡 KNX Secure	Object datatype of 1byte fan speed	Percentage (DPT_5.001)	
+ 芸 General	Output value for Fan speed		
🖞 Internal sensor measurem	Output value for Fan speed low	33	\$ %
+ 1/2 Input	Output value for Fan speed medium	67	\$ %
- Eunction setting	Output value for Fan speed high	100	\$ %
~	Status feedback for Fan speed		
– FCU	Status value for Fan speed low	33	\$ %
Setpoint	Status value for Fan speed medium	67	\$ %
Heating/Cooling control	Status value for Fan speed high	100	÷ %
Fan	Automatic operation function	Local controller	*
Scene	Fan speed auto control setting Condition setting for using Pl control		
	Threshold value speed OFF<->low [1255]	80	÷
- C scene Group function	Threshold value speed low<->medium [1255]	150	*
	Threshold value speed medium<->high [1255]	200	÷
	Hysteresis threshold value in +/-[050]	10	÷
	Condition setting for using 2-point control		
	Temperature difference speed OFF<- >low [1200]	20 ‡	*0.1°C
	Temperature difference speed low<- >medium [1200]	30 *	*0.1°C
	Temperature difference speed medium<- >high [1200]	40 ‡	*0.1°C
	Hysteresis temperature difference in [050]	10 ‡	*0.1°C
	Minimum time in fan speed [065535]	60	‡ s
	Fig.5.3.2.3 "Fan" parameter v	vindow	

This parameter window is visible when fan speed control is enabled. After the download is complete, if the

status is not read, the fan speed is off.

Parameter "Object datatype of Thyte fan speed"

This parameter is for setting the object datatype of 1 byte fan speed. Options:

#### Percentage (DPT\_5.001)

Fan stage (DPT\_5.100)

#### Output value for fan speed

#### ---Parameter "Output value for fan speed low/medium/high"

These three parameters are for setting the value sent for each fan speed switchover. Fan speed off when telegram value is 0. Options according to fan object datatype: **1..255**/**1..100** 

#### Status feedback for fan speed

#### ---Parameter "Status value for fan speed low/medium/high"

These three parameters are for setting the status feedback value of each fan speed. The device will update and display the fan speed according to the feedback value. Options according to fan object datatype: **1..255** /**1..100** 

Note: the output value and status value must meet the condition low<medium<high, if not, they can not be modified on ETS, and display red box warning, as shown as follow:

Output value for Fan speed low	33	\$ %
Output value for Fan speed medium	32	\$ %
Output value for Fan speed high	100	\$ %

# Parameter "Automatic operation function

This parameter is for setting the control way of automatic operation. Options:

Disable

Local controller

#### **External controller**

When the work mode is "Slave", there is no option "Local controller", only can select "Disable" or "External controller".

Parameters as follow are visible when "Local controller" is selected:

#### Fan speed auto control setting

#### **Condition setting for using PI control**

Under PI control, control value is PI operated within program, controller will power on/off fan or switch fan

speed according to the threshold range of the control values.

Parameter "Threshold value speed OFF<-->low [1..255]"

Define threshold value for speed OFF <--> low, options: 1..255

If the control value is greater than or equal to this setting threshold value, start to run low fan speed; if the control value is less than this setting threshold value, the fan will be turned off.

Parameter "Threshold value speed low<-->medium [1.255]"

Define threshold value for speed OFF<-->low, options: 1..255

If the control value is greater than or equal to this setting threshold value, start to run low fan speed; if the control value is less than this setting threshold value, the fan will be turned off.

Parameter "Threshold value speed medium<-->high [1..255]"

Define the threshold for speed medium<-->high, if the control value is greater than or equal to this setting threshold, start to run high fan speed. Options: 1..255

Tip: The controller evaluates the threshold in ascending order.

First check  $\rightarrow$ OFF <->low fan speed threshold  $\rightarrow$ low fan speed <->medium fan speed  $\rightarrow$ medium fan speed <->high fan speed.

The correctness of functional execution is guaranteed only in this case:

The threshold of OFF <-> low fan speed is lower than that of low fan speed <-> medium fan speed, and

the threshold of low fan speed <-> medium fan speed is lower than that of medium fan speed <-> high fan speed.

speeu.

Parameter : Hystoresis threshold value in  $\pm [0,50]$ 

This parameter is for setting the hysteresis value of the threshold value, which can avoid the unnecessary action of the fan when the control value fluctuates near the threshold. Options: **0..50** 

If value is 0, no hysteresis. Fan switch to speed once control value greater than threshold value;

Suppose that hysteresis value is 10 and the threshold is 50, then the upper limit threshold 60 (Threshold value+Hysteresis value) and the lower limit threshold 40 (Threshold value-Hysteresis value). When the control value is between 40 ~60, fan action will not be caused, and the previous status will still be maintained. Only less than 40 or greater than or equal to 60 will change the running status of the fan.

#### Condition setting for using 2-point control

Under 2-point control, controller will decide the fan power on/off or fan speed according to the temperature

difference between the actual temperature and setpoint temperature.

Cooling: Temperature difference = actual temperature - setpoint temperature;

Heating: Temperature difference = setpoint temperature - actual temperature.

?arameter "Temperature difference speed OFF<-->low [1.200] \*0.1K

This parameter is for setting the temperature difference for speed OFF<-->low.

Options: 1..200

If the temperature difference is greater than or equal to this setting temperature difference, start to run low fan speed; if less than this setting temperature difference, the fan will be turned off.

'arameter "Temperature difference speed low<--->medium [1..200]\*0.1K

Define the temperature difference for speed low<-->medium, if the control value is greater than or equal to this setting temperature difference, start to run medium fan speed.

Options: 1..200

Parameter "Temperature difference speed medium<-->high [1.200]\*0.1K

Define the temperature difference for speed medium<-->high, if the control value is greater than or equal to this setting temperature difference, start to run high fan speed. Options: **1..200** 

Parameter "Hysteresis temperature difference in [0..50]=0.1K

This parameter is for setting the hysteresis value of the temperature difference, which can avoid the unnecessary action of the fan when the control value fluctuates near the temperature difference. Options: **0..50** 

If value is 0, no hysteresis. Fan switch to speed once control value greater than temperature difference;

Suppose that hysteresis value is 0.5°C and the temperature difference is 1°C, then the upper limit temperature difference 1.5°C (Temperature difference+Hysteresis value) and the lower limit temperature difference 0.5°C (Temperature difference-Hysteresis value). When the control value is between 0.5°C~1.5°C, fan action will not be caused, and the previous status will still be maintained. Only less than 0.5°C or greater than or equal to 1.5°C will change the running status of the fan.

Parameter "Minimum time in fan speed (0..65535)s"

This parameter is both applied to PI control and 2-point control.

Defines the residence time of the fan from the current fan speed to a higher fan speed or lower fan speed, that is, the minimum time for a fan speed operation.

If you need to switch to another fan speed, you need to wait for this period of time before switching.

If the current fan speed has been running long enough, the fan speed can be changed quickly.

Options: 0..65535

0: there is no minimum running time, but the delay switching time of fan speed still needs to be considered.

#### 5.5.2.1.4. Parameter window "Scene"

Push Button Sensor with LC	D,55mm > Function setting > FCU > Sc	ene	
💙 KNX Secure	1->Assign scene NO.[164,0=inactive]	1	Å T
+ 茸 General	ON/OFF	Unchange	•
ℜ Internal sensor measurem	Operation mode	Unchange	•
U mena senso measarent.	2->Assign scene NO.[164,0=inactive]	2	\$
+ 1/1 Input	ON/OFF	OFF	•
- 📰 Function setting	3->Assign scene NO.[164,0=inactive]	0	\$
- FCU	4->Assign scene NO.[164,0=inactive]	0	÷
Setonint	5->Assign scene NO.[164,0=inactive]	0	\$

Fig.5.5.2.1.4 "Scene" parameter window

When the work mode is "Slave", this parameter window is not visible.

This parameter window is visible when scene function is enabled.

#### Parameter "x->Assign scene NO.[1..64.0=inactive]"(x=1~5)

This parameter is for setting the triggered scene number. Up to support 5 triggered scenes.

Options: 0..64, 0=inactive

Scenes can be recalled or stored. When a new scene is stored, the original saved new scene is still valid when

the voltage is recovered again after the bus has been powered down.

These three parameters as follow are visible when the option is greater than 0:

---Parameter "ON/OFF"

This parameter is for setting status of ON/OFF. Options:

### OFF

ON

Unchange

These two parameters as follow are not visible when OFF is selected:

## Parameter "Temperature"

This parameter is visible when operation mode is disabled. Set the status of setpoint temperature. Options:

5°C 6°C .. 37°C

Unchange

When setpoint temperature of scene is less than the min. setpoint temperature, display following warning:

😣 The setpoint is less than minimum, so minimum will regard as setpoint in fact

When setpoint temperature of scene is greater than the max. setpoint temperature, display following warning:

8 The setpoint is greater than maximum, so maximum will regard as setpoint in fact

Parameter "Operation mode"

This parameter is visible when operation mode is enabled. Set the status of operation mode. Option:

Comfort mode Standby mode Economy mode Frost/heat protection Unchange

#### 5.5.2.2.Parameter window "VRF setting"

💙 KNX Secure	Indication function icon	~		
<b>≓</b> General	lcon	Air conditioner		•
4	Interface display internal humidity	~		
Internal sensor measurem	Recent sector of the sector of			
⅓ Input	Room temperature reference from			
	[0255]	10	‡ n	nin
Function setting		C Saturaint temperature		
VRF	Interface display temperature	Actual temperature		
Mode		Value in °C(DPT_5.010)		
Fan	Object datatype of setpoint	Float value in °C(DPT_9.001)		
Scene	Setpoint temperature adjustment step	○ 0.5K ◎ 1K		
D. Local and	Min. setpoint temperature [1632]	16	•	•0
	Max. setpoint temperature [1632]	32	•	°C
← Scene Group function	12	197772)		
	Vanes swing	~		
	Scene	~		
	Send delay between telegrams	100ms		*

Fig.5.5.2.2 "VRF setting" parameter window

## Parameter "Indication function icon"

This parameter is for setting whether to display the icon of VRF control on the screen.

When enabled, parameter as follow is visible:

#### ---Parameter "Icon"

This parameter is for setting the function icon. Options:

Air conditioner

#### **Floor heating**

•••

#### Temperature

The default icons corresponding to the function and the icons corresponding to the options are described in the appendix, please refer to chapter 8.2.

# Parameter "Interface display internal humidity

This parameter is for setting whether to display the internal humidity on the screen, the humidity is

determined by the setting of the "Internal sensor measurement" in the parameter interface, more details refer to

chapter 5.3.

Parameter "Room temperature reference from'

This parameter is for setting the resource of the room temperature reference. Options:

#### **Internal sensor**

#### **External sensor**

When selecting the reference internal sensor, the temperature is determined by the setting of the "Internal sensor measurement" in the parameter interface, more details refer to chapter 5.3.

---Parameter "Period for request external sensor [0...255]min"

This parameter is visible when "External sensor" is selected. Set the time period for read request external

temperature sensor. Options: 0..255

Parameter "Interface display temperature

This parameter is for setting the interface display temperature under the normal status. Options:

#### Setpoint temperature

#### Actual temperature

If display actual temperature, it just to wake up when firstly adjust setpoint temperature, and not send

telegram.

arameter "Set

rameter "Object datatype of setpoint"

This parameter is for setting the object datatype of setpoint temperature. Options:

Value in °C (DPT_5.010)	Int, data of actual temperature
Float value in °C (DPT_9.001)	Float, data of standard KNX temperature
oint temperature adjustment step"	

This parameter is for setting step value of setpoint temperature. Options display according to datatype:

0.5K

1K

When "Value in °C (DPT\_5.010)" is selected, only 1K

# arameter "Min./Max. setpoint temperature [16..32]

These parameters are for setting the adjustable range of the setpoint temperature, the minimum value should be less than the maximum value. Options:

16°C 17°C ... 32°C

If the setpoint temperature beyond the limited range, the will output the limited temperature.

For setpoint temperature, the Min. value must less than the Max., if not, it can not be modified on

#### ETS.

Parameter "Vanes swing"

This parameter is for setting whether to enable vanes swing function, when enabled, swing =1 or stop =0 via

1 bit object.

Long press button to swing/stop the function, specific operation please refer to chapter 7.2.4.

Parameter "Scene

This parameter is for setting whether to enable scene function is visible. When enabled, link to power on/off, mode, fan speed, setpoint temperature.

#### ---Parameter "Send delay between telegrams"

This parameter is visible when scene function enabled. Set the delay time between the sending telegrams.

Options:

Disable 100ms 300ms 500ms

#### 5.5.2.2.1.Parameter window "Mode"

💙 KNX Secure	Auto mode	~	
🗮 General	Output value for Auto	0	* *
	Status value for Auto	0	* *
1 Internal sensor measurem	Heating mode	~	
况 Input	Output value for Heating	1	\$
Eurotion setting	Status value for Heating	1	Ť
Es runcion scaling	Cooling mode	~	
VRF	Output value for Cooling	3	\$
Mode	Status value for Cooling	3	¢
Fan	Fan mode	~	
Scene	Output value for Fan	9	÷
➡ Logic function	Status value for Fan	9	¢
	Dehumidification mode	~	
← Scene Group function	Output value for Dehumidification	14	¢
	Status value for Dehumidification	14	<u></u>

#### -.-. Push Button Sensor with LCD,55mm > Function setting > VRF > Mode

Parameter : Auto/Heating/Cooling/Fan/Dehumidification mode

Corresponding setting parameters are visible when these parameters are enabled.

-Parameter "Output value for auto/heating/cooling/fan/dehumiddication[0..255]".

These parameters are visible when modes enabled. Set the output value of each mode. Options: 0..255

Parameter "Status value for auto/heating cooling/fan/dehumudification [0, 25]

These parameters are visible when modes enabled. Set the status feedback value of each mode.

Options: 0..255

#### 5.5.2.2.2.Parameter window "Fan"



# 'arameter "Object datatype of Ibyte fan speed'

This parameter is for setting the object datatype of 1 byte fan speed. Options:

#### Fan stage (DPT 5.100)

#### Percentage (DPT 5.001)

#### Output value for fan speed

Parameter "Output value for fan speed auto/low/medium/bigh

These parameters are for setting the value sent for each fan speed switchover, support 4 fan speeds auto, low,

medium, high. Options according to fan object datatype: 0..255/0..100

#### Status feedback for fan speed

# ----Parameter "Status value for fan speed auto/low/medium/high"

These parameters are for setting the status feedback value for each fan speed, support 4 fan speeds auto, low,

medium, high. Device updates display according to feedback values.

Options according to fan object datatype: 0..255/0..100

Note: the output value and status value must meet the condition low<medium<high, and auto fan speed is not limited. If not, they can not be modified on ETS, and display red box warning, as shown as follow:

Output value for Fan speed auto	0	÷ %
Output value for Fan speed low	68	\$%
Output value for Fan speed medium	67	\$ %
Output value for Fan speed high	100	\$ %

#### 5.5.2.2.3. Parameter window "Scene"

-.-. Push Button Sensor with LCD,55mm > Function setting > VRF > Scene

💙 KNX Secure	1->Assign scene NO.[164,0=inactive]	1	* *
+ 🛱 General	ON/OFF	Unchange	
¶ Internal sensor measurem	Temperature	Unchange	<b>▼</b> °C
0	Mode	Unchange	•
+ 🧏 Input	Fan	Unchange	•
- 🔳 Function setting	2->Assign scene NO.[164,0=inactive]	2	* *
- VRF	ON/OFF	OFF	*
Mode	3->Assign scene NO.[164,0=inactive]	0	\$
Fan	4->Assign scene NO.[164,0=inactive]	0	÷
Scene	5->Assign scene NO.[164,0=inactive]	0	* *

This parameter window is visible when scene function is enabled.

# Parameter "x->Assign scene NO.[1..64.0=inactive]"(x=1-5).

This parameter is for setting the triggered scene number. Up to support 5 triggered scenes.

Options: 0..64, 0=inactive

These four parameters as follow are visible when the option is greater than 0:

---Parameter "ON/OFF"

This parameter is for setting status of ON/OFF. Options:

OFF

ON

Unchange

These three parameters as follow are not visible when OFF is selected:





This parameter is for setting the status of mode. Options:

	Auto
	Heating
	Cooling
	Fan
	Dehumidification
	Unchange
Parameter	"Fan"

This parameter is for setting the status of fan speed. Options:

Auto Low Medium High Unchange

Note: ON/OFF, temperature, mode and fan speed send in order. If not finish during delay time and have a new command, perform the new one. Unperformed operations are ignored.

### 5.5.2.3.Parameter window "Floor heating setting"

ß

VNX Secure	Indication function icon	$\checkmark$		
≓ General	lcon	Water heating		•
	Interface display internal humidity	~		
1 Internal sensor measurem		ft k		-
⅓ Input	WORK mode	Single		•
	Room temperature reference from	Internal sensor		•
Function setting	Control value after temp. error [0100] (If 2-point control, set value '0'=0, set value	0		- 96
- VRF	'>0'=1)			
Floor heating	Interface display temperature	Setpoint temperature		
Scene	interface display temperature	Actual temperature		
- Ventilation	Setpoint temperature adjustment step	0.5K 1K		
	Default setpoint temperature [1632]	20		• •0
➡ Logic function	Min. setpoint temperature [1632]	16	-	• •0
► 🕂 Scene Group function	Max. setpoint temperature [1632]	32	•	• °C
	Power on/off function	Via both button and object		•
	Power on/off status after download	OFF ON		
	Power on/off status after voltage recovery	As before voltage failure		•
	Temperature control method	Heating on/off (2 point control)		•
	Object value of Heating on/off	Heat on=1, Heat off=0 Heat on=0, Heat off=1		
	Lower Hysteresis [0200]	10	÷,	'0.1 <mark>K</mark>
	Upper Hysteresis [0200]	10	÷,	'0.1K
	Cyclically send heating control value [0255]	0	* *	min

## Parameter "Indication function icon"

This parameter is for setting whether to display the icon of floor heating on the screen.

When enabled, parameter as follow is visible:

#### --Parameter "Icon"

This parameter is for setting the function icon. Options:

#### Air conditioner

Floor heating

•

#### Temperature

The default icons corresponding to the function and the icons corresponding to the options are described in the appendix, please refer to chapter 8.2.

## Parameter "Interface display internal humidity

This parameter is for setting whether to display the internal humidity on the screen, the humidity is determined by the setting of the "Internal sensor measurement" in the parameter interface, more details refer to chapter 5.3.

#### ieter "Work mode

This parameter is for setting the work mode of floor heating. Options:

Single

Master

Slave

Single: floor heating function of the device is set to single control and with a temperature control algorithm, the output directly controls the actuator, when the device restarts, it sends the current status to the bus, such as power on/off, setpoint temperature;

Master: floor heating function of the device is set to multi-control and with a temperature control algorithm, the output is dominated by the device. When the device restarts, it sends the current status to the bus, such as power on/off, setpoint temperature;

Slave: floor heating function of the device is set to slave control, at this time it is only used as touch and display, no temperature control algorithm, when the device restarts, it will send the status read request, such as power on/off, setpoint temperature.

## 'arameter "Room temperature reference from'

This parameter is for setting the resource of the room temperature reference. Options:

**Internal sensor** 

**External sensor** 

#### Internal sensor combine with External sensor

When selecting the reference internal sensor, the temperature is determined by the setting of the "Internal

sensor measurement" in the parameter interface, more details refer to chapter 5.3.

#### ---Parameter "Period for request external sensor [0...255]min"

This parameter is visible when "...External sensor" is selected. Set the time period for read request external temperature sensor. Options: **0..255** 

#### Parameters as follow are visible when "Internal sensor combine with External sensor" is selected.

#### --Parameter "Combination ratio"

This parameter is for setting the internal sensor and the external sensor to measure the specific gravity of the temperature. Options:

10% Internal to 90% External

#### 20% Internal to 80% External

•••

#### 90% Internal to 10% External

For example, if the option is "40% internal to 60% external", then the internal sensor accounts for 40%, the external sensor accounts for 60%, and the control temperature = (internal sensor's temperature  $\times$  40%) + (external sensor's temperature  $\times$  60%), the RTC function of the device will control and display the temperature according to the calculated temperature.

When two sensors are combined for detection, when one sensor is in error, the temperature value detected by the other sensor is used.

#### ---Parameter "Send temperature when the result change by [0...10]K"

This parameter is for setting when temperature turns to a certain value, whether to enable to send the current temperature value to the bus. Not send when disable. Options:

Disable 0.5K 1.0K ... 10.0K

#### ---Parameter "Cyclically send temperature [0...255,0=inactive]min"

Setting the time for cyclically sending the temperature detection value to the bus. Not send when value is 0.

Options: 0..255

#### Note: cyclically sending and change sending are independent of each other.

Parameter "Control value after temp. error[0, 100]% (if 2-point control, set value '0'=0, set value '>0'=1)"

When the work mode is "Slave", this parameter is not visible.

Set the control value when temperature error occur. Options: 0..100

If 2-Point control, then the parameter value is 0, as well as the control value; if the parameter value is more

than 0, then the control value will be 1.

Parameter "Interface display temperature

This parameter is for setting the interface display temperature under the normal status. Options:

#### Setpoint temperature

#### Actual temperature

If display actual temperature, it just to wake up when firstly adjust setpoint temperature, and not send telegram.

Parameter "Setpoint temperature adjustment step

This parameter is for setting step value of setpoint temperature. Options:

0.5K

1K

Parameter "Default setpoint temperature [16.32]

When the work mode is "Slave", this parameter is not visible.

Set the default set temperature when floor heating is on. Options:

16°C 17°C ... 32°C

When the default setpoint temperature is less than the min. setpoint temperature, display following warning:

8 The setpoint is less than minimum, so minimum will regard as setpoint in fact.

When the default setpoint temperature is greater than the max. setpoint temperature, display following warning:

8 The setpoint is greater than maximum, so maximum will regard as setpoint in fact

arameter "Min./Max. setpoint temperature [16..32] \* 0

These two parameters are for setting the adjustable range of the setpoint temperature. The minimum value

should be less than the maximum value.

If the setpoint temperature beyond the limited range, it will output the limited temperature. Options:

16°C 17°C ... 32°C

For setpoint temperature, the Min. value must less than the Max., if not, it can not be modified on

#### ETS.

Parameter "Power on off function "

This parameter is for setting whether to enable power on/off function of controller. Options:

Disable

Via button only

Via object only

#### Via both button and object

Disable: power on/off function of controller is disabled;

Via button only: control power on/off only via the panel button;

Via object only: control power on/off only via the object;

Via both button and object: control power on/off both via the panel button and object.

These two parameter as follow and objects are visible when enabled:

Parameter "Power on off status after download

When the work mode is "Slave", this parameter is not visible.

Set the power on/off status of floor heating interface after download. Options:

OFF

ON

#### Parameter "Power on/off status after power on"

When the work mode is "Slave", this parameter is not visible.

Set the power on/off status of floor heating interface after device voltage recovery. Options:

OFF

ON

#### As before voltage failure

OFF: floor heating interface is off when device is powered on, the interface are not operational and can not to calculate internally and control;

ON: floor heating interface is on when device is powered on, this interface is operational, floor heating will calculate internally according to the control type to determine the current controlling status;

As before voltage failure: floor heating interface will recover to the status before voltage failure, if it is on, then the device will send the heating control status according to the internal calculation.

### Parameter \*\* Temperature control method \*\*

When the work mode is "Slave", this parameter is not visible.

Set the temperature control method, different control types are suitable for different temperature controller.

