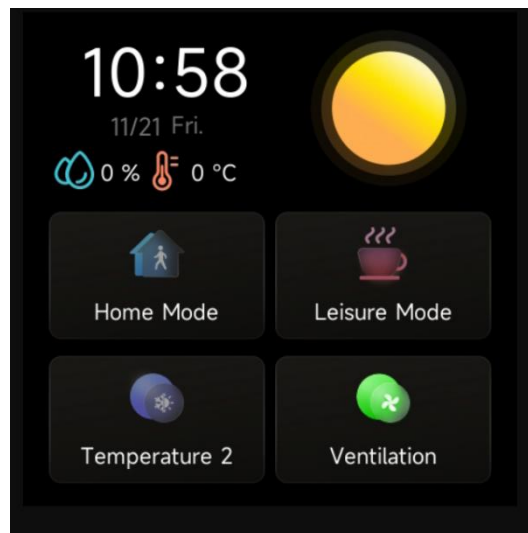


K-BUS® KNX Smart Touch S4 **KNX Smart Touch S4_UM**



CHTIV-4.0/80.1.2x
CHTI-4.0/80.1.2x
CHTF-4.0/80.1.2x

Contents

Chapter 1 Summary	6
Chapter 2 Technical Data	7
Chapter 3 Dimension and Structural Diagram	9
3.1 Dimension Diagram	9
3.2 Structural Diagram	10
3.3 Installation and Disassembly instructions	11
Chapter 4 Project Design and Programming	12
Chapter 5 Parameter setting description in the ETS	16
5.1 KNX Secure	16
5.2 Parameter window "General"	22
5.2.1 Parameter window "General setting"	22
5.2.2 Parameter window "Security setting"	26
5.2.3 Parameter window "Night mode setting"	26
5.2.4 Parameter window "Coordinates location setting"	29
5.2.5 Parameter window "Summer time setting"	31
5.2.6 Parameter window "Proximity setting"	33
5.2.7 Parameter window "Advanced setting"	35
5.3 Parameter window "Home page"	36
5.4 Parameter window "Function page"	40
5.4.1. Parameter window "Page x"(x=1~15)	41
5.5 Parameter window "KNX Channel"	44
5.5.1 Parameter window "Channel x"(x=1~80)	47
5.5.2 Parameter window of basic function	49
5.5.2.1. Switch	49
5.5.2.2. Press/Release switch	50
5.5.2.3. Relative dimming/brightness dimming/Relative&brightness dimming	51
5.5.2.4. Colour temperature dimming	55
5.5.2.5. RGB/RGBW/RGBCW/ dimming	58
5.5.2.6. Curtain and blind control	64
5.5.2.7. Air conditioner control	67
5.5.2.8. Room temperature unit control	74
5.5.2.9. Ventilation system control	83

5.5.2.10. Audio control	89
5.5.2.11. Scene	97
5.5.2.12. Temperature/Humidity sensor	98
5.5.2.13. Air quality detected value display	101
5.5.2.14. I/O sensor	113
5.5.2.15. Value sender	115
5.5.2.16. Energy metering value display	117
5.6 Parameter window "Internal sensor measurement"	122
5.7 Parameter window "Human Centric Lighting(HCL)"	127
5.8 Parameter window "HVAC controller"	132
5.8.1 Parameter window "Controller x-Room temperature controller(RTC)"(x=1~6)	133
5.8.1.1 Parameter window "Setpoint"	141
5.8.1.2 Parameter window "Heating control/Cooling control/Heating/Cooling control"	149
5.8.1.3 Parameter window "Fan auto.control"	161
5.8.2 Parameter window "Controller x-Ventilation controller"(x=1~6)	170
5.9. Parameter window "Voice reminder"	178
5.10 Parameter window "Schedule function"	183
5.10.1 Parameter window "Schedule X"(x=1~8)	184
5.11 Parameter window "Logic function"	187
5.11.1 Parameter window "AND/OR/XOR"	189
5.11.2 Parameter window "Gate forwarding"	191
5.11.3 Parameter window "Threshold comparator"	193
5.11.4 Parameter window "Format convert"	196
5.11.5 Parameter window "Gate function"	197
5.11.6 Parameter window "Delay function"	199
5.11.7 Parameter window "Staircase lighting"	200
5.12 Parameter window "Scene group function"	202
Chapter 6 Description of Communication Object	207
6.1 "General" Communication Object	208
6.2 "Internal sensor measurement" communication object	210
6.3 "Logic function" Communication Object	212
6.3.1 "AND/OR/XOR" Communication Object	212
6.3.2 "Threshold comparator" Communication Object	213

6.3.3 "Format convert" Communication Object	213
6.3.4 "Gate forwarding" Communication Object	217
6.3.5 "Gate function" Communication Object	218
6.3.6 "Delay function" communication object	219
6.3.7 "Staircase lighting" Communication Object	220
6.4 "Scene Group setting" Communication Object	222
6.5 "HVAC controller" Communication Object	224
6.5.1 "Room temperature controller (RTC) " Communication Object	224
6.5.2 "Ventilation controller" Communication Object	232
6.6 "Human Centric Lighting(HCL)" Communication Object	233
6.7 "Schedule function" Communication Object	237
6.8 "Voice reminder" Communication Object	239
6.9 "KNX Channel general" Communication Object	240
6.10 "KNX Channel X" Communication Object	241
6.10.1 "Switch" Communication Object	241
6.10.2 "Dimming" Communication Object	242
6.10.3 "Colour and colour temperature control" Communication Object	244
6.10.4 "Curtain and Blind" Communication object	252
6.10.5 "Air conditioner" communication object	257
6.10.6 "Room temperature unit control" Communication object	260
6.10.7 "Ventilation system" communication object	264
6.10.8 "Audio control" Communication object	269
6.10.9 "Sensor" Communication object	273
6.9.10 "Value sender" Communication object	277
6.10.11 "Scene" Communication object	280
6.10.12 "Energy Metering" Communication object	280
6.11 "Home page" Communication object	284
6.12 "Extension function" Communication object	287
6.13 "Input x" Communication object	289
6.13.1 "Switch" communication object	289
6.13.2 "Actual temperature, Sensor" communication object	290

6.13.3	“Scene” communication object	291
6.13.4	“String” communication object	292

Chapter 1 Summary

KNX Smart Touch S4 is a 4.0-inch KNX smart control panel with a screen resolution of up to 480*480. In addition to integrating KNX device control, it also connects to a SIP intercom system, combining indoor and outdoor communication into one entity.

The smart control integrates lighting, switches, dimming, curtains, value sender, color temperature, color control (RGB, RGBW, RGBCW), audio control, room temperature control, Air conditioner, Ventilation system control, etc. It not only supports displaying air quality, but also support various sensors such as proximity sensor, brightness sensor, temperature and humidity sensors, meets the requirements of most applications. Additionally, it supports schedule, logic function, scene group function to make your life smarter. As an intercom indoor unit, it supports wired network access and features such as address book import, contact management, SIP visual intercom calls, security monitoring, etc. It also supports various functions like SOS, lock screen, password access, etc.

KNX Smart Touch S4 powered from KNX bus, and need a 21-30V DC auxiliary supply voltage. It is available to assign the physical address and configure the parameters by engineering design tools ETS with .knxprod (support edition ETS5.7 or higher).

Chapter 2 Technical Data

Power Supply	Bus voltage	21-30V DC, via the KNX bus
	Bus current	$\leq 6.5\text{mA}/24\text{V}$, $\leq 6.4\text{mA}/30\text{V}$
	Bus consumption	$\leq 0.1\text{W}$
Auxiliary Supply	Voltage	21-30V DC
	Current	$\leq 85\text{mA}/24\text{V}$, $\leq 75\text{mA}/30\text{V}$
	Consumption	$\leq 2.3\text{W}$
Connection	KNX	Bus connection terminal(Red/Black)
	Auxiliary Supply	Bus connection terminal(Yellow/White)
	LAN	RJ45 terminal,supports standard PoE power supply
	Zone Interface	4-channel dry contact inputs
Proximity sensor	Normal: 30cm Enhanced: 60cm	
Temperature	-40-80°C	
Microphone	Dual-microphone matrix	
Speaker	1W8Ω Speaker	
Temperature	Operation	- 5 °C ... + 45 °C
	Storage	-25 °C ... + 55 °C
	Transport	- 25 °C ... + 70 °C
Environment	Humidity	<95%, except dewing

Installation

In a conventional 86mm or 60mm wiring box

Chapter 3 Dimension and Structural Diagram

3.1 Dimension Diagram

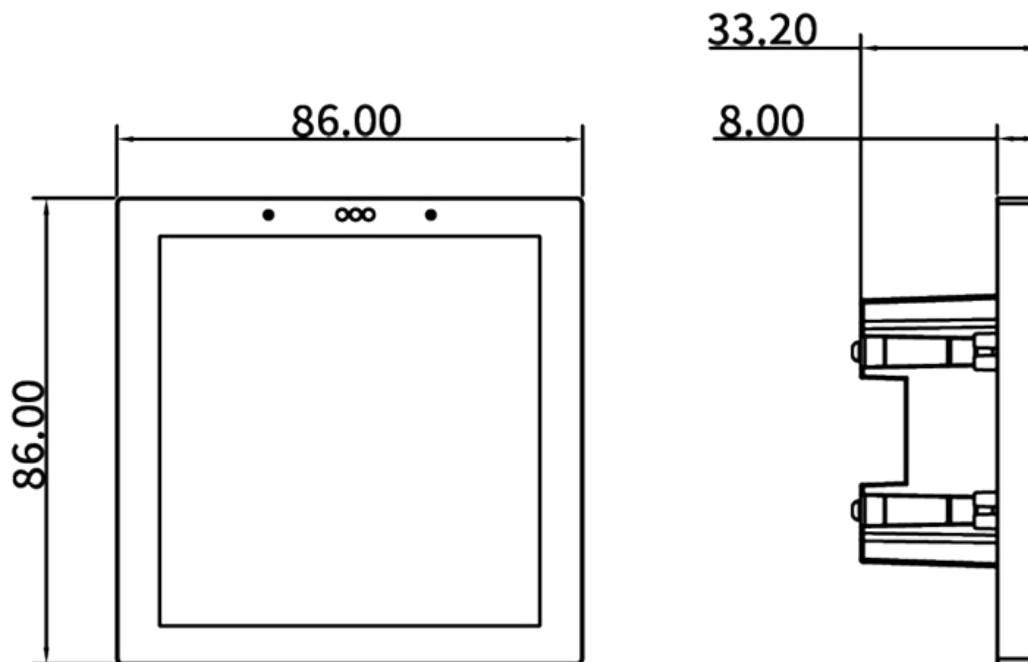


Fig.3.1. KNX Smart Touch S4

3.2 Structural Diagram

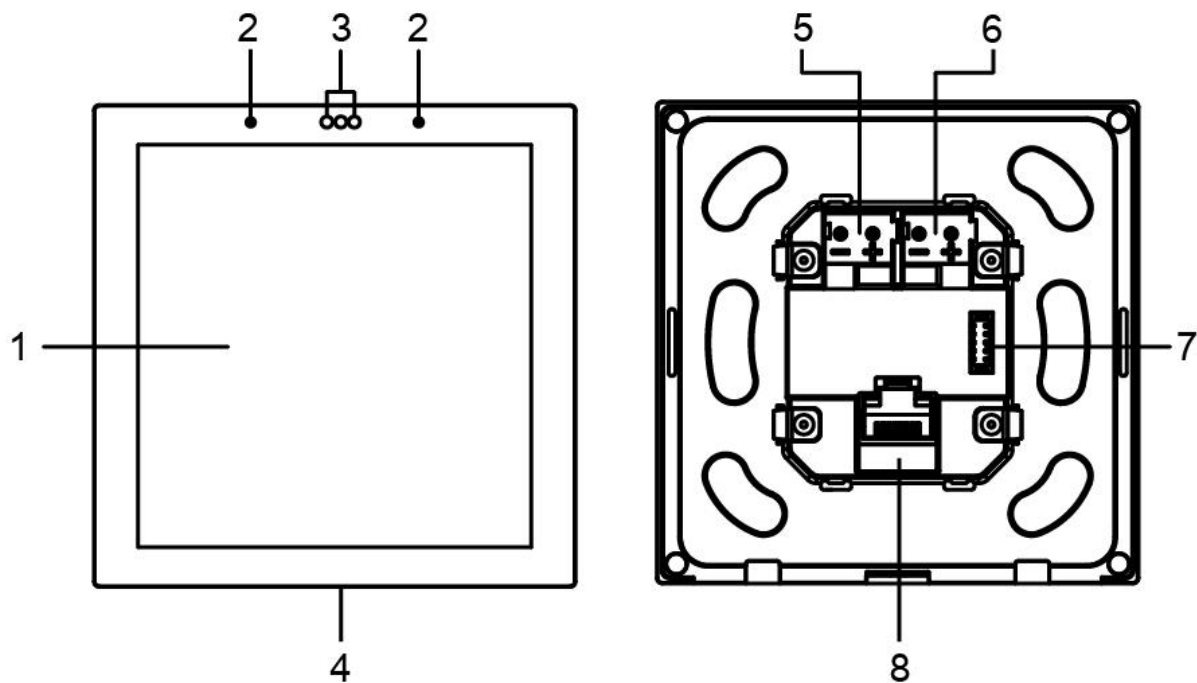


Fig.3.2. KNX Smart Touch S4 structural diagram

1.Touch and display area

2.Microphone

3.Proximity sensor and brightness sensor

4.Speaker

5.KNX bus terminal

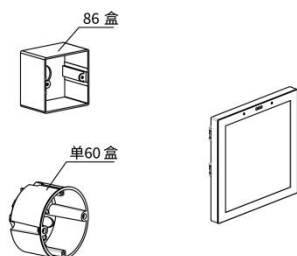
6.Auxiliary supply

7.Zone Interface

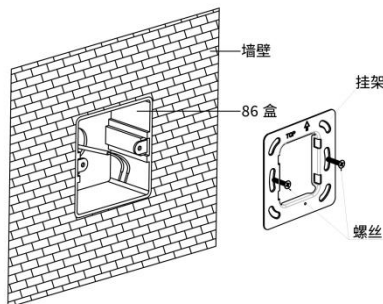
8.Ethernet port

3.3 Installation and Disassembly instructions

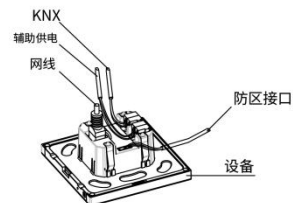
Installation instructions



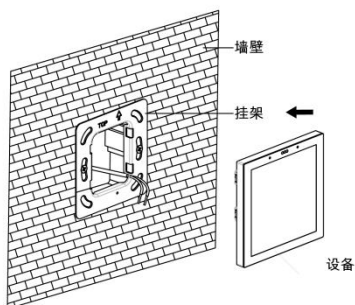
1. Device installation adaptability: Single 86 Box and single European 60 Box.



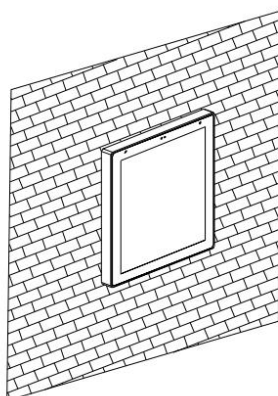
2. Remove the hanging bracket and the fixing screws of the bracket, then secure the bracket to the pre-embedded box using the screws.



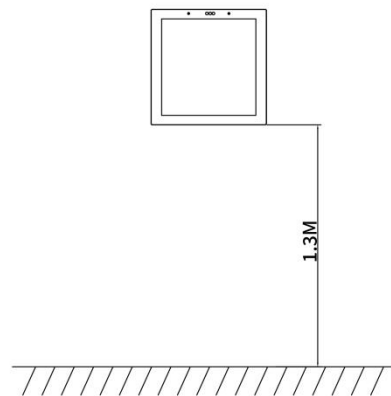
3. Connect the device to the relevant wires.



4. Push the device into the securely fixed bracket until the spring clips on the device snap into the bracket's notches.

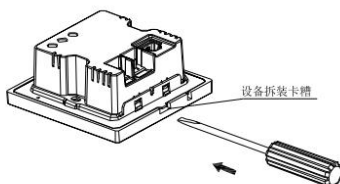
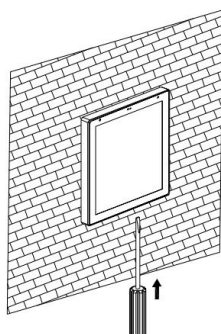


5. Complete the device installation.

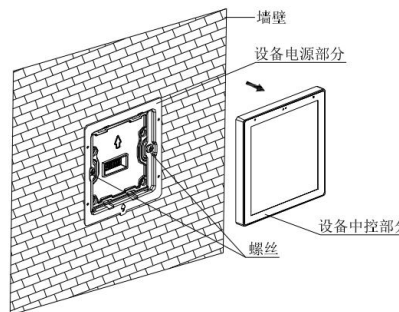


Suggestion: It is recommended to install at a height of 1.3 meters from the ground

Disassembly instructions



2. Reach into the slot at the bottom of the device and pry outward until the center control part is



3. The device has been

1. Borrow a tool (e.g., a flat-head screwdriver)

disconnected from the bracket's snap fasteners.(Note: The speaker sound hole is also located in the slot for disassembly and assembly. Therefore, do not reach too deep into the device's slot to avoid prying the front shell and bottom cover.)

disassembled.

Chapter 4 Project Design and Programming

Application	Maximum of communication objects	Maximum number of group addresses	Maximum number of associations	Secure group addresses
KNX Touch/Intercom/Switch/Heating/1.0	1973	3000	3000	2400

General function

General function includes security password, day/night mode, daylight saving time, time zone and coordinate settings, proximity.

Additionally, you can choose such as temperature units and date formats.

Homepage shortcut function

On the home page, you can set shortcut operation functions to quickly control commonly used devices.

Device function

Adopts a grid UI style, supports up to 80 devices/scenarios.

Supports basic control functions including switch, dimming, blinds, value sender, color

temperature,color control(RGB,RGBW,RGBCW),audio control,room temperature control,Air conditioner,Ventilation System control,Energy Metering display,etc.

Switch indicator

To indicate the switch status of lighting device or other device.

Lighting Control

It is mainly used for switching lighting device or dimming lighting device. Dimming mode can be relative dimming, brightness dimming, relative+brightness dimming or brightness+colour temperature dimming.

RGB dimming and colour temperature

It is mainly used for RGB, RGBW and RGBCW LED dimming in absolute dimming way. RGBCW supports RGB lighting, colour temperature and brightness adjustment. And the colour temperature dimming is optional to normal control or directly control.

Curtain and blind control

To control open/close curtain, roller blind and venetian blind. Support to adjust the position and slat.

Air conditioner control

Support to the control function, including power on/off, setpoint temperature, mode, fan speed, vanes swing, timer, etc.

Room temperature control function

RTC is mainly used to control the room temperature, automatically and optimally control the heating and cooling according to the use of the room or the needs of the occupants.

Supports manually switching of heating/cooling control, support options for three-level fan speed and auto fan speed, four operation modes: comfort, standby, economy and protection mode.

The setting temperature supports absolute and relative settings, as well as adjustable temperature range settings. Supports 2-point and PI control.

Ventilation system control

Supporting 3-level fan speed adjustment, turn on or off heat recovery, filter life counter, filter overtime alarm and filter reset.

Auto control according to the concentration of PM2.5, VOC or CO2, in addition to setting scene function.

Audio control

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

Air quality detected value display

Temperature, humidity, PM2.5, PM10, VOC, CO2, AQI, brightness, wind speed and rain status displays can be set and these values are received from external sensor.

Value sender function

Values of different data types can be sent.

Human Centric Lighting (HCL)

Automatically adjust brightness and color temperature based on the set time to create a comfortable lighting environment.

Schedule function

Supporting to timely send different types of value, up to 8 schedule. When enable schedule function, schedule can be operated from the screen. In screen, user can enable/disable schedule. In addition, schedule can be disabled through the bus.

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.

Intercom function

Adopts a grid UI style, supports basic control functions including address book import, contact management, SIP visual intercom calls, security monitoring, etc.

Chapter 5 Parameter setting description in the ETS

5.1 KNX Secure

KNX Smart Touch S4 is a KNX device that complies with the KNX secure standard. That is, you can run the device in safe way.

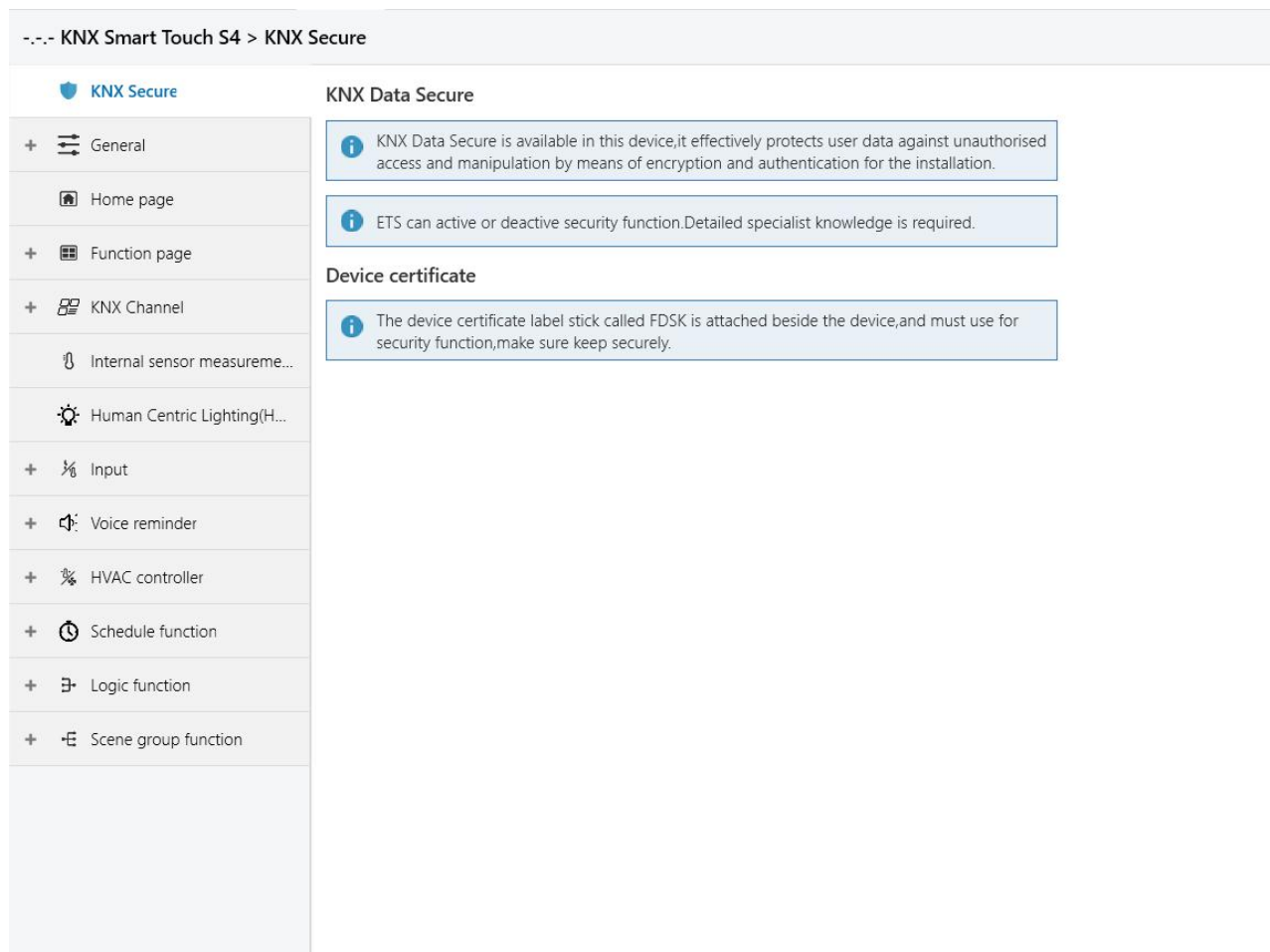


Fig.5.1 (1) "KNX Secure" parameter window

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

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



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

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

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

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

✧ On the first download of the device, a window pops up in the ETS to prompt the user to enter the key, as shown in Fig.5.1 (2) below.

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

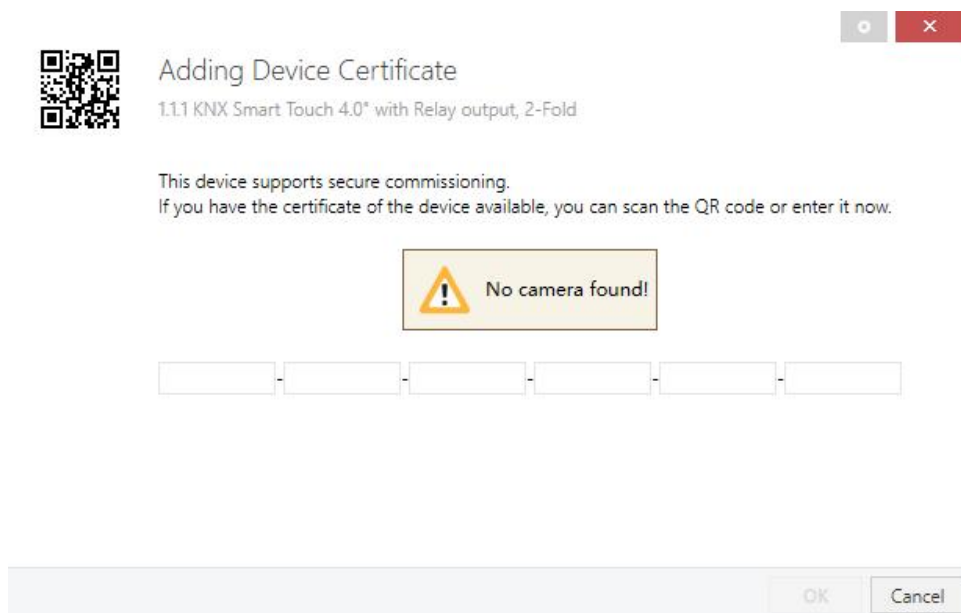


Fig.5.1(2) Add Device Certificate window

✧ 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).

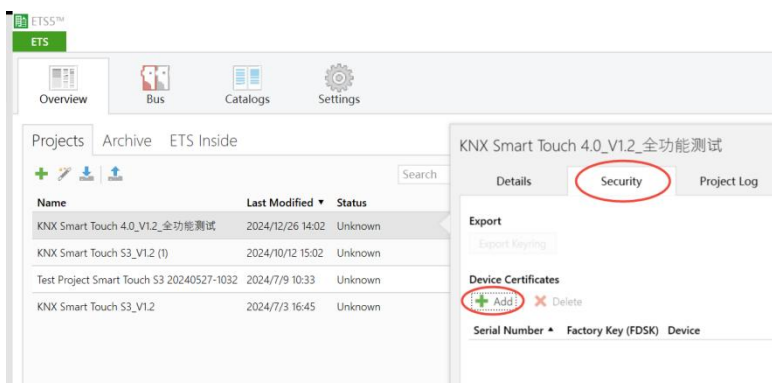


Fig.5.1(3) Add Device Certificate

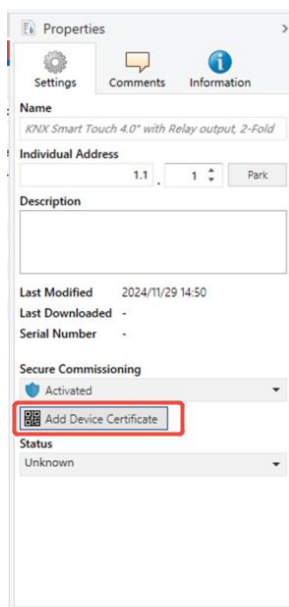


Fig.5.1(4) Add Device Certificate

✧ 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).

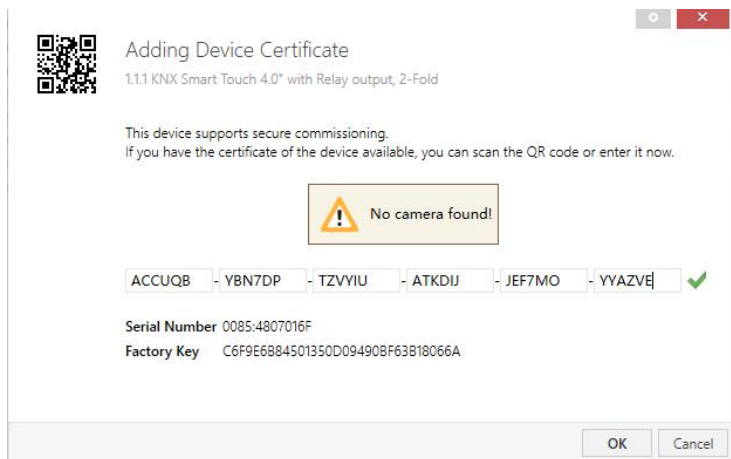


Fig.5.1(5)

Example:

If this application in the project needs to be tried with another device, it is no longer the original device. When the application is downloaded to a new device, the following prompt will appear on the left of Fig.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.

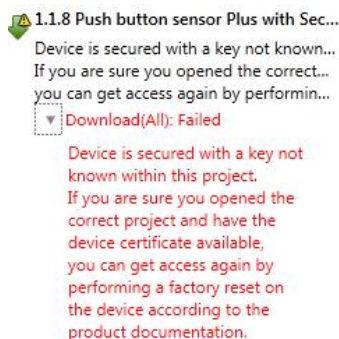
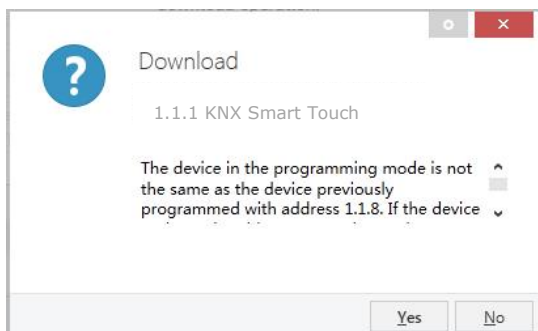


Fig.5.1(6) Example

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.

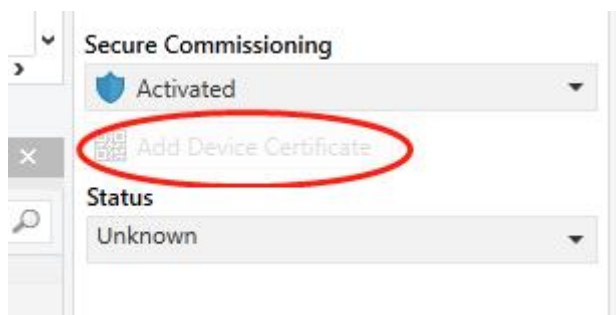


Fig.5.1(7)

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.

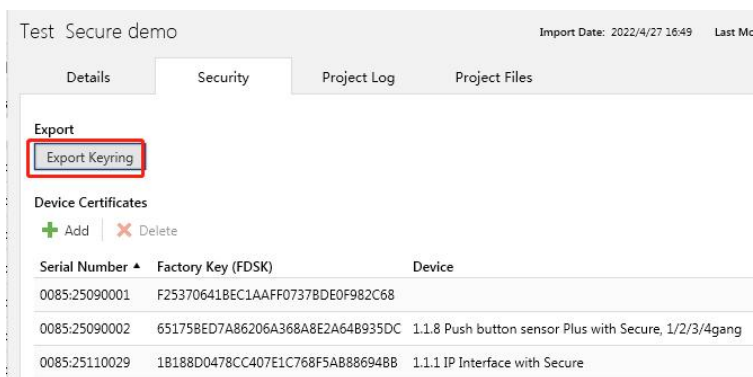


Fig.5.1(8)

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 “General setting”

Parameter window “General setting” shown as Fig.5.2.1, it is mainly for the general setting of the device

--- KNX Smart Touch S4 > General

KNX Secure	Send delay after voltage recovery [0..15]	10	s
General	Send request delay between status objects	100	ms
General setting	Send cycle of In operation telegram [1..240,0=inactive]	0	s
Security setting	Long operation for touch after	☒ 2.0 ☐ 3.0	s
Night mode setting	Cyclically send date and time [0..255,0=inactive]	0	h
Coordinates location setting	Delay time for back to homepage after no operation [0..255,0=inactive]	30	s
Summer time setting	Screen display setting		
Proximity setting	Temperature display units	☒ Celsius(°C) ☐ Fahrenheit(°F)	
Advanced setting	Interface Language	Chinese(Simplified)	
Home page	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		
Function page	Date display format	☒ yyyy/mm/dd ☐ dd/mm/yyyy	
KNX Channel	Brightness setting		
Internal sensor measureme...	Screen brightness can be changed via bus	☒	
Human Centric Lighting(H...	Extension function		
Input	Night mode	☒	
Voice reminder	Proximity function	☒	
HVAC controller			

Fig.5.2.1 “General setting” parameter window

Parameter “Send delay after voltage recovery [0..15]”

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 request delay between status objects"

This parameter is setting for the the delay between sending status object request telegram.

Options:

50ms

100ms

200ms

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

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

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

Parameter "Long operation for touch after"

This parameter is for setting the trigger time of the long operation for touch on the screen. Options:

2.0s

3.0s

Parameter "Cyclically send date and time [0...255,0=inactive]"

This parameter is used to set the cycle for cyclically sending the date and time to the bus.

When setting to 0, it will not sent.

Options: **0...255**

Parameter "Delay time for back to homepage after no operation[0..255,0=inactive]s"

This parameter is for setting the delay time from function page back to home page

when no operation on the device. Options: **0...255**

When setting to 0, it will not return to the home page automatically.

Screen display setting

Parameter "Temperature display units"

This parameter is for setting temperature display units. Options:

Celsius(°C)

Fahrenheit(°F)

Parameter "Interface Language"

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

Chinese(Simplified)	Spanish
Chinese(Traditional)	Russian
English	Arabic
German	Polish
French	Portuguese
Persian	Italian
Hebrew	Norwegian
Other	

Displays the note when Chinese is selected:

i 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

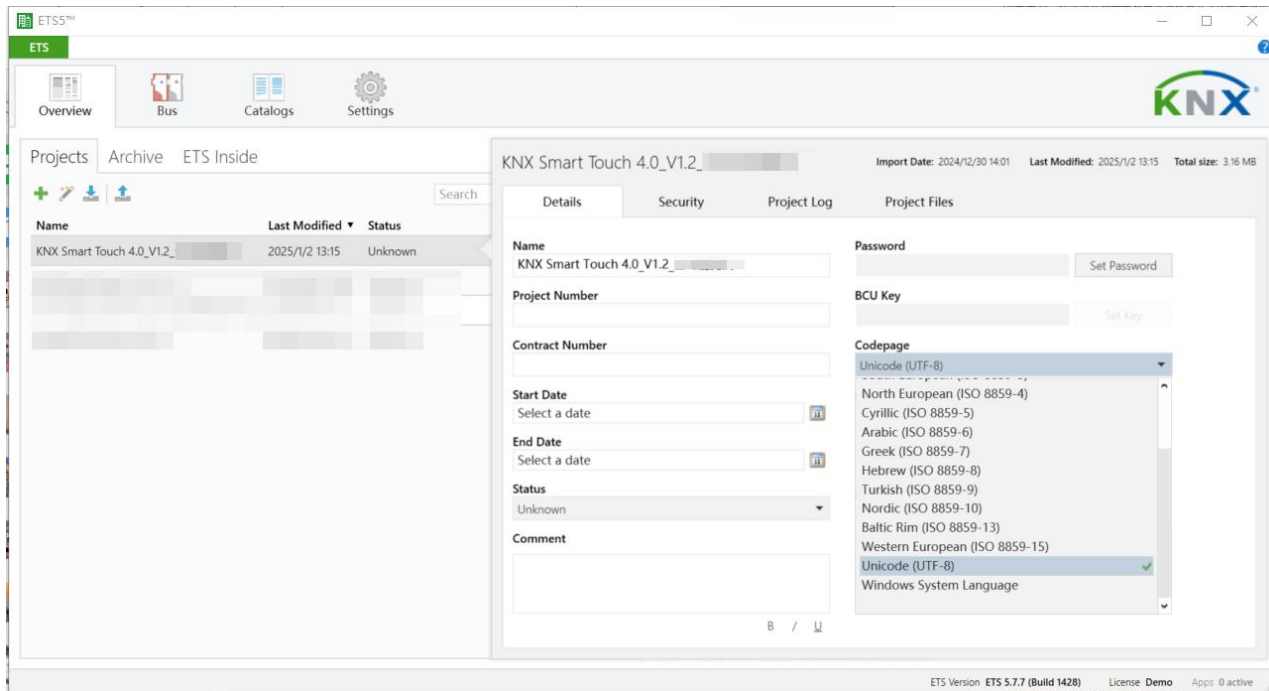
Displays the note when a non-Chinese language is selected:

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

Note: the interface language only supports simplified Chinese and English.

i Currently, the interface language only supports simplified Chinese and English.

UTF-8 setting as shown as follow:



Parameter "Date display format"

This parameter is for setting date display style of screen. Options:

yyyy/mm/dd

dd/mm/yyyy

Brightness setting

Parameter "Screen brightness can be changed via bus"

This parameter is for setting whether to adjust screen brightness via bus. If enabled, object "Screen backlight brightness" is visible which is used to change screen brightness.

Extension function

Parameter "Night mode"

When this parameter is enabled, the "night mode" setting is visible. This function is described in detail in section 5.2.3.

Parameter "Proximity function"

When this parameter is enabled, the “Proximity function” setting is visible. This function is described in detail in section 5.2.5.

5.2.2 Parameter window “Security setting”

Parameter window “Security setting” shown as Fig.5.2.2, it is mainly for setting password function and the object type of output value sent to the bus after device is activated through password.

KNX Smart Touch S4 > General > Security setting

KNX Secure General General setting Security setting	Security pin code ☒ Initial pin code 1 2 3 4
--	---

Fig 5.2.2 “Security setting” Parameter

Parameter “Initial pin password”

This parameter sets the initial user password, which can be modified on the device later.

5.2.3 Parameter window “Night mode setting”

Parameter window “Night setting” shown as Fig.5.2.3, it is mainly for set the time to switch to night or day.

KNX Smart Touch S4 > General > Night mode setting

KNX Secure General General setting Security setting Night mode setting	Polarity of normal/night mode ☐ Normal=1/Night=0 ☒ Normal=0/Night=1 Switchover normal/night mode Via object Normal/night mode need send read request after voltage recovery ☐ No ☒ Yes <i>Note: Default to normal mode if no response when request after startup</i>
--	---

Via object

KNX Smart Touch S4 > General > Night mode setting

KNX Secure	Polarity of normal/night mode	☐ Normal=1/Night=0 ☒ Normal=0/Night=1
General	Switchover normal/night mode	Depend to certain time
General setting	Time for switch to night at	18:00 时:分
Security setting	Time for switch to normal(day) at	06:00 时:分

Night mode setting

Depend to certain time

KNX Smart Touch S4 > General > Night mode setting

KNX Secure	Polarity of normal/night mode	☐ Normal=1/Night=0 ☒ Normal=0/Night=1
General	Switchover normal/night mode	Depend to sunrise&sunset
General setting	Time calibration	
Security setting	Switching time move to night [-128..127]	0 min
	Switching time move to day [-128..127]	0 min

Night mode setting

Depend to sunrise&sunset

Fig.5.2.3 "Night mode setting" parameter window

Parameter "Polarity of normal/night mode"

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

Normal=1/Night=0

Normal=0/Night=1

Parameter "Switchover normal/night mode"

This parameter for setting the switchover mode 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. Default to normal mode after voltage recovery.

Depend to certain time: Switch the normal/night status based on the specific time. Such

as switch 18:30 PM to the night status, 6:30 AM 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'.

When "Via object" is selected, the following parameter is visible, for setting the object via bus to switch to the night or to the normal.

Parameter "Normal/night mode need send read request after voltage recovery"

This parameter for setting whether the object "Night mode" to send read request when bus recovery or finish programming. If send the read request, LED indicates according to setting brightness of responded normal/night mode. Options:

No

Yes



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

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.

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"

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

This parameter for setting the time point to switch to the night/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.

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.

5.2.4 Parameter window “Coordinates location setting”

Parameter window “Coordinates location setting” shown as Fig.5.2.4, it is mainly for set the the coordinate position of the reference point of sunrise and sunset.

1.1.1 KNX Smart Touch S4 > General > Coordinates location setting

KNX Secure General General setting Security setting Night mode setting Coordinates location setting Summer time setting Proximity setting Advanced setting	Latitude longitude setting location	Beijing, China
	Latitude	☒ North ☐ South
	Latitude in degrees [0..90]	39 °
	Latitude in minutes [0..59]	56 ' °
	Longitude	☒ East ☐ West
	Longitude in degrees [0..180]	116 °
	Longitude in minutes [0..59]	20 ' °
	Time difference from Universal Time (UTC + ...)	(UTC +08:00) Singapore, Beijing, Hong Kong, Taipei

Fig.5.2.4 "Coordinates location setting" parameter window

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 longitude 116°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) Auckland, Wellington, Fiji

5.2.5 Parameter window "Summer time setting"

1.1.1 KNX Smart Touch S4 > General > Summer time setting

KNX Secure General General setting Security setting Night mode setting Coordinates location setting Summer time setting Proximity setting Advanced setting	Summer time ☒ Start at month March Start at week The last week Start at day Sunday Start at hour: minute 02:00 时:分 End at month October End at week The last week End at day Sunday End at hour: minute 03:00 时:分
---	---

Fig.5.2.5 "Summer time setting" parameter window

Parameter "Summer time"

This parameter is for setting whether summer time. Options:

Disable

Enable

When "Summer time" is enable, the following parameters are visible, for setting the start or end time of summer time.

——Parameter "Start at month"

——Parameter "End at month"

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

January

February

...

December

——**Parameter“Start at week”**

——**Parameter“End at week”**

These parameters 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 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 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.

The start date and the end date cannot be the same. That is, if you set the same month, week, and day, it 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”

Parameter window “Proximity setting” as shown as Fig.5.2.6. It is mainly setting proximity function, which can set the telegram when proximity approaching, and the delay time for sending telegram.

1.1.1 KNX Smart Touch S4 > General > Proximity setting

KNX Secure General General setting Security setting Night mode setting Coordinates location setting Summer time setting Proximity setting	The Proximity function triggered via Sensor Proximity Sensitivity ☒ Normal ☐ Enhanced Object type of output value 1bit[On/Off] Output value ☐ OFF ☒ ON Delay time for sending [0..65535] 0 s
--	--

Fig.5.2.6 “Proximity setting” parameter window

Parameter “The Proximity function triggered via ”

This parameter is for setting the trigger source 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 "Proximity Sensitivity "

This parameter is for setting the sensitivity of proximity sensing. Normal sensing distance is 30cm, enhanced sensing distance is 60cm.

Options:

Normal

Enhanced

Parameter "Object type of output value "

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

1bit[On/Off]

1byte [scene control]

1byte[0..255]

1byte[0..100%]

——Parameter "Output value[On/Off]"

——Parameter "Output scene NO.[1..64]"

——Parameter "Output value[0..255]"

——Parameter "Output value[0..100%]"

These parameters are set the output value sending to the bus when proximity approaching, the range of value is determined by the data type.

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

This parameter is set the delay time for sending telegram.

When proximity approaching, Options: **0..65535**

Note: Multiple departures from close proximity during the delay time will not repeat the message.

5.2.7 Parameter window “Advanced setting”

Parameter window “Advanced setting” shown as Fig.5.2.8. Used to enable HVAC controller, Human-Centric Lighting(HCL) , schedule function, input interface, logic function, and scene group function, Voice reminder function.

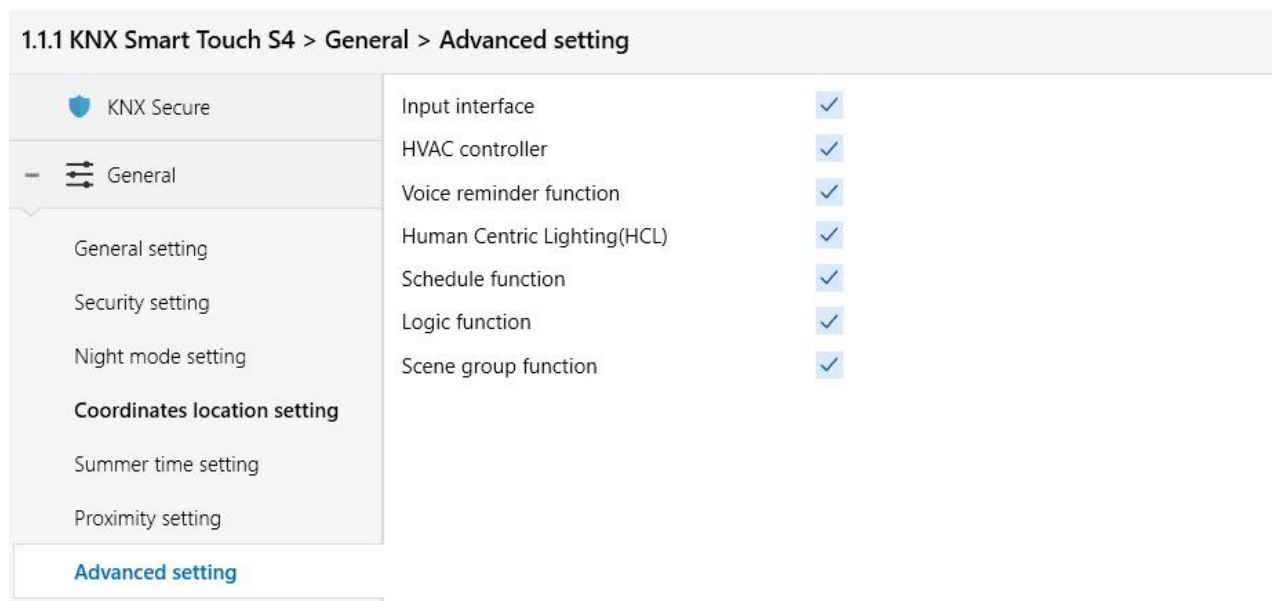


Fig.5.2.7 “Advanced setting” parameter window

5.3 Parameter window "Home page"

Parameter window "Home page" shown as Fig.5.3., where you can set the environmental information displayed on the home page.

1.1.1 KNX Smart Touch S4 > Home page

KNX Secure General General setting Security setting Night mode setting Coordinates location setting Summer time setting Proximity setting Advanced setting Home page Function page KNX Channel Internal sensor measureme... Human Centric Lighting(H... Input Voice reminder HVAC controller Schedule function Logic function Scene group function		Display environment status on home page Item 1 Display function Ext. humidity Function description (max 18char.) Humidity Time period for request external sensor [0..255] 0 min Item 2 Display function Ext. temperature Function description (max 18char.) Temperature Time period for request external sensor [0..255] 0 min
Navigation function setting Associated function 1 Channel 19 Associated function 2 Channel 20 Associated function 3 Channel 14 Associated function 4 Channel 15 Note: If the channel or page is not enabled, it can not be selected. Homepage layout preview 08:30 2/27 Tuesday 1 2 3 4		

Fig.5.3 "Home page"parameter window

Parameter "Display function"

This parameter is for displaying the environmental information. Options:

None

Int. temperature

Ext. Temperature

Int. humidity

Ext. humidity

PM2.5

PM10

VOC

CO2

AQI

Brightness

Wind speed

Rain

Parameter "Function description (max 18char.)"

This parameter is for setting the function description of channel device, up to 18 characters.

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

This parameter is visible when an external sensor is selected. It is used to set the time interval for reading external air quality information. A read request is sent by default upon power-on reset and completion of programming; no read request is sent when the value is 0. Optional values: 0..255

Parameter "Object datatype of display PM2.5/PM10/VOC"

This parameter becomes visible when "PM2.5/PM10/VOC" is selected for status indication. It is used to set the data point type for PM2.5/PM10/VOC

Options:

Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030)

Parameter "Object datatype of display CO2"

This parameter is visible when "CO2" is selected for status indication. It is used to set the data point type for CO2.

Options:

Value in ppm(DPT_7.001)

Float value in ppm(DPT_9.008)

Parameter "Object datatype of display brightness"

This parameter becomes visible when "Brightness" is selected for status indication. It is used to set the data point type for illuminance.

Options:

Brightness in lux(DPT_7.013)

Float value in lux(DPT_9.004)

Parameter "Object datatype of display wind speed"

This parameter becomes visible when "Wind Speed" is selected for status indication. It is used to set the data point type for wind speed.

Options:

Value in m/s(DPT_9.005)

Float value in km/h(DPT_9.028)

——Parameter "Status text for rain (1-ON)" and Parameter "Status text for no rain (0-OFF)"

These two parameters are visible when "Rain" is selected for status indication. They are used to set the dynamic text indicators for "rain" and "NoRain" conditions, and also control

the dynamic icons corresponding to these states.

Parameter "Text for unit"

This parameter is visible when "PM2.5/PM10/VOC/CO2/AQI/Brightness/Wind Speed" is selected. It is used to set the text for units.

Navigation function setting

Parameter "Associated function x" (x=1~4)

The home page supports adding shortcuts for devices or scenes via the ETS software. It allows a maximum of 4 shortcut cards, which can be configured for devices, scenes, and page navigation.

Options:

None

Channel 1

...

Channel 80

Link to Page 1

...

Link to Page 15

5.4 Parameter window "Function page"

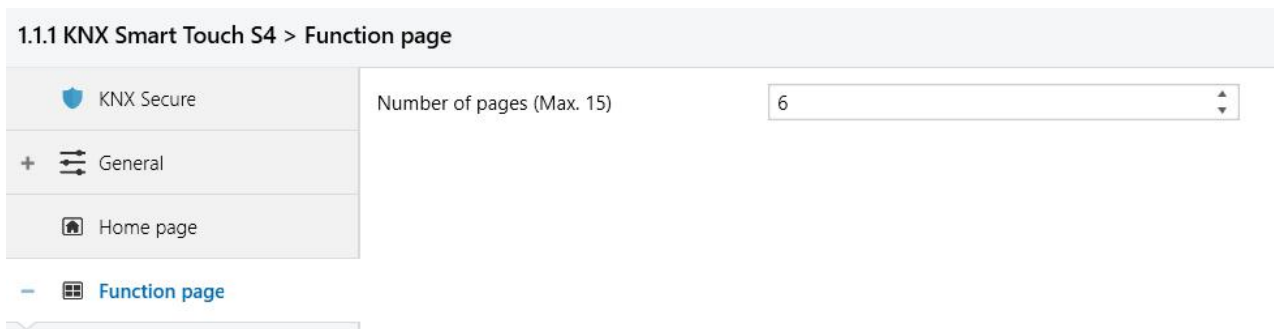


Fig.5.4 "Function page" parameter window

Parameter "Number of pages (Max. 15)"

This parameter is used to set the number of function pages, with a maximum support of 15 function pages. Each page allows a maximum of 6 devices to be added.

5.4.1.Parameter window "Page x"(x=1~15)

1.1.1 KNX Smart Touch S4 > Function page > Page 1-...

KNX Secure + General Home page - Function page Page 1-... Page 2-... Page 3-... Page 4-... Page 5-... Page 6-... + KNX Channel Internal sensor measureme... Human Centric Lighting(H... + Input + Voice reminder + HVAC controller + Schedule function	Icon preview for function page when used as link Scenario Icon preview  Description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars) Display mode of function page ☒ Individual function ☐ Multiple functions Function Note: If the channel is not enabled, it can not be selected. Function layout preview 
--	--

Fig.5.4.1 "Function page" parameter

Parameter "Icon preview for function page when used as link"

This parameter is used to set the icon displayed when the current page is set as a link by other function pages or the home page.

Options:

Scenario

Lighting

Panel

Switch

Curtain

HVAC

Environment

Sensor

Media

General page link 1

General page link 2

General page link 3

Parameter "Function description (max 18 char.)"

This parameter is for setting the function description of channel device, up to 18 characters. In practice, a device can display a maximum of 6 Chinese characters or 18 English letters.

Parameter "Display mode of function page"

This parameter is for setting the display mode of the page.

Options:

Individual function

Multiple functions

In Single Device Mode, it occupies 6 card positions. In Multi-Device Mode, one icon takes up one card position, and a maximum of 6 icons can be set.

This parameter is visible when the "Individual Function" parameter is selected. It is used to set the device/scene for the page in Single Device Mode.

Parameter "Function"

This parameter is for setting the device/scene for the page.

Options:

None

Channel 1

...

Channel 80

This parameter is visible when the "Multiple Functions" parameter is selected. It is used to set the devices/scenes for the page in Multi-Device Mode.

Parameter "Number of function icons (Max. 6 channels)"

This parameter is for setting the number of icons that can be displayed on the page. Options: **1...6**

Parameter "Icon x" (x=1~6)

This parameter is for setting the functions of devices, scenes, and shortcut page navigation. Options:

None

Channel 1

...

Channel 80

Link to Page 1

...

Link to Page 15

5.5 Parameter window "KNX Channel"

1.1.1 KNX Smart Touch S4 > KNX Channel

KNX Secure + General Home page + Function page KNX Channel Channel 1-light Channel 2-switch Channel 3-Dimming Channel 4-Relative Dimming Channel 5-RGBW Dimming Channel 6-Color Temperature Channel 7-cutrain Channel 8-Roller Blind Channel 9-curtain Channel 10-Roller Blind + Channel 11-Air Conditioner + Channel 12-Air conditioner 2 + Channel 13-Temperaturecontrol + Channel 14-Temperature 2 Channel 15-Ventilation Channel 16-Audio control Channel 17-Audio control 2 Channel 18-energy	Number of channels (max. 80) 25
	For 14 Bytes string from bus, The encode data of telegram must be ISO8859 or ASCII characters.
Channel status object read request after restart ☒	
Time period request for common 1 [0..255,0=inactive] 0 min	
Time period request for common 2 [0..255,0=inactive] 0 min	
Time period request for common 3 [0..255,0=inactive] 0 min	
Time period request for common 4 [0..255,0=inactive] 0 min	
Time period request for common 5 [0..255,0=inactive] 0 min	
Time period request for common 6 [0..255,0=inactive] 0 min	
Time period request for common 7 [0..255,0=inactive] 0 min	
Time period request for common 8 [0..255,0=inactive] 0 min	
Time period request for common 9 [0..255,0=inactive] 0 min	
Time period request for common 10 [0..255,0=inactive] 0 min	
PM2.5/PM10 monitoring level indication setting	
Number of level 1	
For level 0	
Colour setting Green	
Threshold for level 0<->level 1 35 ug/m3	
Colour setting Light blue	

AQI monitoring level indication setting

Number of level

For level 0

Colour setting

Threshold for level 0<->level 1 ug/m3

Colour setting

CO2 level indication setting

Number of level

For level 0

Colour setting

Threshold for level 0<->level 1 ug/m3

Colour setting

Fig.5.5 "KNX Channel"parameter window

Parameter "Number of channels (Max. 80)"

This parameter is for setting the number channels.Options:**1...80**

Parameter "Channel status object read request after restart "

This parameter is for setting whether to send channel status object read request after restart.

Parameter "Time period request for common X [0..255,0=inactive] ,(X=1-10)"

This parameter is for setting time period request for querying the online status of the generic device.Options:**0...255min**

PM2.5/PM10/AQI/CO2/ monitoring level indication setting**PM2.5/PM10/AQI/CO2****Parameter "Number of level "**

This parameter is for setting number of level.Options: **1...5**

Parameter "Colour setting"

This parameter is for setting the color of UI display fo each level.Options:

Green

Light blue

Yellow

Orange

Red

Dark red

Parameter "Threshold for level 0<->level 1"**Parameter "Threshold for level 1<->level 2"****Parameter "Threshold for level 2<->level 3"****Parameter "Threshold for level 3<->level 4"****Parameter "Threshold for level 4<->level 5"**

This parameter is for setting the threshold for each level

PM2.5/PM10 Options: **1...999**

AQI Options: **1...500**

CO2 Options: **1...500**

5.5.1 Parameter window "Channel x"(x=1~80)

1.1.1 KNX Smart Touch S4 > KNX Channel > Channel 1-light

KNX Secure

+ General

Home page

+ Function page

- KNX Channel

Channel 1-light

Channel 2-switch

Channel 3-Dimming

Channel 4-Relative Dimming

Function

Switch

Function description (max 18 char.)
(Valid display space is up to 18 chars,while 6 Chinese chars)

light

Function icon

General light

Icon preview



Device online status reference by

Always online

Fig.5.5.1 "Channel x"parameter window

Parameter "Function"

This parameter is for setting the device function.Channel 1-80 Options:

Press/Release switch

Switch

Relative dimming

Brightness dimming

Relative&Brightness dimming

RGB dimming

RGBW dimming

RGBCW dimming

Colour temperature dimming

Curtain step/move

Roller blind step/move

Curtain position

Roller blind position

Venetian blind position and slat

Air conditioner

Ventilation system

Ventilation system(with auto fan speed)

Audio control

Audio control(with on/off)

Audio control(play mode)

Audio control(track information)

Audio control(track information & playlist)

Temperature sensor

Humidity sensor

Energy metering(power & energy)

Energy metering(power & energy & current)

Energy metering(power & energy

Air conditioner(with swing)	& current & voltage)
Room temperature unit	PM2.5 sensor
Room temperature unit(with on/off)	PM10 sensor
Room temperature unit(with operation mode)	VOC sensor
	AQI sensor
Room temperature unit(with on/off & operation mode)	CO2 sensor
	Brightness sensor
Room temperature unit(with operation mode & fan speed)	Wind sensor
	I/O sensor
Room temperature unit(with on/off&operation mode & fan speed)	Value sender
	Scene

Parameter“Function description (max 18 char.)”