Options:

Heating on/off (2 point control)

Heating PWM (use PI control)

Heating continuous control (use PI control)

#### These parameters as follow are visible when "Heating on/off (use 2-point control)" is selected:

Under 2-point control, when the temperature is higher than a certain setpoint temperature, heating off, below

a certain setpoint temperature, heating on.

#### ----Parameter "Object value of Heating on/off"

Define the triggered value of floor heating on/off. Options:

Heat on=1, Heat off=0

Heat on=0, Heat off=1

----Parameter "Lower Hysteresis [0..200]\*0.1K"

----Parameter "Upper Hysteresis [0..200]\*0.1K"

These two parameters for setting the lower/upper hysteresis setpoint temperature of floor heating.

Options: 0..200

When the actual temperature(T) > the setpoint temperature + the upper hysteresis temperature, then will stop heating;

When the actual temperature(T) < the setpoint temperature - the lower hysteresis temperature, then

#### will start heating.

For example, the lower hysteresis temperature is 1K, the upper hysteresis temperature is 2K, the setpoint temperature is 16°C, if T is higher than 18°C, then it will stop heating; if T is lower than 15°C, then it will start heating; if T is between 15~18°C, then it will maintain the previous status.

# These parameters as follow are visible when "Heating PWM (use PI control)" or "Heating continuous control (use PI control)" is selected:

When in Heating PWM (use PI control), floor heating will in cyclically switch control to the valve according to the controlling value.

When in Heating continuous control (use PI control), floor heating will control the opening/closing status of the valve according to the controlling value.

#### ----Parameter "Invert control value"

This parameter is for setting whether to invert control value or normal sending control value, so that the control value will be suitable for the valve type.

When enabled, send the control value to the bus through objects after inverting the control value.

#### ——Parameter "PWM cycle time [1..255] min"

This parameter is visible only when the control type is "Heating PWM (use PI control)" and is used to set the cycle of the control object cycle to send the switch value, and the object sends the switch value according to the duty cycle of the control value. For example, assuming the set period is 10 min and the control value is 80%, the object sends an open telegram to the 8min and the 2min sends a closed telegram. If the control value changes, The duty cycle of the object to send the on/off telegram also changes, but the period is still the time of the parameter setting. Options: 1...255

#### ——Parameter "Heating speed"

This parameter is Setting for the response speed of the heating PI controller. Different response speeds apply to different environments. Options:

Hot water heating (5K/150min) Underfloor heating (5K/240 min) Electrical heating (4K/100min) User defined

#### ----Parameter "Proportional range [10..100]\*0.1K"(P value)

#### ——Parameter "Reset time[0..255]min"(I value)

These two parameters are visible when "User defined" is selected. Set the PI value of PI controller.

Options: 10..100 (P value)

Options: 0..255 (I value)

#### ---Parameter "Send control value on change by [0..100,0=inactive]%"

This parameter is visible when "Continuous control (use PI control)" is selected. Set the changing value of

the control value to be sent to the bus. Options: 0..100, 0=inactive

More descriptions of two-point control mode and PI control mode refer to chapter 5.5.2.1.2.

farameter: "Cyclically send control value [0..255]min"

This parameter is both applied to PI control and 2-point control. Set the period for cyclically sending the control value to the bus. Options: **0..255** 

## <sup>2</sup>arameter "Scene"

When the work mode is "Slave", this parameter is not visible.

Set whether to enable scene function is visible. When enabled, link to power on/off, setpoint temperature.

#### 5.5.2.3.1.Parameter window "Scene"

D,55mm > Function setting > Floor hea	ting > Scene	
1->Assign scene NO.[164,0=inactive]	1	* *
ON/OFF	Unchange	•
Temperature	Unchange	<b>→</b> °C
2->Assign scene NO.[164,0=inactive]	2	\$
ON/OFF	OFF	•
3->Assign scene NO.[164,0=inactive]	0	* *
4->Assign scene NO.[164,0=inactive]	0	÷
5->Assign scene NO.[164,0=inactive]	0	*
	D,55mm > Function setting > Floor hea 1->Assign scene NO.[164,0=inactive] ON/OFF 2->Assign scene NO.[164,0=inactive] ON/OFF 3->Assign scene NO.[164,0=inactive] 4->Assign scene NO.[164,0=inactive] 5->Assign scene NO.[164,0=inactive]	D,SSmm > Function setting > Floor heating > Scene         1->Assign scene NO.[164,0=inactive]         0N/OFF       Unchange         Temperature       Unchange         2->Assign scene NO.[164,0=inactive]       2         0N/OFF       OFF         3->Assign scene NO.[164,0=inactive]       0         4->Assign scene NO.[164,0=inactive]       0         5->Assign scene NO.[164,0=inactive]       0

When the work mode is "Slave", this parameter window is not visible.

This parameter window is visible when scene function is enabled.

K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

# <sup>9</sup>arameter "x-> Assign scene NO.[1..64.0=inactive]"(x-

This parameter is for setting the triggered scene number. Up to support 5 triggered scenes.

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

Scenes can be recalled or stored. When a new scene is stored, the original saved new scene is still valid when

the voltage is recovered again after the bus has been powered down.

These two parameters as follow are visible when the option is greater than 0:

#### ---Parameter "ON/OFF"

This parameter is for setting status of ON/OFF. Options:

OFF

ON

#### Unchange

This parameter as follow is not visible when OFF is selected:

Parameter "Temperature

This parameter is for setting the status of setpoint temperature. Options:

16°C 17°C ... 32°C Unchange

When setpoint temperature of scene is less than the min. setpoint temperature, display following warning:

😢 The setpoint is less than minimum,so minimum will regard as setpoint in fact

When setpoint temperature of scene is greater than the max. setpoint temperature, display following warning:

8 The setpoint is greater than maximum, so maximum will regard as setpoint in fact.
## 5.5.2.4. Parameter window "Ventilation setting"

🖤 KNX Secure	Indication function icon	~		
₩ General	Icon			
1 Internal sensor measurem		Ventilation system		
⅓ Input	Power on/off status after download	OFF ON		
Function setting	Power on/off status after voltage recovery	As before voltage failure		•
+ FCU	Default fan speed after ventilation on	Low		*
Floor heating	Object datatype of 1byte fan speed	<ul> <li>Percentage (DPT_5.001)</li> <li>Fan stage (DPT_5.100)</li> </ul>		
- Ventilation	Output value for Fan speed			
Fan auto.control	Output value for Fan speed low	33	* *	9
Scene	Output value for Fan speed medium	67	÷	
➔ Logic function	Output value for Fan speed high	100	* *	
Scene Group function	Status feedback for Fan speed			
	Status value for Fan speed low	33	÷	9
	Status value for Fan speed medium	67	+	
	Status value for Fan speed high	100	÷	9
	Automatic operation function	~		
	Heat Recovery function	~		
	Filter timer counter	~		
	Evaluation time [10010000]	1000	÷	
	Scene	~		

## rameter "Indication function icon

This parameter is for setting whether to display the icon of ventilation function on the screen.

When enabled, parameter as follow is visible:

## ---Parameter "Icon"

This parameter is for setting the function icon. Option is only Ventilation system

The default icons corresponding to the function and the icons corresponding to the options are described in

the appendix, please refer to chapter 8.2.

## Parameter "Power on off status after download

This parameter is for setting the power on/off status of the ventilation system interface after the application is

downloaded. Options:

#### OFF

ON

## Parameter "Power on off status after voltage recovery"

This parameter is for setting the power on/off status of ventilation system interface after device voltage recovery. Options:

OFF

ON

## As before voltage failure

OFF: device will power off when voltage recovery, this interface can not be operated, except for filter reset

and power ON/OFF;

ON: device will power on when voltage recovery, this interface can be operated;

As before voltage failure: device will return to the power status as before voltage failure when voltage recovery.

'arameter "Default fan speed after ventilation on"

This parameter is for setting the initial fan speed after ventilation on. Options:

Low Medium

High

#### Last status

When "Last status" is selected, if not sure the fan speed, enable the low fan speed as default.

irameter "Object datatype of 1byte fan speed'

This parameter is for setting the object datatype of 1 byte fan speed. Options:

## Fan stage (DPT 5.100)

## Percentage (DPT 5.001)

## Output value for fan speed

## ---Parameter "Output value for fan speed low/medium/high"

These three parameters are for setting the value sent for each fan speed switchover. Fan speed off when

telegram value is 0. Options according to fan object datatype: 1..255 /1..100

#### Status feedback for fan speed

#### ---Parameter "Status value for fan speed low/medium/high"

These three parameters are for setting the status feedback value of each fan speed. The device will update and display the fan speed according to the feedback value. Options according to fan object datatype: **1..255** /**1..100** 

Note: the output value and status value must meet the condition low<medium<high, if not, they can not be modified on ETS, and display red box warning, as shown as follow:

Output value for Fan speed low	68	\$ %
Output value for Fan speed medium	67	\$ %
Output value for Fan speed high	100	\$ %

## Parameter "Automatic operation function"

This parameter is for setting whether to enable fan speed auto function. When enabled, it can be linked with

PM2.5 or CO2 and VOC measurement value, the sensor data is achieved from the bus.

Telegram 1 is to active the auto fan speed, 0 is cancel.

## Parameter "Filter timer counter

This parameter is for setting whether to enable the function of filter timer counter.

#### ----Parameter "Evaluation time [100..10000]h"

This parameter is visible when previous parameter is enabled.

Set the service life of the filter. Options: 100..10000

If the filter takes longer than the setting time, the filter will send an alarm and prompt to clean the filter.

The life length of the filter can be reset through the object "Filter timer reset", long press Fan button **3s** also can reset the life length. And send the reset telegram to the bus.

The life length of the filter can be counted by the object "Filter timer counter". The counting duration is in hours. The counting value will be sent to the bus when it has changed, and the counting duration of filter can be modified by the object "Filter timer counter change".

## Parameter "Scene

This parameter is for setting whether to enable scene function is visible. When enabled, link to fan speed and heat recovery.

## 5.5.2.4.1. Parameter window "Fan auto.control"

Push Button S	ensor with LCD,55mm	Function setting >	Ventilation >	Fan auto.control
---------------	---------------------	--------------------	---------------	------------------

💙 KNX Secure	Control value reference from	PM2.5		•
+ 茸 General	Object datatype of PM2.5	<ul> <li>Value in ug/m3(DPT_7.001)</li> <li>Float value in ug/m3(DPT_9.030)</li> </ul>		
1 Internal sensor measurem	Period for request control value [0255]	10	‡ n	nin
+ 🎉 Input	The speed status after control value error	OFF		•
- 💷 Function setting	Threshold value OFF<->speed low [1999]	35		*
+ VRF	Threshold value speed low<->medium [1999]	75		* *
+ Floor heating	Threshold value speed medium<->high [1999]	115		÷
- Ventilation	Hysteresis value is threshold value in +/- [1030]	10		*
Fan auto.control	Minimum time in fan speed [065535]	10	÷	s

This parameter window is visible when automatic operation function is enabled.

## Parameter "Control value reference from"

This parameter is for setting the reference of control value under automatic operation. Options:

CO2 PM2.5 VOC

Parameter "Object datatype of CO2"

This parameter is for setting the datatype of CO2. Datatype determines object type, select it according to the

docking CO2 sensor data type. Options:

## Value in ppm(DPT\_7.001)

## Float value in ppm(DPT\_9.008)

DPT\_7.001: Suitable for integrated value.

DPT 9.008: Suitable for float value.

## -Parameter "Object datatype of PM2.5/VOC

These two parameters are for setting the datatype of PM2.5/VOC. Datatype determines object type, select it

according to the docking PM2.5 or VOC sensor data type. Options:

## Value in ug/m3(DPT\_7.001)

## Float value in ug/m3(DPT\_9.030)

DPT\_7.001: Suitable for integrated value.

DPT 9.030: Suitable for float value.

arameter "Period for request control value [0...255]min

This parameter is for setting the time period for device to send a control value read request to external sensor

after bus recovery or finish programming (After stabilization time 2min, then read). Options: 0..255

Parameter "Threshold value speed OFE<-->low [1..999]/ [1...4000]"

Define threshold value for speed OFF<-->low, options: 1..999/1..4000

If the control value is greater than or equal to this setting threshold value, start to run low fan speed; if the control value is less than this setting threshold value, the fan will be turned off.

arameter "Threshold value speed low<-->medium [1.999]/ [1...4000]"

Define the threshold value for speed low<-->medium, if the control value is greater than or equal to this setting threshold, start to run medium fan speed. Options: **1..999/1..4000** 

Parameter "Threshold value speed medium<-->high [1,999]/ [1...4000]\*

Define the threshold for speed medium<-->high, if the control value is greater than or equal to this setting threshold, start to run high fan speed. Options: **1..999/1..4000** 

Tip: The controller evaluates the threshold in ascending order.

First check  $\rightarrow$  OFF <->low fan speed threshold  $\rightarrow$  low fan speed <->medium fan speed  $\rightarrow$  medium fan speed <->high fan speed.

The correctness of functional execution is guaranteed only in this case:

The threshold of OFF <-> low fan speed is lower than that of low fan speed <-> medium fan speed, and the threshold of low fan speed <-> medium fan speed is lower than that of medium fan speed <-> high fan speed.

Parameter "Hysteresis threshold value in +/- [10...30]/[100.400]

This parameter is for setting the hysteresis value of the threshold value, which can avoid the unnecessary action of the fan when the control value fluctuates near the threshold. Options: **10..30/100..400** 

For example, the control type is CO2, the Hysteresis value is 100 and the threshold is 450, then the upper limit threshold 550 (Threshold value+Hysteresis value) and the lower limit threshold 350 (Threshold

value-Hysteresis value). When the control value is between 350 ~550, fan action will not be caused, and the previous status will still be maintained. Only less than 350 or greater than or equal to 550 will change the running status of the fan. As shown in the following figure:



Note:

When hysteresis is enabled, if the threshold overlap occurs, fan action is specified as follows:

1) Hysteresis determines the control point where Fan speed conversion occurs;

2) If Fan speed conversion occurs, new fan speed is determined by control value and threshold value, irrespective of hysteresis.

For example (1):

Take PM2.5 as an example

OFF <-> Low fan speed threshold value is 35

Low fan speed <->Medium fan speed threshold value is 55

Medium fan speed <-> High fan speed threshold value is 75

Hysteresis value is 25

The fan speed of the fan turbine increases from OFF:

Fan OFF status will change at a control value of 60 (≥25+35), and new fan speed will be the mid-fan speed (because 60 is between 55 and 75, irrespective of hysteresis at this time), so the low fan speed is ignored;

The behavior of fan speed when descending from a high fan speed:

The high fan speed will change at a control value of 50 (<75-25), and new fan speed will be low fan speed (because 50 is between 35 and 55, irrespective of hysteresis), so the fan speed is ignored.

For example(2): Take PM2.5 as an example **OFF <->** Low fan speed threshold value is 20 Low fan speed <->Medium fan speed threshold value is 40 Medium fan speed <-> High fan speed threshold value is 70 Hysteresis value is 10 When fan speed is increasing from OFF: The OFF status will be turned when the control value is 30 ( $\geq$ 20+10) When the control value 41 is received, the new speed will be at medium(because the hysteresis is ignored when the value 41 is between 40 and 70), therefore the low speed is ignored. When the control value 39 is received, the new speed will be at low (because the hysteresis is ignored when the value 39 is between 20 and 40) When Fan Speed decreasing from high: The high speed will be turned when the control value is 60 (<70-10) When the control value 39 is received, the new speed will be at low(because the hysteresis is ignored when the value 39 is between 20 and 40), therefore the medium speed is ignored. 3) When the control value is 0, the fan will be off at any circumstances.

## Parameter "Minimum time in fan speed [0. 65535]s

Defines the residence time of the fan from the current fan speed to a higher fan speed or lower fan speed, that

is, the minimum time for a fan speed operation. Options: 0..65535

If you need to switch to another fan speed, you need to wait for this period of time before switching.

If the current fan speed has been running long enough, the fan speed can be changed quickly.

0: there is no minimum running time, but the delay switching time of fan speed still needs to be considered.

Note: The residence time for this parameter setting is only enabled in Auto mode.

## 5.5.2.4.2.Parameter window "Scene "

-.-. Push Button Sensor with LCD,55mm > Function setting > Ventilation > Scene

VKNX Secure	1->Assign scene NO.[1.,64,0=inactive]	1	÷
+ 🛱 General	Fan level	Unchange	•
1 Internal sensor measurem	Heat Recovery	Unchange	•
0 memorisensormeusarent.	2->Assign scene NO.[164,0=inactive]	2	\$
+ ¼ Input	Fan level	OFF	•
- 🔳 Function setting	3->Assign scene NO.[164,0=inactive]	0	*
+ VRF	4->Assign scene NO.[164,0=inactive]	0	\$
+ Electrostica	5->Assign scene NO.[164,0=inactive]	0	\$
	Fig.5.5.2.4.2 "Scene" paramet	er window	

This parameter window is visible when scene function is enabled.

Parameter "x-> Assign scene NO.11..64.0=inactive/"(x=1-5) -

This parameter is for setting the triggered scene number. Up to support 5 triggered scenes.

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

These two parameters as follow are visible when the option is greater than 0:

—Parameter "Fan'

This parameter is for setting status of fan speed. Options:

OFF Low

Medium

High

Unchange

This parameter as follow is not visible when OFF is selected:

Parameter "Heat recover

This parameter is visible when heat recovery function is enabled. Setting status of heat recovery. Options:

OFF ON Unchange

## 5.5.3.Parameter window "Audio control"

KNX Secure	Function	ype	Audio contro	ol -	
茸 General	Interface	preview	1	My Low	
1 Internal sensor measurem			•	dos Neclarley éviside	
- 🏹 Input			3 ¢	⊅ ⊠ র ব+ 4	
E Function setting			5		
	1		3	Ŭ	
Audio	1				
Audio	Button 1	short press to switch power on/off, long press to switch play mode	Button 2	short press to switch play long press to mute	/pause,
Audio + Logic function + Scene Group function	Button 1 Button 3	short press to switch power on/off, long press to switch play mode press to switch previous track	Button 2 Button 4	short press to switch play long press to mute press to switch next track	/pause,

Fig.5.5.3(1) "Function setting"-"Audio control" parameter window

When "Audio control" is selected, this window displays the corresponding button operation of audio control, specific UI please refer to chapter 7.3.

🛑 KNX Secure	Power on/off	<b>v</b>	
🗄 🗄 General	Power on/off status after download	OFF ON	
1 Internal sensor measurem	Power on/off status after voltage recovery	Before voltage failure	•
- 🏂 Input	Number of object for play/pause control	0 1 0 2	
Function setting	Number of object for next/previous track control	© 1 ◯ 2	
Audio	Volume adjustment via long operation	Relative control	•
	Work mode	🔵 Start-stop 🔘 Step adjustment	
<ul> <li>➡ Logic function</li> </ul>	Step size	12.5	9
• 🕂 Scene Group function	Interval of tele. cyclic send [025,0=send once]	0 *	0.1
	Mute		
	Track name		
	Artist name		
	Album name		



Play mode	~	
Play for single cycle	~	
Output value	0	<u>ــــــــــــــــــــــــــــــــــــ</u>
Status value	0	÷
Play for random	>	
Output value	1	÷
Status value	1	÷
Play for playlist cycle	~	
Output value	2	* *
Status value	2	÷

Fig.5.5.3(2) "Audio control" parameter window

#### arameter "Power on/off

This parameter is for setting whether to activate the function to power on/off.

If power on/off is enabled, you can set the initial status after voltage recovery or download.

If power on/off is disabled, the audio interface is always on.

Icon of power on/off on the screen is not visible when disabled. These two parameters as follow are visible

#### when enabled:

## Parameter "Power on/off after download"

This parameter is for setting the power on/off status of audio control interface after download. Options:

OFF

ON

## Parameter "Power on/off after voltage recovery

This parameter is for setting the power on/off status of audio control interface after device voltage recovery.

Options:

OFF

ON

#### **Before voltage failure**

On: device will power on when voltage recovery, this interface can be operated;

Off: device will power off when voltage recovery, this interface can not be operated;

Before voltage failure: device will return to the power status as before voltage failure when voltage recovery.

## Parameter "Number of object for play/pause control

This parameter is for setting the number of objects that control play/pause, 1 common object or 2 separate objects. Options:

One object

## **Two objects**

transter "Number of object for next previous track control".

This parameter is for setting the number of objects that control next/previous track, 1 common object or 2 separate objects. Options:

**One object** 

Two objects

## Parameter "Volume adjustment via long operation"

This parameter is for setting control type of volume adjustment via long operation. Options:

Disable

#### **Relative control**

#### **Absolute control**

Disable: no long operation when disabled.

Relative control: long operation and release to send 4bit and stop telegrams;

Absolute control: long operation to send absolute volume telegrams, and no telegram to send when release

Short press to send 1bit telegram.

No matter relative or absolute control, the volume displaying on the screen is only related to the telegrams

from bus, it can not be updated by long operation, as well as short operation.

The parameter as follow is visible when "Relative control" is selected:

## ---Parameter "Work mode"

This parameter is for setting work mode of relative control. Options:

Start-stop

## Step adjustment

## --Parameter "Step size"

This parameter is for setting the step size of relative adjustment.

When "Start-stop" is selected, option is only 100%

When "Step adjustment" is selected, options:

100% 50% ... 3.13% 1.56%

E.g. step size is 50%, telegram value is: increase is 10 and decrease is 2, similar to relative dimming telegrams.

These three parameter as follow are visible when "Absolute control" is selected:

## ---Parameter "Object datatype"

This parameter is for setting the object datatype of absolute adjustment. Options:

## Percentage (DPT 5.001)

## Percentage (DPT 5.004)

## --Parameter "Step size [1..10]%"

This parameter is for setting the step size of absolute adjustment. Options: 1..10

E.g. current volume is 10%, the step size is 5%, then after adjusting once, the output volume will be 15%.

## ---Parameter "Max. volume value [10..100]%"

This parameter is for setting the maximum volume value. Options: 10..100

=Parameter "Interval of tele, evelic send [0, 25,0=send once]\*0.1s

This parameter is for setting the time interval of cyclical volume adjustment telegram sent via long operation.

#### Options: 0..25,0=send once

The time interval is default as **0** when relative control and "Start-stop" is selected.

Parameter "Mute"

This parameter is for setting whether to enable mute function.

?arameter #Track name

This parameter is for setting whether to display the track name.

## ?arameter "Artist name

This parameter is for setting whether to display the artist name.

## Parameter "Album name'

This parameter is for setting whether to display the album name.

The encode data of telegram must be UTF-8 or ASCII characters
The encode data of telegram must be ISO8859 or ASCII characters

Note: The encode data of track name, artist name and album name telegram is associated with interface language, when it is selected Chinese, use UTF-8 or ASCII; while other languages, use ISO8859 or ASCII.

Parameter "Play mode

This parameter is for setting whether to enable play mode, display the parameters as follow when enabled.

## Play for single cycle/random play/playlist cycle

## ---Parameter "Output value"

This parameter is for setting the output value of each play mode. Options: 0..255

#### ---Parameter "Status value"

This parameter is for setting the status value of each play mode. Device will be updated the play mode displayed on the screen according to the feedback value. Options: **0..255** 

## 5.6. Parameter window "Logic"

VXX Secure	1st Logic function	4	
	2nd Logic function	~	
🛨 General	3rd Logic function	~	
1 Internal sensor measurem	4th Logic function	~	
	5th Logic function	~	
浈 Input	6th Logic function	~	
Euroction setting	7th Logic function	~	
	8th Logic function	~	
Push Button Sensor with L	CD,55mm > Logic function > 1st Log	gic function	
💙 KNX Secure	Description for logic function		
- 🛱 General	Function of channel	AND	•
	Fig.5.6 "Logic function setting	" parameter window	

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 comparato
Format convert
Gate function
Delay function
Staircase lighting

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.