This parameter is for setting the function description of channel device,up to 18 characters.

Parameter“Function icon”

This parameter is for setting the icon of channel device. Options:

General light

Ceiling light

...

AQI

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

Chapters as follow explain the device function separately.

5.5.2 Parameter window of basic function

This chapter explains the basic functions, including switch,dimming,blinds,value sender,color temperature,color control(RGB,RGBW,RGBCW),audio control,room temperature control,Air conditioner,Ventilation System control,Air quality and Energy Metering display,etc.

5.5.2.1. Switch

Channel > Channel 1-1

Function	Switch
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	1
Function icon	General light
Icon preview	
Device online status reference by	Always online

Fig.5.5.2.1 "Switch"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common x(x=1~10)

Always online

Parameter "Period for request device online status[1..255]"

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: 1...**255**

5.5.2.2. Press/Release switch

Function	Press/Release switch
Function description (max 18 char.) (Valid display space is up to 18 chars, while 6 Chinese chars)	1
Function icon	General light
Icon preview	
Device online status reference by	Always online
Work mode	☒ Press - ON / Release - OFF ☐ Press - OFF / Release - ON
Icon display	☐ OFF ☒ ON

Fig.5.5.2.2 "Press/Release switch" parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX bus devices. Read-Only Display **Always online**

Parameter "Work mode"

This parameter is for setting the work mode for Press/Release switch. Options:

Press - ON / Release - OFF

Press - OFF / Release - ON

Parameter "Icon display"

This parameter is for setting the indication status of the icons on the screen. Options:

OFF

ON

5.5.2.3. Relative dimming/brightness dimming/Relative&brightness dimming

Function

Relative dimming

Function description (max 18 char.)

(Valid display space is up to 18 chars, while 6 Chinese chars)

1

Function icon

General light

Icon preview



Device online status reference by

Always online

Relative dimming

Function

Brightness dimming ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

1

Function icon

General light ▼

Icon preview



Device online status reference by

Always online ▼

Min. brightness value [0...50]

0

%

Max. brightness value [51...100]

100

%

Brightness dimming

Function	Relative&Brightness dimming ▼	
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	1	
Function icon	General light ▼	
Icon preview		
Device online status reference by	Always online ▼	
Min. brightness value [0...50]	0	%
Max. brightness value [51...100]	100	%

Relative&Brightness dimming

Fig.5.5.2.3 "Relative/brightness dimming"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual**Common x(x=1~10)****Always online****Parameter "Period for request device online status[1..255]"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests.Options: **1...255**

The following parameters are visible when "Brightness dimming/Relative&Brightness dimming" is selected.

Parameter "Min. brightness value [0..50]%"

This parameter is for setting the lower limit threshold of brightness. Options: **0..50**

Parameter "Max. brightness value [51..100]%"

This parameter is for setting the upper limit threshold of brightness. Options:

51..100

5.5.2.4. Colour temperature dimming

Function	Colour temperature dimming ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	1
Function icon	Downlight ▼
Icon preview	
Device online status reference by	Always online ▼
Reaction on 'OFF' operation	☒ Only switch object send value 0 ☐ Brightness objects send value 0
Reaction on 'ON' operation	☒ Only switch object send value 1 ☐ Preset brightness value
Colour temperature control type	Normal(with 2byte absolute value) ▼
Min. colour temperature [2000...7000]	2700 ▲▼ K
Max. colour temperature [2000...7000]	6500 ▲▼ K

Color temperature dimming

Fig.5.5.2.4 "Colour temperature dimming"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common x(x=1~10)

Always online**Parameter "Period for request device online status[1..255]"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

Parameter "Reaction on 'OFF' operation"

This parameter is for setting whether send switch telegram 0 when the switch button is operated off, or whether send brightness telegram 0. Options:

Only switch object send value 0

Brightness objects send value 0

Parameter "Reaction on 'ON' operation"

This parameter is for setting whether send switch telegram 1 when the switch button is operated on, or whether send colour brightness telegram . Options:

Only switch object send value 1

Preset brightness value

Parameters as follow are visible when " Preset brightness value" is selected

parameter "Brightness value"

This parameter is for setting the visible preset value of brightness. Options: **0...100%**

Parameter "Colour temperature control type"

This parameter is for setting the control type of colour temperature. Options:

Normal(with 2byte absolute value)

Normal(with 1byte percentage value)

Directly(with warm/cool white algorithm)

Normal: Send value of 1byte brightness and 2 byte colour temperature;

Directly(with warm/cool white algorithm): Directly control, the has been built-in

"Brightness + Colour Temperature" and Warm/cool white brightness, that is 2 objects of 1 byte, which is used for output brightness adjustment to control warm white LED and cool white LED.

Parameter "Status feedback object"

This parameter is visible when previous parameter is selected "Directly(with warm/cool white algorithm)". Set the status feedback object. Options:

Brightness+Colour Temperature**Warm/cool white brightness**

Brightness+Colour Temperature: Feedback of Brightness+Colour Temperature is to communicate accurately with the data from the other panels.

Warm/cool white brightness: Feedback of Warm/cool white brightness is to communicate with actuator.

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

These parameters are for setting the upper and lower limit threshold of colour temperature.

Options: **2000..7000**

5.5.2.5. RGB/RGBW/RGBCW/ dimming

Function

RGB dimming ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

1

Function icon

RGB light ▼

Icon preview



Device online status reference by

Always online ▼

Reaction on 'OFF' operation

- ☒ Only switch object send value 0
☐ Brightness objects send value 0

Reaction on 'ON' operation

- ☒ Only switch object send value 1
☐ Preset colour brightness value

Object datatype

1x3byte (RGB) ▼

RGB dimming

Function	RGBW dimming ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	1
Function icon	RGB light ▼
Icon preview	
Device online status reference by	Always online ▼
Reaction on 'OFF' operation	☒ Only switch object send value 0 ☐ Brightness objects send value 0
Reaction on 'ON' operation	☒ Only switch object send value 1 ☐ Preset colour brightness value
Object datatype	1x6byte (RGBW) ▼

RGBW dimming

Function	RGBCW dimming ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	1
Function icon	RGB light ▼
Icon preview	
Device online status reference by	Always online ▼
Reaction on 'OFF' operation	☒ Only switch object send value 0 ☐ Brightness objects send value 0
Reaction on 'ON' operation	☒ Only switch object send value 1 ☐ Preset colour brightness value
RGB object datatype	1x3byte (RGB) ▼
Colour temperature control type	Normal(with 2byte absolute value) ▼
Min. colour temperature [2000...7000]	2700 ▲▼ K
Max. colour temperature [2000...7000]	6500 ▲▼ K

RGBCW dimming

Fig.5.5.2.5 "RGB/RGBW/RGBCW dimming"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common x(x=1~10)**Always online****Parameter "Period for request device online status[1..255]"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

Parameter "Reaction on 'OFF' operation"

This parameter is for setting whether send switch telegram 0 when the switch button is operated off, or whether send brightness telegram 0. Options:

Only switch object send value 0

Brightness objects send value 0

Parameter "Reaction on 'ON' operation"

This parameter is for setting whether send switch telegram 1 when the switch button is operated on, or whether send colour brightness telegram . Options:

Only switch object send value 1

Preset colour brightness value

The following parameters are visible when "Preset colour brightness value" is selected.

parameter "RGB value"

When the function is selected as "RGB/RGBW/RGBCW dimming", this parameter is visible. This parameter is for setting the visible preset value of RGB. Options:

#000000#FFFFFF

parameter "White brightness value"

When the function is selected as "RGBW dimming", this parameter is visible. This parameter is for setting the visible preset value of white brightness. Options: **0..255**

parameter "Brightness value"

When the function is selected as "RGBCW dimming", this parameter is visible. This parameter is for setting the visible preset value of brightness. Options: **0..255**

Parameter "Object datatype"/"RGB object datatype"

When the function is selected as "RGB/RGBW dimming", the parameter "Object datatype" is visible. When the function is selected as "RGBCW dimming", the parameter "RGB object datatype" is visible. This parameter is for setting the object datatype of RGB or RGBW.

Options: **1x3byte/3x1byte/1x6byte/4x1byte**

Suitable for RGB/RGBCW type:

1x3byte

3x1byte

Suitable for RGBW type:

1x6byte

4x1byte

Parameters as follow are visible when "RGBCW dimming" is selected, used for setting colour temperature dimming.

Parameter "Colour temperature control type"

This parameter is for setting the control type of colour temperature. Options:

Normal(with 2byte absolute value)

Normal(with 1byte percentage value)

Directly(with warm/cool white algorithm)

Normal: Send value of 1byte brightness and 2 byte colour temperature;

Directly(with warm/cool white algorithm): Directly control, the has been built-in "Brightness + Colour Temperature" and Warm/cool white brightness, that is 2 objects of 1 byte, which is used for output brightness adjustment to control warm white LED and cool

white LED.

Parameter "Status feedback object"

This parameter is visible when previous parameter is selected "Directly (with warm/cool white algorithm)". Set the status feedback object. Options:

Brightness+2 byte Colour Temperature

Warm/cool white brightness

Brightness+2 byte Colour Temperature: Feedback of Brightness+Colour Temperature is to communicate accurately with the data from the other panels.

Warm/cool white brightness: Feedback of Warm/cool white brightness is to communicate with actuator.

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

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

These parameters are for setting the upper and lower limit threshold of colour temperature.

Options: **2000..7000**

5.5.2.6. Curtain and blind control

Function

Curtain step/move ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

1

Function icon

Curtain ▼

Icon preview



Device online status reference by

Always online ▼

Curtain step/move

Function

Roller blind step/move ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

1

Function icon

Roller blind ▼

Icon preview



Device online status reference by

Always online ▼

Roller blind step/move

Function

Curtain position ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

1

Function icon

Curtain ▼

Icon preview



Device online status reference by

Always online ▼

Curtain position

Function

Roller blind position ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

1

Function icon

Roller blind ▼

Icon preview



Device online status reference by

Always online ▼

Roller blind position

Function	Venetian blind position and slat
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	1
Function icon	Venetian blind
Icon preview	
Device online status reference by	Always online

Venetian blind position and slat

Fig.5.5.2.6 "Curtain and blind control" parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus. Options:

Individual

Common 1

...

Common 10

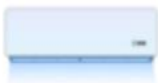
Always online

—Parameter "Period for request device online status [1..255] min"

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

5.5.2.7. Air conditioner control

S4 > ...

Function	Air conditioner
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	Air conditioner 1
Icon preview	
Device online status reference by	Individual
Period for request device online status [1...255]	10 min
Room temperature reference from	☒ Internal sensor ☐ External sensor
Object datatype of setpoint	☐ Value in °C (DPT_5.010) ☒ Float value in °C (DPT_9.001)
Setpoint temperature adjustment step	☒ 0.5K ☐ 1K
Min. setpoint temperature [16...32]	16 °C
Max. setpoint temperature [16...32]	32 °C
Vanes swing	☒
Timer	☐
Protection setting	
ON/OFF protection	☐
Setpoint protection	☐
Control mode protection	☐
Fan protection	☐

Air conditioner

Fig.5.5.2.7(1) "Air conditioner control"parameter window

Auto mode	☒
Output value for auto [0...255]	0
Status value for auto [0...255]	0
Heating mode	☒
Output value for heating [0...255]	1
Status value for heating [0...255]	1
Cooling mode	☒
Output value for cooling [0...255]	3
Status value for cooling [0...255]	3
Fan mode	☒
Output value for fan [0...255]	9
Status value for fan [0...255]	9
Dehumidification mode	☒
Output value for dehumidification [0...255]	14
Status value for dehumidification [0...255]	14

Fig.5.5.2.7(2) Mode

Fan type

☒ Three level ☐ Five level

Object datatype of 1byte fan speed

☐ Fan stage (DPT_5.100)
☒ Percentage (DPT_5.001)

Fan speed auto function

**Output value for fan speed**

Output value for fan speed auto

0

%

Output value for fan speed 1

33

%

Output value for fan speed 2

67

%

Output value for fan speed 3

100

%

Status feedback for fan speed

Min.threshold value for fan speed 1

30

%

Min.threshold value for fan speed 2

60

%

Min.threshold value for fan speed 3

80

%

Fig.5.5.2.7(3) Fan

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus. Options:

Individual**Common 1**

...

Common 10**Always online****Parameter "Period for request device online status[1..255]"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

Parameter "Room temperature reference from"

This parameter is for Setting the resource of the air condition function temperature reference. Options:

Internal sensor

External sensor

—**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**

Note: Send read request as default when the device voltage recovery.

Parameter "Object datatype of setpoint"

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

Value in °C (DPT_5.010)

Float value in °C (DPT_9.001)

Parameter "Setpoint temperature adjustment step"

This parameter is for setting step value of setpoint temperature. Options display according to datatype:

0.5K

1K

When select "Value in °C (DPT_5.010)", only **1K**

Parameter "Min/Max. setpoint temperature [16..32]° C"

These 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, will output the limited temperature. Options:

16°C

17°C

...

32°C

For the set temperature, the minimum value must always be less than the maximum value. If this condition is not met, the parameters on ETS cannot be set.

Parameter "Vanes swing"

This parameter is for setting whether to enable Vanes swing.

Parameter "Timer"

This parameter is for setting whether to enable timer function, display corresponding object when enable. User can set the time on the screen.

Note: The bus only disable timer function temporarily.

Protection setting

Parameter "ON/OFF protection"

Parameter "Setpoint protection"

Parameter "Control Mode protection"

Parameter "Fan protection"

Parameter "Vanes swing protection"

These parameters are for setting to whether to enable protection function, that is some functions only display and not allow user to operate. Protection function support to ON/OFF, setpoint value, mode, fan speed control, swing control.

For protection function, user can not operate screen or shortcut button, but still process received status.

Mode setting, like 5.5.2.7(2)

Parameter "Output value for auto/heating/cooling/fan/dehumidification"

When the parameter "Auto/Heating/Cooling/Fan/Dehumidification mode" is enabled, this

parameter is visible. These parameters set the output values when switching to each mode, supporting 5 modes: Auto, Heating, Cooling, Fan, and Dehumidification. Options: **0...255**

Parameter "Status value for auto/heating/cooling/fan/dehumidification"

When the parameter "Auto/Heating/Cooling/Fan/Dehumidification mode" is enabled, this parameter is visible. These parameters set the status feedback values when switching to each mode, supporting 5 modes: Auto, Heating, Cooling, Fan, and Dehumidification.

Options: **0...255**

Fan setting, like 5.5.2.7(3)

Parameter "Fan type"

This parameter is for setting the fan type. Options:

Three level

Five level

Parameter "Object datatype of 1byte fan speed"

This parameter is for setting the data type of the 1-byte fan speed object. Options:

Fan stage (DPT 5.100)

Percentage (DPT 5.001)

Parameter "Fan speed auto function"

This parameter is for setting the automatic fan speed enable.

Output value for fan speed

Parameter "Output value for fan speed auto/speed 1/speed 2/speed 3"

When the parameter "Fan speed auto function" is enabled, the parameter "Output value for fan speed auto" is visible.

These parameters set the output values when switching to each fan speed gear, supporting 4 fan speeds: Auto, speed 1, speed 2, and speed 3. The optional range is displayed as 0...255/0...100 according to the object type of the previous parameter.

-Parameter"Output value for fan speed auto/speed 1/speed 2/speed 3/speed 4/speed 5

When “fan type” select “Five level” , These parameters set the output values when switching to each fan speed gear, supporting 6 fan speeds: Auto, speed 1, speed 2, and speed 3,speed 4,speed 5.

Status feedback for fan speed

Parameter"Status value for fan speed speed 1/speed 2/speed 3"

When the parameter "Fan speed auto function" is enabled, the parameter "Status value for fan speed auto" is visible.

These parameters set the status feedback values for each fan speed gear, supporting 3 fan speeds: speed1、 speed2、 speed3. The device will update and display the fan speed according to the feedback value. The optional range is displayed as 0...255/0...100 according to the object type of the previous parameter.

-parameter "Status value for fan speed auto/speed 1/speed 2/speed 3/speed 4/speed 5

When “fan type” select “Five level” , these parameters set the status feedback values for each fan speed gear, supporting 5 fan speeds: speed1、 speed2、 speed3、 speed4 and speed 5.

5.5.2.8. Room temperature unit control

Function	Room temperature unit ▼
Function description (max 18 char.) (Valid display space is up to 18 chars, while 6 Chinese chars)	
Function icon	Heating/Cooling ▼
Icon preview	
Device online status reference by	Always online ▼
Controller from	☒ Local ☐ Bus
Room temperature reference from	☒ Internal sensor ☐ External sensor
Power on/off	☒
Power on/off after download	☐ OFF ☒ ON
Power on/off after voltage recovery	Before voltage failure ▼
Object datatype of setpoint adjustment	☐ 1bit (DPT_1.007) ☒ 2byte (DPT_9.001)
Setpoint temperature adjustment step	☒ 0.5K ☐ 1K
Min. setpoint temperature [5...37]	10 ▼ °C
Max. setpoint temperature [5...37]	32 ▼ °C
Control mode	Heating ▼
Operation mode	☒
Fan speed function	☒
Timer	☐

Protection setting

- ON/OFF protection ☐
- Setpoint protection ☐
- Operation mode protection ☐
- Fan protection ☐

Room temperature unit

Fig.5.5.2.8(1) "Room temperature unit control"parameter window

Fan type

Three level ▼

Object datatype of 1byte fan speed

- ☐ Fan stage (DPT_5.100)
- ☒ Percentage (DPT_5.001)

Output value for fan speed

- Output value for fan speed 1 33 %
- Output value for fan speed 2 67 %
- Output value for fan speed 3 100 %

Status feedback for fan speed

- Min.threshold value for fan speed 1 30 %
- Min.threshold value for fan speed 2 60 %
- Min.threshold value for fan speed 3 80 %

Fan speed off via manual operation ☒Automatic operation function ☒

KNX Smart Touch S4 > ...

Fan type	Five level
Object datatype of 1byte fan speed	☐ Fan stage (DPT_5.100) ☒ Percentage (DPT_5.001)
Output value for fan speed	
Output value for fan speed 1	20 %
Output value for fan speed 2	40 %
Output value for fan speed 3	60 %
Output value for fan speed 4	80 %
Output value for fan speed 5	100 %
Status feedback for fan speed	
Min.threshold value for fan speed 1	10 %
Min.threshold value for fan speed 2	30 %
Min.threshold value for fan speed 3	50 %
Min.threshold value for fan speed 4	70 %
Min.threshold value for fan speed 5	90 %
Fan speed off via manual operation	☒
Automatic operation function	☒

Fan type	Percentage level
Fan speed off via manual operation	☒
Automatic operation function	☒

Fig.5.5.2.8(2) "Fan"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus. Options:

Individual

Common 1

...

Common 10**Always online****Parameter "Period for request device online status[1..255]"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

Parameter "Controller from"

This parameter is for setting the controller is from the local or bus. If select the local controller, it no need to send the read request of the setting temperature, control mode and operation mode when power on or bus recovery (because the device cannot respond to its own request). Options:

Local**Bus****Parameter "Room temperature reference from"**

This parameter is visible when "Actual temperature" is selected. Set the resource of the temperature reference. Options:

Internal sensor**External sensor****—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**

Note: Send read request as default when the device voltage recovery.

Parameter "Power on/off after download"

This parameter is for setting the power on/off.

Parameter "Power on/off after download"

This parameter is visible when "power on/off" is enable, is for setting the power on/off status of RTC interface after download. Options:

OFF

ON

Parameter "Power on/off after voltage recovery"

This parameter is visible when "power on/off" is enable, is for setting the power on/off status of RTC interface after device voltage recovery. Options:

OFF

ON

Before voltage failure

OFF: Device will power off when voltage recovery, the screen can not be operated, except for the power icon.

ON: Device will power on when voltage recovery, the screen can be operated;

Before voltage failure: Device will return to the power status as before voltage failure when voltage recovery.

Parameter "Object datatype of setpoint adjustment"

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

1bit (DPT_1.007)

2byte (DPT_9.001)

Parameter "Setpoint temperature adjustment step"

This parameter is visible when "2byte (DPT_9.001 " is selected. Set the step value of setpoint temperature. Options:

0.5K

1K

Parameter "Min/Max. setpoint temperature [5..37]° C"

These 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, the will output the limited temperature.

Options: **5...37**

Parameter "Control mode"

This parameter is for setting the RTC control mode. Options:

Heating

Cooling

Heating and Cooling

Parameter "Operation mode"

This parameter is for setting whether to enable the operation mode. Once enabled, the corresponding comfort, standby, energy-saving, and protection modes will be displayed.

Parameter "Fan speed fuction"

This parameter is for setting whether to enable the fan speed function. When enabled, it display fan parameter.

Parameter "Timer"

This parameter is for setting whether to enable timer function, display corresponding object when enable. User can set the time on the screen.

Note: The bus only disable timer function temporarily.

Protection setting

Parameter "ON/OFF protection"

Parameter "Setpoint protection"

Parameter "Control mode protection"

Parameter "Operation mode protection"

Parameter "Fan protection"

These parameters are for setting to whether to enable protection function, that is some functions only display and not allow user to operate. Protection function support to ON/OFF, setpoint value, control mode, operation mode, fan speed control.

For protection function, user can not operate screen or shortcut button, but still process received data.

Note: The display conditions for this part of the parameter

1. The parameters of ON/OFF protection will only be displayed for temperature control types with ON/OFF.

2. Control mode protection is visible when Heating and Cooling is selected;

3. Temperature control type with operation mode will only show the parameters of operation mode protection.

4. Temperature control type with fan speed will only show the parameters of Fan protection.

Parameters as follow are visible when "Fan speed function" is selected.

Parameter "Fan type"

This parameter is for setting the fan type. Options:

Three level

Five level

Percentage level

Parameters as follow are visible when "Three level" and "Five level" are selected.

Parameter "Object datatype of 1byte fan speed"

This parameter is visible when the "fan type" parameter selects "Three level" and "Five level". 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

-When "fan type" select "Three level":

Parameter"Output value for fan speed 1/speed 2/speed 3"

These three parameters are for setting the value sent for each fan speed switchover, support 3 fan speeds speed 1/speed 2/speed 3. Options according to fan object datatype:

0..255/0..100

-When "fan type" select "Five level":

Parameter"Output value for fan speed 1/speed 2/speed 3/speed 4/speed 5"

These Five parameters are for setting the value sent for each fan speed switchover, support 5 fan speeds speed 1/speed 2/speed 3/speed 4/speed 5. Options according to fan object datatype: **0..255/0..100**

Status feedback for fan speed

-When "fan type" select "Three level":

Parameter"Status value for fan speed 1/speed 2/speed 3"

These parameters are for setting the status feedback value for each fan speed, support 3 fan speeds speed 1/speed 2/speed 3. Device updates display according to feedback value. Options according to fan object datatype: **0..255/0..100**

-When "fan type" select "Five level":

Parameter"Status value for fan speed 1/speed 2/speed 3/speed 4/speed 5"

These parameters are for setting the status feedback value for each fan speed, support 5 fan speeds speed 1/speed 2/speed 3/speed 4/speed 5. Device updates display according to feedback value. Options according to fan object datatype: **0..255/0..100**

Parameter "Fan speed off via manual operation"

This parameter is for setting the fan speed to be turned off by manual operation, display corresponding object when enable.

Parameter "Automatic operation function"

This parameter is for setting whether to enable fan speed auto function, display corresponding object when enable.

5.5.2.9. Ventilation system control

Function	Ventilation system ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	Ventilation ▼
Icon preview	
Device online status reference by	Always online ▼
Power on/off after download	☐ OFF ☒ ON
Power on/off after voltage recovery	Before voltage failure ▼
Default fan speed after ventilation on	Fan speed 1 ▼
Fan type	Three level ▼
Object datatype of 1byte fan speed	☒ Fan stage (DPT_5.100) ☐ Percentage (DPT_5.001)
Output value for fan speed	
Output value for fan speed 1	1 ▲▼
Output value for fan speed 2	2 ▲▼
Output value for fan speed 3	3 ▲▼
Status feedback for fan speed	
Min.threshold value for fan speed 1	1 ▲▼
Min.threshold value for fan speed 2	2 ▲▼
Min.threshold value for fan speed 3	3 ▲▼

Heat recovery function	☒
Filter timer counter	☒
Evaluation time [100...10000]	1000 h

Fan speed auto function	☒
Air Quality value reference from	PM2.5
Object datatype of PM2.5	☒ Value in ug/m3(DPT_7.001) ☐ Float value in ug/m3(DPT_9.030)

Ventilation system

Fig.5.5.2.9 "Ventilation system control"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common 1

...

Common 10

Always online

Parameter "Period for request device online status[1..255]"

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests.Options: **1...255**

Parameter "Power on/off after download"

This parameter is for setting the power on/off status of ventilation system interface after download. Options:

OFF

ON

Parameter "Power on/off after voltage recovery"

This parameter is for setting the power on/off status of ventilation system interface after device voltage recovery. Options:

OFF

ON

Before voltage failure

OFF: Device will power off when voltage recovery, screen can not be operated, except for the icons of filter reset and power;

ON: Device will power on when voltage recovery, screen can be operated;

Before voltage failure: Device will return to the power status as before voltage failure when voltage recovery.

Parameter "Default fan speed after ventilation on"

This parameter is for setting the initial fan speed after power on. Options:

Fan speed 1

Fan speed 2

Fan speed 3

Last status

Parameter "Fan type"

This parameter is for setting the fan type. Options:

Three level

Five level

Percentage level

Parameters as follow are visible when "Three level" and "Five level" are selected.

Parameter "Object datatype of 1byte fan speed"

This parameter is visible when the "fan type" parameter selects "Three level" and "Five level". 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****-When "fan type" select "Three level":**

Parameter "Output value for fan speed 1/speed 2/speed 3"

These three parameters are for setting the value sent for each fan speed switchover, support 3 fan speeds speed 1/speed 2/speed 3. Options according to fan object datatype:

0..255/0..100

-When "fan type" select "Five level":

Parameter "Output value for fan speed 1/speed 2/speed 3/speed 4/speed 5"

These Five parameters are for setting the value sent for each fan speed switchover, support 5 fan speeds speed 1/speed 2/speed 3/speed 4/speed 5. Options according to fan object datatype: **0..255/0..100**

Status feedback for fan speed**-When "fan type" select "Three level":**

Parameter "Status value for fan speed 1/speed 2/speed 3"

These parameters are for setting the status feedback value for each fan speed, support 3 fan speeds speed 1/speed 2/speed 3. Device updates display according to feedback value. Options according to fan object datatype: **0..255/0..100**

-When "fan type" select "Five level":

Parameter "Status value for fan speed 1/speed 2/speed 3/speed 4/speed 5"

These parameters are for setting the status feedback value for each fan speed, support 5 fan speeds speed 1/speed 2/speed 3/speed 4/speed 5. Device updates display according to feedback value. Options according to fan object datatype: **0..255/0..100**

Parameter "Heat recovery function"

This parameter is for setting whether to enable heat recovery function, display corresponding object when enable.

Parameter "Filter timer counter"

This parameter is for setting whether to enable heat recovery function, display corresponding object and parameter when enable.

—Parameter "Evaluation time [100..10000]h"

This parameter is for setting 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 of the filter can be reset through the object "Filter timer reset".

The life 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 object "Filter timer counter change" through the bus.