## 5.6.1. Parameter window "AND/OR/XOR"

💙 KNX Secure	Description for logic function		
<b>≓</b> General	Function of channel	AND	•
	Input a	Disconnected	•
U Internal sensor measurem	Default value	0 0 1	
· 沂 Input	Input b	Disconnected	•
Function setting	Default value	◎ 0 ○ 1	
➔ Logic function	Input c	Disconnected	•
1st Logic function	Default value	© 0 ◯ 1	
2nd Logic function	Input d	Disconnected	•
3rd Logic function	Default value	© 0 ◯ 1	
4th Logic function	Input e	Disconnected	•
5th Logic function	Default value	© 0 ◯ 1	
6th Logic function	Input f	Disconnected	•
7th Logic function	Default value	◎ 0 ○ 1	
8th Logic function	Input g	Disconnected	•
• Scene Group function	Default value	0 0 1	
	Input h	Disconnected	•
	Default value	◎ 0 ○ 1	
	Result is inverted	O No Ves	
	Read input object value after bus voltage recovery	O No Ves	
	Output send when	<ul> <li>Receiving a new telegram</li> <li>Every change of output object</li> </ul>	
	Send delay time: Base	None	•
	Factor: 1255	1	÷

Fig.5.6.1 "AND/OR/XOR" parameter window

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

arameter "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.

irameter "Read input object value after 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
<b>1s</b>
•••
10s
25s
1255

Factor:

.

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

## 5.6.2. Parameter window "Gate forwarding"

V KNX Secure	Description for logic function		
🛱 General	Function of channel	Gate forwarding	•
1 Internal sensor measurem	Object type of Input/Output	1bit	-
1/4 Insuit	Default scene NO. of Gate after startup [1~64,0=inactive]	0	* *
28 mpar	1->Gate trigger scene NO. is [1~64,0=inactive]	0	* *
Function setting	Input A send on	Output A	•
➔ Logic function	Input B send on	Output B	•
1st Logic function	Input C send on	Output C	*
2nd Logic function	Input D send on	Output D	•
3rd Logic function	2->Gate trigger scene NO. is [1~64,0=inactive]	0	A V
4th Logic function	Input A send on	Output A	•
5th Logic function	Input B send on	Output B	•
6th Logic function	Input C send on	Output C	•
7th Logic function	Input D send on	Output D	•

Fig.5.6.2 "Gate forwarding" parameter window

Parameter "Object type of input/Output"

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

1bit 4bit 1byte **TIME** K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

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.

## 5.6.3. Parameter window "Threshold comparator"

👳 KNX Secure	Description for logic function		
茸 General	Function of channel	Threshold comparator	•
1 Internal sensor measurem	Threshold value data type	1byte unsigned value (DPT5.010)	•
O Internal sensor measurem	Threshold value	0	-
⅓ Input	If Object value <threshold td="" value<=""><td>Do not send telegram</td><td>•</td></threshold>	Do not send telegram	•
Function setting	If Object value=Threshold value	Do not send telegram	*
➡ Logic function	If Object value!=Threshold value	Do not send telegram	•
	If Object value>Threshold value	Do not send telegram	•
1st Logic function	If Object value<=Threshold value	Do not send telegram	
2nd Logic function	If Object value>=Threshold value	Do not send telegram	•
3rd Logic function		Receiving a new telegram	
4th Logic function	Output send when	Every change of output object	
5th Logic function	Send delay time: Base	None	•
6th Logic function	Factor: 1255	1	\$

-.-. Push Button Sensor with LCD,55mm > Logic function > 1st Logic function

Fig.5.6.3 "Threshold comparator" parameter window

## Parameter "Threshold value data type"

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

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

## arameter "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 or1.

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.

## Tip: 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
	1s
	10s
	25s
Factor:	1255

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.

## 5.6.4. Parameter window "Format convert"

# •···- Push Button Sensor with LCD,55mm > Logic function > 1st Logic function • KNX Secure Description for logic function • + = General Function of channel • Internal sensor measurem... Function • ½ Input Output send when

Fig.5.6.4 "Format convert" parameter window

## manueter "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.

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

## 5.6.5.Parameter window "Gate function"



Fig.5.6.5 "Gate function" parameter window

## arameter "Object type of Input/Output"

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

1bit[On/Off] 1byte[0..100%] 1byte[0..255] 2byte[Float] 2byte[0..65535]

## -Parameter "Filter function

This parameter is visible when "1bit[On/Off]" is selected. Set whether to filter On or Off telegram, only pass one of them or pass all. Options:

Deactivate

On filter out

## Off filter out

Deactivate: Do not filter the On or Off telegrams;

On filter out: Off can pass, On cannot pass;

Off filter out: On can pass, Off cannot pass.

----Parameter "Value output"

This parameter is visible when "1bit[On/Off]" is selected. Set whether to invert the value then output it.

## Options:

Γ	Normal			
Ι	nverted			
		~	 	
and produced the set of a state of a				

This parameter is for setting whether to invert the gate object value then output it. Options:

#### Normal

Inverted

rrameter "Gate status after voltage recovery"

This parameter is for setting the gate status after voltage recovery. Options:

## Disable

#### Enable

arameter "Save input signal when gate close

This parameter is for setting whether to save input signal on gate close. Options:

No

Yes

No: disable to save the input, the input values received during the gate closing period are ignored;

Yes: enable to save the input, the input values received during the gate closing period are output when gate is open (whether the input value is changed or not).

## 5.6.6.Parameter window "Delay function"

nction of channel	Delay function	•
ject type of Input/Output	1bit[On/Off]	•
Delay time [06500]	10	‡ s
	ject type of Input/Output Delay time [06500] Fig. 5.6.6 "Delay function" n	ject type of Input/Output     1bit[On/Off]       Delay time [06500]     10       Fig. 5.6.6 "Delay function" parameter window

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

1bit[On/Off]	
1byte[0100%]	
1byte[0255]	
2byte[Float]	
2byte[065535]	
——Parameter "Delay time [0.6500]s"	

This parameter is for setting the delay time that output object forwards the value when the input object receives the telegram. Options: **0..6500** 

Note: Receive telegram again in delay time, re-timing.

## 5.6.7. Parameter window "Staircase lighting"

💙 KNX Secure	Description for logic function		
茸 General	Function of channel	Staircase lighting	•
1 Internal sensor measurem	Trigger value	1	•
0	Object type of output	🔘 1bit 🔵 1byte	
兆 Input	Duration time of staircase lighting	10	*
Function setting	Send value 1 when trigger	OFF O ON	2h
➔ Logic function	Send value 2 after duration time		
1st Logic function	Retriggering	🔵 Disable 🧿 Enable	

K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

## arameter "Trigger value

This parameter is for setting the telegram value of the object "Trigger value". Options:

0 1

0 or 1

?arameter "Object type of output"

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

1bit

1byte

## Parameter "Duration time of staircase lighting[10.6500]s"

This parameter is for setting duration time of staircase lighting after the stair light power on.

Options: 10..6500

## -Parameter "Send value 1 when trigger

## -Parameter "Send value 2 after duration time"

These parameters are for setting the value to send. Send value 1 when trigger, and then send value 2 after duration time. Options display according to the output object datatype.

When 1 bit, options:

OFF

ON

When 1 byte , options: 0..255

## arameter "Retriggering

This parameter is for setting whether to trigger re-timing when received trigger value in delay time. Options:

Disable

Enable

## 5.7. Parameter window "Scene Group"

💙 KNX Secure	Scene Group 1 Function	1	
	Scene Group 2 Function	1	
🛨 General	Scene Group 3 Function	~	
Push Button Sensor with LC	D,55mm > Scene Group function > G	roup 1 > Output 1 Function	
KNX Secure	Description for Output 1 function		
茸 General	Object type of Output 1	1bit	•
1 Internal sensor measurem	1->Output 1 trigger scene NO. is [1~64,0=inactive]	0	* *
况 Input	Object value of Output 1	0 0 1	
	Delay time for sending [0255]	0	*0.1s
Function setting	2->Output 1 trigger scene NO. is [1~64,0=inactive]	0	* *
➔ Logic function	Object value of Output 1	0 0 1	
← Group function	Delay time for sending [0255]	0	*0.1s
	Fig.5.7 "Scene Group" paran	neter window	

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.

arameter "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.

rameter "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 K-BUS<sup>®</sup> KNX/EIB Push Button Sensor with LCD, 55mm

## 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 #2~Output v trigger scene NO. is [1=64,0=mactive]#(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:0..64, 0=inactive

Parameter "Object value of Output -

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
neter	Delay time for sending [0255]*0.1s"

This parameter is for setting the delay time for sending the output value to the bus. Options: 0..255

## **Chapter 6 Description of Communication Object**

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.

Numbe												
the second se	er Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
<b>₽</b> ₽1	General	In operation			1 bit	С	R	-	Т	-	switch	Low
∎‡ 2	General	Date			3 bytes	С	5	W	-	50	date	Low
∎‡ 3	General	Time			3 bytes	С	-	W	-	-	time of day	Low
∎‡ 4	General	Screen brightness			1 byte	С	-	W	-	-	percentage (0100%)	Low
■2 345	Extension function	Panel locking			1 bit	С	-	W	-	•	enable	Low
■\$ 347	Extension function	Night mode			1 bit	С	R	-	Т	-	day/night	Low
■2 349	Extension function	Dis/En Proximity function			1 bit	С	-	W	-	•	enable	Low
■\$ 350	Extension function	Proximity input			1 bit	С	5	W	-	-	switch	Low
■2 351	Extension function	Proximity output			1 bit	С	÷	-	Т	-	switch	Low
■\$ 352	Extension function	Alarm acknowledge			1 bit	С	5	5	Т	-	acknowledge	Low
■2 353	Extension function	Alarm message			14 bytes	C	-	W	-	-	Character String (ISO 8859-1)	Low
■2 354	Extension function	Alarm input			1 bit	С	5	W	Т	U	alarm	Low
₹ 355	Extension function	Locking scene			1 byte	C	-	4	Т	-	scene number	Low
■2 356	Screensaver-Items 1	Temperature value			2 bytes	С	-	W	т	U	temperature (°C)	Low
■2 357	Screensaver-Items 2	Humidity value			2 bytes	C	-	W	Т	U	humidity (%)	Low
		Fig.6.1 "	General" com	munication C	Dbject							
NO.	Object Function	Name	I	Data Type	Flag	3			J	DP'	Г	
1	In operation	General	1	bit	C.R.	т			1	0.0	)1 switch	
Tl	he communication	object is used to perio	odically sen	d a telegran	n "1	"	to	o th	e	bus	s to indicate this dev	vice in
Tl	he communication of operation. The per	object is used to perio	odically send	d a telegran	n "1	, ,,	tc	o th	e	bus	s to indicate this dev	vice in
Th normal 2	he communication of operation. The per Date	object is used to perioriod is set by the para General	odically send meter.	d a telegran Bbyte	n "1	, ,, ,	tc	o th	e 1	bus	s to indicate this dev 01 date	vice in
Th normal 2 Th	he communication of operation. The per <b>Date</b>	object is used to perior iod is set by the para General object is used to mod	odically send meter. 3 ify the displ	d a telegran Bbyte lay date three	n "1 C,W	, , , he	to bu	th	e 1	bus	s to indicate this dev 01 date	vice in
Th normal 2 Th 3	he communication of operation. The per Date he communication of Time	object is used to perior iod is set by the para General object is used to mod General	odically send meter. 3 ify the displ 3	d a telegran Bbyte lay date thro Bbyte	n "1 C,W ough t	//////////////////////////////////////	tc bı	o th		bus	s to indicate this dev 01 date 01 time of day	vice in
Th normal 2 Th 3 Th	he communication of operation. The per <b>Date</b> he communication of <b>Time</b> he communication of the communication of the the the communication of the	object is used to periodis set by the para General object is used to mod General object is used to mod	odically send meter. 3 ify the displ 3 ify the displ	d a telegran Bbyte lay date thro Bbyte lay time thr	n "1 C,W ough t C,W	he	tc bu	us.		bus	s to indicate this dev 01 date 001 time of day	vice in
Th normal 2 Th 3 Th 4	he communication of operation. The per Date he communication of Time he communication of Screen brightness	object is used to perior iod is set by the para General object is used to mod General object is used to mod General	odically send meter. 3 ify the displ 3 ify the displ 1	d a telegran Bbyte lay date thro Bbyte lay time thr	n "1 C,W ough t C,W ough t	he	tc bu	us.		bus 11.0	01 date 01 time of day 01 percentage(0100%	vice in
Th normal 2 Th 3 Th 4 Th	he communication of operation. The per Date he communication of Time he communication of Screen brightness he communication	object is used to periodis set by the para General object is used to mod General object is used to mod General object is used to mod	odically send meter.	d a telegran Bbyte lay date thro Bbyte lay time thro Ibyte rightness o	n "1 C,W ough t C,W ough t C,W	he he	to bu t r	us.		bus 11.0 5.00	01 date 01 time of day 01 percentage(0100% or example, if cur	vice in vice in
Th normal 2 Th 3 Th 4 Th normal	he communication of operation. The per Date he communication of Time he communication of Screen brightness he communication mode, it is only to	object is used to periodis set by the para General object is used to mod General object is used to mod General object is used to mod General object is used to mod	odically send meter.	d a telegran Bbyte lay date thro Bbyte lay time thro Ibyte rightness o I mode, wl	n "1 C,W ough t C,W ough t C,W	he //	to bu bu t r	us.	e i 1 1 1 1 e	5.00	to indicate this dev 01 date 01 time of day 01 percentage(0100% or example, if curr is still determined	vice in vice in (6) rent is to its
Th normal 2 Th 3 Th 4 Th normal parame	he communication of operation. The per Date he communication of Time he communication of Screen brightness he communication mode, it is only upper the standard stand	object is used to period iod is set by the para General object is used to mod General object is used to mod General object is used to mod updated the brightne ss in screen saver car	odically send meter. 3 ify the displ 3 ify the displ 1 odify the biss in norma	d a telegran Bbyte lay date thro Bbyte lay time thro Ibyte rightness o il mode, wi lified via th	n "1 C,W ough t C,W ough t C,W f curr nile ni e obje	he , , , , , , , , , , , , , , , , , , ,		us.	e 1 1 1 1 e	5.00	to indicate this dev 01 date 01 time of day 01 percentage(0100% or example, if curr is still determined	vice in vice in (6) rent is to its

## 6.1. "General" Communication Object

345     Panel locking     Extension function     1bit     C,W     1.003 enable       The communication object is used to lock the panel. After screen is locked, the operation on the pan									
The communication object is used to lock the panel. After screen is locked, the operation on the pan									
	el will								
not be responded, but can still receive the bus telegram. Telegram value is defined by the parameter.									
346Screen on/offExtension function1bitC,W1.001 switch									
The communication object is used to receive the telegrams from bus to control screen on/off. Tel	egram								
value:									
0——Off									
1——On									
347     Night mode     Extension function     1bit     C,R,T C,W,T,U     1.024 day/night									
This communication object is used to send day/night status to the bus. Telegram value:									
0 —— Day									
1 —— Night									
The object flag is C,R,T when the day/night status is switched according to the time point or sunri	se and								
sunset time, can not receive the telegram value via bus to switch;									
The object flag is C,W,T,U when the day/night status is switched according to the object, recei	ve the								
telegram value via bus to switch. If device restart, the object sends status request telegram (if sending par-	meter								
is enabled in General interface).									
348Summer time statusExtension function1bitC,R,T1.003 enable									
The communication object is used to send the status telegrams of the summer time to the bus. Telegram	ns:								
1 —— Summer time enable									
0 —— Summer time disable									
349         Dis/En Proximity function         Extension function         1bit         C,W         1.003 enable									
The communication object is used to enable/disable proximity function.									
350 Proximity input Extension function 1bit C,W 1.001 switch									
The communication object is visible when proximity function is triggered by the object. Recei	ve the								
telegram value from bus:									
1——Trigger proximity function									
0——No available									

					1.001 switch
			1bit		5.010 counter pulses
351	Proximity output	Extension function	1byte	C,T	17.001 scene number
			2byte		5.001 percentage
					7.001 pulses

The communication object is determined by the parameter "Object type of output value". When proximity function is triggered, the object can send the parameter setting value(1byte/2byte) or ON(1bit ) to the bus separately. The range of value is determined by the selected data type.

352Alarm acknowledgeExtension function1bitC,T1.016 acknowledge	352	Alarm acknowledge	Extension function	1bit	C,T	1.016 acknowledge
--	-----	-------------------	--------------------	------	-----	-------------------

When the user acknowledges the warning message on the screen, the communication object sends an acknowledge telegram to the bus, and the telegram value is 1.

353	Alarm message	Extension function	14byte	C,W	16.001 character string (ISO 8859-1)

The communication object is used to receive the warning message displayed on the screen from bus. When no value is received initially, the warning pop-up is displayed empty.

354	Alarm input	Extension function	1bit	C,W,T,U	1.005 alarm
-----	-------------	--------------------	------	---------	-------------

The communication object is used to receive the alarm signal from bus. Telegram value:

0 —— No alarm

1 — Alarm

If device restart, the object sends status request telegram (if sending parameter is enabled in General interface).

355	Locking scene	Extension function	1byte	C,T	17.001 scene number

The communication object is visible when panel locking function and external scene function are enabled. Used to recall external scene command.

356	PM2 5/PM10/VOC value	Screensever-Items 1	2 hyte	CWTU	7.001 pulse	
550			20900	C,W,I,U	9.030 concentration(ug/m3)	

The communication object is used to receive the measurement value of the PM2.5/PM10/VOC value and get the corresponding value from the bus to be updated to the display in ug/m<sup>3</sup>. Range: 0~999ug/m<sup>3</sup>, object datatype is determined by the parameter setting.

If device restart, the objects send status request telegram (if sending parameter is enabled in General interface). The other objects of screen saver are the same.

356	Temperature value	Screensaver-Items 1	2byte	C,W,T,U	9.001 temperature
-----	-------------------	---------------------	-------	---------	-------------------

T	he communication object is	s used for receiving	a temperat	ture measur	ement value sent from a external					
temper	temperature sensor, the corresponding value got from the bus is updated to screen display.									
Range: -4040°C										
356	Humidity value	Screensaver-Items 1	2byte	C,W,T,U	9.007 humidity					
The communication object is used for receiving a humidity measurement value sent from a external										
humidity sensor, the corresponding value got from the bus is updated to screen display. Range: 0~100%										
250	7.001 pulse									
350	CO2 value	Screensaver-Items 1	Zbyte	C,w,1,U	9.008 parts/million(ppm)					
T	The communication object is used to receive the measurement value of the CO2 value and get the									
corresp	ponding value from the bus	to be updated to the	display in	ı ppm. Rang	ge: 0~4000ppm, object datatype is					
determ	nined by the parameter settin	g.								
256	D.1.4		2byte C,W,T,U		7.013 brightness(lux)					
356	Brightness value	Screensaver-Items I		9.004 lux						
Т	he communication object is	s used to receive the	measurem	ent value o	f the brightness value and get the					
corresp	ponding value from the bus	to be updated to the	e display i	n lux. Rang	e: 0~65535lux, object datatype is					
determ	ined by the parameter settin	g.								
					9.005 speed					
356	Wind speed	Screensaver-Items 1	2byte	C,W,T,U	9.028 wind speed					
T	he communication object is	used to receive the	measureme	ent value of	the wind speed value and get the					
corresp	ponding value from the bus	to be updated to the c	lisplay in 1	m/s or km/h	. Object datatype is determined by					
the par	rameter setting.									
356	AQI value	Screensaver-Items 1	2byte	C,W,T,U	7.001 pulse					
T	he communication object	is used to receive th	ne measur	ement valu	e of the AQI value and get the					
corresp	corresponding value from the bus to be updated to the display. Range: 0~500									
L		Table 6.1 "General" cor	nmunication	object table						

## 6.2. "Internal sensor measurement" Communication Object

Number	Name	Object Function	Description Group Address	Length C R	W T	U Data Ty	pe Priority			
∎⊉ 5	Internal sensor	Temperature value	2	by <mark>t</mark> es C R	- T -	- temperat	ure (°C) Low			
<b>∎</b> ‡ 6	Internal sensor	Low temperature alarm	1	bit C R	- T -	alarm	Low			
₩₽7	Internal sensor	High temperature alarm	1	bit C R	-т.	- alarm	Low			
∎‡ 8	■28 Internal sensor Humidity value 2 bytes C R - T - humidity (%)									
∎⊉ 9	Internal sensor	Low humidity alarm	1	bit C R	- T -	- alarm	Low			
<b>■‡</b>  10	Internal sensor	High humidity alarm	1	bit C R	- T -	- alarm	Low			
		Fig.6.2 "Interi	hal sensor measurement" comm	nunication O	bject		1			
NO.	Object Fu	nction	Name	Data Ty	pe	Flag	DPT			
5	Temperatu	re value	Internal sensor	2byte		C,R,T	9.001 temperature			
The temperat	The communication object is used for transmitting the temperature value detected by the built-in temperature sensor of the device to the bus. Range:-50~99.8°C									
6	Low tempe	erature alarm	Internal sensor	1bit	C,R	,T 1	.005 alarm			
The than low	The communication object is used to send the low temperature alarm signal to bus, when temperature lower than low threshold that defined by parameter.									
7	High temp	erature alarm	Internal sensor	1bit C,R		,T 1	.005 alarm			
The higher th	e communica an high thres	tion object is used hold that defined by	to send the high tempera parameter.	ture alarm	sign	al to bu	s, when temperature			
8	Humidity	value	Internal sensor	2byte	C,R	,T 9	9.007 humidity			
The bus. Ran	e communicat age:0~100%	ion object is used to	receive humidity measur	ements sen	it froi	n the hu	midity sensor on the			
9	Low humic	lity alarm	Internal sensor	1bit	C,R	,T 1	.005 alarm			
The	e communicat	ion object is used to	send the low humidity al	arm signal	to bu	is, when	humidity lower than			
low three	shold that def	ined by parameter.								
10	High humi	dity alarm	Internal sensor	1bit	C,R	,T 1	.005 alarm			
The	e communicat	ion object is used to	send the high humidity al	arm signal	to bu	s, when	humidity higher than			
high thre	eshold that de	fined by parameter.								