Parameter "Air Quality value reference from "

This parameter sets the sensor value that is displayed during automatic operation. Options

PM2.5

CO2

VOC

Parameter " Object datatype of PM2.5"

This parameter is for setting the data type of PM2.5. Options:

Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030)

Parameter " Object datatype of VOC"

This parameter is for setting the data type of VOC. Options:

Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030)

Parameter" Object datatype of CO2"

This parameter is for setting the data type of CO2. Options:

Value in ppm(DPT_7.001)

Float value in ppm(DPT_9.008)

5.5.2.10. Audio control

Function	Audio control ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	Ventilation
Function icon	Music 1 ▼
Icon preview	
Device online status reference by	Always online ▼
Number of object for play/pause control	☒ 1 ☐ 2
Number of object for next/previous track control	☒ 1 ☐ 2
Object datatype of volume	☒ Percentage (DPT_5.001) ☐ Percentage (DPT_5.004)
Max. volume value [10...100]	100 ▼ ▲ %
Mute	☐

Audio control

Function

Audio control(with on/off) ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Ventilation

Function icon

Music 1 ▼

Icon preview



Device online status reference by

Always online ▼

Power on/off status after download

☒ OFF ☐ ON

Power on/off status after voltage recovery

Before voltage failure ▼

Number of object for play/pause control

☒ 1 ☐ 2

Number of object for next/previous track control

☒ 1 ☐ 2

Mute

☐

Audio control(with on/off)

Function

Audio control(play mode) ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Ventilation

Function icon

Music 1 ▼

Icon preview



Device online status reference by

Always online ▼

Number of object for play/pause control

☒ 1 ☐ 2

Number of object for next/previous track control

☒ 1 ☐ 2

Mute

☐**Play mode setting**

Play in single cycle mode



Output value for play in single cycle

1 ▲▼

Status value for play in single cycle

1 ▲▼

Play in order mode



Output value for play in order

2 ▲▼

Status value for play in order

2 ▲▼

Play in random mode



Output value for play in random

3 ▲▼

Status value for play in random

3 ▲▼

Audio control(play mode)

Function

Audio control(track information) ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Ventilation

Function icon

Music 1 ▼

Icon preview



Device online status reference by

Always online ▼

Number of object for play/pause control

☒ 1 ☐ 2

Number of object for next/previous track control

☒ 1 ☐ 2

Object datatype of volume

☒ Percentage (DPT_5.001)☐ Percentage (DPT_5.004)

Max. volume value [10...100]

100

%

Mute

☐

Audio control(track information)

Function	Audio control(track information & playlist) ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	Ventilation
Function icon	Music 1 ▼
Icon preview	
Device online status reference by	Always online ▼
Number of object for play/pause control	☒ 1 ☐ 2
Number of object for next/previous track control	☒ 1 ☐ 2
Object datatype of volume	☒ Percentage (DPT_5.001) ☐ Percentage (DPT_5.004)
Max. volume value [10...100]	100 ▼ %
Mute	☐

Audio control(track information+playlist)

Fig.5.5.2.10 "Audio control"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common 1

...

Common 10

Always online**Parameter "Period for request device online status[1..255]"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

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:

1**2****Parameter" 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:

1**2****Parameter" Mute"**

This parameter is visible when 1 bit is selected. Set whether to enable mute function.

Parameters as follow are visible when "Audio control(with on/off)" is selected.**Parameter" Power on/off status 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 status 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

OFF: Device will power off when voltage recovery, screen can not be operated;

ON: Device will power on when voltage recovery, screen can be operated;

Before voltage failure: Device will return to the power status as before voltage failure when voltage recovery.

Parameters as follow are visible when "Audio control/Audio control(track information)/Audio control(track information+playlist)" is selected.

Parameter" Object datatype of volume"

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

Percentage (DPT_5.001)

Percentage (DPT_5.004)

Parameter" Max. volume value [10..100]%"

This parameter is for setting the maximum volume value. Options: **10..100**

Parameters as follow are visible when "Audio control(play mode)" is selected.

Play mode setting

Parameter" Play in single cycle mode"

This parameter is for setting whether to enable play in single cycle mode. Display two parameters as follow when enable.

——**Parameter"Output value for play in single cycle"**

This parameter is for setting the output value for play in single cycle. Options: **0..255**

——**Parameter"Status value for play in single cycle"**

This parameter is for setting the status value for play in single cycle. Device will update

the play mode displayed on the screen according to the feedback value. Options: **0..255**

Parameter "Play in order mode"

This parameter is for setting whether to enable play in order mode. Display two parameters as follow when enable.

—Parameter "Output value for play in order"

This parameter is for setting the output value for play in order. Options: **0..255**

—Parameter "Status value for play in order"

This parameter is for setting the status value for play in order. Device will update the play mode displayed on the screen according to the feedback value. Options: **0..255**

Parameter "Play in random mode"

This parameter is for setting whether to enable play in random mode. Display two parameters as follow when enable.

—Parameter "Output value for play in random"

This parameter is for setting the output value for play in random. Options: **0..255**

—Parameter "Status value for play in random"

This parameter is for setting the status value for play in random. Device will update the play mode displayed on the screen according to the feedback value. Options: **0..255**

5.5.2.11. Scene

Function	Scene ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	General scene 1 ▼
Icon preview	

Scene number [1...64]	1 ▲▼
Storage scene via long operation	☐

Fig.5.5.2.11 "Scene" parameter window

Parameter "Scene number [1...64]"

This parameter is for setting the scene number.Options: **1...64**

Parameter "Storage scene via long operation"

This parameter is for setting the long-press to save the scene.

5.5.2.12. Temperature/Humidity sensor

Function

Temperature sensor ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars, while 6 Chinese chars)

Function icon

Temperature 1 ▼

Icon preview



Device online status reference by

Always online ▼

Period for request external sensor [0...255]

0

min

Alarm

☐

Temperature sensor

Function	Humidity sensor
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	Humidity
Icon preview	
Device online status reference by	Always online
Period for request external sensor [0...255]	0 min
Alarm	☐

Humidity sensor

Fig.5.5.2.12 "Temperature/Humidity sensor"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common 1

...

Common 10

Always online

Parameter " Period for request device online status [1..255]min"

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests.Options: **1...255**

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

This parameter is for setting the time period to read external sensor, send read requests by default after bus recovery or finish programming. Options: **0..255**

Parameter" Alarm"

This parameter for setting the whether to enable the alarm function. Applicable to Temperature sensor, Humidity sensor, VOC, PM2.5 sensor, PM10 sensor, AQI sensor, CO2 sensor.

When the function is selected as "Temperature sensor", the following parameters are visible.

Parameter" Threshold for low temperature alarm [0...15]"

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 for high temperature alarm [30...45]"

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

When the function is selected as "Humidity sensor", the following parameters are visible.

Parameter" Threshold 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 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

5.5.2.13. Air quality detected value display

Parameter window "Air Quality display" as shown as Fig.5.5.2.13, for setting the function of air quality display, temperature, humidity, PM2.5, PM10, VOC, CO2, AQI, brightness, wind speed can be set to display.

Function

PM2.5 sensor ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars, while 6 Chinese chars)

Function icon

PM2.5 ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of PM2.5

☒ Value in ug/m3(DPT_7.001)☐ Float value in ug/m3(DPT_9.030)

Text for unit

Period for request external sensor [0...255]

0

min

Monitoring level indication

☐

Alarm



PM2.5 alarm value [100...999]

150

ug/m3

PM2.5 sensor

Function

PM10 sensor ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars, while 6 Chinese chars)

Function icon

PM10 ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of PM10

- ☒ Value in ug/m3(DPT_7.001)
☐ Float value in ug/m3(DPT_9.030)

Text for unit

Period for request external sensor [0...255]

0

min

Monitoring level indication

☐

Alarm



PM10 alarm value [100...999]

150

ug/m3

PM10 sensor

Function

VOC sensor ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Function icon

VOC ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of VOC

☒ Value in ug/m3(DPT_7.001)☐ Float value in ug/m3(DPT_9.030)

Text for unit

Period for request external sensor [0...255]

0

min

Alarm



VOC alarm value [100...900]

500

ug/m3

VOC sensor

Function

AQI sensor

Function description (max 18 char.)

(Valid display space is up to 18 chars, while 6 Chinese chars)

Function icon

AQI

Icon preview



Device online status reference by

Always online

Text for unit

Period for request external sensor [0...255]

0

min

Monitoring level indication



Alarm



AQI alarm value [100...500]

200

AQI sensor

Function

CO2 sensor ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Function icon

CO2 ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of CO2

- ☐ Value in ppm(DPT_7.001)
- ☒ Float value in ppm(DPT_9.008)

Text for unit

Period for request external sensor [0...255]

0

min

Monitoring level indication

☐

Alarm



CO2 alarm value [1000...5000]

2000

ppm

CO2 sensor

Function

Brightness sensor ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Function icon

Brightness ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of brightness(lux)

☐ Value in lux (DPT 7.013)☒ Float value in lux (DPT 9.004)

Text for unit

Period for request external sensor [0...255]

0

min

Brightness sensor

Function	Wind sensor ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	Wind speed ▼
Icon preview	
Device online status reference by	Always online ▼
Object datatype of wind speed	☒ Float value in m/s(DPT_9.005) ☐ Float value in km/h(DPT_9.028)
Text for unit	
Period for request external sensor [0...255]	0 min
Alarm	☒
Wind alarm value [5...50]	20 m/s

Wind sensor

Fig.5.5.2.13 "Air quality detected value display"parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus.Options:

Individual

Common 1

...

Common 10**Always online****Parameter " Period for request device online status [1..255]min"**

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1...255**

Parameter " Text for unit"

This parameter is for setting custom text, the unit is determined by the data point type when the default value is null.

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

This parameter is for setting the time period for read request external sensor.

Options: **0..255****Parameter " Monitoring level indication"**

This parameter is only visible when the functions "PM2.5 sensor", "PM10 sensor", "AQI sensor", "CO2 sensor" are selected. Sets whether enable the monitoring level indication, so that the icon displays different colors according to the change of the value.

Parameters as follow are visible when "PM2.5 sensor" is selected.**Parameter " Object datatype of PM2.5"**

This parameter is for setting the data type of PM2.5. Options:

Value in ug/m3(DPT_7.001)**Float value in ug/m3(DPT_9.030)****Parameter " Alarm"**

This parameter is for setting whether to enable the PM2.5 alarm.

—Parameter " PM2.5 alarm value [100....999]ug/m3"

This parameter is visible when the previous parameter is enabled. When the PM2.5 higher than PM2.5 threshold, PM2.5 alarm object will send telegram. Options: **100...999**

Parameters as follow are visible when "PM10 sensor" is selected.

Parameter " Object datatype of PM10 "

This parameter is for setting the data type of PM10. Options:

Value in ug/m3 (DPT 7.001)

Float value in ug/m3 (DPT 9.030)

Parameter " Alarm "

This parameter is for setting whether to enable the PM10 alarm.

— **Parameter " PM10 alarm value [100....999]ug/m3 "**

This parameter is visible when the previous parameter is enabled. When the PM10 higher than PM10 threshold, PM10 alarm object will send telegram. Options: **100...999**

Parameters as follow are visible when "VOC sensor" is selected.

Parameter " Object datatype of VOC "

This parameter is for setting the data type of VOC. Options:

Value in ug/m3 (DPT 7.001)

Float value in ug/m3 (DPT 9.030)

Parameter " Alarm "

This parameter is for setting whether to enable the VOC alarm.

— **Parameter " VOC alarm value [100....900]ug/m3 "**

This parameter is visible when the previous parameter is enabled. When the VOC higher than VOC threshold, VOC alarm object will send telegram. Options: **100...900**

Parameters as follow are visible when "AQI sensor" is selected.**Parameter "Alarm"**

This parameter is for setting whether to enable the AQI alarm.

—Parameter "AQI alarm value [100....500]"

This parameter is visible when the previous parameter is enabled. When the AQI higher than AQI threshold, AQI alarm object will send telegram. Options: **100...500**

Parameters as follow are visible when "CO2 sensor" is selected.**Parameter "Object datatype of CO2"**

This parameter is for setting the data type of CO2. Options:

Value in ppm(DPT_7.001)

Float value in ppm(DPT_9.008)

Parameter "Alarm"

This parameter is for setting whether to enable the CO2 alarm.

—Parameter "CO2 alarm value [1000....5000]ppm"

This parameter is visible when the previous parameter is enabled. When the CO2 higher than CO2 hreshold, CO2 alarm object will send telegram. Options: **1000...5000**

Parameters as follow are visible when "Brightness sensor" is selected.**Parameter "Object datatype of brightness(lux)"**

This parameter is for setting the data type of brightness. Options:

Value in lux(DPT_7.013)

Float value in lux(DPT_9.004)

Parameters as follow are visible when "Wind sensor" is selected.

Parameter "Object datatype of wind speed"

This parameter is for setting the data type of wind speed. Options:

Float value in m/s(DPT_9.005)

Float value in km/h(DPT_9.028)

Parameter "Alarm"

This parameter is for setting whether to enable the wind alarm.

—Parameter "Wind alarm value [5..50]m/s"

This parameter is visible when the previous parameter is enabled. When the wind higher than wind threshold, wind alarm object will send telegram. Options: **5...50**

5.5.2.14. I/O sensor

Function	I/O sensor ▼
Function description (max 18 char.) (Valid display space is up to 18 chars, while 6 Chinese chars)	
Function icon	I/O signal ▼
Icon preview	
Device online status reference by	Always online ▼
Status text for 1-ON	ON
Status text for 0-OFF	OFF
Period for request external sensor [0...255]	0 min

Fig.5.5.2.14 I/O "I/O sensor" parameter window

Parameter "Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus. Options:

Individual

Common 1

...

Common 10

Always online

Parameter "Period for request device online status [1..255]min"

This parameter is visible when previous parameter is selected "Individual". Set the time period for individual device online status requests. Options: **1..255**

Parameter" Status text for 1-ON"

Parameter" Status text for 0-OFF"

This parameter is used to customize the display description of status on and off, such as for displaying occupied/unoccupied, unlock/lock, open/close the window, power on/off, etc., with 4 characters in Chinese and 12 characters in English.

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

This parameter is for setting the time period for read request external sensor.
Options: **0..255**

5.5.2.15. Value sender

Function	Value sender ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	General light ▼
Icon preview	
Device online status reference by	Always online
Object type of short operation	1bit value[ON/OFF] ▼
Reaction on short operation	TOGGLE ▼
Object type of long operation	None ▼
Icon display	☐ OFF ☒ ON

Fig.5.5.2.15 "Value sender"parameter window

参数"Device online status reference by"

This parameter is for setting the reference type for sending read requests to KNX devices on the bus. **read-only display "Always online"**

Parameter"Object type of short operation"

Parameter"Object type of long operation"

These two parameters are for setting the sending datatype when the button is in a short / long operation.

Options:

None

1bit value[ON/OFF]

2bit/4bit value

1byte value[0..255]

2byte value[0..65535]

2byte float value

4byte value[0..4294967295]

4byte float value

——**Parameter“Object datatype”**

This parameter is visible when select “2bit/4bit value”. Set the datatype 2bit or 4bit.

Options:

2bit value[0..3]

4bit value[0..15]

Parameter“Reaction on short operation”

Parameter“Reaction on long operation”

These two parameters are for setting the sending data value when perform short/long operation. Value range is according to the datatype selected by previous parameter.

When select 1 bit, options:

OFF

ON

TOGGLE

When select 2bit/4bit/1byte/2byte/4byte, options:

Value 1

Alternating Value1/Value2

——**Parameter“Value 1”**

This parameter is visible when 2bit/4bit/1byte/2byte is selected. Set the sending value 1 when perform short/long operation. Options are according to the object datatype: **0~3 / 0..15 / 0..255 / 0..65535 / -670760~670760 / 0~4294967295 / -3.40...~3.40...**

——Parameter“Value 2”

This parameter is visible when 2bit/4bit/1byte/2byte/4byte is selected, and “Alternating Value1/Value2”. Set the sending value 2 when perform short/long operation. Options are according to the object datatype: **0~3 / 0..15 / 0..255 / 0..65535 / -670760~670760 / 0~4294967295 / -3.40...~3.40...**

Parameter“Icon display”

This parameter is for setting the indication status of the icon on the screen. Options:

OFF

ON

5.5.2.16.Energy metering value display

Parameter window “Energy Metering display” as shown as Fig.5.5.2.16, for setting the function of energy metering display, current, voltage, power and energy can be set to display.

Function

Energy metering(power & energy) ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Function icon

Energy ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of power

- ☒ Float value in kW (DPT 9.024)
☐ Float value in W (DPT 14.056)

Object datatype of energy

- ☐ Value in Wh (DPT 13.010)
☒ Value in kWh (DPT 13.013)

Period for request meter value [0...255]

0 min

Energy metering(power & energy)

Function

Energy metering(power & energy & current) ▼

Function description (max 18 char.)

(Valid display space is up to 18 chars,while 6 Chinese chars)

Function icon

Energy ▼

Icon preview



Device online status reference by

Always online ▼

Object datatype of current

Float value in mA (DPT 9.021) ▼

Object datatype of power

☒ Float value in kW (DPT 9.024)☐ Float value in W (DPT 14.056)

Object datatype of energy

☐ Value in Wh (DPT 13.010)☒ Value in kWh (DPT 13.013)

Period for request meter value [0...255]

0

min

Energy metering(power & energy & current)

Function	Energy metering(power & energy & current & voltage) ▼
Function description (max 18 char.) (Valid display space is up to 18 chars,while 6 Chinese chars)	
Function icon	Energy ▼
Icon preview	
Device online status reference by	Always online ▼
Object datatype of current	Float value in mA (DPT 9.021) ▼
Object datatype of voltage	☐ Float value in mV (DPT 9.020) ☒ Float value in V (DPT 14.027)
Object datatype of power	☒ Float value in kW (DPT 9.024) ☐ Float value in W (DPT 14.056)
Object datatype of energy	☐ Value in Wh (DPT 13.010) ☒ Value in kWh (DPT 13.013)
Period for request meter value [0...255]	0 min

Energy metering(power & energy & current & voltage)

Fig.5.5.2.16 "Energy metering value display"parameter window

Parameter" Object datatype of power"

This parameter is for setting the data type of power metering display items. Options:

Float value in kW (DPT 9.024)

Float value in W (DPT 14.056)

Parameter" Object datatype of energy"

This parameter is for setting the data type of energy metering display items. Options:

Value in Wh (DPT 13.010)

Value in kWh (DPT 13.013)

Parameter" Period for request meter value [0...255]min"

This parameter is for setting the time period for the request meter value of the device sent to external metering actuator. Options: **0...255**

Parameters as follow are visible when "Energy metering(power & energy & current) or "Energy metering(power & energy & current & voltage)" is selected.

Parameter" Object datatype of current"

This parameter is for setting the data type of current metering display items. Options:

Value in mA (DPT 7.012)

Float value in mA (DPT 9.021)

Float value in A (DPT 14.019)

Parameters as follow are visible when "Energy metering(power & energy & current & voltage)" is selected.

Parameter" Object datatype of voltage"

This parameter is for setting the data type of voltage metering display items. Options:

Float value in mV (DPT 9.020)

Float value in V (DPT 14.027)

5.6 Parameter window "Internal sensor measurement"

1.1.1 KNX Smart Touch S4 > Internal sensor measurement

KNX Secure + General Home page + Function page + KNX Channel Internal sensor measure... Human Centric Lighting(H... + Input + Voice reminder + HVAC controller	Temperature sensor setting Temperature calibration 0.0 K Send temperature when the result change by 1.0K Cyclically send temperature [0..255,0=inactive] 10 min Send alarm telegram for low/high temperature No respond Humidity sensor setting Humidity calibration 0 % Send humidity the result change by [0..20] 默认值: 0 5 % Cyclically send humidity [0..255,0=inactive] 10 min Send alarm telegram for low/high humidity No respond
--	---

Fig.5.6 "Internal sensor measurement"parameter window

The following parameters is used for setting the calibration value, sending condition and error report of internal sensor. If internal sensor is selected for other functions as well, please refer to this section.

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:

-5K

...

0K

...

5K

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 by "

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

...

10K

Parameter "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.

Parameter "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%**

Parameter "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=inactive]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.

Parameters as follow are visible when "Respond after read only" or "Respond after change" is 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**

5.7 Parameter window "Human Centric Lighting(HCL)"

This interface is visible when the parameter "Human Centric Lighting (HCL)" in "Advanced Setting" under General is enabled, as shown in Figure 5.7. Its main function is to automatically adjust brightness and color temperature based on the set time.

1.1.1 KNX Smart Touch S4 > Human Centric Lighting(HCL)

- KNX Secure - General - Home page - Function page - KNX Channel - Internal sensor measureme... Human Centric Lighting(...) - Input - Voice reminder - HVAC controller - Schedule function - Logic function - Scene group function	Switching time ☒ Depend to certain time ☐ Depend to sunrise&sunset HCL behavior after voltage recovery Stop running HCL behavior at receiving switch control telegram "Off" ☒ Ignore, and keep running ☐ Stop running HCL behavior at receiving other control telegram from bus Ignore, and keep running Colour temperature control type ☒ Normal ☐ Directly(with warm/cool white algorithm) Control brightness via HCL ☒ Disable ☐ Enable Time 1 ☒ Time 06:00 Colour temperature preset 2700 K Time 2 ☒ Time 08:00 Colour temperature preset 4000 K Time 3 ☒ Time 10:00 Colour temperature preset 5000 K Time 4 ☒ Time 12:00 Colour temperature preset 6500 K Time 5 ☐
---	---

"Human Centric Lighting(HCL)-Depend to certain time

1.1.1 KNX Smart Touch S4 > Human Centric Lighting(HCL)

KNX Secure	
+ General	
Home page	
+ Function page	
+ KNX Channel	
Internal sensor measureme...	
Human Centric Lighting(...)	
+ Input	
+ Voice reminder	
+ HVAC controller	
+ Schedule function	
+ Logic function	
+ Scene group function	

Switching time	☐ Depend to certain time ☒ Depend to sunrise&sunset
HCL behavior after voltage recovery	Stop running
HCL behavior at receiving switch control telegram "Off"	☒ Ignore, and keep running ☐ Stop running
HCL behavior at receiving other control telegram from bus	Ignore, and keep running
Colour temperature control type	☒ Normal ☐ Directly(with warm/cool white algorithm)
Control brightness via HCL	☒ Disable ☐ Enable

Time 1	☒
Time	Sunrise +-0min
Colour temperature preset	2700 K
Time 2	☒
Time	Sunrise +2h
Colour temperature preset	4000 K
Time 3	☒
Time	Sunrise +4h
Colour temperature preset	5000 K
Time 4	☒
Time	Sunrise +5h
Colour temperature preset	6500 K
Time 5	☐

"Human Centric Lighting(HCL)-Depend to sunrise&sunset"

Fig.5.7 "Human Centric Lighting(HCL)"parameter window

Parameter "Switching time"

This parameter is for setting the method of switching time. Options:

Depend to certain time

Depend to sunrise&sunset

Parameter "HCL behavior after voltage recovery"

This parameter is for setting running behavior of HCL after voltage recovery. Options:

Start running

Stop running

As before voltage failure**Parameter "HCL behavior at receiving switch control telegram "Off""**

This parameter is for setting running behavior of HCL when receiving switch control telegram "Off".

Options:

Ignore, and keep running**Stop running**

Ignore, and keep running: ignore the receiving telegram and keep running HCL, no display the object "Switch control";

Stop running: stop running HCL.

Parameter "HCL behavior at receiving other control telegram from bus"

This parameter is for setting running behavior of HCL when receiving other control telegram from bus.

Options:

Ignore, and keep running**Ignore, but stop running****Update preset value, and keep running****Update preset value, and stop running**

Ignore, and keep running: ignore the receiving telegram and keep running HCL;

Ignore, but stop running: ignore the receiving telegram but stop running HCL;

Update preset value, and keep running: update the current brightness or colour temperature when receiving their telegrams, and keep running HCL;

Update preset value, and stop running: update the current brightness or colour temperature when receiving their telegrams, but stop running HCL.

Note: telegrams received during that time period, update the parameter presets for that time period. In the HCL stops running, it is not logged. Updated presets will be saved when voltage failure.

Parameter "Colour temperature control type"

This parameter is for setting the control type of colour temperature. Options:

Normal

Directly(with warm/cool white algorithm)

Normal: send value of 1byte brightness and 2 byte colour temperature;

Directly(with warm/cool white algorithm): directly control, it has been built-in conversion algorithm for "Brightness + Colour Temperature" and Warm/cool white brightness, that is two 1byte objects, which is used for output brightness adjustment to control warm white LED and cool white LED.

——Parameter "Control brightness via HCL"

This parameter is visible when previous parameter is selected "Normal". Set whether to control brightness via HCL.

Parameters as follow are used to preset the brightness and colour temperature for each time period, up to set 10 time periods:

Parameter "Time X(X=1-10)"

When enabled, three parameter as follow are visible. This parameter is for setting whether to enable time x.

——Parameter "Time"

This parameter is for setting the preset time period, options are different according to the method of switching time.

When "Depend to certain time" is selected, options:

00:00

01:00**02:00****...****23:00**

When "Depend to sunrise&sunset" is selected, options:

Sunrise -5h**Sunset +-0min****Sunrise -4h****Sunset +30min****...****Sunset +1h****Sunrise -1h****...****Sunrise -30min****Sunset +4h****Sunrise +-0min****Sunset +5h****...**

——Parameter "Colour temperature preset"

This parameter is for setting the preset colour temperature. Options: **2000..7000K**

——Parameter "Brightness preset"

This parameter is visible when control type of colour temperature is selected "Normal" and the parameter "Control brightness via HCL" is enabled, or the type is selected "Directly(with warm/cool white algorithm)". Set the preset brightness. Options:

0%**5%****10%****...****95%****100%**

5.8 Parameter window "HVAC controller"

The parameter "HVAC controller" is visible when enabled in the "Advanced setting" interface, as shown in Figure 5.9.

1.1.1 KNX Smart Touch S4 > HVAC controller

KNX Secure

Number of controllers (max. 6)

1

+ General

Home page

+ Function page

+ KNX Channel

Internal sensor measureme...

Human Centric Lighting(H...

+ Input

+ Voice reminder

- HVAC controller

Function setting

Fig.5.9 "HVAC controller" parameter window

Parameter "Number of controllers (max.6)"

This parameter sets the number of controllers. Options: **1-6**

5.8.1 Parameter window "Controller x-Room temperature

controller(RTC)"(x=1~6)

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-...

General setting	Description (max 30char.)	
Security setting	Controller type	☒ Room temperature controller (RTC) ☐ Ventilation controller
Coordinates location setting	Room temperature reference from	External sensor
Summer time setting	Period for request external sensor [0...255,0=inactive]	10 min
Proximity setting	Control value after temp. error[0..100] (if 2-point control, set value '0'=0, set value '>0'=1)	0 %
Advanced setting		
Home page	Room temperature control mode	Heating and Cooling
Function page	Heating/Cooling switchover	☒ Via object ☐ Automatic changeover
KNX Channel	Heating/Cooling status after download	☐ Heating ☒ Cooling
Internal sensor measureme...	Heating/Cooling status after voltage recovery	As before voltage failure
Human Centric Lighting(H...	Room temperature control system	☐ 2 pipes system ☒ 4 pipes system
Input	Operation mode	☒
Voice reminder	Controller status after download	Comfort mode
HVAC controller	Controller status after voltage recovery	As before voltage failure
Function setting	Extended comfort mode [0..255,0=inactive]	0 min
Controller 1-...	1 bit object function for operation mode	☒
Setpoint	1 bit object for standby mode	☒
Heating control		
Cooling control	Fan speed auto.control function	☒
Fan auto.control	Window contact input function	☐
Schedule function	Bus presence detector function	☐

Fig.5.8.1 "Controller x-Room temperature controller(RTC)"(x=1~6) parameter window

Parameter "Description (max 30char.) "

This parameter is for setting the name description for controller x, up to input 30 characters.

Parameter "Controller type "

This parameter is for setting the controller type. Options:

Room temperature controller (RTC)

Ventilation controller**Parameter "Room temperature reference from "**

This parameter is for setting the resource of the RTC function temperature reference.

Options:

Internal sensor

External sensor

Internal and External sensor combination

Parameter is visible when "External sensor" is selected.

—parameter "Period for request external sensor [0...255, 0=inactive]"

This parameter sets the time interval for the device to send temperature reading requests to the external temperature sensor. Options: **0...255min**

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 × 40%) + (external sensor's temperature × 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“Period for request external sensor [0...255,0=inactive]min”**

This parameter is for setting the time period for read request external temperature sensor. Options: **0..255**

—**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

...

10K

—**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**

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

This parameter is for setting 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 "Room temperature control mode"

This parameter is for setting 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:

Via object

Automatic changeover

——Parameter "Heating/Cooling status after download"

This parameter is for setting the heating/cooling control mode of device when power on RTC after download. Options:

Heating

Cooling

——Parameter "Heating/Cooling status after voltage recovery"

This parameter is for setting the heating/cooling control mode of device when power on RTC after voltage recovery. Options:

Heating

Cooling

As before voltage failure

As before voltage failure: When the device is reset after power on, the control mode will recover as before voltage failure. If it is the first time the device is used or a newly enabled device function, 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”

This parameter is for setting the type of RTC 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“Operation mode ”

This parameter is for setting whether to enable RTC operation mode.

Parameters as follow are visible when operation mode disabled.

—Parameter“ Initial setpoint temperature”

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

10.0

10.5

...

35.0

—Parameter“Min./Max. setpoint temperature [5..37] ”

This parameter is for setting limit 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, the will output the limited temperature. Options:

5° C

6° C

37° C

Parameters as follow are visible when "Heating/Cooling switchover" and "Automatic changeover" is selected.

——Parameter" Upper /Lower dead zone"

This parameter is for 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) > 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 upper dead zone, then mode cooling switch to heating.

Parameters as follow are visible when operation mode enabled.

——Parameter" Controller status after download"

This parameter is for setting the operation mode when power on RTC after download.

Options:

Standby mode

Comfort mode

Economy mode

——Parameter"Controller status after voltage recovery "

This parameter is for setting the operation mode when power on RTC 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”**

This parameter is for setting 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 activation. 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.

Switch operation will quit the timing, and heating/cooling switchover will not.

——**Parameter“1 bit object function for operation mode”**

This parameter is for setting whether to enable 1 bit objects of operation mode are visible. Corresponding mode activation when objects send telegram 1; Perform standby mode when object values of comfort, economy, protection received from the bus are 0.

——**Parameter“1 bit object for standby mode”**

This parameter is visible when previous parameter enabled. Set whether to enable 1 bit object of standby mode is visible.

Parameter“Fan speed auto.control function ”

This parameter is for setting whether to enable fan auto control interface is visible.

Parameter“Window contact input function ”

This parameter is visible when RTC operation mode enabled. Set whether to link to window contact status.

Parameters as follow are visible when“Window contact input function” enabled.

——**Parameter“Delay for window contact [0..65535]s”**

This parameter is visible when RTC operation mode and window contact input function are enabled. Set the delay time to window contact detection. That is, when the window is open within the set value, the window is not open. If the time is out of the set value, the window is open. Options: **0..65535**

——**Parameter“Controller mode for open window”**

This parameter is visible when RTC operation mode and window contact input function are enabled. 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 a control telegram is received, and performed after the window is closed. If no logging is received, return to the mode before the window was opened.) Options:

Economy mode

Frost/heat protection

Parameter“Bus presence detector function”

This parameter is visible when RTC operation mode enabled. Set whether to link to bus presence detector status.

If presence is detected, enter the comfort mode and recovery original mode after leaving. If there is a telegram/manual to adjust the mode, it will not recovery the previous mode after leaving. (If receive presence status cyclically, no comfort mode retriggered, and only can be after leaving.)

5.8.1.1 Parameter window "Setpoint"

This parameter window is visible when "Room temperature controller(RTC)" is selected as the controller type and is displayed according to the control mode, as shown in 5.8.1.1.

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-... > Setpoint

General
General setting
Security setting
Coordinates location setting
Summer time setting
Proximity setting
Advanced setting
Home page
Function page
KNX Channel
Internal sensor measureme...
Human Centric Lighting(H...
Input
Voice reminder
HVAC controller
Function setting
Controller 1-...
Setpoint

Setpoint method for operating mode ☒ Relative ☐ Absolute
Base setpoint temperature 20.0 °C
Additional setpoint offset for setpoint adjustment ☒ Disable ☐ Enable
Automatic H/C mode changeover dead zone (only for comfort mode)
Upper dead zone 2.0 K
Lower dead zone 2.0 K

Heating
Reduced heating in standby mode [0..10] 2 K
Reduced heating in economy mode [0..10] 4 K
Setpoint temperature in frost protection mode [5..10] 7 °C
Cooling
Increased cooling in standby mode [0..10] 2 K
Increased cooling in economy mode [0..10] 4 K
Setpoint temperature in heat protection mode [30..37] 35 °C

Min. setpoint temperature [5..37] 10 °C
Max. setpoint temperature [5..37] 32 °C

Relative

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-... > Setpoint

General

General setting
Security setting
Coordinates location setting
Summer time setting
Proximity setting
Advanced setting

Home page
Function page
KNX Channel
Internal sensor measureme...
Human Centric Lighting(H...
Input
Voice reminder
HVAC controller

Function setting
Controller 1-...
Setpoint

Setpoint method for operating mode

Relative
Absolute

Heating
Setpoint temperature in comfort mode [5..37]
21
°C
Setpoint temperature in standby mode [5..37]
19
°C
Setpoint temperature in economy mode [5..37]
17
°C
Setpoint temperature in frost protection mode [5..10]
7
°C

Cooling
Setpoint temperature in comfort mode [5..37]
23
°C
Setpoint temperature in standby mode [5..37]
25
°C
Setpoint temperature in economy mode [5..37]
27
°C
Setpoint temperature in heat protection mode [30..37]
35
°C

Note: The heating setpoint must be always less than the cooling setpoint.

Min. setpoint temperature [5..37]
10
°C
Max. setpoint temperature [5..37]
32
°C

Absolute

Fig.5.8.1.1 "Setpoint" parameter window

Parameter "Setpoint method for operating mode"

This parameter is for setting the setpoint method for operating mode. Options:

Relative**Absolute**

Relative: Relative adjustment, the setting 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 temperature "

This parameter is for setting the basic setpoint temperature, from which the initial 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 setpoint adjustment", then the new value will be stored after the device power off.

Current basic setpoint temperature = modified basic setpoint temperature +/- accumulated offset(if existence)

When adjusting the setpoint temperature of current operation mode, the setpoint value will be changed with it, but the relative temperature of each mode is unchanged. Relative temperature of standby, economy and comfort mode is set by the parameters as follows.

Parameter "Additional setpoint offset for setpoint adjustment "

This parameter is for setting whether to enable additional setpoint offset function for setpoint adjustment, mainly used to adjust setpoint temperature by 1 bit object. Options:

Disable

Enable

Increase/decrease offset by 1 bit object "Setpoint offset", adjust the setpoint temperature indirectly, and send offset value to the bus by 2 byte object "Float offset value". Also reset the offset value by 1 bit object "Setpoint offset reset", modified the offset value by 2 byte object "Float offset value". Save the offset value when control mode and operation mode changed.

Parameters as follow are visible when "Additional setpoint offset for setpoint adjustment" enabled.

—Parameter "Step of setpoint offset"

This parameter is for setting step value of setpoint offset increased/decreased when receiving telegrams. Telegram 1- increase, telegram 0- decrease. Accumulated offset can be saved when power off. Options:

0.5K

1K

Setpoint temperature of current mode = base temperature + fix offset of mode + accumulated additional offset

Note: Fix offset of mode is the offset of standby and economy modes compared to comfort mode, which is decided by the follow parameters of heating/cooling. Accumulated additional offset is adjusted by 1bit object "Setpoint offset", or directly modified the offset value by 2 byte object "Float offset value".

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

This parameter is for setting the maximum offset allowed when negative offset (setpoint temperature is decreased). Options: **-10..0**

—Parameter "Max. setpoint offset [0..10]K"

This parameter is for setting the maximum offset allowed when forward offset (setpoint temperature is increased). Options: **0..10**

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" is selected,

and "Automatic changeover" is selected. Setting the dead zone range of auto switchover heating/cooling. Options:

0.5K

1.0K

...

10K

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 upper 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.

Parameter "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 [5...10]" °C

This parameter is for setting the setpoint of frost protection mode. 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]" °C

This parameter is for setting the setpoint of heat protection mode. 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 [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] °"

This parameter is for setting the setpoint temperature in frost protection mode when heating. Options:

5°C

6°C

...

10°C

Parameter "Setpoint temperature in heat protection mode [30...37] °"

This parameter is for setting the setpoint temperature in heat protection mode when cooling. Options:

30°C

31°C

...

37°C



Note: The heating setpoint must be always less than the cooling setpoint.

For absolute adjustment mode, "Heating and Cooling" and "Automatic changeover" are selected, the note is visible. The heating setpoint value must

be less than or equal to the cooling of the same operation mode, if not, it can not be configured on ETS. It is also applied to "Via object"

1. When the ambient temperature is higher than the setpoint temperature of current mode, it is changed to cooling mode; When the ambient temperature is lower than the setpoint temperature of current mode, 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 from 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. For the abnormal configuration where the heating setpoint value is greater than the cooling, it is depend on the setpoint temperature and ambient temperature to adjust heating/cooling mode, that is, change to cooling when ambient temperature is higher than the setpoint temperature in the current operation mode of cooling, while change to heating when ambient temperature is lower than the setpoint temperature in the current operation mode of cooling.

4. When receiving setpoint temperature from bus, 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..

Points 2 and 4 also apply to "Via object".

Note: for relative/absolute adjustment, in protection mode, the setpoint temperature is only configured via ETS. When the received setpoint value from bus is different from the ETS configuration, the value is not updated and returned to the current setpoint temperature, to update synchronously to other devices on the bus.

Parameter "Min./Max. setpoint temperature [5..37] "

This parameter is for setting limit 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, the will output the limited temperature. Options:

5° C

6° C

37° C

5.8.1.2 Parameter window "Heating control/Cooling control/Heating/Cooling control"

This parameter window is visible when "Room temperature controller(RTC)" is selected as the controller type and is displayed according to the control mode,as shown in 5.8.1.2.

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-... > Heating/Cooling control

General	Type of heating/cooling control	Switching on/off(use 2-point control)
General setting	Invert control value	☒
Security setting	Heating	
Coordinates location setting	Lower Hysteresis [0..200]	10 *0.1K
Summer time setting	Upper Hysteresis [0..200]	10 *0.1K
Proximity setting	Cooling	
Advanced setting	Lower Hysteresis [0..200]	10 *0.1K
	Upper Hysteresis [0..200]	10 *0.1K
Home page	Cyclically send control value [0..255]	10 min
Function page		
KNX Channel	Additional heating/cooling	☒
Internal sensor measureme...	Control type	☒ 1bit ☐ 1byte
Human Centric Lighting(H...	Invert control value	☒
Input	Temperature difference to switch on additional heating [-100..-5]	-25 *0.1K
Voice reminder	Hysteresis to switch off additional heating [-20..-1]	-5 *0.1K
HVAC controller	Temperature difference to switch on additional cooling [5..100]	25 *0.1K
Function setting	Hysteresis to switch off additional cooling [1..20]	5 *0.1K
Controller 1-...	Cyclically send control value [0..255]	0 min
Setpoint		
Heating/Cooling control		

Switching on/off(use 2-point control)

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-... > Heating/Cooling control

General	Type of heating/cooling control	Switching PWM(use PI control)
General setting	Invert control value	☒
Security setting	PWM cycle time [1..255]	15 min
Coordinates location setting	Heating speed	Hot water heating(5K/150min)
Summer time setting	Cooling speed	Cooling ceiling (5K/240min)
Proximity setting	Cyclically send control value [0..255]	10 min
Advanced setting	Additional heating/cooling	☒
Home page	Control type	☒ 1bit ☐ 1byte
Function page	Invert control value	☒
KNX Channel	Temperature difference to switch on additional heating [-100..-5]	-25 *0.1K
Internal sensor measureme...	Hysteresis to switch off additional heating [-20..-1]	-5 *0.1K
Human Centric Lighting(H...	Temperature difference to switch on additional cooling [5..100]	25 *0.1K
Input	Hysteresis to switch off additional cooling [1..20]	5 *0.1K
Voice reminder	Cyclically send control value [0..255]	0 min
HVAC controller		
Function setting		
Controller 1-...		
Setpoint		
Heating/Cooling control		

Switching PWM(use PI control)

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-... > Heating/Cooling control

General	Type of heating/cooling control	Continuous control(use PI control)
General setting	Invert control value	☒
Security setting	Heating speed	Hot water heating(5K/150min)
Coordinates location setting	Cooling speed	Cooling ceiling (5K/240min)
Summer time setting	Send control value on change by [0..100,0=inactive]	5 %
Proximity setting	Cyclically send control value [0..255]	10 min
Advanced setting	Additional heating/cooling	☒
Home page	Control type	☒ 1bit ☐ 1byte
Function page	Invert control value	☒
KNX Channel	Temperature difference to switch on additional heating [-100..-5]	-25 *0.1K
Internal sensor measureme...	Hysteresis to switch off additional heating [-20..-1]	-5 *0.1K
Human Centric Lighting(H...	Temperature difference to switch on additional cooling [5..100]	25 *0.1K
Input	Hysteresis to switch off additional cooling [1..20]	5 *0.1K
Voice reminder	Cyclically send control value [0..255]	0 min
HVAC controller		
Function setting		
Controller 1-...		
Setpoint		
Heating/Cooling control		

Continuous control(use PI control)

Fig.5.8.1.2 "Heating control/Cooling control/Heating/Cooling control" parameter window

Parameters of this window display according to control mode and control system(2 pipe or 4pipe).

Parameter "Type of heating/cooling control"

This parameter is visible when selecting "Heating and Cooling & 2-pipe" option, 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 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. Options:

No

Yes

Yes: Sending the control value to the bus through objects after inverting the control value.

Two parameters as follow are suitable for 2 point control:**Parameter "Lower Hysteresis [0...200]*0.1K"****Parameter "Upper Hysteresis [0...200]*0.1K"**

These two parameters are for setting the lower/upper hysteresis temperature in HVAC heating or cooling. Options: **0..200**

Under heating control,

When the actual temperature(T) > the setting temperature + the upper hysteresis temperature, then will stop heating;

When the actual temperature(T) < the setting temperature - the lower hysteresis temperature, then will start heating.

For example, the lower hysteresis temperature is 1K, the upper hysteresis temperature is 2K, the setting temperature is 22°C, if T is higher than 24°C, then it will stop heating; if T is lower than 20°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 setting temperature -the lower hysteresis temperature, then will stop cooling;

When the actual temperature (T) > the setting temperature + the upper hysteresis temperature, then will start cooling.

For example, the lower hysteresis temperature is 1K, the upper hysteresis temperature is 2K, the setting 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.

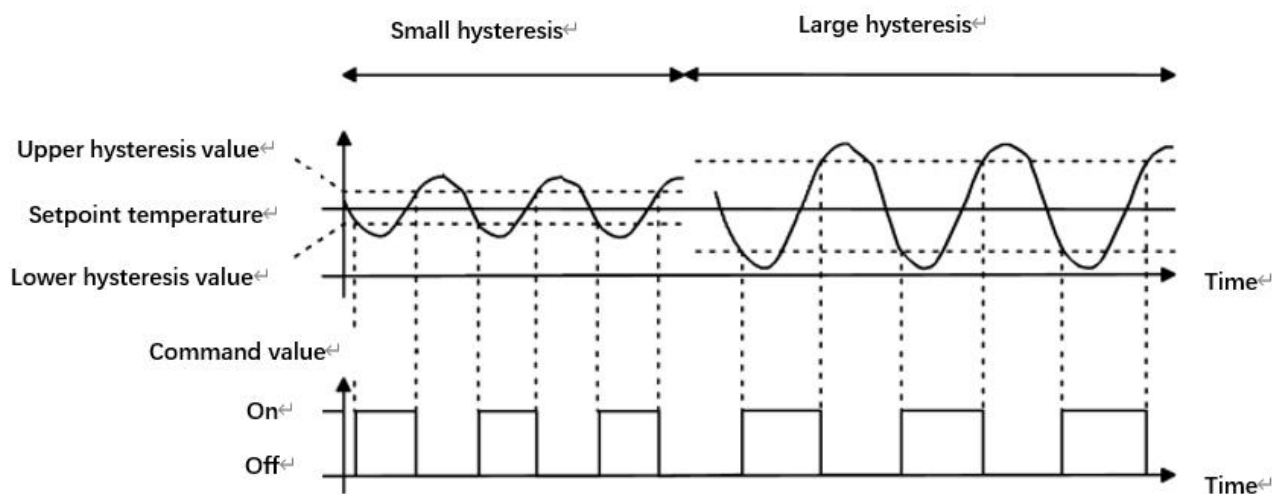


Fig 5.8.1.2(2) Effects of hysteresis on control value switch action(heating) under 2-point control mode

Parameters as follow are suitable for PWN control:

Parameter "PWM cycle 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.

Parameters as follow are suitable for PI control:**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”

—Parameter“Reset time [0..255]min”

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 time)	Recommended PI control type	Recommended PWM period
Hot water Heating	5K	150min	Continuous/PWM	15min
Underfloor heating	5K	240min	PWM	15-20min
Electrical	4K	100min	PWM	10-15min

heating				
Split unit	4K	90min	PWM	10-15min
Fan coil unit	4K	90min	Continuous	--

(2) Cooling

Cooling type	P value	I value(integration time)	Recommended PI control type	Recommended PWM 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.

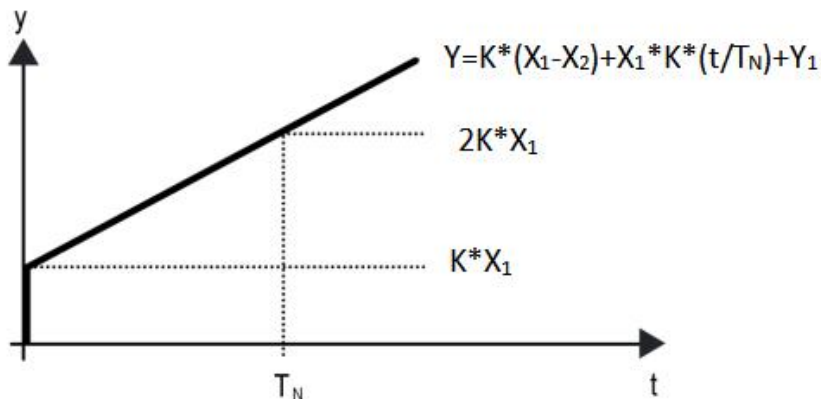


Fig.5.8.1.2(3) control value of PI control mode

Y: control value

Y1: last control value

X1: temperature deviation = set temperature - actual temperature

X2: last temperature deviation = set temperature - actual temperature

T_N : integration time

K: scale factor (the scale factor is not zero)

PI control algorithm: $Y = K \cdot (X_1 - X_2) + X_1 \cdot K \cdot t / T_N + Y_1$

When the integration time is set to zero, the PI control algorithm is: $Y = K \cdot (X_1 - X_2) + Y_2$

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_N : If the integration time is too short	Quick adjustment, but there will be oscillation
T_N : If the integration time is too long	Slow adjustment, no obvious oscillation

Parameter "Cyclically send control value [0...255]min"

This parameter is for setting the period for cyclically sending the control value to the bus.

Options: **0..255**

Parameter "Additional heating"

This parameter is for setting whether to enable additional heating.

Parameter as follow are visible when "Additional heating" is enable.

—Parameter "Control type"

This parameter is for setting the control type for the additional heating. Options:

1bit

1byte

—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.

For additional heating valve:

—Parameter "Temperature difference to switch on additional heating

[-100..-5]*0.1K"

This parameter is for setting the temperature difference to switch on additional heating valve. When the actual temperature (T) < (Setpoint temperature + Temperature difference), start heating.

. Options: **-100...-5**

—Parameter "Hysteresis to switch off additional heating [-20..-1]*0.1K"

This parameter is for setting the hysteresis to switch off additional heating.

When the actual temperature (T) > (Setpoint temperature + Temperature difference - Hysteresis), then will stop heating.

Options: **-20... -1**

Note: |Hysteresis| < |Temperature difference|, if not meet the condition, they can not be configured in ETS, and display red box warning, as shown as follow:

Temperature difference to switch on additional heating [-100..-5]	-9	*0.1K
Hysteresis to switch off additional heating [-20..-1]	-10	*0.1K

For additional cooling valve:

——Parameter“Temperature difference to switch on additional cooling [5..100]*0.1K”

This parameter is for setting the temperature difference to switch on additional cooling valve. When the actual temperature (T) > (Setpoint temperature + Temperature difference), start cooling.

Options: **5...100**

——Parameter“Hysteresis to switch off additional cooling [1..20]*0.1K”

This parameter is for setting the hysteresis to switch off additional cooling.

When the actual temperature (T) < (Setpoint temperature + Temperature difference - Hysteresis), then will stop cooling.

Options: **1...20**

Note: |Hysteresis| < |Temperature difference|, if not meet the condition, they can not be configured in ETS, and display red box warning, as shown as follow:

Temperature difference to switch on additional cooling [5..100]	19	*0.1K
Hysteresis to switch off additional cooling [1..20]	20	*0.1K

—Parameter “Cyclically send control value [0..255]min”

This parameter is for setting the period for cyclically sending the control value to the bus.

Options: **0..255**

5.8.1.3 Parameter window “Fan auto.control”

This parameter window is visible when “Room temperature controller(RTC)” is selected as the controller type and fan speed auto.control function is enabled, as shown in 5.8.1.3.

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-... > Fan auto.control

General

General setting

Security setting

Coordinates location setting

Summer time setting

Proximity setting

Advanced setting

Home page

Function page

KNX Channel

Internal sensor measureme...

Human Centric Lighting(H...

Input

Voice reminder

HVAC controller

Function setting

Controller 1-...

Setpoint

Heating/Cooling control

Fan auto.control

Schedule function

Auto. operation on object value ☒ Auto=1/Man.=0 ☐ Auto=0/Man.=1

State of Auto.operation after startup ☒ Cancel ☐ Auto

Fan type Three level

Fan speed output setting

Object datatype of 1byte fan speed ☐ Fan stage (DPT_5.100) ☒ Percentage (DPT_5.001)

Output value for fan speed 1 33 %

Output value for fan speed 2 67 %

Output value for fan speed 3 100 %

1 bit object function for fan speed ☐

Fan speed control method Three level according to control value

Fan speed control setting

Condition setting for using PI control

Min.threshold value OFF-->speed 1 [0..255] 80

Min.threshold value speed 1-->speed 2 [1..255] 150

Min.threshold value speed 2-->speed 3 [1..255] 200

Hysteresis threshold value in +/-[0..50] 10

Condition setting for using 2-point control

Min.temperature difference OFF-->speed 1 [0..200] 20 *0.1K

Min.temperature difference speed 1-->speed 2 [1..200] 30 *0.1K

Min.temperature difference speed 2-->speed 3 [1..200] 40 *0.1K

Hysteresis temperature difference in [0..50] 10 *0.1K

Minimum time in fan speed [0..65535] 60 s

Fig.5.8.1.3 "Fan" parameter window

Parameter "Auto. operation on object value"

This parameter is for setting the telegram value to activate automatic operation.

Options:

Auto=1/Man.=0

Auto=0/Man.=1

Auto=1/Man.=0: When the object "Fan automatic operation" receives the telegram value "1", activate the automatic operation, when receive "0", exit the automatic operation.

Auto=0/Man.=1: When the object "Fan automatic operation" receives the telegram value "0", activate the automatic operation, when receive "1", exit the automatic operation.

After power-on, automatic operation is not activated by default.

Parameter "State of Auto.operation after startup"

This parameter is for setting whether to enable state of Auto.operation after startup the device. Options:

Cancel

Auto

Parameter "Fan type"

This parameter is for setting the fan type. Options:

Three level

Five level

Percentage level

Parameters as follow are visible when "Three level" and "Five level" are selected.

Parameter "Object datatype of 1byte fan speed"

This parameter is visible when the "fan type" parameter selects "Three level" and "Five level". 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

-When "fan type" select "Three level":

Parameter "Output value for fan speed 1/speed 2/speed 3"

These three parameters are for setting the value sent for each fan speed switchover, support 3 fan speeds speed 1/speed 2/speed 3. Options according to fan object datatype:

0..255/0..100

-When "fan type" select "Five level":

Parameter "Output value for fan speed 1/speed 2/speed 3/speed 4/speed 5"

These Five parameters are for setting the value sent for each fan speed switchover, support 5 fan speeds speed 1/speed 2/speed 3/speed 4/speed 5. Options according to fan object datatype: **0..255/0..100**

Note: the out value and status value must meet the condition level 1 < level 2 < level 3, if not, they can not be configured on ETS, and display red box warning, as shown as follow:

Output value for fan speed 1	3
Output value for fan speed 2	2
Output value for fan speed 3	3

Parameter "1 bit object function for fan speed"

This parameter is for setting whether to enable 1 bit object function for fan speed. 1 bit control objects of each fan speed are visible when enabled.

—Parameter "1 bit object for fan speed off "

This parameter is visible when previous parameter is enabled. Set whether to enable 1 bit object of fan speed off .

Parameter "Fan speed control method"

This parameter is for setting the fan speed control method.

When "Fan type" selects "Three level", this parameter is "Three level according to control value"

When "Fan type" selects "Five level", this parameter is "Five level according to control value"

When "Fan type" selects "Percentage level", options:

Three level according to control value

Five level according to control value

Linear according to control value

Fan speed 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 "Min.Threshold value speed OFF<-->speed 1 [0..255]"

Define threshold value for off-fan and level 1 fan speeds, options: **0..255**

If the control value is greater than or equal to this setting threshold value, level 1 fan speed will start running; if the control value is less than this setting threshold value, the fan will be turned off.

Parameter "Min.Threshold value speed speed 1<-->speed 2 [1..255]"

Define the threshold value for switching the fan speed to level 2 fan speed, if the control value is greater than or equal to this setting threshold, the level 2 fan speed will start running. Options: **1..255**

Parameter "Min.Threshold value speed speed 2<-->speed 3 [1..255]"

Define the threshold for switching the fan speed to level 3 fan speed, if the control value is greater than or equal to this setting threshold, the level 3 fan speed will start running.

Options: **1..255**

Parameter "Min.Threshold value speed speed 3<-->speed 4 [1..255]"

When "fan type" selects " five level",this parameter is visible.Define the threshold for switching the fan speed to level 4 fan speed, if the control value is greater than or equal to this setting threshold, the level 4 fan speed will start running. Options: **1..255**

Parameter "Min.Threshold value speed speed 4<-->speed 5 [1..255]"

When "fan type" selects " five level",this parameter is visible.Define the threshold for switching the fan speed to level 5 fan speed, if the control value is greater than or equal to this setting threshold, the level 5 fan speed will start running. Options: **1..255**

Tip: The controller evaluates the threshold in ascending order.

First check →OFF <->level 1 fan speed threshold →level 1 fan speed <->level 2 fan speed →level 2 fan speed <->level 3 fan speed.

The correctness of functional execution is guaranteed only in this case:

The threshold of OFF <-> level 1 fan speed is lower than that of level 1 fan speed <-> level 2 fan speed, and the threshold of level 1 fan speed <-> level 2 fan speed is lower than that of level 2 fan speed <-> level 3 fan speed.

Parameter "Fan speed for threshold value x"

When "Fan type"selects "percentage level" , "Fan speed control method"selects"Three level according to control value"or"Five level according to control value", this parameter is visible.

This parameter is for setting the fan speed at different level.

Parameter "Hysteresis threshold value in +/-[0..50]"

When "fan type" selects "three level" or "five level", this parameter is visible.

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.

Parameter "Temperature difference speed OFF <--> speed 1 [0..200] * 0.1K"

This parameter is for setting the temperature difference between off-fan and level 1 fan speeds.

Options: **1..200**

If the temperature difference is greater than or equal to this setting temperature difference, level 1 fan speed will start running; if less than this setting temperature difference, the fan will be turned off.

Parameter "Temperature difference speed 1 <--> speed 2 [1..200] * 0.1K"

Define the temperature difference for switching the fan speed to level 2 fan speed, if the control value is greater than or equal to this setting temperature difference, the level 2 fan speed will start running.

Options: **1..200**

Parameter "Temperature difference speed speed 2<-->speed 3[1..200]*0.1K"

Define the temperature difference for switching the fan speed to level 3 fan speed, if the control value is greater than or equal to this setting temperature difference, the level 3 fan speed will start running. Options: **1..200**

Parameter "Temperature difference speed speed 3<-->speed 4[1..200]*0.1K"

When "fan type" selects " five level",this parameter is visible.Define the temperature difference for switching the fan speed to level 4 fan speed, if the control value is greater than or equal to this setting temperature difference, the level 4 fan speed will start running.

Options: **1..200**

Parameter "Temperature difference speed speed 4<-->speed 5[1..200]*0.1K"

When "fan type" selects " five level",this parameter is visible.Define the temperature difference for switching the fan speed to level 5 fan speed, if the control value is greater than or equal to this setting temperature difference, the level 5 fan speed will start running.

Options: **1..200**

Parameter "Fan speed for temperature difference x[1..100]"

When "Fan type" selects "percentage level" , "Fan speed control method" selects "Three level according to control value" or "Five level according to control value", this parameter is visible.

This parameter is for setting the fan speed at temperature difference for different level.

Parameter "Hysteresis temperature difference in [0..50] *0.1K"

When "fan type" selects "three level" or "five level", this parameter is visible.

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]"

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.

Note: The residence time for this parameter setting is only enabled in Auto mode.

5.8.2 Parameter window "Controller x-Ventilation controller"(x=1~6)

This parameter window is visible when "Ventilation controller" is selected as the controller type, which realizes the automatic control of wind speed, and the linkage control of wind speed with PM2.5, CO2, VOC detection value, as shown in Fig.5.8.2.

1.1.2 标准款 KNX Smart Touch S4 > HVAC controller > Controller 1-...