Table 6.2 "Internal sensor measurement" communication object table

## 6.3. "Input" Communication Object

Number	Name	Object Function	Description	Group Address	Length	С	R	W	т	U	Data Type	Priority
■244	Input 1 - Temperature probe	Actual temperature, Sensor			2 bytes	С	R	10	Т	-	temperature (°C)	Low
■245	Input 1 - Temperature probe	Temperature error report, Sensor			1 bit	С	R	2	Т	82	alarm	Low
			Temperature	e probe								
Number	Name	Object Function	Description	Group Address	Length	C	F	R	N	г	U Data Type	Priority
∎≵ 244	Input 1 - Switch sensor	Switch			1 bit	С	R	W	T	U	switch	Low
244	Input 1 - Switch sensor	Close, Switch			1 bit	C	R	W	T	U	switch	Low
<b> ∤</b> 245	Input 1 - Switch sensor	Open, Switch			1 bit	С	R	W	T	U	switch	Low
■244	Input 1 - Switch sensor	Short, Switch			1 bit	С	R	W	T	U	switch	Low
∎‡ 245	Input 1 - Switch sensor	Long, Switch			1 bit	С	R	W	( T	U	switch	Low
■246	Input 1 - Switch sensor	Disable	BI: Switch	sensor	1 bit	C	2	W	-	-	enable	Low
Number	Name	Object Function	Description	Group Address	Length	С	R	W	T	U	Data Type	Priority
■244	Input 1 - Scene control	Scene			1 byte	С	-	-	Т	-	scene control	Low
■244	Input 1 - Scene control	Close, Scene			1 byte	С	-72	5	Т	5	scene control	Low
■245	Input 1 - Scene control	Open, Scene			1 byte	С	÷	-	Т		scene control	Low
∎‡ 244	Input 1 - Scene control	Short, Scene			1 byte	С	•	~	Т	~	scene control	Low
245	Input 1 - Scene control	Long, Scene			1 byte	С	-	2	Т	9	scene control	Low
■246	Input 1 - Scene control	Disable			1 bit	С	-	W	-	-	enable	Low
			BI: Scene c	ontrol								
Number	Name	Object Function	Description	Group Address	Length	С	R	N	/ т	U	Data Type	Priority
■244	Input 1 - Send String	String			14 bytes	С	-		Т		Character String (ISO 8859-1)	Low
■244	Input 1 - Send String	Close, String			14 bytes	C		<del>ت</del>	Т	37	Character String (ISO 8859-1)	Low
<b>₽</b> 245	Input 1 - Send String	Open, String			14 bytes	С	-	-	Т	-	Character String (ISO 8859-1)	Low
■244	Input 1 - Send String	Short, String			14 bytes	C	7	÷	Т		Character String (ISO 8859-1)	Low
■245	Input 1 - Send String	Long, String			14 bytes	С	2	2	Т	2	Character String (ISO 8859-1)	Low
■246	Input 1 - Send String	Disable			1 bit	С	-	W	-	÷	enable	Low

BI: Send string Fig.6.3 "Input" communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
244	Actual temperature, Sensor	Input 1 - {{Temperature probe}}	2byte	C,R,T	9.001 temperature

The communication object is used for transmitting the temperature value detected by the external temperature sensor of the device to the bus. Range:-50~99.8°C

The name in parentheses changes with the parameter "Description (max 30 char.)". If description is empty, display "Input x - ..." by default. The same below.

245	Temperature	error	report,	Input 1 - {{Temperature probe}}	1bit	C.R.T	1.005 alarm
	Sensor				1.010	0,11,1	

The communication object is used to send the error report of the external temperature sensor, and the object value is defined according to the parameters.

244	Switch	Input 1 - {{Switch sensor}}	1bit	C,R,W,T,U	1.001 switch
244	Close/Short, Switch	Input 1 - {{Switch sensor}}	1bit	C,R,W,T,U	1.001 switch
245	Open/Long, Switch	Input 1 - {{Switch sensor}}	1bit	C,R,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.

Only the object "Switch" is visible when use a common object. If use two separate objects, "Close/Open" 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

244	Scono	Input 1 ((Scono control))	1 byto	СТ	18.001	scene
	Stelle	input i - {{Scene control}}	Ibyte	С,1	control	
244	Class/Short Same	Lengt 1 ((Composition))	1h-4a	СТ	18.001	scene
	Close/Snort, Scene	Input I - {{Scene control}}	Ibyte	C,1	control	
245	Omen/Lang Same	Lungt 1 ((Comp control))	1h-4	СТ	18.001	scene
	Open/Long, Scene	Input I - {{Scene control}}	Ibyte	C,1	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.

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

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  $1\sim64$ , actually communication object "Scene" corresponds to the telegram received is  $0\sim63$ . Such as parameter settings is the scene 1, communication object "Scene" sends the scene for 0.

244	String	Input 1 - {{Send String}}	14byte	C,T	16.001 character string (ISO 8859-1)
244	Close/Short, String	Input 1 - {{Send String}}	14byte	C,T	16.001 character string (ISO 8859-1)
245	Open/Long, String	Input 1 - {{Send String}}	14byte	C,T	16.001 character string (ISO 8859-1)

These communication objects are used to send the sting to bus. Use a common object or two separate objects is according to the parameter setting.

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

246	Disable	Input 1 - {{}}	1bit	C,W	1.003 enable

The communication object is used to disable/enable the function of contact input, apply to binary input function, including switch, scene and send string.

Table 6.3 "Input" communication object table

## 6.4. "Push button sensor" Communication Object

The objects of individual button are similar to the rocker button, so the repeat objects as follow are explained

## by individual button.

Numbe	r Name	<b>Object Function</b>	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■≵ 148	Button 1 - Switching	Switch			1 bit	С	-		Т		switch	Low
<b>■</b> \$ 153	Button 1 - Switching	Switch status			1 bit	С	2	W	Т	U	switch	Low
■↓ 148	Button 1 - Switching	Press, Switch			1 bit	С	-	ie.	Т	×.	switch	Low
∎‡ 149	Button 1 - Switching	Release, Switch			1 bit	С	2	<u>_</u>	Т	<u>_</u>	switch	Low
152	Button 1 - Switching	Press, switch status			1 bit	С	-	W	Т	U	switch	Low
■2 153	Button 1 - Switching	Release, switch status			1 bit	С	-	W	Т	U	switch	Low
■2 148	Button 1 - Switching	Short, Switch			1 bit	С	÷	•	Т		switch	Low
■之 149	Button 1 - Switching	Long, Switch			1 bit	С	2	827	Т	-	switch	Low
■2 152	Button 1 - Switching	Short, switch status			1 bit	С	-	W	Т	U	switch	Low
■2 153	Button 1 - Switching	Long, switch status			1 bit	С	2	W	Т	U	switch	Low
₽2 151	Button 1 - Switching	Flashing function			1 bit	С	2	W	- 1	U	enable	Low
■≵ 154	Button 1 - Switching	Disable			1 bit	C	-	W	-		enable	Low
■之 155	Button 1 - Switching	Status indication			1 bit	С	2	W	Т	U	switch	Low
			Swite	h								
Numbe	r Name	<b>Object Function</b>	Description	Group Address	Length	С	R	W	т	U	Data Type	Priority
∎‡ 148	Button 1 - Dimming	Short, Switch			1 bit	С	-	×.	Т	×.	switch	Low
■2 149	Button 1 - Dimming	Long, Dimming			4 bit	С	2	W	Т	<u>_</u>	dimming control	Low
<b>₽2</b>  153	Button 1 - Dimming	Switch status			1 bit	C	-	W	Т	U	switch	Low
∎‡ 154	Button 1 - Dimming	Disable			1 bit	С	2	W	2	ੁ	enable	Low
■2 155	Button 1 - Dimming	Status indication			1 bit	C	-	W	Т	U	switch	Low
₽2 151	Button 1 - Dimming	Flashing function			1 bit	C	-	W	-	U	enable	Low

Dimming

Numbe	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
<b>1</b> 48	Button 1 - RGB	Switch			1 bit	C	3		Т		switch	low
z 149	Button 1 - RGB	RGB dimming value			3 bytes	c	-	-	T	-	RGB value 3x(0, 255)	Low
+140	Putton 1 PCP	Pad dimming value			1 huto	6			т		nercentage (0, 100%)	Low
+ 149	Putton 1 PCP	Green dimming value			1 byte	~		-	т	-	percentage (0.100%)	Low
≠ 150 ≠ 151	Button 1 - RGB	Blue dimming value			1 byte	C	- 7-	2	Ť	-	percentage (0.100%)	Low
+(15) +)152	Button 1 - RGB	Switch status			1 bit	C		-	T		percentage (010076)	Low
+ 100 + 104	Putton 1 - RGB	Disable			1 614	-		14/	10	U	seeble	Low
+ 104 + 105	Button 1 - NGB	Cisable Citatus indication			1.614	-	-	AV.	т	-	enable	LOW
Number	Name	Object Function	RGB switching/ Description	send value Group Address	Length	C	R	N	'т / т	U	Data Type	Priority
<b>z</b>  148	Button 1 - RGBW	Switch		•	1 bit	с		-	Т	-	switch	Low
<b>z</b>  149	Button 1 - RGBW	RGBW dimming value			б bvtes	c	-	-	Т	-	RGBW value 4x(0.,100%)	Low
+ 140	Putters 1 DCDW	Pad diaparing value			1 huda	-			Ŧ		nesentana (0.1009()	Leve
■+ 149 ■+ 150	Putton 1 PGPW/	Green dimming value			1 byte	C	-	5 <b>7</b> 131	т	10	percentage (0.100%)	Low
•+ 150 •+ 151	Putton 1 - RGBW	Blue diamine value			1 byte	-	-		T		percentage (0.100%)	Low
•+ 101 •+ 100	Button I - RGBW	Blue dimming value			1 byte	C .	-	5 <b>7</b>	T	57 53	percentage (0.100%)	LOW
=+ 152 ■+ 152	Button I - RGBW	White dimming value			1 byte	5	-	147	T		percentage (U. 100%)	LOW
■+  153 ■+  45 4	Button I - RGBW	Switch status			I bit	C	-	VV	1	U	switch	Low
<b>4</b>  154	Button I - RGBW	Disable			Ibit	5	-	VV	-	-	enable	Low
■4 155	Button 1 - RGBW	Status indication	DODUL : 1:	/ 1 1	1 bit	C	-	W	1	U	switch	Low
		011 15 11	RGBW switching	g/send value		•			+		D	
Number	Name	Object Function	Description	Group Address	Length	C	к	vv	1	U	Data Type	Priority
∎7 148	Button 1 - Colour Temp.	Switch		1	l bit	C	5 I	<u>.</u>	T	<u>.</u>	switch	Low
<b>1</b> 49	Button 1 - Colour Temp.	Brightness value		4	byte	C	- 1	-	Т	-1	percentage (0100%)	Low
■之 150	Button 1 - Colour Temp.	Colour temperature value			2 bytes	C	5 J	-	T	-	absolute colour temperature (K)	Low
∎⊉ 153	Button 1 - Colour Temp.	Switch status		<td< td=""><td>bit</td><td>С</td><td>-</td><td>W</td><td>Т</td><td>U</td><td>switch</td><td>Low</td></td<>	bit	С	-	W	Т	U	switch	Low
∎‡ 154	Button 1 - Colour Temp.	Disable		1	l bit	C	5	W	-	-	enable	Low
<b>↓</b>	Button 1 - Colour Temp.	Status indication			byte	С	÷ (	W	Т	U	percentage (0100%)	Low
		Colo	our temperature swi	itching/send va	alue							
Numbe	Name	Object Function	Description	Group Address	Length	C	R	N	/ Т	U	Data Type	Priority
■2 148	Button 1 - Value sender	Short, 1bit value			1 bit	С	-	10	Т	10	switch	Low
∎≵ 149	Button 1 - Value sender	Long, 1bit value			1 bit	С	-	-	Т	2	switch	Low
■2 148	Button 1 - Value sender	Short, 2bit value			2 bit	C	5	-	Т	1	switch control	Low
■2 149	Button 1 - Value sender	Long, 2bit value			2 bit	С	-	4	Т	-	switch control	Low
∎≵ 148	Button 1 - Value sender	Short, 4bit value			4 bit	C	-	-	Т		dimming control	Low
<b>■‡</b>  149	Button 1 - Value sender	Long, 4bit value			4 bit	С	-	1	Т	2	dimming control	Low
■‡ 154	Button 1 - Value sender	Disable			1 bit	С	5	W	5	<b>.</b>	enable	Low
■2 155	Button 1 - Value sender	Status indication			1 byte	С	-	W	Т	U	percentage (0100%)	Low
			Value ser	nder								
Numbe	r Name	Object Function	Description	Group Address	Length	С	R	W	т	U	Data Type	Priority
■2 148	Button 1 - Scene	Scene			1 byte	C	-	-	Т	-	scene control	Low
148	Button 1 - Scene	Short Scene			1 byte	C	-	-	т	-	scene control	low
7149	Button 1 - Scene	Long Scene			1 byte	c	20	12	т	12	scene control	Low
	Button 1 - Scene	Dirable			1 bit	-		14/			enable	Low
→1100	Button 1 - Scene	Ctatus indication			1 bute	~		340	т	11	enable (0.100%)	Low
	button i - scene	Status Indication	C	- <b>4</b> 1	Dyte	5	-	VV	1	U	percentage (0.100%)	LOW
Number	Name	Object Eugetian	Description	Group Address	Langth	C	D	14	т		Data Tuna	Driggita
		Object Function	Description	Group Address	Lengui	-	I		-	U	Data Type	Fliolity
<b>4</b>  148	Button I - Blind	Up/Down, Blind			I bit	C	-	W	-	5	up/down	Low
<b>4</b> [149	Button 1 - Blind	Stop/Adjust, Blind			1 bit	C	-	W	1	-	step	Low
<b>             </b>	Button 1 - Blind	Disable			1 bit	C	5	W	5	<i>.</i> 7	enable	Low
<b>7</b>  155	Button 1 - Blind	Status indication			1 byte	C	-	W	Т	U	percentage (0100%)	Low
∎⊉ 151	Button 1 - Blind	Flashing function			1 bit	С	-	W	-	U	enable	Low
Number	Name	Object Function	Blind	Group Address	Length	C	P	14	т	н	Data Turpe	Driority
+140	Detters 1. Childrens inter	Desister runction	Description	Group Address	1 bude	~	K	14/	-		Data type	Inonty
+ 140	Button I - Shift register	Register value			i byte	~		VV.	1	U	counter pulses (0255)	LOW
- <b>4</b>  154 - <b>→</b>  154	Button I - Shift register	Disable			Dit	-	27	W	2	-	enable	Low
<b>e</b> ∉ 155	Button 1 - Shift register	Status indication	Shift regi	ster	1 byte	C	-	W	I	U	percentage (0100%)	Low
Numbe	r Name	Object Function	Description	Group Address	Length	С	R	W	/ Т	U	Data Type	Priority
∎‡ 148	Button 1 - Multiple operation	Object1-On/Off			1 bit	С	-	W	Т	1	switch	Low
■2 149	Button 1 - Multiple operation	Object2-Up/Down			1 bit	С	-	W	Т	-	up/down	Low
■2 150	Button 1 - Multiple operation	Object3-SceneControl			1 byte	C	-	14	Т	94 - P	scene control	Low
■2 151	Button 1 - Multiple operation	Object4-Percentage			1 byte	C	-	5	Т	-	percentage (0100%)	Low
■2 154	Button 1 - Multiple operation	Disable			1 bit	C	-	W	4	-	enable	Low
■2 155	Button 1 - Multiple operation	Status indication			1 byte	C	-	W	Т	U	percentage (0.,100%)	Low
<b>₽‡</b> 148	Button 1 - Multiple operation	Object1-String			14 bytes	C	-		T	-	Character String (ISO 8859-1)	Low
											-	

Multiple operation

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	Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
-+	148	Button 1 - Delay mode	Short, Delay mode			1 bit	С	-	-	Т	-	switch	Low
+	149	Button 1 - Delay mode	Long, Delay mode			4 bit	С	20	2	Т	2	dimming control	Low
<b>■</b> ‡	154	Button 1 - Delay mode	Disable			1 bit	С	-	W	-	÷	enable	Low
1	155	Button 1 - Delay mode	Status indication			1 byte	С	20	W	Т	U	percentage (0100%)	Low
				Delay m	ode								
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
<b>₽</b>	148	Button 1 - RTC mode	Comfort mode			1 bit	С	-	æ. 1	Т	5	enable	Low
<b>*</b>	149	Button 1 - RTC mode	Economy mode			1 bit	С	-	9.3	Т	2	enable	Low
<b>■‡</b>	150	Button 1 - RTC mode	Frost/Heat protection mode			1 bit	С	-	Ξ.	Т	5	enable	Low
<b>*</b>	151	Button 1 - RTC mode	Standby mode			1 bit	С	-	23	Т	9	enable	Low
<b>■†</b>	148	Button 1 - RTC mode	Operation mode			1 byte	С	-	~	Т	-	HVAC mode	Low
+	154	Button 1 - RTC mode	Disable			1 bit	С	-	W	-	-	enable	Low
∎ <b></b> ‡	155	Button 1 - RTC mode	Status indication			1 byte	C	-	W	Т	U	percentage (0100%)	Low
			R	TC operatio	on mode			R.R.		4.00		NS I WOLLD	1 Marshirston
	Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
<b>-</b>	148	Button 1 - String	String			14 bytes	С	-	-	Т		Character String (ISO 8859-1)	Low
<b>■‡</b>	154	Button 1 - String	Disable			1 bit	C	-	W	-	-	enable	Low
				String(14b	oytes)								
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
<b>■</b> ‡	148	Button 1 - Display	Status display(2byte temperature)			2 bytes	С	-	W	Т	U	temperature (°C)	Low
<b>;</b>	148	Button 1 - Display	Status display(2byte humidity)			2 bytes	C	4	W	Т	U	humidity (%)	Low
z	148	Button 1 - Display	Status display(1byte percentage)			1 byte	C	23	W	Т	U	percentage (0, 100%)	low
-	148	Button 1 - Display	Status display(1byte unsigned)			1 byte	c	2	w	т	11	counter pulses (0, 255)	low
-+-	140	button 1 - Display	Status display(loyte disigned)			TOyte	2					counter puises (0255)	LOW
<b>₽</b> ₹	148	Button 1 - Display	Status display(2byte unsigned)			2 bytes	C	-	W	T	U	pulses	Low
7	148	Button 1 - Display	Status display(2byte lux)			2 bytes	C	-	W	Т	U	lux (Lux)	Low
■ <b></b>	148	Button 1 - Display	Status display(2byte float)			2 bytes	C	-	W	Т	U	2-byte float value	Low
==	148	Button 1 - Display	Status display(4byte unsigned)			4 bytes	C	•	W	Т	U	counter pulses (unsigned)	Low
=z	148	Button 1 - Display	Status display(4byte float)			4 bytes	C	4	W	Т	U	4-byte float value	Low
	1/12	Button 1 - Display	Status display(14buta)			11 huter	C		W			Character String (ISO 8850-1)	Low
-+-	140	button r - Display	Status display(14byte)	Status die	mlay	14 Dytes	5	2	vv	70	6	character string (iso 6659-1)	LOW
	Number	Name	Object Function	Description	Group Addross	Longth	C	P	14	, т		Data Tuna	Priority
-+	140	Deduct Cotosist	Consistent and a distance to	Description	Group Address	2 Lengu	~	IN		- -	U		Fliolity
+	148	Rocker I - Setpoint	Current setpoint adjustment			2 bytes	C	-	-	1	-	temperature (°C)	LOW
+	149	Rocker I - Setpoint	Current temperature setpoint			2 Dytes	5	-	VV		U	temperature ( C)	LOW
7	148	Rocker 1 - Setpoint	Setpoint offset			1 bit	C	2	-	T	×.	step	Low
- <del>(</del>	148	Rocker 1 - Setpoint	Offset setpoint adjustment			2 bytes	C	2	-	1	-	temperature difference (K)	Low
	149	Rocker 1 - Setpoint	Current Setpoint offset			2 bytes	C	-	W	T	U	temperature difference (K)	Low
- <del>(</del>	154	Rocker 1 - Setpoint	Disable			1 bit	C	2	W	2	-	enable	Low
÷	155	Rocker 1 - Setpoint	Status indication	<b>.</b>		2 bytes	C	-	W	T	U	temperature (°C)	Low
			011115	setpoint adju	ustment		0			-		D	
	Number	Name	Object Function	Description	Group Address	Length	C	R	w	1	U	Data Type	Priority
Ŧ	148	Button 1 - RGB	Switch			1 bit	C	<del>.</del>	-	1		switch	Low
7	149	Button 1 - RGB	RGB dimming value			3 bytes	C	<u></u>	-	T	-	KGB value 3x(0255)	Low
<b>7</b>	151	Button 1 - RGB	KGB brightness, status			3 bytes	C	-34	W	ſ	U	KGB value 3x(0255)	Low
Ŧ	153	Button 1 - RGB	Switch status			1 bit	C	20	W	Т	U	switch	Low
Ŧ	154	Button 1 - RGB	Disable			1 bit	C	-	W	•		enable	Low
Ŧ	155	Button 1 - RGB	Status indication	DOD I		1 byte	C	20	W	Т	U	percentage (0100%)	Low
				RGB dim	ming	1000				_			
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
7	148	Button 1 - RGBW	Switch			1 bit	C	-	-	Т	-	switch	Low
7	149	Button 1 - RGBW	RGBW dimming value			6 bytes	C	2	-	Т	20	RGBW value 4x(0100%)	Low
7	151	Button 1 - RGBW	RGBW brightness, status			6 bytes	C	-	W	Т	U	RGBW value 4x(0100%)	Low
7	153	Button 1 - RGBW	Switch status			1 bit	C	2	W	Т	U	switch	Low
7	154	Button 1 - RGBW	Disable			1 bit	C	-	W	-	-	enable	Low
7	155	Button 1 - RGBW	Status indication			1 byte	C	2 3	W	T	U	percentage (0100%)	Low
-	149	Button 1 - RGBW	RGB dimming value			3 bytes	С	-	-	Т	-	RGB value 3x(0255)	Low
7	150	Button 1 - RGBW	White dimming value			1 byte	C	2	Works	Т	-	percentage (0100%)	Low
-7	151	Button 1 - RGBW	RGB brightness, status			3 bytes	С	-1	W	Т	U	RGB value 3x(0255)	Low
∎ <b>‡</b>	152	Button 1 - RGBW	White brightness, status			1 byte	C	50	W	Т	U	percentage (0100%)	Low

RGBW dimming

Number	Name	Object Function	Description	Group Address	Length	С	R	٧	ΙT	U	Data Type	Priority
148	Button 1 - Colour Temp.	Switch			1 bit	С	5	-	Т	-	switch	Low
■≵ 149	Button 1 - Colour Temp.	Brightness value			1 byte	С	-	-	Т	-	percentage (0100%)	Low
■2 150	Button 1 - Colour Temp.	Absolute colour temperature			2 bytes	С	5		Т		absolute colour temperature (K)	Low
■2 151	Button 1 - Colour Temp.	Brightness value, status			1 byte	С	-	W	Т	U	percentage (0100%)	Low
152	Button 1 - Colour Temp.	Absolute colour temperature, sta			2 bytes	С	5	W	Т	U	absolute colour temperature (K)	Low
■2 153	Button 1 - Colour Temp.	Switch status			1 bit	С	-	W	Т	U	switch	Low
<b>■‡</b> 154	Button 1 - Colour Temp.	Disable			1 bit	С	5	W	-	-	enable	Low
■2 155	Button 1 - Colour Temp.	Status indication			1 byte	С	-	W	Т	U	percentage (0100%)	Low
■↓ 150	Button 1 - Colour Temp.	Percentage colour temperature			1 byte	С	-	÷	Т	-	percentage (0100%)	Low
152	Button 1 - Colour Temp.	Percentage colour temperature, s			1 byte	С	-	W	Т	U	percentage (0100%)	Low

Colour temperature dimming

		Fig.6.4 "Push button sensor" c			
NO.	Object Function	Name	Data Type	Flag	DPT
148	Switch	Button 1 - {{Switching}}	1bit	C,T	1.001 switch
148	Press/Short, Switch	Button 1 - {{Switching}}	1bit	C,T	1.001 switch
149	Release/Long, Switch	Button 1 - {{Switching}}	1bit	C,T	1.001 switch
153	Switch status	Button 1 - {{Switching}}	1bit	C,W,T,U	1.001 switch
152	Press/Short, switch status	Button 1 - {{Switching}}	1bit	C,W,T,U	1.001 switch
153	Release/Long, switch	Button 1 - {{Switching}}	1bit	C.W.T.U	1.001 switch
	status	Button i ((Switching))	1010		LIVE SWICH

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 "Switch" and "Switch status" are 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

Obj.148/Obj.149: used to send telegrams of switch control to the bus.

Obj.152/Obj.153: used to receive the feedback of switch status from the bus. If device restart, the object sends status request telegram (if sending parameter is enabled in General interface).

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

148	Short, Switch	Button 1 - {{Dimming}}	1bit	C,T	1.001 switch
149	Long, Dimming	Button 1 - {{Dimming}}	4bit	C,W,T	3.007 dimming
153	Switch status	Button 1 - {{Dimming}}	1bit	C,W,T,U	1.001 switch

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

Obj.148, Obj.153: as the same as above.

Obj.149: used to trigger a relative dimming operation.

Dimming down when telegram of object "Long, Dimming" is  $1\sim7$ , 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  $9\sim15$ , 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.

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

These two communication objects are used to control the blind.

Obj.148: used to control blind up/down. Telegrams:

0——Move up

1——Move up

Obj.149: used to stop curtain movement. Telegram:

1——Stop	
---------	--

	F				
	Short, 1bit value		1bit		1.001 switch
	Short, 2bit value		2bit		2.001 switch control
	Short, 4bit value		4bit		3.007 dimming
1.40	Short, 1byte value	<b>D</b> ((V) ((V)	1byte	C,T	5.010 counter pulses
140	Short, 2byte value	Button 1 - {{value senu}}	2byte		7.001 pulses
	Short, 2byte float value		2byte		9.x float value
	Short, 4byte value		4byte		12.001 counter pulses
	Short, 4byte float value		4byte		14.x float value
	Long, 1bit value		1bit		1.001 switch
	Long, 2bit value		2bit		2.001 switch control
	Long, 4bit value		4bit		3.007 dimming
1.10	Long, 1byte value		1byte		5.010 counter pulses
149	Long, 2byte value	Button 1 - {{Value send}}	2byte	С,Т	7.001 pulses
	Long, 2byte float value		2byte		9.x float value
	Long, 4byte value		4byte		12.001 counter pulses
	Long, 4byte float value		4byte		14.x float value
1	1	1	1	1	1

These communication objects are used to value sender. Object type and value range are determined by the parameter setting datatype.

Obj.148: used to send telegram to the bus when short operation.

Obj.149: used to send telegram to the bus when long operation.

148	Scene	Button 1 - {{Scene}}	1byte	C,T	18.001 scene control
148	Short, Scene	Button 1 - {{Scene}}	1byte	C,T	18.001 scene control
149	Long, Scene	Button 1 - {{Scene}}	1byte	C,T	18.001 scene control

These communication objects are used to scene control. Use a common object or two separate objects is according to the parameter setting when long/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;

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  $1\sim64$ , actually communication object "Scene" corresponds to the telegram received is  $0\sim63$ . Such as parameter settings is the scene 1, communication object "Scene" sends the scene for 0.

					5.010 counter pulses
149	Register value	Button 1 - {{Shifter}}	1byte	C,W,T,U	17.001 scene number
					20.102 HVAC mode

This communication object is used to shift register. To send the value to the bus, object type is determined by the parameter setting datatype.

148	Switch	Button 1 - {{RGB}}	1bit	C,T	1.001 switch	
149	RGB dimming value	Button 1 - {{RGB}}	3byte	C,T	232.600 RGB value 3x(0255)	
151	RGB brightness, status	Button 1 - {{RGB}}	3byte	C,W,T,U	232.600 RGB value 3x(0255)	

X:0;

153	Switch stat	us	Button 1 - {{RGB}}		1bit	C,V	N,T,U	1.001	switch
Tł	nese commu	inication objects	are used for RGB sy	witchi	ng/send	valu	e and d	immir	ng, and RGBW dimming.
O	bi.148. Obi.	153: as the same	e as above.		U				
W	hen RGB c	biect type is se	ected 1x3byte or R	GBW	/ is sele	cted	3hvte+	1hvte	Obi 149 and Obi 151 are
visible	visible:								
visible:	Obj 140: used to send brightness value of DCD three colour lamp to the bug								
	Obj. 149: used to send brightness value of RGB three-colour lamp to the bus.								
lamn fr	om bus	Visible when	dimming function, u	ised to	o receiv	e bri	gntnes	s teleg	gram of KGB three-colour
3- <sup>3</sup>	Byte Code 1	for RGB Dimmi	ng Object Data Type	: U8 I	U8 U8. a	as fol	lows:		
		AMED	2 2	_	11 60				
			2 C		D			_	
		<u> </u>	0		D			_	
		JUUUUUUU	UUUUUUU		UUUUUUUU				
			U						
R	red dimmi	ng value; G: gre	en dimming value; B	: blue	e dimmir	ng va	lue.		
148	Switch		Button 1 - {{RGBW}}		1bit C,T			1.001 switch	
149	RGBW din	nming value	Button 1 - {{RGBW}}		6byte C,T		251.6		00 DPT_Colour_RGBW
151	RGBW bri	ghtness, status	Button 1 - {{RGBW}}		6byte	C,W	<b>/,T,</b> U	251.600 DPT_Colour_RGBW	
153	Switch stat	us	Button 1 - {{RGBW}}		1bit	C,W	<b>/,T,</b> U	1.001	switch
Tł	nese commu	inication objects	are used for RGBW	swite	ching/set	nd va	lue and	1 dimn	ning.
O	bj.148, Obj.	153: as the same	e as above.						
W	hen RGBW	object type is s	elected 1x6byte, Obj	.149 a	and Obj.	151 a	are visi	ble:	
O	bj.149: used	to send brightn	ess value of RGBW	four-c	colour la	mp to	o the b	us.	
O	bj.151: only	visible when a	limming function, us	sed to	receive	e brig	ghtness	telegr	am of RGBW four-colour
lamp fr	om bus.	1 1 4 4 6			1.	110		110 54	
Er	icoding of t	ne data type of f	ne o-byte RGBW dir		g object:	: U8		U8 R8	s K4 B4, as follows:
6 <sub>MSB</sub>		3	4	3	3		2		1 <sub>LSB</sub>
R		G	В	W		Reserve		ve	rrrrmR mG mB mW
UUU	UUUUU	υυυυυυυυ	υυυυυυυυ	טטו	JUUUU	JU	00000	0000	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.

149	Red dimming value	Button 1 - {{RGBW}}	1byte	C,T	5.001 percentage(0100%)
150	Green dimming value	Button 1 - {{RGBW}}	1byte	C,T	5.001 percentage(0100%)
151	Blue dimming value	Button 1 - {{RGBW}}	1byte	C,T	5.001 percentage(0100%)
152	White dimming value	Button 1 - {{RGBW}}	1byte	C,T	5.001 percentage(0100%)

These communication objects are used for RGB and RGBW switching/send value.

Obj.149~Obj.151 are visible when 3x1byte for the RGB object type or 4x1byte for the RGBW object type, Obj.152 is only visible when RGBW is selected 4x1byte.Telegrams: 0...100%

Obj.149: used to send brightness value of the control R (red) channel to the bus.

Obj.150: used to send brightness value of the control G (green) channel to the bus.

Obj.151: used to send brightness value of the control B (blue) channel to the bus.

Obj.152: used to send brightness value of the control W (white) channel to the bus.

150	White dimming value	Button 1 - {{RGBW}}	1byte	C,T	5.001 percentage(0100%)
152	White brightness, status	Button 1 - {{RGBW}}	1byte	C,W,T,U	5.001 percentage(0100%)

These communication objects are used for RGBW dimming, and visible when object type is 3byte+1byte. Telegrams: 0...100%

Obj.150: used to send brightness value of the control W (white) channel to the bus.

Obj.152: used to receive brightness telegram of the control W (white) channel from bus.

148	Switch	Button 1 -{{Colour Temp.}}	1bit	С,Т	1.001 switch
149	Brightness value	Button 1 -{{Colour Temp.}}	1byte	C,T	5.001 percentage(0100%)
150	Colour temperature value Percentage colour temperature Absolute colour temperature	Button 1 -{{Colour Temp.}}	2byte	C,T	5.001 percentage(0100%) 7.600 absolute colour temperature
151	Brightness value, status	Button 1 -{{Colour Temp.}}	1byte	C,W,T,U	5.001 percentage(0100%)

152	Percentage colour temperature, status Absolute colour temperature, status	Button 1 -{{Colour Temp.}}	1byte 2byte	C,W,T,U	5.001 percentage(0100%) 7.600 absolute colour temperature
153	Switch status	Button 1 -{{Colour Temp.}}	1bit	C,W,T,U	1.001 switch

These communication objects are used for colour temperature switching/send value and dimming.

Obj.148, Obj.153: as the same as above.

Obj.149: used to send the dimming telegram of the colour temperature to the bus, that is, sending the brightness value. Telegrams: 0...100%

Obj.150: only display "Colour temperature value" when switching/send value; display "Percentage colour temperature" or "Absolute colour temperature" according to object type when dimming function. Used to send the control telegram of the colour temperature to the bus.

Telegrams: 1byte is 0..100% and 2byte is 2000...7000 K

Obj.151: only visible when dimming function, used to receive status of brightness value from bus.

Obj.152: only visible when dimming function, display "Percentage colour temperature" or "Absolute colour temperature" according to object type. Used to receive colour temperature status from bus.

148	Object1-On/Off Object1-Up/Down Object1-SceneControl Object1-Percentage Object1-Unsigned value Object1-String	Button 1 - {{Multiple operation}}	1 bit 1 bit 1 byte 1 byte 1 byte 1 4 byte	C,W,T C,W,T C,T C,T C,T C,T	1.001 switch         1.008 up/down         18.001 scene control         5.001 percentage(0100%)         5.010 counter pulses         16.001 character string (ISO         8859-1)
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These communication objects are used to multiple operation, up to activate 4 objects at the same time, and operation once can send the value of 4 different datatype objects to the bus via these objects. Range of values that can be sent are determined by the datatype, and the datatype is determined by the parameter setting.

Note: 14byte is only applied to object1.

			1bit		1.001 switch
148	Short, Delay mode	Button 1 - {{Delay mode}}	4bit	C,T	3.007 dimming
			1byte		5.010 counter pulses
			1bit		1.001 switch
149	Long, Delay mode	Button 1 - {{Delay mode}}	4bit	C,T	3.007 dimming
			1byte		5.010 counter pulses

These communication objects are used to delay mode. Range of values that can be sent are determined by the datatype, and the datatype is determined by the parameter setting.

Obj.148: used to send telegrams of delay mode to the bus when short operation.

Obj.149: used to send telegrams of delay mode to the bus when long operation.

148	Operation mode	Button 1 - {{RTC mode}}	1byte	C,T	20.102 HVAC mode
148	Comfort mode	Button 1 - {{RTC mode}}	1bit	C,T	1.003 enable
149	Economy mode	Button 1 - {{RTC mode}}	1bit	C,T	1.003 enable
150	Frost/Heat protection mode	Button 1 - {{RTC mode}}	1bit	C,T	1.003 enable
151	Standby mode	Button 1 - {{RTC mode}}	1bit	C,T	1.003 enable

These communication objects are used to RTC operation. Used to send the operation mode of RTC to the bus.

When 1 byte: object 148 is visible, telegrams: 1-Comfort, 2-Standby, 3-Economy, 4-Protection, other reserved.

When 1bit:

Object 148-Comfort mode

Object 149—Economy mode

Object 150—Protection mode

Object 151—Standby mode

Only corresponding object send telegram "1" when activate one mode. When 1 bit standby object is not enable, three objects comfort, economy, protection all send 0 to activate standby mode. When 1 bit standby object is enable, only standby object sends 1 to activate standby mode.

148	String	Button 1 - {{String}}	14byte	C,T	16.001 character string (ISO 8859-1)				
Tł	This communication object is used to string function. Used to send the sting to the bus.								
148	Status display()	Button 1 - {{Display}}	1byte 2byte 4byte	C,W,T,U	5.001 percentage(0100%) 5.010 counter pulses 7.001 pulses 9.001 temperature 9.007 humidity 9.004 lux(lux) 9.x float value 12.001 counter pulses 14.x float value				
148	Status display()	Button 1 - {{Display}}	14byte	C,W	16.001 character string (ISO 8859-1)				

This communication object is used to status display. Used to receive the data of status display, and get the corresponding value from the bus to be updated to the display. Range of values determined by the datatype, and the datatype is determined by the parameter setting.

148	Current adjustment	setpoint	Rocker 1 - {{Setpoint}}	2byte	C,T	9.001 temperature
149	Current	temperature	Rocker 1 - {{Setpoint}}	2byte	C,W,T,U	9.001 temperature
147	setpoint				- ) · · ) /-	···· <b>r</b> · ··· <b>r</b>

These communication objects are used to setpoint temperature adjustment, are visible when "Setpoint adjustment(absolute)" is selected.

Obj.148: used to send current setpoint temperature to the bus when button operation.

Obj.149: used to receive the current setpoint temperature. If device restart, the object sends status request telegram (if sending parameter is enabled in General interface).

148	Setpoint offset	Rocker 1 - {{Setpoint}}	1bit	C,T	1.007 step
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This communication object is used to setpoint temperature adjustment, are visible when "Offset Increase/Decrease(relative)" is selected.

Used to send the telegrams of setpoint temperature increase/decrease to the bus when button operation. Telegrams:

0-Decrease

1——Increase

148	Offset setpoint	Rocker 1 - {{Setpoint}}	2byte	C,T	9.001 temperature
	adjustment				
149	Current Setpoint offset	Rocker 1 - {{Setpoint}}	2byte	C,W,T,U	9.001 temperature

These communication objects are used to setpoint temperature adjustment, are visible when "Offset setpoint adjustment(relative)" is selected.

Obj.148: used to send the offset of the current setpoint adjustment to the bus when button operation.

Obj.149: used to receive the offset of the current setpoint adjustment from bus.If device restart, the object sends status request telegram (if sending parameter is enabled in General interface).

151	Flashing function	Button 1 - {{}}	1bit	C,W,U	1.003 enable
Tł	nis communication object	is only applied to switch,	dimming	and blind	. Used to disable/enable flashing
function	n.				

154	Disable	Button 1 - {{}}	1bit	C,T	1.003 enable		
This communication object is used to the above functions expect for status display function. Used to disable/enable the function of contact input.							
155	Status indication	Button 1 - {{}}	1bit 1byte	C,W,T,U	1.001 switch5.010 counter pulses5.001 percentage(0100%)		
155	Status indication	Rocker 1 - {{}}	1bit 1byte	C,W,T,U	<ul> <li>1.001 switch</li> <li>5.010 counter pulses</li> <li>5.001 percentage(0100%)</li> <li>7.600 absolute colour temperature</li> <li>9.001 temperature(° C)</li> </ul>		
This communication object is used to control the status of button function on the screen via the bus, and also can receive status feedback. Range of telegram values is determined by the datatype, and the datatype is							

determined by the parameter setting.

If device restart, the object sends status request telegram (if sending parameter is enabled in General interface).

Table 6.4 "Push button sensor" communication object table

### 6.5. "Multifunction thermostat" Communication Object

#### 6.5.1."FCU" Communication Object

When the work mode is "Master", the read requests of external sensor (with separate enable parameter, the same below), fan speed, the window and the presence are sent to the bus after voltage recovery, as well as send the status of power on/off, actual temperature (combined), current setpoint temperature, heating/cooling mode, operation mode, fan speed and fan automatic.

When the work mode is "Single", the read requests of external sensor, fan speed, the window and the presence are sent to the bus after voltage recovery, as well as the status of actual temperature (combined).

When the work mode is "Slave", send the status requests of these functions after voltage recovery: power on/off, the external sensor, current setpoint temperature, heating/cooling control mode, operation mode, fan speed and fan automatic.

Numbe	r Name	Object Function	Description	Group Address	Length	C	R	W	Т	U	Data Type	Priority
∎‡ 250	FCU	Locking function			1 bit	С	-	W			enable	Low
251	FCU	Power on/off, status			1 bit	С	-	W	Т	U	switch	Low
■252	FCU	External temperature sensor			2 bytes	С	-	W	Т	U	temperature (°C)	Low
253	FCU	Base temperature setpoint, status			2 bytes	С	-	W	-	U	temperature (°C)	Low
254	FCU	Heating/Cooling mode, status			1 bit	С	-	W	-	U	cooling/heating	Low
255	FCU	Operation mode, status			1 byte	С	-	W	-	U	HVAC mode	Low
■256	FCU	Comfort mode, status			1 bit	С	-	W	-	U	enable	Low
257	FCU	Standby mode, status			1 bit	С	-	W	-	U	enable	Low
258	FCU	Economy mode, status			1 bit	С	-	W	-	U	enable	Low
259	FCU	Frost/Heat protection mode, status			1 bit	С	-	W	-	U	enable	Low
■260	FCU	Fan speed, status			1 byte	С	-	W	Т	U	percentage (0100%)	Low
261	FCU	Fan Automatic operation, status			1 bit	С	-	W	-	U	enable	Low
263	FCU	Window contact			1 bit	С	-	W	Т	U	window/door	Low
■264	FCU	Presence detector			1 bit	С	-	W	Т	U	occupancy	Low
■266	FCU	Scene			1 byte	С	-	W	-		scene control	Low
267	FCU	Power on/off			1 bit	С	R	÷	Т	-	switch	Low
268	FCU	Actual temperature			2 bytes	С	R		Т		temperature (°C)	Low
269	FCU	Current base setpoint temperature			2 bytes	С	-	-	т	-	temperature (°C)	Low
270	FCU	Current setpoint adjustment			2 bytes	С	R		т		temperature (°C)	Low
271	FCU	Heating/Cooling mode			1 bit	С	R	-	Т	-	cooling/heating	Low
272	FCU	Operation mode			1 byte	С	R		т		HVAC mode	Low
273	FCU	Comfort mode			1 bit	С	-	-	Т	-	enable	Low
274	FCU	Standby mode			1 bit	С	-		Т		enable	Low
275	FCU	Economy mode			1 bit	С	-	-	Т	-	enable	Low
276	FCU	Frost/Heat protection mode			1 bit	С	-		Т		enable	Low
277	FCU	Heating/cooling control value			1 byte	С	R	~	Т	-	percentage (0100%)	Low
■279	FCU	Fan speed			1 byte	С	R		т		percentage (0100%)	Low
■280	FCU	Fan Automatic operation			1 bit	С	R	4	Т	-	enable	Low

NO.	Object Function	Name	Data Type	Flag	DPT		
250	Locking function	FCU	1bit	C,W	1.003 enable		
Th	The communication object is used to lock/unlock FCU control function. Telegrams:						
	0——Lock						
1——Unlock							

251	Power on/off	FCU	1bit	C,W	1.001 switch
251	Power on/off, status	FCU	1bit	C,W,T,U	1.001 switch

When the work mode is "Master" or "Single", the flag is C,W, "Power on/off" is visible, used to receive telegram from bus to control power on/off.

When the work mode is "Slave", the flag is C,W,T,U, "Power on/off, status" is visible, used to receive the status of power on/off, which is fed back from the controller on the bus.

Telegrams:

1——On 0——Off

252	External temperature sensor	FCU	2byte	C,W,T,U	9.001 temperature

The communication object is used to receive the room temperature from the bus, and send read request cyclically, and feedback to screen display.

253	Current temperature setpoint	FCU	2hvto	CWI	9.001 temperature	
	Base temperature setpoint	ree	Zbytt	С, и, о		
253	Current temperature setpoint, status	FCU	2byte	C,W,T,U	9.001 temperature	

When the work mode is "Master", the flag is C,W,U:

"Current temperature setpoint" is visible when operation mode is not enabled, and under absolute adjustment. Used to modify the base value of the set temperature; and to modify set temperature value of current room operation mode when absolute adjustment.

"Base temperature setpoint" is visible only when relative adjustment, used to modify the base value of the set temperature, that is, the temperature setting value of the comfort mode, and the setpoint temperature of the standby mode and the economy mode changes according to the relative change. In the protection mode, only the temperature setting value of the protection mode is modified.

When the work mode is "Slave", the flag is C,W,T,U, only "Current temperature setpoint, status" is visible, used to receive the status of current setpoint temperature, which is fed back from the controller on the bus.

While "Single", no these objects.

254	Heating/Cooling mode	FCU	1bit	C,W,U	1.100 cooling/heating
254	Heating/Cooling mode, status	FCU	1bit	C,W,T,U	1.100 cooling/heating

When the work mode is "Master" or "Single", the flag is C,W,U, "Heating/Cooling mode" is visible, used to receive telegram from bus to control heating/cooling mode.

When the work mode is "Slave", the flag is C,W,T,U, "Heating/Cooling mode, status" is visible, used to receive the status of heating/cooling mode, which is fed back from the controller on the bus.

,	Telegrams:							
	1——Heating							
	0——Cooling							
255	Operation mode	FCU	1byte	C,W,U	20.102 HVAC mode			
255	Operation mode, status	FCU	1byte	C,W,T,U	20.102 HVAC mode			
256	Comfort mode	FCU	1bit	C,W,U	1.003 enable			
257	Standby mode	FCU	1bit	C,W,U	1.003 enable			
258	Economy mode	FCU	1bit	C,W,U	1.003 enable			
259	Frost/Heat protection mode	FCU	1bit	C,W,U	1.003 enable			

When 1byte, Object255 is visible:

When the work mode is "Master" or "Single", the flag is C,W,U, "Operation mode" is visible, used to receive telegram from bus to control operation mode.

When the work mode is "Slave", the flag is C,W,T,U, "Operation mode, status" is visible, used to receive the status of operation mode., which is fed back from the controller on the bus.

Telegram value: 1-Comfort, 2-Standby, 3-Economy, 4-Protection, other reserved.

When 1bit, used to receive telegrams from bus to control each operation mode:

Object256—Comfort mode

Object227—Standby mode

Object258—Economy mode

Object259—Protection mode

When the object receives the telegram "1", the corresponding mode is activated and the display status of the mode on the screen will also be updated to the corresponding mode. When 1 bit standby object is not enable, three objects comfort, economy, protection all send 0 to activate standby mode. When 1 bit standby object is enable, only standby object sends 1 to activate standby mode, 0 is ignored.

When the work mode is "Single" or "Slave", these four 1bit objects are not visible.

260	Fan speed, status	FCU	1bvte	C.W.T.U	5.001 percentage		
200			-~;	0,11,1,0	5.100 fan stage		
-	The communication object is used to receive the current fan speed from the bus. Telegram value is						
deteri	determined by parameter setting datatype.						
261	261Fan automatic operation, statusFCU1bitC,W,T,U1.003 enable						
r	The communication object is used to receive feedback status of fan automatic fan operation from the bus.						