- General - General setting - Security setting - Coordinates location setting - Summer time setting - Proximity setting - Advanced setting - Home page - Function page - KNX Channel - Internal sensor measureme... - Human Centric Lighting(H... - Input - Voice reminder - HVAC controller - Function setting - Controller 1-... - Schedule function - Logic function - Scene group function	Description (max 30char.)	
	Controller type	☐ Room temperature controller (RTC) ☒ Ventilation controller
	Auto.operation on object value	☒ Auto=1/Man.=0 ☐ Auto=0/Man.=1
	State of Auto.operation after startup	☒ Cancel ☐ Auto
	Fan type	Three level
	Fan speed output setting	
	Object datatype of 1byte fan speed	☐ Fan stage (DPT_5.100) ☒ Percentage (DPT_5.001)
	Output value for fan speed 1	20 %
	Output value for fan speed 2	40 %
	Output value for fan speed 3	60 %
	Fan speed control method	Three level according to control value
	Fan speed control setting	
	Control value reference from	PM2.5
	Object datatype of PM2.5	☒ Value in ug/m3(DPT_7.001) ☐ Float value in ug/m3(DPT_9.030)
	Period for request control value [0...255,0=inactive]	10 min
The fan speed status when the control value error	OFF	
Min. threshold value OFF-->speed 1 [1...999]	35	
Min. threshold value speed 1-->speed 2 [1...999]	75	
Min. threshold value speed 2-->speed 3 [1...999]	115	

Hysteresis value is threshold value in +/- [10..30]

Minimum time in fan speed [0...65535] s

Fig.5.8.2 "Cotroller x-Ventilation controller"(x=1~6) parameter window

Parameter "Auto. operation on object value"

This parameter is for setting the telegram value to activate automatic operation.

Options:

Auto=1/Man.=0

Auto=0/Man.=1

Auto=1/Man.=0: When the object "Fan automatic operation" receives the telegram value "1", activate the automatic operation, when receive "0", exit the automatic operation.

Auto=0/Man.=1: When the object "Fan automatic operation" receives the telegram value "0", activate the automatic operation, when receive "1", exit the automatic operation.

After power-on, automatic operation is not activated by default.

Parameter "State of Auto.operation after startup"

This parameter is for setting whether to enable state of Auto.operation after startup the device. Options:

Cancel

Auto

Parameter "Fan type"

This parameter is for setting the fan type. Options:

Three level

Five level

Percentage level

Parameters as follow are visible when "Three level" and "Five level" are selected.

Parameter "Object datatype of 1byte fan speed"

This parameter is visible when the "fan type" parameter selects "Three level" and "Five level". 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

-When "fan type" select "Three level":

Parameter "Output value for fan speed 1/speed 2/speed 3"

These three parameters are for setting the value sent for each fan speed switchover, support 3 fan speeds speed 1/speed 2/speed 3. Options according to fan object datatype:

0..255/0..100

-When "fan type" select "Five level":

Parameter "Output value for fan speed 1/speed 2/speed 3/speed 4/speed 5"

These Five parameters are for setting the value sent for each fan speed switchover, support 5 fan speeds speed 1/speed 2/speed 3/speed 4/speed 5. Options according to fan object datatype: **0..255/0..100**

Fan speed control setting

Parameter "Control value reference from"

This parameter is for setting the reference of control value under automatic operation.

Options:

PM2.5

CO2

VOC

Parameter "Object datatype of PM2.5/VOC"

These 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.

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 "Period for request control value [0...255,0=inactive]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 . Options: **0..255**

Parameter "The fan speed status when the control value error"

This parameter is for setting the default fan speed of ventilation system when control value is error. Options:

Off

Fan speed 1

Fan speed 2

Fan speed 3

-When "Fan speed control method 为 Five level according to control value",options:

Off

Fan speed 1

Fan speed 2

Fan speed 3

Fan speed 4

Fan speed 5

Parameter "Min. threshold value OFF-->speed 1 [1...999]/ [1...4000]"

Define threshold value for off-fan and level 1 fan speed, options: **1..999/1..4000**

If the control value is greater than or equal to this setting threshold value, level 1 fan speed will start running; if the control value is less than this setting threshold value, the fan will be turned off.

Parameter "Min. threshold value speed 1-->speed 2 [1...999]/ [1...4000]"

Define the threshold value for switching the fan speed to level 2 fan speed, if the control value is greater than or equal to this setting threshold, the level 2 fan speed will start running. Options: **1..999/1..4000**

Parameter "Min. threshold value speed 2-->speed 3 [1...999]/ [1...4000]"

Define the threshold for switching the fan speed to level 3 fan speed, if the control value is greater than or equal to this setting threshold, the level 3 fan speed will start running. Options: **1..999/1..4000**

-When "Fan speed control method" is "Five level according to control value", these parameters are visible.

Parameter "Min. threshold value speed 3-->speed 4 [1...999]/ [1...4000]"

Define the threshold for switching the fan speed to level 4 fan speed, if the control value is greater than or equal to this setting threshold, the level 4 fan speed will start running.

Options: **1..999/1..4000**

Parameter "Min. threshold value speed 4-->speed 5 [1...999]/ [1...4000]"

Define the threshold for switching the fan speed to level 5 fan speed, if the control value is greater than or equal to this setting threshold, the level 5 fan speed will start running.

Options: **1..999/1..4000**

Parameter "Fan speed for threshold value x"

When "Fan type" select "percentage level" , "Fan speed control method" select "Three level according to control value" or "Five level according to control value", this parameter is visible.

This parameter is for setting the fan speed at different level.

Tip: The controller evaluates the threshold in ascending order.

First check → OFF <-> level 1 fan speed threshold → level 1 fan speed <-> level 2 fan speed → level 2 fan speed <-> level 3 fan speed.

The correctness of functional execution is guaranteed only in this case:

The threshold of OFF <-> level 1 fan speed is lower than that of level 1 fan speed <-> level 2 fan speed, and the threshold of level 1 fan speed <-> level 2 fan speed is lower than that of level 2 fan speed <-> level 3 fan speed.

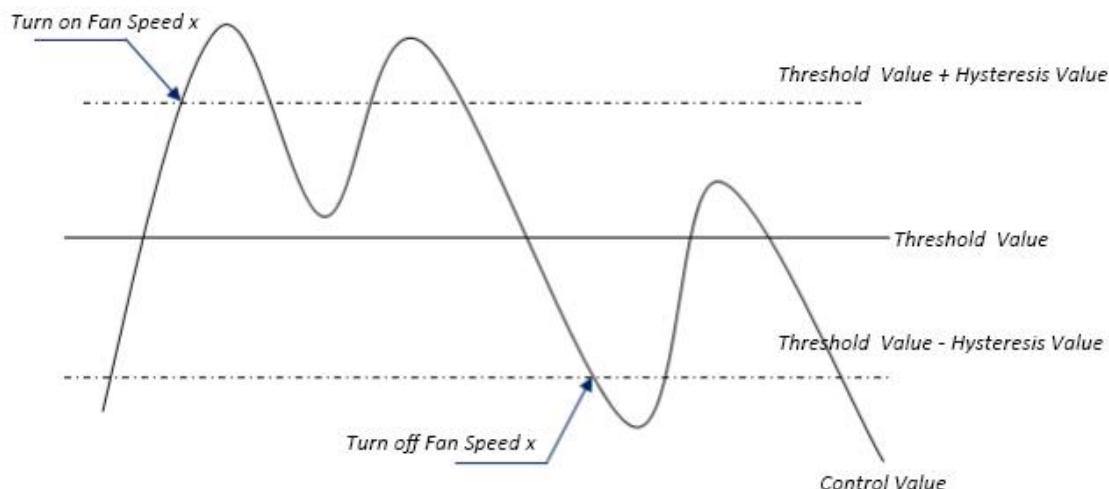
When "Fan type" select "Three level" or "Five level", these parameters are visible.

Parameter "Hysteresis value is threshold 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 $\leftrightarrow$ level 1 fan speed threshold value is 35

level 1 fan speed $\leftrightarrow$ level 2 fan speed threshold value is 55

level 2 fan speed $\leftrightarrow$ level 3 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 ($\geq 25 + 35$), and new fan speed will be the level 2 speed (because 60 is between 55 and 75, irrespective of hysteresis at this time), so the level 1 fan speed is ignored;

The behavior of fan speed when descending from a level 3 fan speed:

The level 3 fan speed will change at a control value of 50 ($< 75 - 25$), and new

fan speed will be level 1 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 <-> level 1 fan speed threshold value is 20

level 1 fan speed <-> level 2 fan speed threshold value is 40

level 2 fan speed <-> level 3 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 level 2(because the hysteresis is ignored when the value 41 is between 40 and 70), therefore the level 1 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**

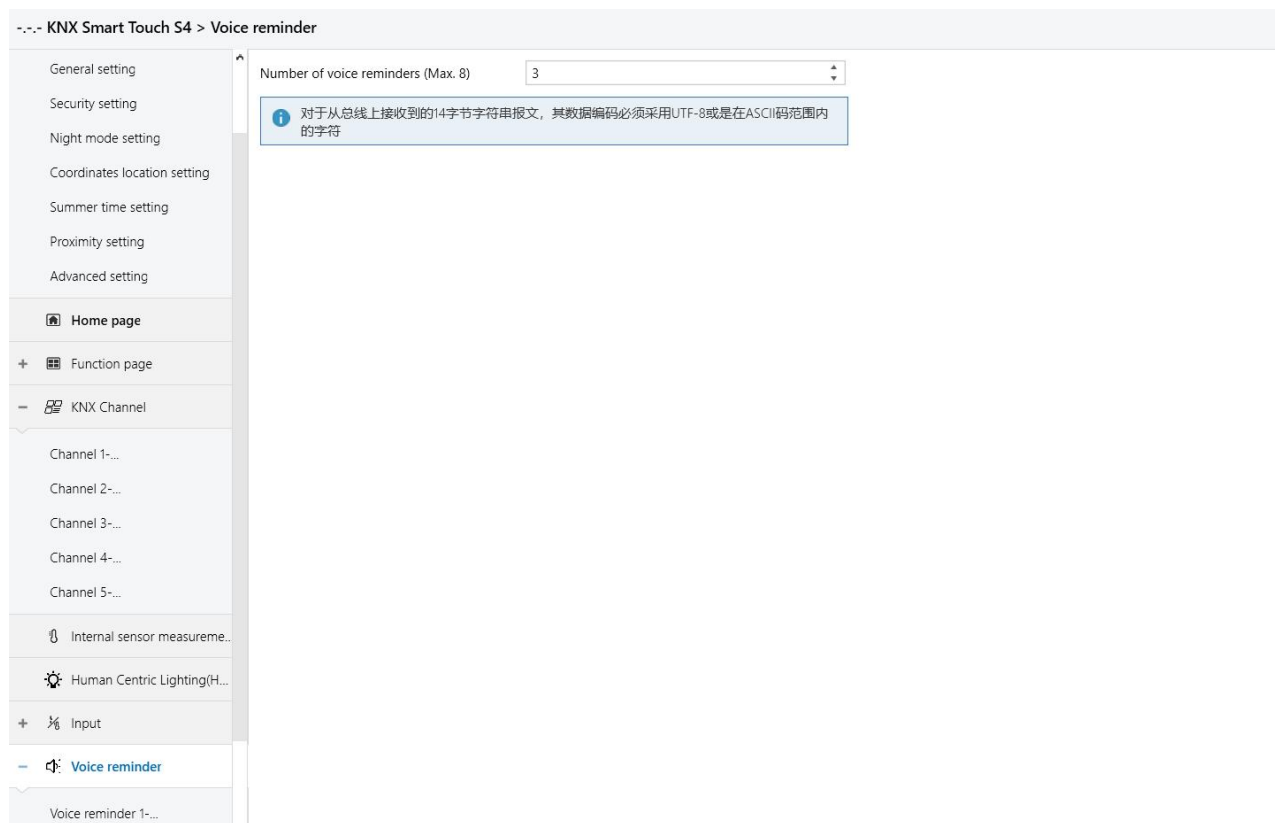
If you need to switch to another fan speed, you need to wait for this period of time before switching.

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.

5.9.Parameter window“Voice reminder”



The screenshot shows the 'Voice reminder' parameter window. On the left is a sidebar with navigation options: KNX Secure, General, Home page, Function page setting, Internal temperature meas..., HVAC controller, Button, and Voice reminder (selected). Below the sidebar, the 'Voice reminder 1-Out' function is selected. The main area contains the following parameters:

- Description for voice reminder:** Out
- When voice reminder active, message via:** 14 Bytes string from bus (radio button), Fixed string (radio button, selected)
- Message string(max 18char.):** Please call later.
- Send acknowledge after confirm the voice reminder:** ☒
- Stop voice reminder via bus:** ☐
- Object type of voice reminder input:** 1bit (radio button), 1byte (radio button, selected)
- Input value:** 1
- Display style of message:** Status bar (radio button, selected), Pop-up window (radio button)
- Max. duration of acoustic voice reminder signal:** 20s
- Voice reminder signal is repeated automatically after:** 5min

At the bottom of the window, there are three tabs: 组对象 (Group Object), 频道 (Channel), and 参量 (Parameter).

Fig.5.9"Voice reminder" Parameter window

Parameter "Number of voice reminders (Max. 8)"

This parameter is for setting the number of voice reminder. After selection, the corresponding number of voice reminder function pages will be displayed. A maximum of 8 voice reminder functions can be set.

Parameter "Description for voice reminder"

This parameter is for setting the name description for the current voice reminder function. A maximum of 18 characters can be entered.

Parameter "When voice reminder active, message via"

This parameter is for setting whether the S4 smart screen displays the fixed characters input via ETS or the 14-byte string received from the bus when the bus activates this voice. Options:

14 Bytes string from bus

Fixed string

Parameter "Message string(max 18char.)"

This parameter is for setting the text information displayed on the S4 smart screen when the voice reminder is playing, with a maximum limit of 18 characters.

Parameter "Send acknowledge after confirm the voice reminder"

This parameter is for setting select whether to send the 1-bit response message 1 to the bus.

Parameter "Stop voice reminder via bus"

This parameter is for setting whether to stop the voice reminder via the bus.

Parameter "Object type of voice reminder input"

This parameter is for setting the type of target that receives the voice playback signal. Options:

1bit

1byte

Parameter "Input value"

This parameter is for setting the target value for receiving the voice playback signal when the "Object type of voice reminder input" is 1 byte.

Options: **0...255**

Parameter "Display style of message"

This parameter is for setting the prompt style for the S4 smart screen information. Options:

Status bar

Pop-up window

Parameter "Max. duration of acoustic voice reminder signal"

This parameter is for setting the playback duration of the voice reminder. Options:

Disable

20s**30s****1min****2min****3min****4min****5min****10min****15min****20min****25min****30min**

Parameter "Voice reminder signal is repeated automatically after"

This parameter is for setting the interval for the automatic repetition of voice reminders.

After the voice playback ends, it will play automatically at the set interval. Options:

Disable**10s****20s****30s****1min****2min****3min****4min****5min****10min****15min**

20min**25min****30min**

5.10 Parameter window "Schedule function"

The parameter "schedule function" is visible when enabled in the "Advanced setting" interface . As shown in Fig.5.10 ,up to 8 time functions can be configured.

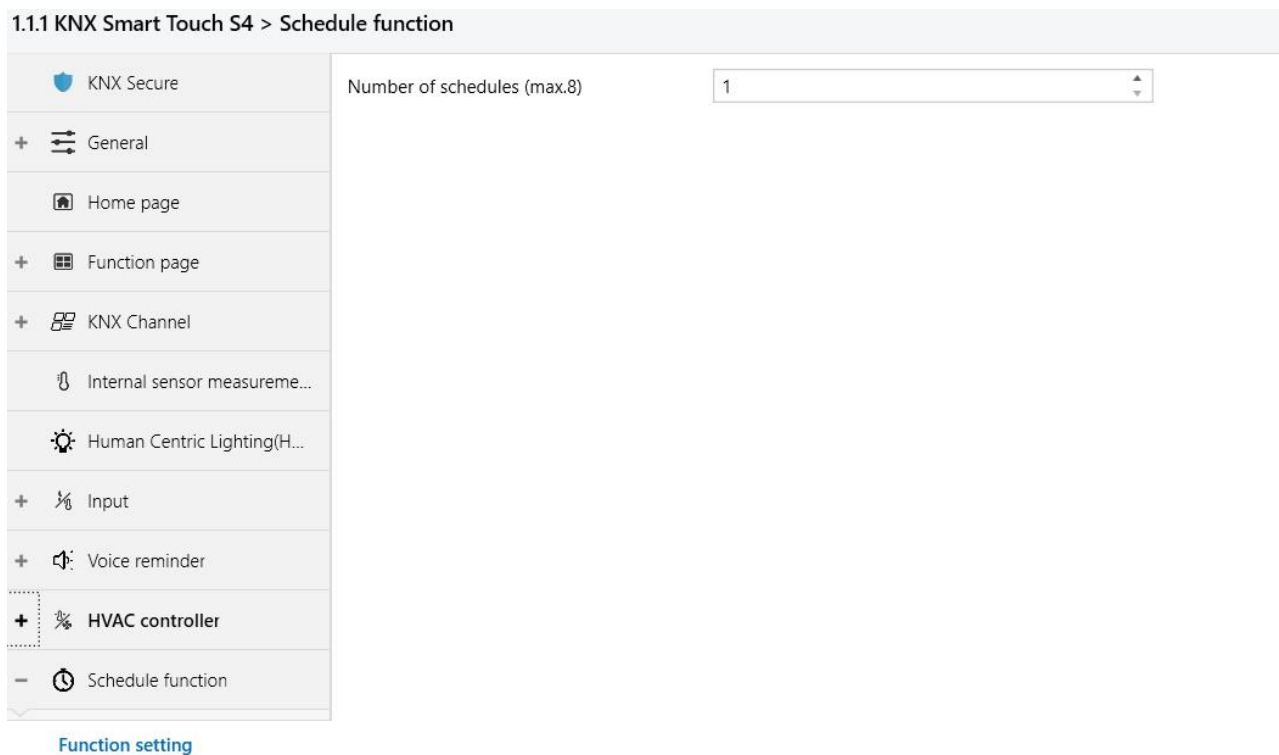


Fig.5.10"schedule function"parameter window

Parameter "Number of schedule (max.8) "

This parameter is for setting the number of timers.Options: **1....8**

5.10.1 Parameter window "Schedule X"(x=1~8)

15.15.255 语音款 KNX Smart Touch S4 > Schedule function > Schedule 1-...

+ Channel 3-...
+ Channel 4-...
Channel 5-...
Channel 6-...
Channel 7-...
Channel 8-...
Channel 9-...
Channel 10-...
Channel 11-...
Channel 12-...
Internal sensor measureme...
Human Centric Lighting(H...
+ Input
- Voice reminder
Voice reminder 1-...
- HVAC controller
Function setting
Controller 1-...
- Schedule function
Function setting
Schedule 1-...

Description for schedule
(Valid display space is up to 18 chars,while 6 Chinese chars)

Overwrite the schedule setting during download
☐

Object type of schedule
1byte

Object datatype
1byte unsigned value

Output value[0..255]
127

Schedule disable function
Disable

Schedule configuration

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Enable	☒	☒	☒	☒	☐	☐	☐

Time

23:59

时分

Fig.5.10.1 "Schedule X"parameter window

Parameter "Description for schedule function "

This parameter is for setting the description of schedule function, up to 18 characters can be input (up to 6 Chinese characters are supported).

Parameter "Overwrite the schedule function setting during download "

This parameter is for setting whether to overwrite the schedule function setting during download.

If enabled, the schedule function on screen is subject to the ETS configuration after the application is downloaded.

If disabled, if the channel is already activated, the ETS configuration will not be transmitted to screen, but if it is not activated at first, the channel of schedule function on screen is subject to the ETS.

Parameter "Object type of schedule function "

This parameter is for setting the data type of the sending value when timing time of schedule x arrives. Options:

1bit

1byte

2byte

—Parameter "Object datatype"

This parameter is for defining the data type of 1byte or 2byte.

When 1byte, Options:

1byte unsigned value

1byte[scene control]

HVAC mode

When 2byte, Options:

2byte unsigned value

Temperature value

—Parameter "Output value/ scene No.[...]"

This parameter is for setting the telegram value to be sent when it arrives the time of time x. The range depends on the options of the previous parameter.

Parameter "Schedule disable function "

This parameter is for setting whether time function can be disabled or enabled via the

object, or setting the trigger value of enable/disable timing. Options:

Disable

Disable=0/Enable=1

Disable=1/Enable=0

The following parameters are for setting the time of time x, when time arrives, perform time x.

Parameter "Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday"

This parameter is for setting the day of a week to enable schedule x.

Parameter "Time"

This parameter is for setting the specific time of time x. Options:

Hours: **0..23**

Minutes: **0..59**

Note:The accuracy of RTC real-time clock inside the device is $\pm 20\text{ppm}$.

5.11 Parameter window "Logic function"

The parameter "Logic function" is visible when enabled in the "Advanced setting" interface , as shown in Fig.5.11. It is mainly setting logic function, up to 8 logic functions can be configured.

1.1.1 KNX Smart Touch S4 > Logic function

KNX Secure + General Home page + Function page + KNX Channel Internal sensor measureme... Human Centric Lighting(H... + Input + Voice reminder + HVAC controller - Schedule function Function setting Schedule 1-定时功能 - Logic function Function setting 1st Logic function-... 2nd Logic function-...	1st Logic function 2nd Logic function 3rd Logic function	☒ ☒ ☐
--	---	---

1.1.1 KNX Smart Touch S4 > Logic function > 1st Logic function-...

KNX Secure + General	Description for logic function Function of channel	AND
--	--	----------------------------

Fig. 5.11 "Logic function"parameter window

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

This parameter is for setting the setting interface of logic function, display

corresponding logic function page when select. Up to enable 8 logic functions.

Parameter "Description for logic function "

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

Parameter "Function of channel "

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

AND

OR

XOR

Gate forwarding

Threshold comparator

Format convert

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.

5.11.1 Parameter window “AND/OR/XOR”

1.1.1 KNX Smart Touch S4 > Logic function > 1st Logic function-...

KNX Secure + General Home page + Function page + KNX Channel Internal sensor measureme... Human Centric Lighting(H... + Input + Voice reminder + HVAC controller - Schedule function Function setting Schedule 1-定时功能 - Logic function Function setting 1st Logic function-... 2nd Logic function-... + Scene group function	Description for logic function Function of channel Input a Default value Input b Default value Input c Default value Input d Default value Input e Default value Input f Default value Input g Default value Input h Default value Result is inverted Read input object value after bus voltage recovery Output send when Send delay time: Base	AND Disconnected ☒ 0 ☐ 1 Disconnected ☒ 0 ☐ 1 Disconnected ☒ 0 ☐ 1 Disconnected ☒ 0 ☐ 1 Disconnected ☒ 0 ☐ 1 Disconnected ☒ 0 ☐ 1 Disconnected ☒ 0 ☐ 1 Disconnected ☒ No ☐ Yes ☒ No ☐ Yes ☒ Receiving a new telegram ☐ Every change of output object None
--	---	--

Fig.5.11.1 “Logic function_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

Parameter“Result is inverted”

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

No

Yes

No: output directly; Yes: output after inverting.

Parameter“Read input object value after bus voltage recovery”

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

Parameter“Output send when”

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

Receiving a new telegram

Every change of output object

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

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

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

Parameter "Send delay time"

Base: **None**

0.1s

1s

...

10s

25s

Factor: **1..255**

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

5.11.2 Parameter window "Gate forwarding"

1.1.1 KNX Smart Touch 4.0" with Relay output, 2-Fold > Logic function > 1st Logic function-...

KNX Secure + General Home page + Function page + KNX Channel Internal sensor measurem... Human Centric Lighting(H... + Output	Description for logic function Function of channel Object type of Input/Output Default scene NO. of Gate after startup [1~64,0=inactive] 1->Gate trigger scene NO. is [1~64,0=inactive] Input A send on Input B send on Input C send on Input D send on	Gate forwarding 1bit 0 0 Output A Output B Output C Output D
---	---	--

Fig.5.11.2 "Logic function_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

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 "x->Gate trigger scene NO. [1..64,0=inactive]" (x: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.

5.11.3 Parameter window “Threshold comparator”

1.1.1 KNX Smart Touch 4.0" with Relay output, 2-Fold > Logic function > 1st Logic function-...

KNX Secure	Description for logic function	
+ General	Function of channel	Threshold comparator
Home page	Threshold value data type	1byte unsigned value (DPT5.010)
+ Function page	Threshold value	0
+ KNX Channel	If Object value<Threshold value	Do not send telegram
Internal sensor measurem...	If Object value=Threshold value	Do not send telegram
Human Centric Lighting(H...	If Object value!=Threshold value	Do not send telegram
+ Output	If Object value>Threshold value	Do not send telegram
+ HVAC controller	If Object value<=Threshold value	Do not send telegram
+ Schedule function	If Object value>=Threshold value	Do not send telegram
+ Alarm function	Output send when	☒ Receiving a new telegram ☐ Every change of output object
	Send delay time: Base	None
	Factor: 1..255	1

Fig.5.11.3“Logic function_Threshold comparator”parameter window

Parameter “Threshold value data type”

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

4bit value (DPT3.007)

4byte unsigned

value[0..4294967295]

1byte unsigned value (DPT5.010)

Ext. temperature value

(DPT 9.001)

2byte unsigned value (DPT7.001)

Ext. humidity value (DPT

9.007)

2byte signed value (DPT8.x)

Illuminance value (DPT

9.004)

2byte float value (DPT9.x)

—Parameter “Threshold value ”

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

Options:

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

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

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

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

Illuminance value (DPT 9.004) 0..65535lux

Parameter "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"

These parameters are for setting the logic result values that should be sent when threshold value less than, equal to, not equal to, greater than, less than and equal to, or greater and equal to the setting valve. When object datatype is selected "2byte float value (DPT9.x)" or "Illuminance value (DPT 9.004)", can only set the object value less than or greater than threshold value. Options:

Do not send telegram

Send value "0"

Send value "1"

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

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

If there is a conflict between the setting options of the parameters, it is based on the value that should be sent, which meets 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

...

25s

Factor: 1..255

This parameter is for setting the delay time for sending the logic algorithm result to the

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

5.11.4 Parameter window "Format convert"

Fig.5.11.4 "Logic function _Format convert" parameter window

Parameter "Function"

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

2x1bit-->1x2bit

8x1bit-->1x1byte

1x1byte-->1x2byte

2x1byte-->1x2byte

2x2byte-->1x4byte

1x1byte-->8x1bit

1x2byte-->2x1byte

1x4byte-->2x2byte

1x3byte-->3x1byte

3x1byte-->1x3byte

Parameter "Output send when"

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

Receiving a new telegram

Every change of output object

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

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

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

5.11.5 Parameter window "Gate function"

Fig.5.11.5 "Gate function"parameter window

Parameter "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 as follow are visible when "1bit[On/Off]" is selected.

—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 for setting whether to invert the value then output it. Options:

Normal

Inverted

Parameter "Gate object value"

This parameter is for setting whether to invert the gate object value then output it.

Options:

Normal

Inverted

Parameter "Gate status after voltage recovery"

This parameter is for setting the gate status after power on. Options:

Disable

Enable

Parameter " 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).

5.11.6 Parameter window "Delay function"

Fig.5.11.6 "Delay function" parameter window

Parameter "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 "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.

5.11.7 Parameter window "Staircase lighting"

1.1.1 KNX Smart Touch 4.0" with Relay output, 2-Fold > Logic function > 1st Logic function-...

KNX Secure + General Home page + Function page + KNX Channel Internal sensor measurem... Human Centric Lighting(H...	Description for logic function Function of channel Trigger value Object type of output Duration time of staircase lighting [10..6500] Send value 1 when trigger Send value 2 after duration time Retriggering	Staircase lighting 1 ☒ 1bit ☐ 1byte 10 s ☐ OFF ☒ ON ☒ OFF ☐ ON ☐ Disable ☒ Enable
---	---	--

Fig.5.11.7 "Staircase lighting" parameter window

Parameter "Trigger value"

This parameter is for setting the telegram value of the object "Trigger value". Options:

0

1

0 or 1

Parameter "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**

Parameter "Retriggering"

This parameter is for setting whether to trigger re-timing when received trigger value in delay time. Options:

Disable

Enable

5.12 Parameter window "Scene group function"

The parameter "Scene group function" is visible when enabled in the "Advanced setting" interface, as shown in Fig.5.12(1) ,Fig.5.12(2)and Fig.5.12(3). It is mainly setting scene group function, up to 8 scene group functions can be configured,each group with 8 outputs.