Telegrams:

	1——Automatic							
	0——Cancel automatic							
262	Extended comfort mode	FCU	1bit	C,W	1.016 acknowledge			
	The communication object is used for triggering	ng time to exter	nded com	nfort mode	. Telegrams:			
	1——Activate comfort mode							
	0——No available							
	Activate comfort mode when the object recei	ves telegram 1	. If recei	ve again te	elegram 1 in delay time, time			
will t	be timed again. And return the previous opera	tion mode from	n comfoi	rt mode on	ce finish timing. If there is a			
new	operation mode in delay time, exit the comfort	mode.						
	Change the operation mode will exit the timin	g, but switch th	e heating	g/cooling w	vill not.			
	When the work mode is "Slave", this object is	not visible.						
263	Window contact	FCU	1bit	C,W,T,U	1.019 Window/door			
	The communication object is used to receive the switch status of window contact. Telegrams:							
	1——Open window							
	0——Close window							
	When the work mode is "Slave", this object is	not visible.						
264	Presence detector	FCU	1bit	C,W,T,U	1.018 occupancy			
	The communication object is used to receive t	he room occup	ancy stat	us from pro	esence detector. Telegrams:			
	1——Occupied							
	0——Not occupied							
	When the work mode is "Slave", this object is	not visible.						
266	Scene	FCU	1byte	C,W	18.001 scene control			
	The communication object is visible when sce	ne function ena	bled. Us	ed to recal	l/storage scene via bus.			
	When the work mode is "Slave", this object is	not visible.						
267	Power on/off, status	FCU	1bit	C,R,T	1.001 switch			
267	Power on/off	FCU	1bit	C,T	1.001 switch			
	When the work mode is "Master" or "Single",	the flag is C,R	<b>,</b> T, "Pow	er on/off, s	status" is visible, used to feed			
back	status of power on/off to the bus.							
	When the work mode is "Slave", the flag is	C,T, "Power o	n/off" is	visible, us	sed to send the power on/off			
teleg	ram to bus, to control the controller on the KN	X bus.						
268	Actual temperature	FCU	2byte	C,R,T	9.001 temperature			

The communication object is used for transmitting the actual temperature value detected by the combination									
tempo	temperature sensor of the device to the bus.								
269	Current base setpoint temperature, status	FCU	2byte	C,R,T	9.001 temperature				
	When the work mode is "Master", the comm	unication objec	t is visib	le when re	lative adjustment is selected.				
Used	to send the current base setpoint temperature	value to the bu	s.						
'	When the work mode is "Slave" or "Single", t	his object is no	t visible.	1					
270	Current setpoint adjustment, status	FCU	FCU 2byte C,R,T 9.001 temperature						
270	Current setpoint adjustment	FCU	2byte	C,T	9.001 temperature				
· ·	When the work mode is "Master", the flag is	C,R,T, "Curren	nt setpoii	nt adjustme	ent, status" is visible, used to				
feed l	back status of current setpoint temperature to t	he bus.							
	When the work mode is "Slave", the flag is	C,T, "Current	setpoint a	adjustment	" is visible, used to send the				
curre	nt setpoint temperature to bus.								
	While "Single", this object is not visible.								
271	Heating/Cooling mode, status	FCU	1bit	C,R,T	1.100 cooling/heating				
,	When the work mode is "Master" or "Single	e", the commu	nication	object is v	visible when control mode is				
"Heat	ting and Cooling" and "Only via object" is no	ot selected. Use	ed to sen	d telegram	s from switching cooling and				
heatir	ng functions to the bus. Telegram value:								
	1 ——Heating								
	0 ——Cooling								
	While "Slave", this object is not visible.								
272	Operation mode, status	FCU	1byte	C,R,T	20.102 HVAC mode				
272	Operation mode	FCU	1byte	C,T	20.102 HVAC mode				
273	Comfort mode, status	FCU	1bit	C,T	1.003 enable				
274	Standby mode, status	FCU	1bit	C,T	1.003 enable				
275	Economy mode, status	FCU	1bit	С,Т	1.003 enable				
276	Frost/Heat protection mode, status	FCU	1bit	С,Т	1.003 enable				

When 1byte, Object272 is visible:

When the work mode is "Master" or "Single", the flag is C,R,T, "Operation mode, status" is visible, used to feed back status of operation mode to the bus.

When the work mode is "Slave", the flag is C,T, "Operation mode" is visible, used to send the operation mode of controller to bus.

Telegrams: 1: Comfort mode; 2: Standby mode; 3: Economy mode; 4: Protection mode; other reserved.

When 1bit:

Switch to the corresponding mode, and the object of the corresponding mode sends the telegram "1" to the bus.

When the work mode is "Single" or "Slave", these four 1bit objects are not visible.

277	Heating/cooling control value	ECU	1bit	СРТ	1.001 Switch
	Heating control value	reu	1byte	C, <b>K</b> ,I	5.001 percentage
278	Cooling control value	FCU	1bit	C,R,T	1.001 Switch
			lbyte		5.001 percentage

These communication objects are used to send control value of heating or cooling function to the bus. Object is depending on the control mode and control system (2-pipe or 4 pipe) to display, and object datatype is according to parameter setting.

When the work mode is "Slave", these two objects are not visible.

270	For smood	ECU	1 hrsta	C,T	5.001 percentage
279	r an speed	FCU	Ibyte	C,R,T	5.100 fan stage

The communication object is used to send control telegrams of the fan speed to the bus. The corresponding telegram value of each fan speed is defined by the parameter. Activate the corresponding fan speed on the panel, and send the corresponding telegram value of the fan speed to the bus.

When the work mode is "Master", the flag is C,R,T; when "Slave" or "Single", the flag is C,T.

280	Fan automatic operation	FCU	1bit	C,T C,R,T	1.003 enable
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The communication object is used to activate the fan automatic operation via the bus. Telegrams:

1——Automatic

0——Cancel automatic

When the work mode is "Master", the flag is C,R,T; when "Slave" or "Single", the flag is C,T.

Table 6.5.1 "FCU" communication object table

### 6.5.2. "VRF" Communication Object

System needs to return to the status as before voltage failure when voltage recovery, as well as send

these status requests: power on/off, mode, fan speed, setpoint temperature, external temperature sensor and

vanes swing.

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
■≵ 281	VRF	Locking function			1 bit	С	-	W	-	3	enable	Low
■282	VRF	Power on/off, status			1 bit	С	-	W	Т	U	switch	Low
■283	VRF	External temperature sensor			2 bytes	С	-	W	т	U	temperature (°C)	Low
284	VRF	Current temperature setpoint, sta			2 bytes	С	-	W	Т	U	temperature (°C)	Low
■285	VRF	Control mode, status			1 byte	С	-	W	Т	U	HVAC control mode	Low
■‡ 286	VRF	Fan speed, status			1 byte	С	-	W	Т	U	percentage (0100%)	Low
■287	VRF	Vanes swing (1-swing,0-stop), stat			1 bit	С	-	W	т	U	start/stop	Low
289	VRF	Scene			1 byte	С	-	W	-	-	scene control	Low
■‡ 290	VRF	Power on/off			1 bit	С	-	5	Т		switch	Low
■291	VRF	Current setpoint adjustment			2 bytes	С	-	-	Т	-	temperature (°C)	Low
292	VRF	Fan speed			1 byte	С			т		percentage (0100%)	Low
■293	VRF	Vanes swing (1-swing,0-stop)			1 bit	С	-	-	Т	-	start/stop	Low
■294	VRF	Control mode			1 byte	С	-	5	Т	3	HVAC control mode	Low

■294	VRF Control mode		1 byte	С Т	- HVAC control mode Low
	Fig.6.5.2 "V	RF" communicat	ion Object		
NO.	Object Function	Name	Data Typ	be Flag	DPT
281	Locking function	VRF	1bit	C,W	1.003 enable
Th	e communication object is used to lock/unlo	ock VRF contr	ol functio	n. Telegraı	ms:
	0——Lock				
	1——Unlock				
282	Power on/off, status	VRF	1bit	C,W,T,U	1.001 switch
Th	e communication object is used to receive t	he power on/o	ff telegrar	n of VRF 1	from the bus. Telegrams:
	1——On				
	0——Off				
283	External temperature sensor	VRF	2byte	C,W,T,U	9.001 temperature
Th	e communication object is used to receiv	e the room te	mperature	e from the	bus, and send read request
cyclical	lly, and feedback to screen display.				
284	Current temperature setuoint status	VRF	1byte	СМТИ	5.010 counter pulses
204	Current temperature setpoint, status	V IXI	2byte	с, ,,,,,,	9.001 temperature
Th	e communication object is used to receive t	he current setp	oint temp	erature val	lue from the bus.
285	Control mode, status	VRF	1byte	C,W,T,U	20.105 HVAC control mode
	e communication object is used to receive	e the current	control n	node from	the bus Different telegram

The communication object is used to receive the current control mode from the bus. Different telegram means different control mode: 0-Auto, 1- Heating, 3-Cooling, 9-Fan, 14-Dehumidity, other reserved.

286	Fan sneed status	VRF	1hvte	C.W.T.U	5.001 percentage
200	ran speed, status	VIXI	Ibyte	С, 1, 1, 0	5.100 fan stage

Tł	ne communication object is used to rece	ive the curren	t fan sp	eed from	the bus. Telegram value is
determi	ned by parameter setting datatype.				
287	Vanes swing (1-swing,0-stop), status	VRF	1bit	C,W,T,U	1.010 start/stop
Tł	ne communication object is visible when sw	ving function e	nabled. U	Jsed to rec	eive vanes swing status from
the bus	. Telegrams:				
	1——Swing				
	0——Stop				
289	Scene	VRF	1byte	C,W	18.001 scene control
Tł	ne communication object is visible when sce	ne function ena	abled. Us	ed to recal	l/storage scene via bus.
290	Power on/off	VRF	1bit	C,T	1.001 switch
Tł	ne communication object is used to send the	power on/off to	elegram o	of VRF, to	control VRF power on/off on
the KN	X bus.				
291	Current setpoint adjustment	VRF	1byte	C,T	5.001 percentage
					5.100 fan stage
Tr bug	ne communication object is used to adjust so	etpoint tempera	ature via	the bus, ar	nd send telegram value to the
ous.					5.001 nercentage
292	Fan speed	VRF	1byte	C,T	5.100 fan stage
Tł	ne communication object is used to send co	ntrol telegram	of each	fan speed	to the bus. Telegram value is
determi	ined by parameter setting datatype.				
293	Vanes swing (1-swing,0-stop)	VRF	1bit	C,T	1.010 start/stop
Tł	ne communication object is visible when sw	ving function e	nabled. U	Jsed to ser	d telegram controlling vanes
swing t	o the bus. Telegrams:				
	1——Swing				
	0——Stop				
294	Control mode	VRF	1byte	C,T	20.105 HVAC control mode
Tł	ne communication object is used to send co	ntrol telegram	of each a	air condition	on mode to the bus. Different
telegra	m means different control mode: 0-Auto, 1-	Heating, 3-Coc	oling, 9-F	an, 14-Del	numidity, other reserved.
	Table 6.5.2 "VR	F" communicatio	n object ta	ble	

### 6.5.3. "Floor heating" Communication Object

When the work mode is "Master", the read requests of external sensor is sent to the bus after voltage recovery, as well as send the status of power on/off, actual temperature (combined), current setpoint temperature.

When the work mode is "Single", the read requests of external sensor is sent to the bus after voltage recovery, as well as send the status of the actual temperature (combined).

When the work mode is "Slave", send the status requests of these functions after voltage recovery: power on/off, the external sensor, current setpoint temperature.

Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■295	Floor heating	Locking function			1 bit	С	-	W	-	-	enable	Low
∎‡ 296	Floor heating	Power on/off, status			1 bit	С	-	W	Т	U	switch	Low
■2 297	Floor heating	External temperature sensor			2 bytes	С	-	W	Т	U	temperature (°C)	Low
■≵ 298	Floor heating	Current temperature setpoint, status			2 bytes	С	-	W	-	U	temperature (°C)	Low
■2 300	Floor heating	Scene			1 byte	С	-	W	-	-	scene control	Low
■之 301	Floor heating	Power on/off			1 bit	С	R	2	Т	2	switch	Low
■2 302	Floor heating	Actual temperature			2 bytes	С	R	-	Т	-	temperature (°C)	Low
■2 303	Floor heating	Current setpoint adjustment			2 bytes	С	R	2	Т	12	temperature (°C)	Low
■2 304	Floor heating	Heating on/off			1 bit	С	-	-	Т	-	switch	Low

Fig.6.5.3 "Floor heating" communication Object

NO.	Object Function	Name	Data Type	Flag	DPT
295	Locking function	Floor heating	1bit	C,W	1.003 enable
Th	e communication object is used to lock	unlock floor hea	ting function.	Telegrams:	

0——Lock

1——Unlock

296	Power on/off	Floor heating	1bit	C,W	1.001 switch
296	Power on/off, status	Floor heating	1bit	C,W,T,U	1.001 switch

When the work mode is "Master" or "Single", the flag is C,W, "Power on/off" is visible, used to receive telegram from bus to control power on/off.

When the work mode is "Slave", the flag is C,W,T,U, "Power on/off, status" is visible, used to receive the status of power on/off, which is fed back from the controller on the bus.

Telegrams:

1——On

0——Off

297	External temperature sensor	Floor heating	2byte	C,W,T,U	9.001 temperature
-----	-----------------------------	---------------	-------	---------	-------------------

The communication object is used to receive the room temperature from the bus, and send request cyclically, and feedback to screen display.

### KNX/EIB Push Button Sensor with LCD, 55mm

298	Current temperature setpoint	Floor heating	2byte	C,W,U	9.001 temperature
298	Current temperature setpoint, status	Floor heating	2byte	C,W,T,U	9.001 temperature

When the work mode is "Master", the flag is C,W,U, "Current temperature setpoint" is visible, used to modify the current setpoint temperature.

When the work mode is "Slave", the flag is C,W,T,U, "Current temperature setpoint, status" is visible, used to receive the status of current setpoint temperature, which is fed back from the controller on the bus.

While "Single", this object is not visible.

300SceneFloor heating1byteC,W18.001 scene control
---

The communication object is visible when scene function enabled. Used to recall/storage scene via bus.

When the work mode is "Slave", this object is not visible.

301	Power on/off, status	Floor heating	1bit	C,R,T	1.001 switch
301	Power on/off	Floor heating	1bit	C,T	1.001 switch

When the work mode is "Master" or "Single", the flag is C,R,T, "Power on/off, status" is visible, used to feed back status of power on/off to the bus.

When the work mode is "Slave", the flag is C,T, "Power on/off" is visible, used to send the power on/off telegram to bus, to control the controller on the KNX bus.

302	Actual temperature	Floor heating	2byte	C,R,T	9.001 temperature

The communication object is used for transmitting the actual temperature value detected by the combination temperature sensor of the device to the bus.

303	Current setpoint adjustment, status	Floor heating	2byte	C,R,T	9.001 temperature
303	Current setpoint adjustment	Floor heating	2byte	C,T	9.001 temperature

When the work mode is "Master", the flag is C,R,T, "Current setpoint adjustment, status" is visible, used to feed back status of current setpoint temperature to the bus.

When the work mode is "Slave", the flag is C,T, "Current setpoint adjustment" is visible, used to send the current setpoint temperature to bus.

While "Single", this object is not visible.

304	Heating on/off	Floor heating	1bit	СТ	1.001 switch
	Heating control value		1byte	С,1	5.001 percentage

The communication object is used to send the control value of floor heating to control the switch of floor heating valve. Telegram value is determined by temperature control type.

1bit telegram value:

1——On

0——Off

1byte telegram value: 0..100%

When the work mode is "Slave", this object is not visible.

Table 6.5.3 "Floor heating" communication object table

### 6.5.4. "Ventilation" Communication Object

### System is no need to send a status read request when the ventilation function is voltage recovery.

Numbe	r Name	Object Function	Description Gro	oup Address	Length	C	R	W	Т	U	Data Type	Priority
■2 305	Ventilation	Locking function			1 bit	С	-53	W	-	-	enable	Low
■2 306	Ventilation	Power on/off, status			1 bit	С	-	W	-	4	switch	Low
<b>■‡</b>  307	Ventilation	Fan speed, status			1 byte	С	-	W	-	-	percentage (0100%)	Low
■2 308	Ventilation	Fan automatic operation, status			1 bit	С	-	W	2	12	enable	Low
■2 309	Ventilation	Heat recovery on/off, status			1 bit	С	-	W	-	-	switch	Low
■2 310	Ventilation	En./Dis. Heat recovery			1 bit	С	-	W	-	2	enable	Low
<b>■‡</b>  311	Ventilation	Filter timer counter change			2 bytes	С	-	W	-	-	time (h)	Low
■2 312	Ventilation	Filter timer reset, status			1 bit	С	-	W	-	1	reset	Low
■2 314	Ventilation	Scene			1 byte	С	-	W	-	-	scene control	Low
■‡ 315	Ventilation	CO2 value			2 bytes	С	-	W	Т	U	parts/million (ppm)	Low
■2 316	Ventilation	PM2.5 value			2 bytes	С	-	W	т	U	pulses	Low
<b>2</b>  317	Ventilation	VOC value			2 bytes	С	-	W	Т	U	pulses	Low
■2 318	Ventilation	Power on/off			1 bit	С	-	φ.	т	2	switch	Low
■‡ 319	Ventilation	Fan speed			1 byte	C	-		Т		percentage (0100%)	Low
<b>₽‡</b>  320	Ventilation	Fan automatic operation			1 bit	С		-	Т	-	enable	Low
■2 321	Ventilation	Heat recovery on/off			1 bit	C	-		Т		switch	Low
■2 322	Ventilation	Filter timer counter			2 bytes	С	-	~	т	-	time (h)	Low
■2 323	Ventilation	Filter alarm			1 bit	С	-	-	Т		alarm	Low
■2 324	Ventilation	Filter timer reset			1 bit	С		÷	т	÷	reset	Low
			1.1 I. I.									

Fig.6.5.4 "Ventilation" communication Object									
Object Function	Name	Data Ty	vpe Fla	g	DPT				
Locking function	Ventilation	1bit	C,V	V	1.003 enable				
The communication object is used to lock/unlock ventilation function. Telegrams:									
0——Lock									
1——Unlock									
Power on/off, status	Ventilation	1bit	switch						
ne communication object is used to receive the	he power on/of	f telegrar	n of ventil	ation fr	om the bus.				
legrams:									
1——On									
0——Off									
For great status	Ventilation	1 hvita	CW	5.001 p	oercentage				
Fan speed, status		Tuyte	C, W	5.100 f	an stage				
	Object Function Locking function ne communication object is used to lock/unle 0——Lock 1——Unlock Power on/off, status ne communication object is used to receive t elegrams: 1——On 0——Off Fan speed, status	Object Function     Name       Locking function     Ventilation       ne communication object is used to lock/unlock ventilation     0——Lock       1——Unlock     1——Unlock       Power on/off, status     Ventilation       ne communication object is used to receive the power on/off     1——On       0——Off     1——On       Fan speed, status     Ventilation	Object Function       Name       Data Ty         Locking function       Ventilation       Ibit         ne communication object is used to lock/unlock ventilation function.       0——Lock       1——Unlock         Power on/off, status       Ventilation       Ibit         ne communication object is used to receive the power on/off telegram       1bit         ne communication object is used to receive the power on/off telegram       1bit         ne communication object is used to receive the power on/off telegram       1bit         ne communication object is used to receive the power on/off telegram       1bit         feature       1——On       0——Off         Fan speed, status       Ventilation       1byte	Object Function       Name       Data Type       Fla         Locking function       Ventilation       1bit       C,V         ne communication object is used to lock/unlock ventilation       function. Telegram         0——Lock       1——Unlock         Power on/off, status       Ventilation       1bit       C,W         ne communication object is used to receive the power on/off telegram of ventil       legrams:       1——On       0——Off         Fan speed, status       Ventilation       1byte       C,W	Pig.6.5.4 "Ventilation" communication Object       Flag         Dobject Function       Name       Data Type       Flag         Locking function       Ventilation       Ibit       C,W         ne communication object is used to lock/unlock ventilation       function. Telegrams:       0——Lock       1——Unlock         Power on/off, status       Ventilation       1bit       C,W       1.001 state         ne communication object is used to receive the power on/off telegram of ventilation from the power on/off       State				

Tł	The communication object is used to receive the current fan speed from the bus. Telegram value is									
determi	determined by parameter setting datatype.									
308	Fan automatic operation, status	Ventilation	1bit	C,W	1.003 enable					
Tł	ne communication object is used to receive f	eedback status	of fan ai	utomatic op	peration from the bus.					
Те	Telegrams:									
	1——Automatic									
	0——Cancel automatic									
309	Heat recovery on/off, status	Ventilation	1bit	C,W	1.001 switch					
Tł	ne communication object is used to receive f	eedback status	of heat r	ecovery on	/off from the bus. Telegrams:					
	1——Active									
	0——Inactive									
310	En./Dis. Heat recovery	Ventilation	1bit	C,W	1.003 enable					
The communication object is used to disable/enable heat recovery via the bus.										
311	Filter timer counter change	Ventilation	2byte	C,W	7.007 time(h)					
The communication object is used to modify the time length of the filter usage by the bus, the unit is in										
hours.										
312	Filter timer reset, status	Ventilation	1bit	C,W	1.015 reset					
Tł	ne communication object is used to reset the	filter time via	the bus,	and after th	ne filter is reset, the filter time					
is used	to start counting again. Telegram value:									
	1——Reset									
314	Scene	Ventilation	1byte	C,W	18.001 scene control					
Tł	ne communication object is visible when sce	ne function ena	abled. Us	sed to recal	l/storage scene via bus.					
215		Vontilation	2 hyto	CWTU	7.001 pulse					
515		ventilation	Zbyte	C,W,I,U	9.008 parts/million(ppm)					
316	PM 2.5 value	Ventilation	2bvte	C.W.T.U	7.001 pulse					
010			2.5300	0,,,,,,,,	9.030 concentration(ug/m3)					
317	VOC value	Ventilation	2bvte	C.W.T.U	7.001 pulse					
			_~	-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	9.030 concentration(ug/m3)					
These communication objects are used to receive the input of the PM2.5/VOC/CO2 value and get the										
corresp	corresponding value from the bus to be updated to the display in ug/m <sup>3</sup> or ppm. Range:0~999ug/m <sup>3</sup> or 0~4000ppm									

If	If the control value of the automatic operation is PM2.5, the ventilation system can be set to automatically									
adjust	the fan speed according to the concentration	of PM2.5.								
318	Power on/off	Ventilation	1bit	C,T	1.001 switch					
Т	The communication object is used to send the power on/off telegram of ventilation, to control ventilation									
power	power on/off on the KNX bus. Cancel Auto function at the same time after power-off.									
319	Fan sneed	Ventilation	1 hvte	С.Т	5.001 percentage					
		, circination	Ibyte	0,1	5.100 fan stage					
T	he communication object is used to control	fan speed via t	he scree	n, and send	l control telegram of each fan					
speed	to the bus. Telegram value is determined by p	parameter settin	ng dataty	pe.						
320	Fan automatic operation	Ventilation	1bit	C,T	1.003 enable					
Т	he communication object is used to send con	trol telegram o	of fan aut	omatic ope	eration to the bus. Telegrams:					
	1——Automatic									
	0——Cancel automatic									
321	Heat recovery on/off	Ventilation	1bit	C,T	1.001 switch					
Т	The communication object is used to send telegram of heat recovery on/off to the bus. Telegrams:									
	1——Active									
	0——Inactive									
322	Filter timer counter	Ventilation	2byte	C,T	7.007 time(h)					
Т	he communication object is used to count the	he length of the	e filter, s	end telegra	am to the bus when the count					
value o	changes. The unit of filter time counter is in l	nours.								
323	Filter alarm	Ventilation	1bit	C,T	1.005 alarm					
W	Vhen the filter is used for longer than the set	value, the con	nmunicat	tion object	sends an alarm to remind the					
user to	replace the filter. Telegram value:			·						
	1——Alarm									
324	Filter timer reset	Ventilation	1bit	C,W	1.015 reset					
т	he communication object is used to send the	e filter timer re	set status	to the bus	and you can also long press					
button	button 1s to reset.									
	1s to reset.									

### 6.6. "Audio control" Communication Object

When status read request is enabled, and power on/off is disabled, system needs to return to the status as before voltage failure when voltage recovery, and need to send these status requests when restarted: play status, play mode, volume percent, mute, track name, album name, artist name (related function is enabled); When power on/off is enabled, the sending requests are the same with the disabled, but note that status of power on/off is no need to send.

	Number	Name	Object Function	Description	Group Address	Length	С	R	W	т	U	Data Type	Priority
<b>;</b>	325	Audio	Locking function			1 bit	С	-	W	-	-	enable	Low
<b>;</b>	326	Audio	Power on/off, status			1 bit	С	20	W	2	-	switch	Low
<b>■‡</b>	327	Audio	Play, status			1 bit	С	-	W	Т	U	enable	Low
<b>■</b>	328	Audio	Pause, status			1 bit	С	2	W	Т	U	enable	Low
<b>■</b> ‡	329	Audio	Volume, status			1 byte	С	-	W	Т	U	percentage (0100%)	Low
<b>;</b>	330	Audio	Mute, status			1 bit	С	23	W	Т	U	enable	Low
<b>;</b>	331	Audio	Play mode, status			1 byte	С	-	W	Т	U	counter pulses (0255)	Low
<b>;</b>	332	Audio	Track name			14 bytes	С	23	W	Т	U	Character String (ISO 8859-1)	Low
<b>;</b>	333	Audio	Album name			14 bytes	С	-	W	Т	U	Character String (ISO 8859-1)	Low
<b>;</b>	334	Audio	Artist name			14 bytes	С	23	W	Т	U	Character String (ISO 8859-1)	Low
=2	335	Audio	Power on/off			1 bit	С	-	÷	Т	æ	switch	Low
<b>;</b>	336	Audio	Play			1 bit	С	20	-	Т	2	enable	Low
<b>;</b>	337	Audio	Pause			1 bit	С	-	-	Т	-	enable	Low
<b>;</b>	338	Audio	Next track			1 bit	С	23	2	Т	-	enable	Low
<b>;</b>	339	Audio	Previous track			1 bit	С	-	÷	Т	-	enable	Low
<b>;</b>	340	Audio	Volume+=1/Volume-=0			1 bit	С	2	2	Т	2	step	Low
=7	341	Audio	Relative volume adjustment			4 bit	С	-	-	Т	-	dimming control	Low
=2	343	Audio	Mute			1 bit	С	-	100	Т	100	enable	Low
=7	344	Audio	Play mode			1 byte	С	-	-	Т	-	counter pulses (0255)	Low
			Fig 6 6 "Audio	o control" co	mmunicatio	n Ohie	ct						

NO.	Object Function	Name	Data Type	Flag	DPT				
325	Locking function	Audio	1bit	C,W	1.003 enable				
T									

The communication object is used to lock/unlock audio control function. Telegrams:

0——Lock

1——Unlock

326	Power on/off, status	Audio	1bit	C,W	1.001 switch

The communication object is visible when power on/off is enabled. Used to receive the status feedback of on/off in audio module from bus, and feed back to screen display.

327	Play=1/Pause=0, status	Audio	1bit	C,W,T,U	1.010 start/stop

The communication object is visible when control play/pause with one object. Used to receive the status feedback of play/pause in audio module from bus, and feed back to screen display.

327Play, statusAudio1 bitC,W,T,U1.003 enable	
--	--

The communication object is visible when control play/pause with two separate objects. Used to receive the status feedback of play in audio module from bus, and feed back to screen display.

Telegram 1 is to play, 0 is meaningless.

328	Pause, status	Audio	1bit	C,W,T,U	1.003 enable						
1	The communication object is visil	ole when contro	l play/paus	se with two	separate objects. Used to receive the						
status	feedback of pause in audio modu	le from bus, and	l feed back	to screen di	splay.						
1	Felegram 1 is to stop, 0 is meaning	gless.									
329	Volume, status	Audio	1byte	C,W,T,U	5.001 percentage (0100%) 5.004 percentage (0255%)						
1	The communication object is used to receive the volume status in audio module, and feed back										
displa	y. Telegrams value is according to	o different objec	t types: 0	100 / 0255							
330	330 Mute, status Audio 1bit C,W,T,U 1.003 enable										
	The communication object is vis	ible when mute	is enabled	d Used to r	eceive the mute status of the audio						
modu	le from the bus, and feed back to	soreen display			eceive the mule status of the audio						
modu				~							
331	Play mode, status	Audio	1byte	C,W,T,U	5.010 counter pluses(0255)						
1	The communication object is use	ed to receive th	e status fe	edback of p	lay mode in the audio module, the						
receiv	ing telegrams should be preset by	y parameters bef	ore the dis	play status o	n the screen can be updated.						
332	Track nameAudio14byteC,W,T,U16.001 character string (ISO 8										
1	The communication object is used	to receive the t	ack name	via the bus, a	and display on the screen.						
333	Album name	Audio	14byte	C,W,T,U	16.001 character string (ISO 8859-1)						
1	The communication object is used	to receive the a	lbum name	e via the bus,	, and display on the screen.						
334	Artist name	Audio	14byte	C,W,T,U	16.001 character string (ISO 8859-1)						
1	The communication object is used	to receive the a	rtist name	via the bus, a	and display on the screen.						
335	Power on/off	Audio	1bit	C,T	1.001 switch						
7	The communication object is visi	ble when powe	r on/off is	enabled. Us	sed to send the telegram to the bus.						
Teleg	cams:										
	1——On										
	0——Off										
336	Play=1/Pause=0	Audio	1bit	C,T	1.010 start/stop						
1	The communication object is visib	le when control	play/paus	e with one o	bject. Used to play/stop the music in						
the au	dio module. Telegrams:										
	1——Play music										
	0——Pause playing	g music									
336	Play	Audio	1bit	С,Т	1.003 enable						

T	The communication object is visible when control play/pause with two separate objects. Used to play the									
music	in the audio module. Telegram 1	is to play, 0 is n	neaningles	s.						
337	Pause	Audio	1bit	C,T	1.003 enable					
Т	he communication object is vis	ible when contr	ol play/pa	use with two	o separate objects. Used to stop the					
music	in the audio module. Telegram 1	is to stop, 0 is n	neaningles	s.						
338	Next track=1/Previous track=0	Audio	1bit	C,T	1.007 step					
Т	he communication object is visi	ble when contro	l next trac	k/previous ti	rack with one object. Used to switch					
the pla	ying song of the audio module, t	o switch the pre	vious song	/the next sor	ng. Telegrams:					
	1——Play the next song									
	0——Play the previous song									
338	Next track	Audio	1bit	C,T	1.003 enable					
Т	he communication object is visib	ble when contro	l next trac	k/previous ti	rack with two separate objects. Used					
to swi	tch the playing song of the aud	io module, to sv	witch the r	next song. T	elegram 1 is to play next song, 0 is					
meanii	ngless.									
339	339Previous trackAudio1bitC,T1.003 enable									
Т	he communication object is visit	ble when contro	l next trac	k/previous ti	ack with two separate objects. Used					
to swit	tch the playing song of the audio	module, to swit	ch the prev	vious song. T	Felegram 1 is play the previous song,					
0 is me	eaningless.									
340	Volume+=1/Volume-=0	Audio	1bit	C,T	1.007 step					
Т	he communication object is used	to adjust the vo	lume in au	dio module	when short operation. Telegrams:					
	1——Increase volu	ime								
	0——Decrease vol	ume								
341	Relative volume adjustment	Audio	4bit	C,T	3.007 dimming					
Т	he communication object is visi	ble when relativ	ve adjustm	ent. Used to	adjust the volume in audio module					
when l	long operation, step value is deter	rmined by the pa	arameter.							
342	Absolute volume adjustment	Audio	1bvte	С.Т	5.001 percentage (0100%)					
				-,	5.004 percentage (0255%)					
Т	The communication object is visible when absolute adjustment. Used to adjust the volume in audio module									
when l	long operation, step value is deter	rmined by the pa	arameter.	0.255						
	elegram is determined by differen	nt object datatyp	e: 0100 /	0255						
343	Mute	Audio	1bit	C,T	1.003 enable					

 The communication object is visible when mute is enabled. Used to control mute of audio module via the button. Telegrams:

 1——Mute
 0——Cancel mute

 O——Cancel mute

 344
 Play mode

 Audio
 1byte
 C,T

 5.010 counter pluses(0..255)

The communication object is used to send control telegram of the audio module play mode, different mode telegrams are preset by parameters.

Table 6.6 "Audio control" communication object table

### 6.7. "Logic" Communication Object

### 6.7.1."AND/OR/XOR" Communication Object

Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■≵ 11	1st Logic	Input a			1 bit	С	-	W	Т	U	boolean	Low
∎‡ 12	1st Logic	Input b			1 bit	С	2	W	Т	U	boolean	Low
∎‡ 13	1st Logic	Input c			1 bit	С	-	W	Т	U	boolean	Low
∎‡ 14	1st Logic	Input d			1 bit	С	28	W	Т	U	boolean	Low
■2 15	1st Logic	Input e			1 bit	С	-	W	Т	U	boolean	Low
∎‡ 16	1st Logic	Input f			1 bit	С	2	W	Т	U	boolean	Low
∎‡ 17	1st Logic	Input g			1 bit	С	-	W	Т	U	boolean	Low
∎‡ 18	1st Logic	Input h			1 bit	С	2	W	Т	U	boolean	Low
■之 19	1st Logic	Logic result			1 bit	С	-	ie (	Т	-	boolean	Low

Fig.6.7.1	"AND/OR	/XOR"	communication	Objec
- L				

NO.	Object Function	Name	Data Type	Flag	DPT
11//18	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.

19	Logic result	{{1st Logic}}	1bit	C,T	1.002 boolean

The communication object is used to send the results of logical operation.

Table 6.7.1 "AND/OR/XOR" communication object table

### 6.7.2. "Gate forwarding" Communication Object

Numbe	r Name	Object Function	Description	Group Address	Length	C	R	W	Т	U	Data Type	Priority
∎‡ 11	1st Logic	Gate value select			1 byte	С	-	W	-	ē.	scene number	Low
<b>■‡</b>  12	1st Logic	Input A			1 bit	С	-	W		-	switch	Low
<b>■‡</b>  13	1st Logic	Input B			1 bit	C	-	W	-	σ.	switch	Low
<b>■‡</b>  14	1st Logic	Input C			1 bit	С	20	W	-	÷	switch	Low
■之 15	1st Logic	Input D			1 bit	С	-	W	-	σ.	switch	Low
■2 16	1st Logic	Output A			1 bit	С	-	-	Т	2	switch	Low
■2 17	1st Logic	Output B			1 bit	С	•	σ.	т	a.	switch	Low
■2 18	1st Logic	Output C			1 bit	С	20	-	Т	-	switch	Low
■2 19	1st Logic	Output D			1 bit	C	-	σ.	Т	<i>a</i> :	switch	Low

#### Fig.6.7.2 "Gate forwarding" communication Object

NO.	Object Function	Name	Data Type	Flag	DPT					
11	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.										
			1bit		1.001 switch					
12//15	Input x	{{1st Logic}}	4bit	C,W	3.007 dimming control					
			1byte		5.010 counter pulses(0255)					
The communication object is used to receive the value of the logic gate input Input x.										

			1bit		1.001 switch
16//19	Output x	{{1st Logic}}	4bit	C,T	3.007 dimming control
			1byte		5.010 counter pulses(0255)
The	communication object is used to	o output the value forw	arded by	the logic g	ate. The output value is the
same as t	the input value, but one input can	be forwarded into one	or more of	utputs, set	by parameters.

Table 6.7.2 "Gate forwarding" communication object table

### 6.7.3. "Threshold comparator" Communication Object

Number	Name	<b>Object Function</b>	Descri	otion Group Address	Length	С	R	V	VT	L	Data Type	Priority	
■之 11	1st Logic	Threshold value input			4 bit	С	-	W	-	U	dimming control	Low	
∎‡ 11	1st Logic	Threshold value input			1 byte	С		W	- 1	U	counter pulses (0255)	Low	
∎‡ 11	1st Logic	Threshold value input			2 bytes	С	-	W	- 1	U	pulses	Low	
∎≵ 11	1st Logic	Threshold value input			2 bytes	С	-1	W	-	U	2-byte signed value	Low	
∎ <b>‡</b>  11	1st Logic	Threshold value input			2 bytes	C	-	W	-	U	2-byte float value	Low	
■‡ 11	1st Logic	Threshold value input			4 bytes	С	-	W	-	U	counter pulses (unsigned)	Low	
■‡ 11	1st Logic	Threshold value input			2 bytes	С	-	W	-	U	temperature (°C)	Low	
∎‡ 11	1st Logic	Threshold value input			2 bytes	C	4	W	-	U	humidity (%)	Low	
■‡ 11	1st Logic	Threshold value input			2 bytes	С	-	W	-	U	lux (Lux)	Low	
∎≵ 19	1st Logic	Logic result			1 bit	С	2	0	Т	2	boolean	Low	
		Fig.6.7.3 "T	Threshold comp	arator" communi	cation	O	bje	ect					
NO.	<b>Object Function</b>		Name	Data T	ype	ł	Fla	ıg			DPT		
				4bit							3.007 dimming		
				1byte							5.010 counter pulses		
11	Threshold value in	ıput	{{1st Logic}}			<b>C,W,</b> U			U		7.001 pulses		
				2byte									
				4byte							12.001 counter pulse	s	
Th	e communication	object is used to	input thresho	ld value.									
19	Logic result		{{1st Logic}}	1bit		(	C <b>,</b> 1	Г			1.002 boolean		
Th	e communication	object is used to	send the res	ults of logical	opera	atio	on	. ]	Tha	at i	s, the value that sh	ould be	
sent afte	er the object input	threshold is com	pared with th	e setting thres	hold y	val	116	Ļ					

Table 6.7.3 "Threshold comparator" communication object table

#### 6.7.4. "Format convert" Communication Object

Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
∎⊉ 11	1st Logic	Input 1bit-bit0			1 bit	С	-	W	-	U	boolean	Low
∎‡ 12	1st Logic	Input 1bit-bit1			1 bit	С	-	W	-	U	boolean	Low
■ <b>2</b>  19	1st Logic	Output 2bit			2 bit	С	-	-	Т	-	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	с	R	W	т	U	Data Type	Priority
11	1st Logic	Input 1bit-bit0			1 bit	C	-	W	-	U	boolean	Low
12	1st Logic	Input 1bit-bit1			1 bit	С	2	W	2	U	boolean	Low
<b>IZ</b> 13	1st Logic	Input 1bit-bit2			1 bit	C	-	W	-	U	boolean	Low
<b>I‡</b>  14	1st Logic	Input 1bit-bit3			1 bit	С	2	W	2	U	boolean	Low
<b>I</b> Z 15	1st Logic	Input 1bit-bit4			1 bit	C	-	W	-	U	boolean	Low
16	1st Logic	Input 1bit-bit5			1 bit	С	2	W	2	U	boolean	Low
<b>↓</b>	1st Logic	Input 1bit-bit6			1 bit	C	-	W	-	U	boolean	Low
∎‡ 18	1st Logic	Input 1bit-bit7			1 bit	С	2	W	2	U	boolean	Low
∎‡ 19	1st Logic	Output 1byte			1 byte	C	-	-	Т	-	counter pulses (0255)	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	С	R	W	Т	U	Data Type	Priority
<b>■</b> ‡ 1	1	1st Logic	Input 1byte			1 byte	С	-	W	73	U	counter pulses (0255)	Low
∎ <b>‡</b>  1	19	1st Logic	Output 2byte			2 bytes	С	-	2.0	Т	1	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	Т	U	Data Type	Priority
<b>■‡</b>  11	1st Logic	Input 1byte-low			1 byte	С	-	W	-	U	counter pulses (0255)	Low
■‡ 12	1st Logic	Input 1byte-high		1	1 byte	С	- 1	W	-	U	counter pulses (0255)	Low
■‡ 19	1st Logic	Output 2byte			2 bytes	С	-	5	Т	27	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	С	R	W	Т	U	Data Type	Priority
<b>■‡</b>  11	1st Logic	Input 2byte-low			2 bytes	С	-	W	-	U	pulses	Low
∎‡ 12	1st Logic	Input 2byte-high			2 bytes	С	-	W	-	U	pulses	Low
■之 19	1st Logic	Output 4byte			4 bytes	С	-	5	Т	-	counte <mark>r pu</mark> lses (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	С	R	W	Т	U	Data Type	Priority
■ <b>‡</b>  11	1st Logic	Input 1byte			1 byte	С	-	W	-	U	counter pulses (0255)	Low
∎‡ 12	1st Logic	Output 1bit-bit0			1 bit	С	2	2	Т	2	boolean	Low
∎‡ 13	1st Logic	Output 1bit-bit1			1 bit	С	-	÷	Т	-	boolean	Low
∎‡ 14	1st Logic	Output 1bit-bit2			1 bit	С	2	-	Т	-	boolean	Low
■2 15	1st Logic	Output 1bit-bit3			1 bit	С	-	-	Т	-	boolean	Low
■‡ 16	1st Logic	Output 1bit-bit4			1 bit	С	2	-	Т	-	boolean	Low
■2 17	1st Logic	Output 1bit-bit5			1 bit	С	-	-	Т	-	boolean	Low
∎‡ 18	1st Logic	Output 1bit-bit6			1 bit	С		-	Т	-	boolean	Low
∎≵ 19	1st Logic	Output 1bit-bit7			1 bit	С		-	Т	-	boolean	Low

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

Numbe	r Name	Object Function	Description	Group Address	Length	С	R	W	т	U	Data Type	Priority
■之 11	1st Logic	Input 2byte			2 bytes	С	-	W	-	U	pulses	Low
∎‡ 18	1st Logic	Output 1byte-low			1 byte	С	2	2	т	2	counter pulses (0255)	Low
■‡ 19	1st Logic	Output 1byte-high			1 byte	С	-	8	Т	e i	counter pulses (0255)	Low

"1x2byte --> 2x1byte" function: converts one 2byte values to two 2byte 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	С	R	W	Т	U	Data Type	Priority
<b>■‡</b>  11	1st Logic	Input 4byte		4	4 bytes	С	-18	W	-	U	counter pulses (unsigned)	Low
■之 18	1st Logic	Output 2byte-low		2	2 bytes	С	-	с.	т	9	pulses	Low
∎‡ 19	1st Logic	Output 2byte-high		2	2 bytes	C	-	2	Т		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	С	R	W	T	U	Data Type	Priority
■之 11	1st Logic	Input 3byte			3 bytes	С	-	W	-	U	RGB value 3x(0255)	Low
∎‡ 17	1st Logic	Output 1byte-low			1 byte	С	-	2	Т	2	counter pulses (0255)	Low
<b>■</b> ‡ 18	1st Logic	Output 1byte-middle			1 byte	С	-	-	Т	÷	counter pulses (0255)	Low
∎‡ 19	1st Logic	Output 1byte-high			1 byte	С	-	2	Т	2	counter pulses (0255)	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 1byt	e-high = 120 (\$78)
--	---------------------

Number	Name	Object Function	Description Group	Address Length	С	R	W	т	U	Data Type	Priority
■之 11	1st Logic	Input 1byte-low		1 byte	С	-	W	-	U	counter pulses (0255)	Low
∎‡ 12	1st Logic	Input 1byte-middle		1 byte	С	-	W	-	U	counter pulses (0255)	Low
■‡ 13	1st Logic	Input 1byte-high		1 byte	С	-	W	-	U	counter pulses (0255)	Low
∎≵ 19	1st Logic	Output 3byte		3 bytes	С	-	2 0	Т	9	RGB value 3x(0255)	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.6.7.4 "Format con	nvert" commun	ication Object	
NO.	Object Function	Name	Data Type	Flag	DPT
			1bit		1.001 switch
			1byte		5.010 counter pulses(0255)
11	Input	{{1st Logic}}	2byte	C,W,U	7.001 pulses
			3byte		232.600 RGB value 3x(0255)
			4byte		12.001 counter pulses
Tł	ne communication of	ject is used to input a value	ue that needs	to be convert	ed.
			1bit		1.001 switch
			2bit		2.001 switch control
10	Output	((1st Logis))	1byte	СТ	5.010 counter pulses(0255)
19	Output		2byte	C,I	7.001 pulses
			3byte		232.600 RGB value 3x(0255)
			4byte		12.001 counter pulses
					·

The communication object is used to output the converted value.

Table 6.7.4 "Format convert" communication object table

### 6.7.5."Gate function" Communication Object

Numbe	er Name	Object Function	Description Grou	Address Length C	RWTUD	ata Type	Priority
■‡ 11	1st Logic	Input		1 bit C	- W sw	vitch	Low
■之 12	1st Logic	Gate input		1 bit C -	- W ba	oolean	Low
■‡ 19	1st Logic	Output	Input/Output 16:0	1 bit C -	- <b>T</b> - sw	vitch	Low
■2 11	1st Logic	Input	inpu/Output - Tott[On	1 byte C	- W pe	ercentage (0100%)	Low
∎‡ 12	1st Logic	Gate input		1 bit C	- W bo	polean	Low
■ <b>之</b>  19	1st Logic	Output		1 byte C	Т-ре	ercentage (0100%)	Low
<b>_→</b> ] +1	4.41.4.1.4	1	Input/Output - 1byte[0	100%]	14/	(0.255)	1
■←    ■♥ 12	Ist Logic	Input Gate input		Ibit C	- w co	ounter puises (0255)	Low
=+ 12 ■±19	1st Logic	Outout		1 bit C -	- T - co	ounter pulses (0, 255)	Low
	ist Logic	oupur	Input/Output - 1byte[0.	.255]		anter paises (alless)	2011
■之 11	1st Logic	Input		2 bytes C	- W te	mperature (°C)	Low
<b>   </b> 2	1st Logic	Gate input		1 bit C -	- W bo	oolean	Low
■4 19	1st Logic	Output	Input/Output - 2byte[F	2 bytes C - loat]	- I - te	mperature (°C)	Low
■之 11	1st Logic	Input	input output 209to[1	2 bytes C -	- W pu	lses	Low
∎‡ 12	1st Logic	Gate input		1 bit C -	- W ba	olean	Low
■‡ 19	1st Logic	Output		2 bytes C	- T - pu	ilses	Low
		Fig.6.7	Input/Output - 2byte[0 .5 "Gate function" comm	55535] unication Object			
NO.	Object Functi	on	Name	Data Type	Flag	DPT	
						1.001 switch	
				1 bit		5 001 porconto	ao
				Ton		5.001 percenta	ge
11	Input		{{1st Logic}}	1byte	C,W	5.010 counter p	pulses
				2bvte		9.001 temperat	ture
				20900			
						7.001 pulses	
Tl	ne communicati	on object is used to	input a value that nee	eds to gate filter	r.		
12	Gate input		{{1st Logic}}	1bit	C,W	1.002 boolean	
Tl	he communicati	on object is used to	control the switch st	atus of gate in	put. Input s	signal is allowe	d to pass
		1.1					
when g	gate open, then	output, and the curr	ent input status is still	sent if there is	a change;	Can not pass w	when gate
close.							
						1.001 switch	
				bit		5.001 percenta	ge
13	Output		filst Logie	1 hvto	СТ	5 010 counter -	-
15	Julpul		{{150 Log(0}}	Inyte			JUISCS
				2byte		9.001 temperat	ture
						7.001 pulses	
TI	ne communicat	ion object is used t	o output the value at	ter gate filterir	ng Only w	hen gate input	status is
11				Sale Intern	-9. Cmj W	and gate input	514145 15
open, c	output 1s availab	le, defined by the o	bject "Gate input".				