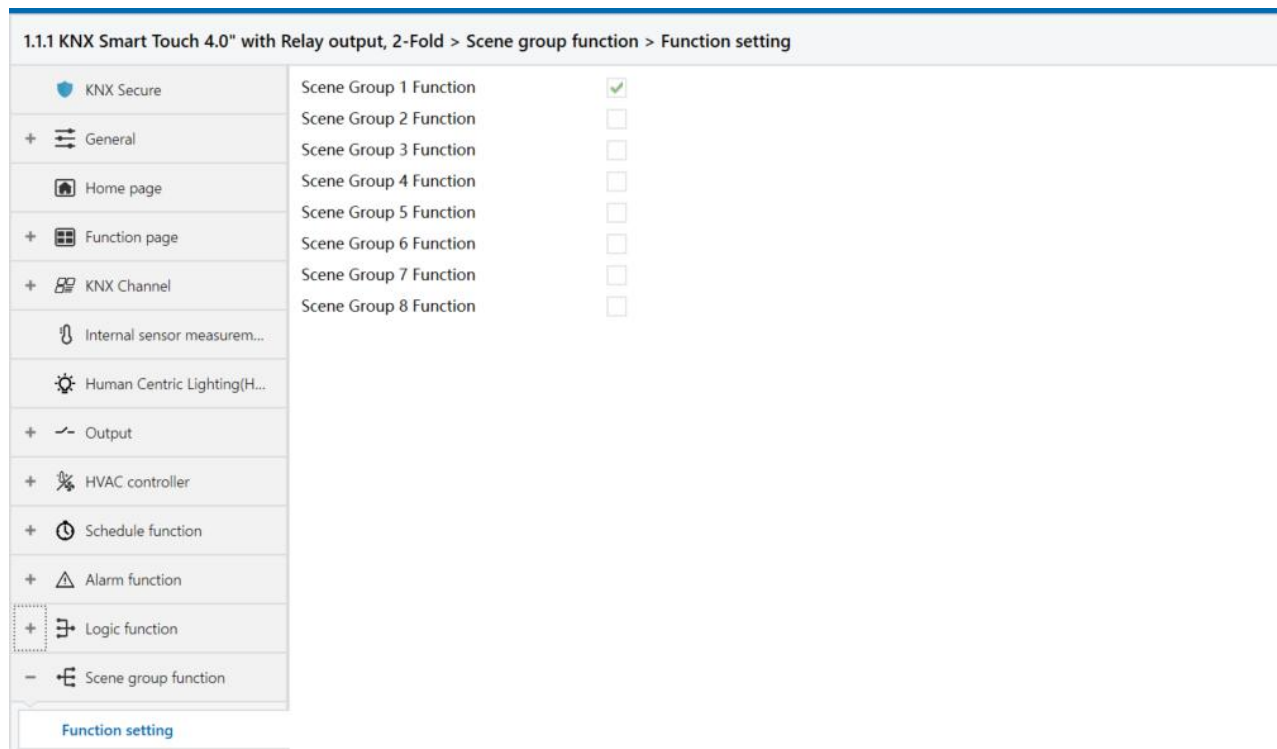


Fig.5.12(1) "Scene Group function" parameter window

1.1.1 KNX Smart Touch 4.0" with Relay output, 2-Fold > Scene group function > Group 1

KNX Secure + General Home page + Function page + KNX Channel Internal sensor measurem... Human Centric Lighting(H... + Output + HVAC controller + Schedule function + Alarm function + Logic function - Scene group function Function setting + Group 1	Output 1 Function Output 2 Function Output 3 Function Output 4 Function Output 5 Function Output 6 Function Output 7 Function Output 8 Function	☒ ☐ ☐ ☐ ☐ ☐ ☐ ☐
---	---	--

Fig.5.12(2) "Group X" parameter window

1.1.1 KNX Smart Touch 4.0" with Relay output, 2-Fold > Scene group function > Group 1 > Output 1 Function

KNX Secure + General Home page + Function page + KNX Channel	Description for Output 1 function Object type of Output 1 1->Output 1 trigger scene NO. is [1~64,0=inactive] Object value of Output 1 Delay time for sending [0..255]	1bit ☒ 0 ☐ 1
---	---	---

Fig.5.12(3) "Output Y function"parameter window

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

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

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

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

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

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

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

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

This parameter is for setting the object type of output Y of group X. Options:

1bit

1byte

2byte

RGB

RGBW

——Parameter"Object datatype"

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

When the datatype is 1byte, options:

1byte unsigned value

HVAC mode

When the datatype is 2byte, options:

2byte unsigned value

Temperature value

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

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

——Parameter"Object value of Output Y"

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

output Y.

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

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

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

Comfort mode

Standby mode

Economy mode

Frost/heat protection

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

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

-5°C

-4°C

...

45°C

——参数“**RGB value of Output y**”

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

——参数“**White value of Output y**”

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

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

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

Options: **0..255**

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.

6.1 "General" Communication Object

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1	General	In operation	New group address	0/0/5	1 bit	C	R	-	T	-	switch	Low
2	General	Date	New group address	0/0/6	3 bytes	C	-	W	T	-	date	Low
3	General	Time	New group address	0/0/7	3 bytes	C	-	W	T	-	time of day	Low
4	General	Screen brightness	New group address	0/0/3	1 byte	C	-	W	-	-	percentage (0..100%)	Low

Fig.6.1 "General"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1	General	In operation	1bit	C,R,T	1.001 switch
The communication object is used to periodically send a telegram "1" to the bus to indicate that the device is working properly.					
2/3	General	Date/Time	3byte	C,W,T	11.001 date 10.001 time of day
The communication object is used to modify the display date on the screen through the bus. With Cyclic Send enabled, the current time and date can be sent to the bus periodically to facilitate synchronization of the time and date of other devices. Note: When the time is set to auto update on the device, the bus modification is invalid.					
4	General	Screen brightness	1byte	C,W	5.001 percentage(0..100%)
The communication object is used to modify the backlight brightness of the screen. Brightness output range: 10~100%, when the telegram value is less than 10%, directly output 10% brightness. The object is visible when the parameter "Screen brightness can be changed via bus" is enable. Note: The bus modification is invalid when the screen backlight brightness is set to adjust automatically on the device side.					

Table 6.1 "General" communication object

6.2 "Internal sensor measurement" communication object

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
5	Internal sensor	Temperature value			2 bytes	C	R	-	T	-	temperature (°C)	Low
6	Internal sensor	Low temperature alarm			1 bit	C	R	-	T	-	alarm	Low
7	Internal sensor	High temperature alarm			1 bit	C	R	-	T	-	alarm	Low
8	Internal sensor	Humidity value			2 bytes	C	R	-	T	-	humidity (%)	Low
9	Internal sensor	Low humidity alarm			1 bit	C	R	-	T	-	alarm	Low
10	Internal sensor	High humidity alarm			1 bit	C	R	-	T	-	alarm	Low

Fig.6.2 "Internal sensor" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
5	Internal sensor	Temperature value	2byte	C,R,T	9.001 temperature
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	Internal sensor	Low temperature alarm	1bit	C,R,T	1.005 alarm
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	Internal sensor	High temperature alarm	1bit	C,R,T	1.005 alarm
The communication object is used to send the high temperature alarm signal to bus, when temperature higher than high threshold that defined by parameter.					
8	Internal sensor	Humidity value	2byte	C,R,T	9.007 humidity
The communication object is used to send humidity measurements sent from the humidity sensor on the bus. Range:0~100%					
9	Internal sensor	Low humidity alarm	1bit	C,R,T	1.005 alarm

The communication object is used to send the low humidity alarm signal to bus, when humidity lower than low threshold that defined by parameter.					
10	Internal sensor	High humidity alarm	1bit	C,R,T	1.005 alarm
The communication object is used to send the high humidity alarm signal to bus, when humidity higher than high threshold that defined by parameter. The threshold is defined by the parameter.					

Table 6.2 "Internal sensor" communication object

6.3 "Logic function" Communication Object

6.3.1 "AND/OR/XOR" Communication Object

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input a			1 bit	C	-	W	T	U	boolean	Low
12	1st Logic-...	Input b			1 bit	C	-	W	T	U	boolean	Low
13	1st Logic-...	Input c			1 bit	C	-	W	T	U	boolean	Low
14	1st Logic-...	Input d			1 bit	C	-	W	T	U	boolean	Low
15	1st Logic-...	Input e			1 bit	C	-	W	T	U	boolean	Low
16	1st Logic-...	Input f			1 bit	C	-	W	T	U	boolean	Low
17	1st Logic-...	Input g			1 bit	C	-	W	T	U	boolean	Low
18	1st Logic-...	Input h			1 bit	C	-	W	T	U	boolean	Low
19	1st Logic-...	Logic result			1 bit	C	-	-	T	-	boolean	Low

Fig.6.3.1 "AND/OR/XOR"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
11/.../18	1st Logic- {{...}}	Input X	1 bit	C,W,T,U	1.002 boolean
The name in parentheses changes with the parameter "Description for logic function". If description is empty, display "1st Logic- {{...}}" by default. The same below. The communication object is used to receive the value of logical input Input x.					
19	1st Logic- {{...}}	Logic result	1 bit	C,T	1.002 boolean
The communication object is used to send the results of logical operation.					

Table 6.3.1 "AND/OR/XOR"communication object

6.3.2 "Threshold comparator" Communication Object

Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Threshold value input			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
19	1st Logic-...	Logic result			1 bit	C	-	-	T	-	boolean	Low

Fig.6.3.3 "Threshold comparator" communication object

NO	Name	Object Function	Data Type	Flag	DTP
11	1st Logic- {...}}	Threshold value input	4bit 1byte 2byte 4byte	C,W,U	3.007 dimming 5.010 counter pulses 7.001 pulses 12.001 counter pulses 8.x signed value 9.x float value 9.001 temperature 9.007 humidity 9.004 lux
The communication object is used to input threshold value.					
19	1st Logic- {...}}	Logic result	1bit	C,T	1.002 boolean
The communication object is used to send the results of logical operation. That is, the value that should be sent after the object input threshold is compared with the setting threshold value.					

Table 6.3.3 "Threshold comparator" communication object

6.3.3 "Format convert" Communication Object

Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	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	C	-	W	-	U	boolean	Low
19	1st Logic-...	Output 2bit			2 bit	C	-	-	T	-	switch control	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 1bit-bit0			1 bit	C	-	W	-	U	boolean	Low
12	1st Logic-...	Input 1bit-bit1			1 bit	C	-	W	-	U	boolean	Low
13	1st Logic-...	Input 1bit-bit2			1 bit	C	-	W	-	U	boolean	Low
14	1st Logic-...	Input 1bit-bit3			1 bit	C	-	W	-	U	boolean	Low
15	1st Logic-...	Input 1bit-bit4			1 bit	C	-	W	-	U	boolean	Low
16	1st Logic-...	Input 1bit-bit5			1 bit	C	-	W	-	U	boolean	Low
17	1st Logic-...	Input 1bit-bit6			1 bit	C	-	W	-	U	boolean	Low
18	1st Logic-...	Input 1bit-bit7			1 bit	C	-	W	-	U	boolean	Low
19	1st Logic-...	Output 1byte			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 1byte			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
19	1st Logic-...	Output 2byte			2 bytes	C	-	-	T	-	pulses	Low

"1x1byte --> 1x2byte"function: converts one 1byte values to a 2byte value, such as Input 1byte=125--> Output 2byte=125. Although the value remains the same, the data type of the value is different.

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 1byte-low			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
12	1st Logic-...	Input 1byte-high			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
19	1st Logic-...	Output 2byte			2 bytes	C	-	-	T	-	pulses	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 2byte-low			2 bytes	C	-	W	-	U	pulses	Low
12	1st Logic-...	Input 2byte-high			2 bytes	C	-	W	-	U	pulses	Low
19	1st Logic-...	Output 4byte			4 bytes	C	-	-	T	-	counter pulses (unsign...Low	

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 1byte			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
12	1st Logic-...	Output 1bit-bit0			1 bit	C	-	-	T	-	boolean	Low
13	1st Logic-...	Output 1bit-bit1			1 bit	C	-	-	T	-	boolean	Low
14	1st Logic-...	Output 1bit-bit2			1 bit	C	-	-	T	-	boolean	Low
15	1st Logic-...	Output 1bit-bit3			1 bit	C	-	-	T	-	boolean	Low
16	1st Logic-...	Output 1bit-bit4			1 bit	C	-	-	T	-	boolean	Low
17	1st Logic-...	Output 1bit-bit5			1 bit	C	-	-	T	-	boolean	Low
18	1st Logic-...	Output 1bit-bit6			1 bit	C	-	-	T	-	boolean	Low
19	1st Logic-...	Output 1bit-bit7			1 bit	C	-	-	T	-	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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 2byte			2 bytes	C	-	W	-	U	pulses	Low
18	1st Logic-...	Output 1byte-low			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
19	1st Logic-...	Output 1byte-high			1 byte	C	-	-	T	-	counter pulses (0..255)	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	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 4byte			4 bytes	C	-	W	-	U	counter pulses (unsign...	Low
18	1st Logic-...	Output 2byte-low			2 bytes	C	-	-	T	-	pulses	Low
19	1st Logic-...	Output 2byte-high			2 bytes	C	-	-	T	-	pulses	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 3byte			3 bytes	C	-	W	-	U	RGB value 3x(0..255)	Low
17	1st Logic-...	Output 1byte-low			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
18	1st Logic-...	Output 1byte-middle			1 byte	C	-	-	T	-	counter pulses (0..255)	Low
19	1st Logic-...	Output 1byte-high			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input 1byte-low			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
12	1st Logic-...	Input 1byte-middle			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
13	1st Logic-...	Input 1byte-high			1 byte	C	-	W	-	U	counter pulses (0..255)	Low
19	1st Logic-...	Output 3byte			3 bytes	C	-	-	T	-	RGB value 3x(0..255)	Low

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

NO.	Name	Object Function	Data Type	属性	DTP
11	1st Logic- {...}}	Input ...	1bit 1byte 2byte 3byte 4byte	C,W,U	1.002 boolean 5.010 counter pulses 7.001 pulses 12.001 counter pulses 232.600 RGB value 3x(0..255)
The communication object is used to input a value that needs to be converted.					
19	1st Logic- {...}}	Output .. .	1bit 2bit 1byte 2byte 3byte 4byte	C,T	1.002 boolean 2.001 switch control 5.010 counter pulses 7.001 pulses 12.001 counter pulses 232.600 RGB value 3x(0..255)
The communication object is used to output the converted value.					

Fig 6.3.3 “Format convert”communication object

6.3.4 "Gate forwarding" Communication Object

Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Gate value select			1 byte	C	-	W	-	-	scene number	Low
12	1st Logic-...	Input A			1 bit	C	-	W	-	-	switch	Low
13	1st Logic-...	Input B			1 bit	C	-	W	-	-	switch	Low
14	1st Logic-...	Input C			1 bit	C	-	W	-	-	switch	Low
15	1st Logic-...	Input D			1 bit	C	-	W	-	-	switch	Low
16	1st Logic-...	Output A			1 bit	C	-	-	T	-	switch	Low
17	1st Logic-...	Output B			1 bit	C	-	-	T	-	switch	Low
18	1st Logic-...	Output C			1 bit	C	-	-	T	-	switch	Low
19	1st Logic-...	Output D			1 bit	C	-	-	T	-	switch	Low

Fig.6.3.4 "Gate forwarding" communication object

NO.	Name	Object Function	Data Type	Flag	DTP
11	1st Logic- {...}}	Gate value select	1byte	C,W	17.001 scene number
The communication object is used to select the scene of logical gate forwarding.					
12/.../15	1st Logic- {...}}	Input X	1bit/4bit/1byte	C,W	1.001 switch 3.007 dimming 5.010 counter
The communication object is used to receive the value of the logic gate input Input x.					
16/.../19	1st Logic- {...}}	Output X	1bit/4bit/1byte	C,T	1.001 switch 3.007 dimming 5.010 counter

The communication object is used to output the value forwarded by the logic gate. The output value is the same as the input value, but one input can be forwarded into one or more outputs, set by parameters.

Table "Gate forwarding" communication object

6.3.5 "Gate function" Communication Object

Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input			1 bit	C	-	W	-	-	switch	Low
12	1st Logic-...	Gate input			1 bit	C	-	W	-	-	boolean	Low
19	1st Logic-...	Output			1 bit	C	-	-	T	-	switch	Low

图 6.3.5 "Gate function"的通讯对象

NO	Name	Object Function	Data Type	Flag	DTP
11	1st Logic- {{...}}	Input	1bit 1byte 2byte	C,W	1.001 switch 5.001 percentage 5.010 counter pulses 9.001 temperature 7.001 pulses
The communication object is used to input a value that needs to gate filter.					
12	1st Logic- {{...}}	Gate input	1bit	C,W	1.002 boolean
The communication object is used to control the switch status of gate input. Input signal is allowed to pass when gate open, then output, and the current input status is still sent if there is a change; Can not pass when gate close.					
19	1st Logic- {{...}}	Output	1bit 1byte	C,T	1.001 switch 5.001 percentage

			2byte		5.010 counter pulses 9.001 temperature 7.001 pulses
--	--	--	--------------	--	--

The communication object is used to output the value after gate filtering. Only when gate input status is open, output is available, defined by the object "Gate input".

Table 6.3.5 "Gate function"communication object

6.3.6 "Delay function"communication object

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input			1 bit	C	-	W	-	-	switch	Low
19	1st Logic-...	Output			1 bit	C	-	-	T	-	switch	Low

Input/Output - 1bit[On/Off]

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input			1 byte	C	-	W	-	-	percentage (0..100%)	Low
19	1st Logic-...	Output			1 byte	C	-	-	T	-	percentage (0..100%)	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input			1 byte	C	-	W	-	-	counter pulses (0..255)	Low
19	1st Logic-...	Output			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

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

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input			2 bytes	C	-	W	-	-	temperature (°C)	Low
19	1st Logic-...	Output			2 bytes	C	-	-	T	-	temperature (°C)	Low

Input/Output - 2byte[Float]

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Input			2 bytes	C	-	W	-	-	pulses	Low
19	1st Logic-...	Output			2 bytes	C	-	-	T	-	pulses	Low

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

Fig.6.3.6 "Delay function"communication object

NO.	Name	Object Function	Data Type	Flag	DTP
11	1st Logic- {{...}}	Input	1bit 1byte 2byte	C,W	1.001 switch 5.001 percentage 5.010 counter pulses 9.001 temperature 7.001 pulses
The communication object is used to input a value that needs to delay.					
19	1st Logic- {{...}}	Output	1bit 1byte 2byte	C,T	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 6.3.6 "Delay function"communication object

6.3.7 "Staircase lighting" Communication Object

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
11	1st Logic-...	Trigger value			1 bit	C	-	W	-	-	trigger	Low
12	1st Logic-...	Light-on duration time			2 bytes	C	-	W	-	-	time (s)	Low
19	1st Logic-...	Output			1 bit	C	-	-	T	-	switch	Low

Fig.6.3.7 "Staircase lighting"communication object

NO.	Name	Object Function	Data Type	Flag	DTP
11	1st Logic- {{...}}	Trigger value	1bit	C,W	1.017 trigger
The communication object is used to receive the value to trigger staircase lighting.					

12	1st Logic- {{...}}	Light-on duration time	2byte	C,W	7.005 time(s)
The communication object is used to modify the staircase light-on duration time, the modified range is referenced from the range defined by the parameter, take the limit value if exceeded.					
19	1st Logic- {{...}}	Output	1bit/1byte	C,T	1.001 switch 5.010 counter pulses
The communication object is used to output telegram values when triggered. Telegram value is determined by the parameter setting datatype.					

Table 6.3.7 "Staircase lighting"communication object

6.4 "Scene Group setting" Communication Object

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	1bit value			1 bit	C	-	-	T	-	switch	Low

1 bit value

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	1byte unsigned value			1 byte	C	-	-	T	-	counter pulses (0..255)	Low

1 byte

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	HVAC mode			1 byte	C	-	-	T	-	HVAC mode	Low

HVAC mode

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	2byte unsigned value			2 bytes	C	-	-	T	-	pulses	Low

2byte unsigned value

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	Temperature			2 bytes	C	-	-	T	-	temperature (°C)	Low

Temperature

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	RGB value			3 bytes	C	-	-	T	-	RGB value 3x(0..255)	Low

RGB value

Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
83	Scene Group	Main scene trigger			1 byte	C	-	W	-	-	scene number	Low
84	1st Scene Group-Output 1	RGBW value			6 bytes	C	-	-	T	-	RGBW value 4x(0..100%)	Low

RGBW value

Fig.6.4 "Scene Group setting" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
83	Scene Group	Main scene trigger	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					
84	1st Scene Group-{{Output X}}	1bit value 1byte unsigned value HVAC mode 2byte unsigned value Temperature RGB value RGBW value	1bit 1byte 2byte 3byte 6byte	C,T	1.001 switch 5.010 counter pulses 20.102 HVAC mode 7.001 pulses 9.001 temperature 232.600 RGB value 3x(0..255) 251.600 DPT_Colour_RGBW
When a scene is recalled, the communication object is used to send the corresponding output value of the scene to the bus. If the output is not set to this scene, it will not be sent. A total of 8 scene groups can be set up, with 8 outputs per group.					

Table 6.4 "Scene Group setting"communication object

6.5 "HVAC controller" Communication Object

6.5.1 "Room temperature controller (RTC) " Communication Object

148	Controller 1 - ...	Power on/off	1 bit	C R W - -	switch	低
149	Controller 1 - ...	External temperature sensor	2 bytes	C - W T U	temperature (°C)	低
150	Controller 1 - ...	Base setpoint adjustment	2 bytes	C - W - -	temperature (°C)	低
151	Controller 1 - ...	Setpoint offset	1 bit	C - W - -	step	低
152	Controller 1 - ...	Float offset value	2 bytes	C - W - -	temperature differen...	低
153	Controller 1 - ...	Setpoint offset reset	1 bit	C - W - -	reset	低
154	Controller 1 - ...	Heating/Cooling mode	1 bit	C - W - -	cooling/heating	低
155	Controller 1 - ...	Operation mode	1 byte	C - W - -	HVAC mode	低
156	Controller 1 - ...	Comfort mode	1 bit	C - W - -	enable	低
157	Controller 1 - ...	Economy mode	1 bit	C - W - -	enable	低
158	Controller 1 - ...	Frost/Heat protection mode	1 bit	C - W - -	enable	低
159	Controller 1 - ...	Standby mode	1 bit	C - W - -	enable	低
160	Controller 1 - ...	Extended comfort mode	1 bit	C - W - -	acknowledge	低
161	Controller 1 - ...	Fan automatic operation	1 bit	C - W - -	enable	低
162	Controller 1 - ...	Window contact	1 bit	C - W T U	window/door	低
163	Controller 1 - ...	Presence detector	1 bit	C - W T U	occupancy	低
164	Controller 1 - ...	Actual temperature, status	2 bytes	C R - T -	temperature (°C)	低
165	Controller 1 - ...	Base temperature setpoint, status	2 bytes	C R - T -	temperature (°C)	低
166	Controller 1 - ...	Setpoint offset, status	2 bytes	C R - T -	temperature differen...	低
167	Controller 1 - ...	Current temperature setpoint, status	2 bytes	C R - T -	temperature (°C)	低
168	Controller 1 - ...	Heating/Cooling mode, status	1 bit	C R - T -	cooling/heating	低
169	Controller 1 - ...	Operation mode, status	1 byte	C R - T -	HVAC mode	低
170	Controller 1 - ...	Comfort mode, status	1 bit	C R - T -	enable	低
171	Controller 1 - ...	Economy mode, status	1 bit	C R - T -	enable	低
172	Controller 1 - ...	Frost/Heat protection mode, status	1 bit	C R - T -	enable	低
173	Controller 1 - ...	Standby mode, status	1 bit	C R - T -	enable	低
174	Controller 1 - ...	Heating control value	1 byte	C R - T -	percentage (0..100%)	低
175	Controller 1 - ...	Cooling control value	1 byte	C R - T -	percentage (0..100%)	低
176	Controller 1 - ...	Fan speed	1 byte	C - - T -	percentage (0..100%)	低
177	Controller 1 - ...	Fan speed 1	1 bit	C - - T -	switch	低
178	Controller 1 - ...	Fan speed 2	1 bit	C - - T -	switch	低
179	Controller 1 - ...	Fan speed 3	1 bit	C - - T -	switch	低
180	Controller 1 - ...	Fan speed 4	1 bit	C - - T -	switch	低
181	Controller 1 - ...	Fan speed 5	1 bit	C - - T -	switch	低
182	Controller 1 - ...	Fan speed off	1 bit	C - - T -	switch	低
183	Controller 1 - ...	Fan automatic operation, status	1 bit	C R - T -	enable	低
184	Controller 1 - ...	Additional Heating control value	1 byte	C R - T -	percentage (0..100%)	低
185	Controller 1 - ...	Additional Cooling control value	1 byte	C R - T -	percentage (0..100%)	低
186	Controller 1 - ...	Power On/Off, status	1 bit	C R - T -	switch	低

Fig.6.5.1 "Room temperature controller(RTC)"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
148	Controller X-{{...}}	Power on/off	1bit	C,W,R	1.001 switch
The communication object is used to receive the telegram from the bus to control RTC power on/off. Telegrams:					

1—On

0—Off

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

149	Controller X-{{...}}	External temperature sensor	2byte	C,W,T ,U	9.001 temperature
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The communication object is used to receive the temperature value detected by the temperature sensor of the device from the bus. Range:-50~99.8°C

150	Controller X-{{...}}	Current setpoint adjustment Base setpoint adjustment	2byte	C,W	9.001 temperature
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"Current setpoint adjustment" 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 setpoint adjustment" 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 setting temperature of the standby mode and the economy mode changes according to the relative change. In any case, the temperature setting value of the protection mode cannot be modified by the bus.

151	Controller X-{{...}}	Setpoint offset	1bit	C,W	1.007 step
------------	---------------------------------------	------------------------	-------------	------------	-------------------

The communication object is visible only when absolute adjustment, and offset function enabled. Used to adjust the offset to adjust setpoint temperature indirectly. The step value set according to the parameter. Telegrams:

1 —Increase the offset in the forward direction

0 —Decrease the offset in the negative direction

152	Controller X-{{...}}	Float offset value	2byte	C,W	9.002 temperature difference
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The communication object is visible only when absolute adjustment, and offset function enabled. Used to modify the accumulated offset via 2 byte float value.

153	Controller X-{{...}}	Setpoint offset reset	1bit	C,W	1.015 reset
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The communication object is visible only when absolute adjustment, and offset function enabled. Reset offset value when telegram is 1.

154	Controller X-{{...}}	Heating/Cooling mode	1bit	C,W	1.100 cooling/heating
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The communication object is used for switching the heating and cooling via the bus. Telegrams:

1 —Heating

0 —Cooling

155	Controller X-{{...}}	Operation mode	1byte	C,W	20.102 HVAC mode
156	Controller X-{{...}}	Comfort mode	1bit	C,W	1.003 enable
157	Controller X-{{...}}	Economy mode	1bit	C,W	1.003 enable
158	Controller X-{{...}}	Frost/Heat protection mode	1bit	C,W	1.003 enable

159	Controller X-{{...}}	Standby mode	1bit	C,W	1.003 enable
These communication objects are visible when the “operation mode” and “1-bit object function for operation mode” are enabled. They are used to control the RTC operation mode via the bus. Object 156—— Comfort mode Object 157—— Standby mode Object 158—— Economy mode Object 159—— Protection mode When the object receives the telegram “1”, the corresponding mode is activated. When 1 bit standby object is not enable, and the telegrams of comfort, economy, protection mode are 0, is standby mode. When 1 bit standby object is enable, standby object receives “1” activates standby mode, 0 is no processing.					
160	Controller X-{{...}}	Extended comfort mode	1bit	C,W	1.016 acknowledge
The communication object is used for triggering time to extended comfort mode. Telegrams: 1——Activate comfort mode 0——No sense Activate comfort mode when the object receives telegram 1. If receive again telegram 1 in delay time, time will be timed again. And return the previous operation mode from comfort mode once finish timing. If there is a new operation mode in delay time, exit the comfort mode. If a switch operation, exit the timing, but switch the heating/cooling will not.					
161	Controller	Fan automatic operation	1bit	C,W	1.003 enable

	X-{{...}}				
The communication object is used to activate the fan automatic operation via the bus. Telegram: 1—Activate auto 0—Exit auto					
162	Controller X-{{...}}	Window contact	1bit	C,W,T ,U	1.019 Window/door
The communication object is used to receive the switch status of window contact. Telegrams: 1—The window is open 0—The window is close					
163	Controller X-{{...}}	Presence detector	1bit	C,W,T ,U	1.018 occupancy
The communication object is used to receive the room occupancy status from presence detector. Telegrams: 1—Occupied 0—Unoccupied					
164	Controller X-{{...}}	Actual temperature, status	2byte	C,R,T	9.001 temperature
The communication object is visible when temperature reference of RTC function is combination of internal and external sensor. Used to send the actual temperature after the combination to the bus.					
165	Controller X-{{...}}	Base temperature setpoint, status	2byte	C,R,T	9.001 temperature

The communication object is visible only when relative adjustment. Used to send the current base set temperature to the bus.

166	Controller X-{{...}}	Setpoint offset, status	2byte	C,R,T	9.002 temperature difference
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The communication object is visible only when relative adjustment. Used to send the accumulated offset value of base set temperature to the bus.

167	Controller X-{{...}}	Current temperature setpoint, status	2byte	C,R,T	9.001 temperature
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The communication object is used to send current set temperature to the bus.

168	Controller X-{{...}}	Heating/Cooling mode, status	1bit	C,R,T	1.100 cooling/heating
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The communication object is used to feedback the telegram of switching cooling and heating function to the bus.