Table 6.8.5 "Gate function" communication object table

### 6.7.6."Delay function" Communication Object

Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
∎≵ 11	1st Logic	Input			1 bit	С	-	W	-	-	switch	Low
■之 19	1st Logic	Output			1 bit	С	-	-	Т	<u>.</u>	switch	Low
			Input/Output - 11	oit[On/Off								
■之 11	1st Logic	Input			1 byte	С	20	W	-20	2	percentage (0100%)	Low
∎‡ 19	1st Logic	Output			1 byte	С	-	1	Т	-	percentage (0100%)	Low
			Input/Output - 1by	te[0100%]								
■之 11	1st Logic	Input			1 byte	С	-	W	-		counter pulses (0255)	Low
■‡ 19	1st Logic	Output			1 byte	С	-	-	Т	-	counter pulses (0255)	Low
			Input/Output - 1b	yte[0255]								
■# 11	1st Logic	Input			2 bytes	С	-	W	•	-	temperature (°C)	Low
∎‡ 19	1st Logic	Output			2 bytes	С	-	2	Т	12	temperature (°C)	Low
			Input/Output - 2h	oyte[Float]								
■‡ 11	1st Logic	Input			2 bytes	С	-	W	-	i.	pulses	Low
■‡ 19	1st Logic	Output			2 bytes	С	2	2	Т	2	pulses	Low
■ <b>2</b>  11 ■ <b>2</b>  19	1st Logic 1st Logic	Input Output			2 bytes 2 bytes	C	-	- W	T	-	pulses pulses	Low

#### Input/Output - 2byte[0..65535] Fig.6.7.6 "Delay function" communication Object

NO.	Object Function	Name	Data Type	Flag	DPT						
11	Input	{{1st Logic}}	1bit 1byte 2byte	C,W	1.001 switch 5.001 percentage 5.010 counter pulses 9.001 temperature 7.001 pulses						
Tł	The communication object is used to input a value that needs to delay.										
19	Output	{{1st Logic}}	1bit 1byte 2byte	С,Т	1.001 switch 5.001 percentage 5.010 counter pulses 9.001 temperature 7.001 pulses						
The communication object is used to output that needs to delay converted value, delay time is defined by											

the parameter.

Table 6.7.6 "Delay function" communication object table

### 6.7.7. "Staircase lighting" Communication Object

Number	Name	Object Function	Description	Group Addres	s Length	С	R	V	Т	U	Data Type	Priority
■之 11	1st Logic	Trigger value			1 bit	С	-	W	-	-	trigger	Low
■之 12	1st Logic	Light-on duration time			2 bytes	С	20	W	-	-	time (s)	Low
■之 19	1st Logic	Output			1 bit	С	-	÷	Т	÷	switch	Low
■2 19	1st Logic	Output			1 byte	С	-	-	Т	-	counter pulses (0255)	Low
	101	Fig.6.7.7 "Sta	aircase lighting"	communica	ation O	bje	ct					
NO.	Object Function		Name	D	ata Ty	pe		F	lag	3	DPT	
11	Trigger value		{{1st Logic}}	1b	1bit			C,W		7	1.017 trigger	
The communication object is used to receive the value to trigger staircase lighting.												

12	Light-on duration time	{{1st Logic}}	2byte	C,W	7.005 time(s)						
Tł	The communication object is used to modify the staircase light-on duration time, the modified range is										
referen	referenced from the range defined by the parameter, take the limit value if exceeded.										
10	Output	((1st Logis))	1bit	СТ	1.001 switch						
19	Output	{{ISt Logic}}	1byte	С,1	5.010 counter pulses						
The communication object is used to output value 1 when trigger, and send value 2 after duration time.											
Telegram value is determined by the parameter setting datatype.											

Table 6.7.7 "Staircase lighting" communication object table

### 6.8. "Scene Group" Communication Object

Number	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■2 83	Scene Group	Main scene trigger			1 byte	С	-	W	-	-	scene number	Low
■2 84	1st Scene Group-Output 1	1bit value			1 bit	С	-	-	т	-	switch	Low
∎≵ 92	2nd Scene Group-Output 1	1bit value			1 bit	С	-		т		switch	Low
■2 100	3rd Scene Group-Output 1	1bit value			1 bit	С	-	-	Т	~	switch	Low
■2 108	4th Scene Group-Output 1	1bit value			1 bit	С	-	•	т	•	switch	Low
<b>■</b> ‡ 116	5th Scene Group-Output 1	1bit value			1 bit	С	-		т	-	switch	Low
■≵ 124	6th Scene Group-Output 1	1bit value			1 bit	С	-	•	т		switch	Low
<b>₽‡</b>  132	7th Scene Group-Output 1	1bit value			1 bit	С	-	-	Т	-	switch	Low
■2 140	8th Scene Group-Output 1	1bit value			1 bit	С	-	•	т	-	switch	Low
		Fig 6.8 "	Scene Group" co	mmunication	) Ohie	et						

NO.	Object Function	Name	Data Type	Flag	DPT					
83	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

	1bit value				1.001 switch
	1byte unsigned value		1bit		5.010 counter pulses
84//	HVAC mode	1st Scene Group-{{Output x}}	1byte	C,T	20.102 HVAC mode
	2byte unsigned value		2byte		7.001 pulses
	Temperature				9.001 temperature

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 for logic function". If description is empty, display "1st Scene Group-Output x" by default. The same below.

Table 6.8 "Scene Group" communication object table

### **Chapter 7 UI Description**

Push Button Sensor with LCD, 55mm is achieved by the 6 buttons on the panel (as shown in the figure below), and the buttons have different usages when different functions. The button operations also can be referred on ETS interface.



Chapters as follow explain the user interfaces separately according to each function.

### 7.1. Push button sensor



#### Note: the time of long operation is configured on General interface.

You can set 1 page with 4 buttons, 2 pages with 8buttons, or 3 pages with 12 buttons.

When 1 page is selected, the 2 buttons on the bottom of the device (Button 5 and Button 6) only support the scene function. When 2 pages or 3 pages is selected, the 2 buttons on the bottom of the device are used to switch function pages.

#### When used as individual button:

You can only set the left and right fields separately. Each button can be configured with different indication types, including icon, description or icon + description. Colour of icon is set by the parameter. As shown as Fig.7.1(1).

#### When used as rocker button:

You can set the left, middle and right field separately. The middle field is status indication, with the indication types about icon, description, icon + description, status value or icon+status value; While the left and right fields only can be set as icon or description, and flash twice times (0.5s on and 0.5s off) when press the button, if there is another press during the flashing cycle, not reset the cycle. Colour of icon is set by the parameter. As shown as Fig.7.1(2).

Note:

When enabled flashing function for switch, dimming or blind functions, there will be different flashing effects when pressing buttons depending on the configured indication type: continuous flashing (1s on and 1s off) when icon or description is selected; only icon flashing when "Icon + description" is selected; while the other selection is to flash icon or description or status value, which is according to configuration.

For rocker button, flashing function is only applied to middle field, and the left/right field will not flash when flashing function enabled.

Display the lock icon when button is disabled, which is configured the indication type via the parameter. Small icon is as shown as Fig.7.1(3), and big icon is as shown as Fig.7.1(4).

For RGB dimming, RGBW dimming or colour temperature dimming, long press the button to enter sub dimming interface. UI for these three function is explained as follow.
#### 7.1.1.RGB dimming

Button operations as follow:



Page as follow:



Fig.7.1.1

①This area is colour adjustment range.

(2) This is the arrow icon to adjust saturation, it is white when selected, otherwise it is gray.

③This is the arrow icon to adjust hue, it is white when selected, otherwise it is gray.

(4) This is the arrow icon to adjust value, it is white when selected, otherwise it is gray. The upper bar is the area for brightness adjustment.

⑤Decrease selected value by the button corresponding to this icon, and the arrow will move with the operation.

(6) Increase selected value by the button corresponding to this icon, and the arrow will move with the operation.

⑦This area displays the effect of colour setting.

#### 7.1.2.RGBW dimming

Button operations as follow:



Page as follow:



Fig.7.1.2

①This area is colour adjustment range.

(2) This is the arrow icon to adjust saturation, it is white when selected, otherwise it is gray.

③This is the arrow icon to adjust hue, it is white when selected, otherwise it is gray.

(4) This is the arrow icon to adjust value, it is white when selected, otherwise it is gray. The upper bar is the area for brightness adjustment.

5 This is the arrow icon to adjust white brightness, it is white when selected, otherwise it is gray.

The upper bar is the area for white brightness adjustment.

<sup>(6)</sup>Decrease selected value by the button corresponding to this icon, and the arrow will move with the operation.

⑦Increase selected value by the button corresponding to this icon, and the arrow will move with the operation.

**(B)** This area displays the effect of colour setting.

#### 7.1.3.Colour temperature dimming

Button operations as follow:

1	2		
Button1	press to decrease colour	Button2	press to increase colour temperature
	temperature		
Button3	press to decrease brightness	Button4	press to increase brightness
Button5	NA	Button6	NA

Page as follow:





①This area is colour temperature adjustment range, and current colour temperature is displayed above.

②Decrease colour temperature by the button corresponding to this icon.

③Increase colour temperature by the button corresponding to this icon.

(4) This is the arrow icon to adjust colour temperature, and the arrow will move with the operation of (2)(3).

**⑤**Decrease brightness by the button corresponding to this icon.

**(6)**Increase brightness by the button corresponding to this icon.

T This is the arrow icon to adjust brightness, and the arrow will move with the operation of 5.

The upper bar is the area for brightness adjustment, and current brightness is displayed above the bar.

#### 7.2. Multifunction thermostat

#### 7.2.1.FCU control page

Button operations as follow:

1 3 5	2 26 50.5 8 6		
Button1	Press to power off	Button2	if enable multiple functions, press to switchover
			function page
Button3	Short press to switch fan speed	Button4	if operation mode disable, press to switch
	Long press to switch auto mode		heating/cooling mode; if operation mode enable,
			short press to switch operation mode, long press to
			switch heating/cooling mode
Button5	press to decrease temperature	Button6	press to increase temperature

Note: the time of long operation is configured on General interface.



When device is on, display the temperature and humidity, control mode, room operation mode, fan speed and

other status, according to the ETS configuration. When it is off, function interface is shown as Fig.7.2.1(3).

#### $\textcircled{1}\label{eq:theta}$ This area displays function page icon. Icon is configured via ETS.

## ②This area displays locked status of function page, display when locked, as shown as Fig.7.2.1(1).

The locked function page cannot be operated except receiving telegram from the bus. The locked is only

apply to the current function page, and has no effect on switching between each function page. You can lock or unlock the function page via the bus.

③This ring is indicated the current control mode, different colour is different mode. As shown as Fig.7.2.1(1)~7.2.1(2):

Blue: cooling; Orange: heating.

④This area displays setpoint temperature or actual temperature, which is configured via ETS.
Actual temperature has not received data is shown nothing.

Icon definition in the lower-left corner: Room temperature î; External temperature i; Combined

temperature ; Setpoint temperature .

When display actual temperature, switch automatically to setpoint temperature when adjust via the button, the adjustment step is 0.5K or 1K, which is configured via ETS. Exit the setting after finishing setpoint temperature adjustment, and display actual temperature.

When the setpoint temperature unit is set to degrees Celsius(°C), adjustment range of the setpoint temperature is  $5\sim37^{\circ}$ C by default; when the setpoint temperature unit is set to Fahrenheit(°F), the current temperature value will automatically convert to Fahrenheit value, adjustment range of the setpoint temperature is  $41\sim98^{\circ}$ F by default. The temperature adjustment range can be modified through parameter setting.

**⑤**This area displays humidity. It is configured via ETS.

**(6)**This area displays fan speed level, switch circularly via short press the button:

&Off, &Low, &Middle, &High, &Auto.

⑦When activate operation mode on ETS, this area display room operation mode, switch circularly via short press the button:

Comfort mode, Standby mode, Economy mode, Protection mode.

#### 7.2.2.VRF control page

Button operations as follow:

1 3 8	2 2 2 2 2 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5		
Button1	Press to power off	Button2	if enable multiple functions, press to switchover
			function page
Button3	short press to switch fan speed	Button4	press to switch mode
	long press to switch swing status		
Button5	press to decrease temperature	Button6	press to increase temperature

Note: the time of long operation is configured on General interface.

Page as follow:



When device is on, display the temperature and humidity, control mode, fan speed, vanes swing and other status, according to the ETS configuration. When it is off, function interface is shown as Fig.7.2.2(7).

#### ①This area displays function page icon. Icon is configured via ETS.

②This area displays locked status of function page, display when locked, as shown as Fig.7.2.2(6).

The locked function page cannot be operated except receiving telegram from the bus. The locked is only apply to the current function page, and has no effect on switching between each function page. You can lock or unlock the function page via the bus.

③This ring is indicated the current mode, different colour is different mode. As shown as Fig.7.2.2(1)~7.2.2(6):

White: mode is uncertain; Yellow: Dehumidification; Purple: Auto; Green: Fan; Blue: cooling; Orange: heating.

(4) This area displays setpoint temperature or actual temperature, which is configured via ETS. Actual temperature has not received data is shown nothing.

Icon definition in the lower-left corner: Room temperature **(**); External temperature **(**; Combined temperature **(**; Setpoint temperature **(**).

When display actual temperature, switch automatically to setpoint temperature when adjust via the button, the adjustment step is 0.5K or 1K, which is configured via ETS. Exit the setting after finishing setpoint temperature adjustment, and display actual temperature.

When the setpoint temperature unit is set to degrees Celsius(°C), adjustment range of the setpoint temperature is 16~32°C by default; when the setpoint temperature unit is set to Fahrenheit(°F), the current temperature value will automatically convert to Fahrenheit value, adjustment range of the setpoint temperature is 60~89°F by default. The temperature adjustment range can be modified through parameter setting.

#### **⑤**This area displays humidity. It is configured via ETS.

**(6)**This area displays fan speed level, switch circularly via short press the button:

Soff, BLow, Middle, High, Auto.

Display as default when fan speed is uncertain.

⑦This area displays vanes swing status, it is enabled in ETS, switch via long press the button:

Stop (Swing ); Display as default when vanes swing status is uncertain.

#### 7.2.3.Floor heating page

Button operations as follow:

1 3 5	2 26 0 50.5 4 6		
Button1	Press to power off	Button2	if enable multiple functions, press to switchover
			function page
Button3	NA	Button4	NA
Button5	press to decrease temperature	Button6	press to increase temperature

Page as follow:



When device is on, display the temperature and humidity, heating status and other status, according to the ETS configuration. When it is off, function interface is shown as Fig.7.2.3(3).

①This area displays function page icon. Icon is configured via ETS.

②This area displays locked status of function page, display 💼 when locked, as shown as Fig.7.2.3(1).

The locked function page cannot be operated except receiving telegram from the bus. The locked is only apply to the current function page, and has no effect on switching between each function page. You can lock or unlock the function page via the bus.

#### ③This ring is indicated the current heating status, different colour is different heating status. As

#### shown as Fig.7.2.3(1), Fig.7.2.3(2):

Orange: heating valve on; White: heating valve off, at this time, floor heating is in the unheated status.

Floor heating compares the setpoint temperature with actual temperature of current environment to define control value according to 2-point control or PI control mode, so that realizes the automatic opening or closing of the heating valve.

(④This area displays setpoint temperature or actual temperature, which is configured via ETS. Actual temperature has not received data is shown nothing.

Icon definition in the lower-left corner: Room temperature 1 ; External temperature 1; Combined

temperature ; Setpoint temperature

When display actual temperature, switch automatically to setpoint temperature when adjust via the button, the adjustment step is 0.5K or 1K, which is configured via ETS. Exit the setting after finishing setpoint temperature adjustment, and display actual temperature.

When the setpoint temperature unit is set to degrees Celsius(°C), adjustment range of the setpoint temperature is  $16\sim32$ °C by default; when the setpoint temperature unit is set to Fahrenheit(°F), the current temperature value will automatically convert to Fahrenheit value, adjustment range of the setpoint temperature is  $60\sim89$ °F by default. The temperature adjustment range can be modified through parameter setting.

**⑤**This area displays humidity. It is configured via ETS.

#### 7.2.4.Ventilation page

Button operations as follow:

1 3 5	2 11. Co up mo 2 4 6		
Button1	Press to power off	Button2	if enable multiple functions, press to switchover
			function page
Button3	press to switch heat recovery	Button4	short press to switch auto status;
	status		long press 1s to reset filter time, long press 3s to
			exit filter alarm
Button5	press to decrease fan speed level	Button6	press to increase fan speed level

Note: the time of long operation is not configured on General interface.



When device is on, display the heat recovery, fan speed, filter and other status, according to the ETS configuration. When it is off, function interface is shown as Fig.7.2.4(3).

#### ①This area displays function page icon. Icon is configured via ETS.

## ②This area displays locked status of function page, display when locked, as shown as Fig.7.2.4(1).

The locked function page cannot be operated except receiving telegram from the bus. The locked is only apply to the current function page, and has no effect on switching between each function page. You can lock or unlock the function page via the bus.

#### ③This area displays according to auto status. Short press the button to switch auto status;

## (4) This area displays auto fan speed icon when it is in auto status; And not display when exit auto;

When it is in auto status, display fan speed and the information of linked air quality (CO2/PM2.5/VOC), as shown as Fig.7.2.4(1).

When it exits auto status, display fan speed, the levels are reflected by the number of steps on both sides, as shown as Fig.7.2.4(2). Switch circularly via short press the button:



Whether fan speed auto control is enable or not is configured through parameter configuration, when disabled, no display auto fan speed in ④ area, and always display fan speed in ③ area; When auto is enabled and in the auto status, automatic cyclic display of fan speed levels: low/middle/high.

## ⑤This area displays status of heat recovery, switch via short press the button: heat recovery on ⑥, heat recovery off

## (6) This area displays filter life of ventilation. Display when filter is normal; Display when filter life has been used up.

The service life of the filter set by the parameter configuration, or updated via the bus. When the filter time reaches to the parameter setting value, the alarm status can be issued through the bus to remain user to change filter, as well as reset the filter time. Exit alarm via long press the button **3s** or via the object.

#### 7.3. Audio control page

Button operations as follow:

1	Sky Lowe 2 End MacLafey municip		
K1 3 ⊄	▷ Di st <1· 4		
5	6		
Button1	short press to switch power	Button2	short press to switch play/pause, long press to
	on/off, long press to switch play		mute
	mode		
Button3	press to switch previous track	Button4	press to switch next track
Button5	short press to decrease volume,	Button6	short press to increase volume,
	long press to decrease volume via		long press to increase volume via relative/absolute
	relative/absolute way, the step		way, the step value is determined by the parameter
	value is determined by the		
	parameter		

Note: the time of long operation is configured on General interface. When relative adjustment, the volume is not fed back to display on the screen after long operation.

Page as follow:



When device is on, display the play status, play mode, volume, mute, track name, album name, artist name and other status, according to the ETS configuration. When it is off, function interface is shown as Fig.7.3(2).

(1)This area displays locked status of function page, display when locked, as shown as Fig.7.3(1).

The locked function page cannot be operated except receiving telegram from the bus. You can lock or unlock the function page via the bus.

②This area displays track name, receive the track name via the bus;

③This area displays artist name, receive the track name via the bus;

**④Select previous song by the button corresponding to this icon;** 

**5**Select next song by the button corresponding to this icon;

**(6)**This area displays the status of play/pause, switch via the button;

⑦This area displays album name, receive the track name via the bus;

(a) This area displays the play mode, switch circularly via the button: single cycle, random, playlist cycle;

**(9)** This area displays volume, decrease volume via the button;

(1) This area displays volume, increase volume via the button;

(1)This area displays the volume or mute, you can choose to mute or cancel mute via the button.

It display mute icon when in mute status, as shown as Fig.7.3(2).

Note: the volume on the screen (1) will be not change with the button operation of volume decrease/increase, only when a telegram is fed back on the bus can be updated.



#### 7.4. Screen saver



Screen-saver can be set the date format and air quality information via the parameters on ETS.

The date and time can be modified on the setting page, or through the bus.

When air quality information is not configured, as shown as Fig.7.4(1); When air quality information is configured, as shown as Fig.7.4(2), up to 2 items to display.

When no operation on the screen and the delay time of screen-saver set by parameter arrives, screen will enter the screen-saver state; once an operation happened, it will exit screen saver.

#### 7.5. Setting page

Button operations as follow:



Press the upper right corner + lower left corner button ( button2 + button5 ) at the same time for 5s to enter the setting page, as shown as Fig.7.5(1).

Button1	Press	to	enter	into	date	Button2	Press to enter into time adjustment interface
	adjustn	nent i	nterface				
Button3	press	t	o a	ctive/in	active	Button4	press to view system information of device
	program	nmin	g mode :	status			
Button5	j press to return to previous			Button6	press to exit setting page		

Note: the time of long operation is configured on General interface.

Page as follow:



①Press the button corresponding to this icon, enter the time setting page as shown as Fig.7.5(2);

Increase/Decrease the number via the button  $1\sim 6$ . At this time, return the previous page via long pressing the button5, and exit the setting page via long press the button6.

#### <sup>(2)</sup>Press the button corresponding to this icon, enter the date setting page as shown as Fig.7.5(3);

Increase/Decrease the number via the button 1~4.

③Press the button corresponding to this icon, enter the programming mode, as shown as Fig.7.5(4), and exit programming mode when press the button again.

**(4)** Press the button corresponding to this icon, enter the page of system information, as shown

as Fig.7.5(5), you can view firmware, database version, SN code, FDSK code;

The FDSK code is used for KNX secure, detail please refer to chapter 5.1.

7.6. Other



1.When no application, the application download of the device is completed or the device power recover, the device will be initialized, as shown as Fig.7.6(1), you can view the SN code.

2. When it is downloading, lock the whole panel, as shown as Fig. 7.6(2).

3.User can lock or unlock the operating interface of the device via the bus. After locking, interface shown as Fig.7.6(2), the entire device cannot be operated, except receiving telegram from the bus.

4.Alarm function is activated by the receiving telegram from the bus, pup up the window shown as Fig.7.6(3) when activated, and with the alarm sound. Indicate text, the alarm tone time period and the automatically repeat interval time are set by the parameters.

#### Chapter 8 Icon list

#### 8.1. Icon list for push button sensor

ETS options	Icon	ETS options	Icon
Light on	- <u>Ö</u> -	General scene 3	
Light off	Ċ	Curtain	$\overline{P}\overline{N}$
Ceiling light	亰	Blind(open/close)	$\mathbf{\Pi}$
Downlight	Ú.	Blind(up/down)	≣
Wall light	괸	Blind(with slat)	Ħ
Spotlight	$\overline{\mathcal{A}}$	Blind open	$\langle \rangle$
Chandelier	, Ţ	Blind close	$\succ$
Floor light	T	Arrow up	~
RGB lamp	8	Arrow down	$\sim$
General scene 1		Plus	+
General scene 2	諮	Minus	

ETS options	Icon	ETS options	Icon
Brighter	-苁-	Media	<b>@</b>
Darker	Ö	Cleaning	77
Go home 1	Â	Comfort	Î
Leave home 1	♤	Standby	<b>í</b>
Go home 2	ঞি	Economy	P
Leave home 2		Protection	
Welcome	ביי	Wake up	Ň
Meeting(guest)		TV	
Dinner	Ψq	Socket(CHN)	<b>\'</b>
Party	Ŷ	Socket(EU)	$\odot$
Sleeping		Fan	B
Reading		Door lock	·

ETS options	Icon	ETS options	Icon
Power supply	Ę	Windspeed	<del>ل</del>
Window 1	4	Rain	$\bigcap_{m}$
Window 2	••	Current	À
Alarm	Ŵ	Voltage	$\bigcirc$
Heating	-ò.	Power meter	
Cooling	**	Presence	- Fr
Temperature		On	
Colour temperature	$\odot$	Off	0
VOC	Ĩ	Open	0
CO2	ැ	Close	
Humidity	$\Diamond$	Power on/off	Ċ
Brightness	Ý.	Unlock	Image: second se

ETS options	Icon	ETS options	Icon
Lock	<b>A</b>	Text	TXT
No charge	4	Message	MSG
Charge		Setting	 
No mute	چ	Room temperature	
Mute	Ŕ	PM2.5	PM2.5
Day	Ś;	PM10	РМ10
Night	(		

#### 8.2. Icon list for multifunction thermostat

ETS options	Icon	ETS options	Icon
Air conditioner		Heating	-ò́-
Floor heating	ž	Cooling	**
Water heating	°	Heating/Cooling system	***
Ventilation system		Temperature	