169	Controller X-{{...}}	Operation mode, status	1byte	C,R,T	20.102 HVAC mode
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170	Controller X-{{...}}	Comfort mode, status	1bit	C,R,T	1.003 enable
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171	Controller X-{{...}}	Economy mode, status	1bit	C,R,T	1.003 enable
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172	Controller X-{{...}}	Frost/Heat protection mode, status	1bit	C,R,T	1.003 enable
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173	Controller X-{{...}}	Standby mode, status	1bit	C,R,T	1.003 enable
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These communication objects are visible when the “operation mode” and “1-bit object function for operation mode” are enabled. They are used to send RTC operation mode status to the bus.

Object 170—— Comfort mode

Object 171—— Economy mode

Object 172—— Protection mode

Object 173—— Standby mode

When a mode is activated, the corresponding object only sends telegram “1”. When 1 bit standby object is not enable, activate standby mode when comfort, economy, protection objects send telegram 0 together. When 1 bit standby object is enable, activate standby mode only when standby object send 1.

Note: no requirement to send mode status to the bus when switchover via bus.

The same is fan speed and other operation.

174	Controller X-{{...}}	Heating control value Heating/Cooling control value	1bit/ 1byte	C,R,T	1.001 switch/5.001 percentage
175	Controller X-{{...}}	Cooling control value	1bit/ 1byte	C,R,T	1.001 switch/5.001 percentage
The communication object is used to send control value of heating or cooling function to the bus. Object datatype is according to parameter setting.					
176	Controller X-{{...}}	Fan speed	1byte	C,T	5.001 percentage 5.100 fan stage
177	Controller X-{{...}}	Fan speed 1	1bit	C,T	1.001 switch
178	Controller X-{{...}}	Fan speed 2	1bit	C,T	1.001 switch
179	Controller	Fan speed 3	1bit	C,T	1.001 switch

	X-{{...}}				
180	Controller X-{{...}}	Fan speed 4	1bit	C,T	1.001 switch
181	Controller X-{{...}}	Fan speed 5	1bit	C,T	1.001 switch
182	Controller X-{{...}}	Fan speed off	1bit	C,T	1.001 switch

These communication objects are used to send control telegrams of the fan speed to the bus.

1bit object is visible according to the parameter setting :

Object 177—fan speed 1

Object 178—fan speed 2

Object 179—fan speed 3

Object 180—fan speed 4

Object 181—fan speed 5

Object 182—Fan speed off

Only the corresponding object sends telegram “1” when switch to a certain fan speed. When 1bit-off object is not enable, all objects send telegrams “0” when switch to fan speed off (The situation apply to connect with fan actuator of GVS);

When 1bit-off object is enable, only 1bit-off object send telegram “1” (The situation apply to connect with fan actuator of other manufacturers).

183	Controller X-{{...}}	Fan automatic operation, status	1bit	C,R,T	1.003 enable
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This communication object is used to send the automatic status of fan speed to the bus.

184	Controller X-{{...}}	Additional heating control value Additional heating/cooling control value	1bit/ 1byte	C,R,T	1.001 switch/5.001 percentage
185	Controller X-{{...}}	Additional cooling control value	1bit/ 1byte	C,R,T	1.001 switch/5.001 percentage
These communication object is used to send control value of additional heating or cooling function to the bus. 1bit: telegrams: 1-switch on the valves,0-switch off the valve 1byte: telegrams: 100%-switch on the valves, 0%-switch off the valve					
186	Controller X-{{...}}	Power On/Off, status	1bit	C,R,T	1.001 switch
This communication object is used to send the switch status to the bus.					

Table 6.5.1 "Room temperature controller(RTC)"communication object

6.5.2 "Ventilation controller" Communication Object

148	Controller 1 - ...	Fan automatic operation	1 bit	C R W - -	enable	低
149	Controller 1 - ...	PM 2.5 value	2 bytes	C - W T U	pulses	低
150	Controller 1 - ...	Fan automatic operation, status	1 bit	C R - T -	enable	低
176	Controller 1 - ...	Fan speed	1 byte	C - - T -	percentage (0..100%)	低

Fig.6.5.2 "Ventilation controller" communication object

NO.	Name	Object Function	Data Typ e	Flag	DPT
148	Controller	Fan automatic	1bit	C,R,W	1.003 enable

	X-{{...}}	operation			
The communication object is used to activate the fan automatic operation via the bus. Telegram: 1——Activate auto 0——Exit auto					
149	Controller X-{{...}}	PM 2.5 value VOC value CO2 value	2byte	C,W,T ,U	7.001 pulse 9.030 concentration(ug/m3) 9.008 parts/million(ppm)
The communication object is used to receive the input of the PM2.5/VOC/CO2 value. The data type of object is set by the parameter.Range:0~999ug/m³ or 0~4000ppm.					
150	Controller X-{{...}}	Fan automatic operation, status	1bit	C,R,T	1.003 enable
This communication object is used to send the automatic status of fan speed to the bus.					
176	Controller X-{{...}}	Fan speed	1byte	C,T	5.001 percentage 5.100 fan stage
The communication object is used to send the fan speed under auto control to the bus. Corresponding telegrams of each fan speed are determined by parameter setting.					

Table 6.5.2 "Ventilation controller"communication object

6.6 "Human Centric Lighting(HCL)" Communication Object

382	Human Centric Lighting(HCL)	Start HCL	1 bit	C - W - -	start/stop	低
383	Human Centric Lighting(HCL)	HCL status	1 bit	C R - T -	state	低
384	Human Centric Lighting(HCL)	Brightness value	1 byte	C - - T -	percentage (0..100%)	低
385	Human Centric Lighting(HCL)	Colour temperature value	2 bytes	C - - T -	absolute colour tem...	低
388	Human Centric Lighting(HCL)	Switch control	1 bit	C - W - -	switch	低
389	Human Centric Lighting(HCL)	Brightness control value	1 byte	C - W - -	percentage (0..100%)	低
390	Human Centric Lighting(HCL)	Colour temperature control value	2 bytes	C - W - -	absolute colour tem...	低

Normal

386	Human Centric Lighting(HCL)	Warm white brightness	1 byte	C - - T -	percentage (0..100%) 低
387	Human Centric Lighting(HCL)	Cool white brightness	1 byte	C - - T -	percentage (0..100%) 低
388	Human Centric Lighting(HCL)	Switch control	1 bit	C - W - -	switch 低
391	Human Centric Lighting(HCL)	Warm white brightness control value	1 byte	C - W - -	percentage (0..100%) 低
392	Human Centric Lighting(HCL)	Cool white brightness control value	1 byte	C - W - -	percentage (0..100%) 低

Directly(with warm/cool white algorithm)

Fig.6.6 "Human Centric Lighting(HCL)"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
382	Human Centric Lighting(HCL)	Start HCL	1bit	C,W	1.010 start/stop
The communication object is used to start the setting of HCL. Telegrams: 1—Start 0—Stop					
383	Human Centric Lighting(HCL)	HCL status	1bit	C,R,T	1.011 state
The communication object is used to send the status telegram of HCL to bus.					
384	Human Centric Lighting(HCL)	Brightness value	1byte	C,T	5.001 percentage(0..100 %)
389	Human Centric Lighting(HCL)	Brightness control value	1byte	C,W	5.001 percentage(0..100 %)

	L)				
These two parameters are visible when control brightness via HCL. Telegrams: 0...100% Obj.384: used for sending dimming telegrams to the bus, that is, sending the brightness value. Obj.389: used for receiving brightness status responded from bus.					
385	Human Centric Lighting(HCL)	Colour temperature value	2byte	C,T	7.600 absolute colour temperature
390	Human Centric Lighting(HCL)	Colour temperature control value	2byte	C,W	7.600 absolute colour temperature
These two communication objects apply to normal control of colour temperature adjustment. Telegrams: 2000...7000 K Obj.385: used for sending the control telegram of the colour temperature to the bus. Obj.390: used for receiving the control telegram of the colour temperature from bus.					
386	Human Centric Lighting(HCL)	Warm white brightness	1byte	C,T	5.001 percentage(0..100 %)
391	Human Centric Lighting(HCL)	Warm white brightness control value	1byte	C,W	5.001 percentage(0..100 %)
These two communication objects apply to the warm white brightness in directly control.					

Telegrams: 0...100% Obj.386: used for sending the warm white dimming telegram to the bus, that is, sending the warm white brightness value. Obj.391: used for receiving the warm white brightness status responded from bus.					
387	Human Centric Lighting(HCL)	Cool white brightness	1byte	C,T	5.001 percentage(0..100 %)
392	Human Centric Lighting(HCL)	Cool white brightness control value	1byte	C,W	5.001 percentage(0..100 %)
These two communication objects apply to the cool white brightness in directly control. Telegrams: 0...100% Obj.387: used for sending the cool white dimming telegram to the bus, that is, sending the cool brightness value. Obj.392: used for receiving the cool white brightness status responded from bus.					
388	Human Centric Lighting(HCL)	Switch control	1bit	C,W	1.001 switch
During HCL running, stop running HCL when receive the telegram of switch control OFF from bus, the communication object is to receive the telegram of switch control. That is telegram 0 is stop, 1 is meaningless.					

Table 6.6 "Human Centric Lighting(HCL)"communication object

6.7 "Schedule function" Communication Object

393	Schedule 1-...	On/Off	1 bit	C - - T -	switch
394	Schedule 1-...	Disable/Enable	1 bit	C - W - -	enable
393	Schedule 1-...	1byte unsigned value	1 byte	C - - T -	counter pulses (0..255)
393	Schedule 1-...	HVAC mode	1 byte	C - - T -	HVAC mode
393	Schedule 1-...	Scene control	1 byte	C - - T -	scene number
393	Schedule 1-...	2byte unsigned value	2 bytes	C - - T -	pulses
393	Schedule 1-...	Temperature value	2 bytes	C - - T -	temperature (°C)

Fig.6.7 "Schedule function"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
393	Schedule X-{{...}}	On/Off 1byte unsigned value HVAC mode Scene control 2byte unsigned value Temperature value	1bit 1byte 1byte 1byte 2byte 2byte	C,T	1.001 switch 5.010 counter pulses(0..255) 20.102 HVAC mode 17.001 scene number 7.001 pulses 9.001 temperature
The communication object is used to send the preset telegram value of the time function to the bus, and the schedule function, default value and object type are set by the parameters. When the time is up, send the default telegram value to the bus. A total of 16 timing(x= 16) can be set .					
394	Schedule X-{{...}}	Disable/Enable	1bit	C,W	1.003 enable
The communication object is used to disable/enable schedule function x. The					

disable/enable telegram value is specifically defined by the parameter. When disable, schedule x function will be disable.

Table 6.7 "Schedule function"communication object

6.8 “Voice reminder” Communication Object

409	Voice reminder 1-...	Reminder acknowledge	1 bit	C - - T -	acknowledge
410	Voice reminder 1-...	Reminder message	14 bytes	C - W - -	Character String (ISO 8859-1)
411	Voice reminder 1-...	Reminder	1 bit	C - W T U	start/stop

Fig.6.8 “Voice reminder”communication object

NO.	Name	Object Function	Data Type	Flag	DPT
409	Voice reminder 1-{{...}}	Reminder acknowledge	1 bit	C,T	1.016 acknowledge
This communication object is used to send response telegram 1 to the bus when the user clicks to confirm the information on the screen.					
410	Voice reminder 1-{{...}}	Reminder message	14 byte	C,W	16.001 character string (ISO 8859-1)
This communication object is used to input the information displayed on the screen through the object. When no value is initially received, the pop-up window is displayed as empty.					
411	Voice reminder 1-{{...}}	Reminder	1bit 1byte	C,W,T,U	1.010 start/stop 5.010 counter pulses
The communication object is used to receive voice broadcast signal 1 bit, 1 - play voice, 0 - stopped playing, 1 byte, according to the parameter is set the value of the trigger					

6.9 "KNX Channel general" Communication Object

433	KNX Channel general	Device online common 1, status	1 bit	C - W T U	switch
434	KNX Channel general	Device online common 2, status	1 bit	C - W T U	switch
435	KNX Channel general	Device online common 3, status	1 bit	C - W T U	switch
436	KNX Channel general	Device online common 4, status	1 bit	C - W T U	switch
437	KNX Channel general	Device online common 5, status	1 bit	C - W T U	switch
438	KNX Channel general	Device online common 6, status	1 bit	C - W T U	switch
439	KNX Channel general	Device online common 7, status	1 bit	C - W T U	switch
440	KNX Channel general	Device online common 8, status	1 bit	C - W T U	switch
441	KNX Channel general	Device online common 9, status	1 bit	C - W T U	switch
442	KNX Channel general	Device online common 10, status	1 bit	C - W T U	switch

Fig.6.9 "KNX Channel general"communication object

NO	Name	Object Function	Data Type	Flag	DPT
433...442	KNX Channel general	Device online common X, status	1bit	C,W,T,U	1.* 1-bit

The communication object is displayed when the parameter "Time period request for common x" is greater than 0.

The communication object is used to periodically send a read request telegram for the online status of a generic device in order to query the current online status of each generic device.

Table 6.9 "KNX Channel general"communication object

6.10 "KNX Channel X" Communication Object

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable

Fig.6.10 "KNX Channel X"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
443	KNX Channel X-{{...}}	Device online, status	1bit	C,W,T,U	1.001 switch
This communication object is visible when the device online status reference by "individual". The communication object is used to periodically send a read request telegram for the online status of a generic device in order to query the current online status of each generic device.					
444	KNX Channel X-{{...}}	Locking object	1bit	C,W	1.003 enable
Suitable for all of the following functions, except sensors, energy metering devices. The communication object is used to lock/unlock the icon function. 1-unlock 0-lock					

Table 6.10 "KNX Channel X"communication object

6.10.1"Switch" Communication Object

445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch

Switch

445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
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Press/Release switch

Fig.6.10.1 "Switch" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Switch	1bit	C,T	1.001 switch
This communication object apply to switch, press/release switch, relative/brightness dimming, colour and colour temperature control. Telegrams: 1——Turn on the light 0——Turn off the light					
450	KNX Channel X-{{...}}	Switch, status	1bit	C,W,T,U	1.001 switch
The communication object is used to receive the on / off status from other bus devices, and feedback to screen display, applies to switch, relative/brightness dimming, brightness+ colour temperature control and switch indicator.					

Table 6.10.1 "Switch" communication object

6.10.2 "Dimming" Communication Object

445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Relative dimming	4 bit	C - W T -	dimming control
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch

Relative dimming

445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
447	KNX Channel 1-...	Brightness dimming	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)

Brightness dimming

445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Relative dimming	4 bit	C - - T -	dimming control
447	KNX Channel 1-...	Brightness dimming	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)

Relative&Brightness dimming

Fig.6.10.2 "Dimming" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
446	KNX Channel X-{{...}}	Relative dimming	4bit	C,W,T	3.007 dimming control
The communication object applies to relative dimming, is used for sending the relative dimming telegram to the bus, such as brighter, darker, or stop-dimming telegram.					
447	KNX Channel X-{{...}}	Brightness dimming	1byte	C,T	5.001 percentage(0..100%)
451	KNX Channel X-{{...}}	Brightness, status	1byte	C,W,T, U	5.001 percentage(0..100%)
These two communication objects apply to brightness dimming. Telegrams: 0~100% Obj.447: used for sending dimming telegrams to the bus, that is, sending the brightness value. Obj.451: used for receiving brightness status responded from dimming actuator.					

Table 6.10.2 "Dimming" Communication Object

6.10.3 "Colour and colour temperature control" Communication Object

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Red dimming value	1 byte	C - - T -	percentage (0..100%)
447	KNX Channel 1-...	Green dimming value	1 byte	C - - T -	percentage (0..100%)
448	KNX Channel 1-...	Blue dimming value	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Red brightness, status	1 byte	C - W T U	percentage (0..100%)
452	KNX Channel 1-...	Green brightness, status	1 byte	C - W T U	percentage (0..100%)
453	KNX Channel 1-...	Blue brightness, status	1 byte	C - W T U	percentage (0..100%)

RGB_3x1byte

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	RGB dimming value	3 bytes	C - - T -	RGB value 3x(0..255)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	RGB brightness, status	3 bytes	C - W T U	RGB value 3x(0..255)

RGB_1x3byte

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Red dimming value	1 byte	C - - T -	percentage (0..100%)
447	KNX Channel 1-...	Green dimming value	1 byte	C - - T -	percentage (0..100%)
448	KNX Channel 1-...	Blue dimming value	1 byte	C - - T -	percentage (0..100%)
449	KNX Channel 1-...	White dimming value	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Red brightness, status	1 byte	C - W T U	percentage (0..100%)
452	KNX Channel 1-...	Green brightness, status	1 byte	C - W T U	percentage (0..100%)
453	KNX Channel 1-...	Blue brightness, status	1 byte	C - W T U	percentage (0..100%)
454	KNX Channel 1-...	White brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBW_4x1byte

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	RGBW dimming value	6 bytes	C - - T -	RGBW value 4x(0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	RGBW brightness, status	6 bytes	C - W T U	RGBW value 4x(0..100%)

RGBW_1x6byte

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Red dimming value	1 byte	C - - T -	percentage (0..100%)
447	KNX Channel 1-...	Green dimming value	1 byte	C - - T -	percentage (0..100%)
448	KNX Channel 1-...	Blue dimming value	1 byte	C - - T -	percentage (0..100%)
449	KNX Channel 1-...	Absolute colour temperature	2 bytes	C - - T -	absolute colour temperature (K)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Red brightness, status	1 byte	C - W T U	percentage (0..100%)
452	KNX Channel 1-...	Green brightness, status	1 byte	C - W T U	percentage (0..100%)
453	KNX Channel 1-...	Blue brightness, status	1 byte	C - W T U	percentage (0..100%)
454	KNX Channel 1-...	Absolute colour temperature, status	2 bytes	C - W T U	absolute colour temperature (K)
455	KNX Channel 1-...	Brightness value	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBCW_3x1byte_Normal

444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Red dimming value	1 byte	C - - T -	percentage (0..100%)
447	KNX Channel 1-...	Green dimming value	1 byte	C - - T -	percentage (0..100%)
448	KNX Channel 1-...	Blue dimming value	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Red brightness, status	1 byte	C - W T U	percentage (0..100%)
452	KNX Channel 1-...	Green brightness, status	1 byte	C - W T U	percentage (0..100%)
453	KNX Channel 1-...	Blue brightness, status	1 byte	C - W T U	percentage (0..100%)
454	KNX Channel 1-...	Absolute colour temperature, status	2 bytes	C - W T U	absolute colour temperature (K)
455	KNX Channel 1-...	Warm white brightness	1 byte	C - - T -	percentage (0..100%)
456	KNX Channel 1-...	Cool white brightness	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBCW_3x1byte_Directly(..) &Brightness+Colour Temperature

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	Red dimming value	1 byte	C - - T -	percentage (0..100%)
447	KNX Channel 1-...	Green dimming value	1 byte	C - - T -	percentage (0..100%)
448	KNX Channel 1-...	Blue dimming value	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	Red brightness, status	1 byte	C - W T U	percentage (0..100%)
452	KNX Channel 1-...	Green brightness, status	1 byte	C - W T U	percentage (0..100%)
453	KNX Channel 1-...	Blue brightness, status	1 byte	C - W T U	percentage (0..100%)
455	KNX Channel 1-...	Warm white brightness	1 byte	C - - T -	percentage (0..100%)
456	KNX Channel 1-...	Cool white brightness	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Warm white brightness, status	1 byte	C - W T U	percentage (0..100%)
458	KNX Channel 1-...	Cool white brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBCW_3x1byte_Directly(..) &Warm/Cool white brightness

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	RGB dimming value	3 bytes	C - - T -	RGB value 3x(0..255)
449	KNX Channel 1-...	Absolute colour temperature	2 bytes	C - - T -	absolute colour temperature (K)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	RGB brightness, status	3 bytes	C - W T U	RGB value 3x(0..255)
454	KNX Channel 1-...	Absolute colour temperature, status	2 bytes	C - W T U	absolute colour temperature (K)
455	KNX Channel 1-...	Brightness value	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBCW_1x3byte_Normal

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	RGB dimming value	3 bytes	C - - T -	RGB value 3x(0..255)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	RGB brightness, status	3 bytes	C - W T U	RGB value 3x(0..255)
454	KNX Channel 1-...	Absolute colour temperature, status	2 bytes	C - W T U	absolute colour temperature (K)
455	KNX Channel 1-...	Warm white brightness	1 byte	C - - T -	percentage (0..100%)
456	KNX Channel 1-...	Cool white brightness	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBCW_1x3byte_Directly(..) &Brightness+Colour Temperature

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
446	KNX Channel 1-...	RGB dimming value	3 bytes	C - - T -	RGB value 3x(0..255)
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
451	KNX Channel 1-...	RGB brightness, status	3 bytes	C - W T U	RGB value 3x(0..255)
455	KNX Channel 1-...	Warm white brightness	1 byte	C - - T -	percentage (0..100%)
456	KNX Channel 1-...	Cool white brightness	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Warm white brightness, status	1 byte	C - W T U	percentage (0..100%)
458	KNX Channel 1-...	Cool white brightness, status	1 byte	C - W T U	percentage (0..100%)

RGBCW_1x3byte_Directly(..) & Warm/Cool white brightness

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Switch	1 bit	C - - T -	switch
450	KNX Channel 1-...	Switch, status	1 bit	C - W T U	switch
454	KNX Channel 1-...	Absolute colour temperature, status	2 bytes	C - W T U	absolute colour temperature (K)
455	KNX Channel 1-...	Warm white brightness	1 byte	C - - T -	percentage (0..100%)
456	KNX Channel 1-...	Cool white brightness	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Brightness, status	1 byte	C - W T U	percentage (0..100%)
455	KNX Channel 1-...	Warm white brightness	1 byte	C - - T -	percentage (0..100%)
456	KNX Channel 1-...	Cool white brightness	1 byte	C - - T -	percentage (0..100%)
457	KNX Channel 1-...	Warm white brightness, status	1 byte	C - W T U	percentage (0..100%)
458	KNX Channel 1-...	Cool white brightness, status	1 byte	C - W T U	percentage (0..100%)

Colour temperature dimming

Fig.6.10.3 "Colour and colour temperature control" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
446	KNX Channel X-{{...}}	RGB dimming value	3byte	C,T	232.600 RGB value 3x(0..255)
451	KNX Channel X-{{...}}	RGB brightness, status	3byte	C,W,T,U	232.600 RGB value 3x(0..255)

These two communication objects are visible when 1x3byte for the RGB object type or 1x3byte for the RGBCW object type is selected. Apply to control brightness of colorful lamp.

Obj.446: Used for sending brightness value of RGB lamp to the bus

Obj.451: Used for receiving brightness value of RGB lamp from bus.

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

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

R: red dimming value; G: green dimming value; B: blue dimming value.

446	KNX Channel X-{{...}}	RGBW dimming value	6byte	C,T	251.600 DPT_Colour_RGB W
451	KNX Channel X-{{...}}	RGBW brightness, status	6byte	C,W,T,U	251.600 DPT_Colour_RGB W

These two communication objects are visible when 1x6byte for the RGBW object type is selected. Apply to control brightness of colorful lamp.

Obj.446: Used for sending brightness value of RGBW lamp to the bus.

Obj.451: Used for receiving brightness value of RGBW lamp from bus.

Encoding of the data type of the 6-byte RGBW dimming object: U8 U8 U8 U8 R8 R4 B4, as follows:

6 _{MSB}	5	4	3	2	1 _{LSB}
R	G	B	W	保留	r r r r mR mG mB mW
UUUUUUUU	UUUUUUUU	UUUUUUUU	UUUUUUUU	000000 00	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.

446	KNX Channel X-{{...}}	Red dimming value	1byte	C,T	5.001 percentage(0..100%)
451	KNX Channel X-{{...}}	Red brightness, status	1byte	C,W,T,U	5.001 percentage(0..100%)

These two communication objects are visible when 3x1byte for the RGB object type or 4x1byte for the RGBW object type is selected. Apply to control brightness of lamp, and also support colour temperature adjustment. Telegrams: 0...100%

Obj.446: Used for sending brightness value of the control R (red) channel to the bus.

Obj.451: Used for sending brightness value of the control R (red) channel to the bus.

447	KNX Channel X-{{...}}	Green dimming value	1byte	C,T	5.001 percentage(0..100%)
452	KNX Channel X-{{...}}	Green brightness, status	1byte	C,W,T,U	5.001 percentage(0..100%)

These two communication objects are visible when 3x1byte for the RGB object type or 4x1byte for the RGBW object type is selected. Apply to control brightness of lamp, and also support colour temperature adjustment. Telegrams: 0...100%

Obj.447: Used for sending brightness value of the control G (green) channel to the bus.

Obj.452: Used for receiving brightness status of the G (green) channel from the bus.

448	KNX Channel	Blue dimming	1byte	C,T	5.001
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	X-{{...}}	value			percentage(0..100%)
453	KNX Channel X-{{...}}	Blue brightness, status	1byte	C,W,T,U	5.001 percentage(0..100%)
These two communication objects are visible when 3x1byte for the RGB object type or 4x1byte for the RGBW object type is selected. Apply to control brightness of lamp. Telegrams: 0...100% Obj.448: Used for sending brightness value of the control B (blue) channel to the bus. Obj.453: Used for receiving brightness status of the B (blue) channel from the bus.					
449	KNX Channel X-{{...}}	White dimming value	1byte	C,T	5.001 percentage(0..100%)
454	KNX Channel X-{{...}}	White brightness, status	1byte	C,W,T,U	5.001 percentage(0..100%)
These two communication objects are visible when 4x1byte or 3byte+1byte for the RGB object type is selected. Apply to control brightness of lamp. Telegrams: 0...100% Obj.449: Used for sending brightness value of the control W (white) channel to the bus. Obj.454: Used for receiving brightness status of the W (white) channel from the bus.					
449	KNX Channel X-{{...}}	Absolute colour temperature Percentage colour temperature	2byte 1byte	C,T	7.600 absolute colour temperature 5.001 percentage(0..100%)

					0%)
These two communication objects apply to colour temperature adjustment. Telegrams: 2000...7000 K Under normal control, used for sending the control telegram of the colour temperature to the bus.					
454	KNX Channel X-{{...}}	Absolute colour temperature, status	2byte	C,W,T,U	7.600 absolute colour temperature
The two communication objects apply to colour temperature adjustment. Telegrams: 2000...7000 K Under normal or directly control & (Brightness+Colour Temperature), used for receiving the control telegram of the colour temperature from bus.					
454	KNX Channel X-{{...}}	Percentage colour temperature, status	1byte	C,W,T,U	5.001 percentage(0..10 0%)
The two communication objects apply to colour temperature adjustment. Telegrams: 2000...7000 K Under normal control, used for sending the control telegram of the colour temperature to the bus.					
455	KNX Channel X-{{...}}	Brightness value	1byte	C,T	5.001 percentage(0..10 0%)
457	KNX Channel X-{{...}}	Brightness, status	1byte	C,W,T,U	5.001 percentage(0..10 0%)

These two communication objects apply to brightness control. Telegrams: 0...100%

Obj.455: Under normal control, used for sending the dimming telegram of the brightness value to the bus, that is, sending the brightness value.

Obj.457: Under normal or directly control & (Brightness+Colour Temperature), used for receiving the brightness status responded from the dimming actuator.

455	KNX	Channel	Warm	white	1byte	C,T	5.001
		X-{{...}}	brightness				percentage(0..100%)
457	KNX	Channel	Warm	white	1byte	C,W,T,U	5.001
		X-{{...}}	brightness, status				percentage(0..100%)

Under the directly control, these two communication objects apply to warm white brightness control. Telegrams: 0...100%

Obj.455: Under directly control, used for sending the warm white dimming telegram to the bus, that is, sending the warm white brightness value.

Obj.457: Under directly control & (Warm/Cool white brightness), used for receiving the warm white brightness status responded from the dimming actuator.

456	KNX	Channel	Cool	white	1byte	C,T	5.001
		X-{{...}}	brightness				percentage(0..100%)
458	KNX	Channel	Cool	white	1byte	C,W,T,U	5.001
		X-{{...}}	brightness, status				percentage(0..100%)

Under the directly control, these two communication objects apply to cool white brightness control. Telegrams: 0...100%

Obj.456: Under directly control, used for sending the cool white dimming telegram to

the bus, that is, sending the cool brightness value.

Obj.458: Under directly control & (Warm/Cool white brightness), used for receiving the cool white brightness status responded from the dimming actuator.

Table 6.10.3 "Colour and colour temperature control" communication object

6.10.4 "Curtain and Blind" Communication object

445	KNX Channel 1-...	Open/Close	1 bit	C - W T -	open/close
446	KNX Channel 1-...	Stop	1 bit	C - W T -	step
447	KNX Channel 1-...	Curtain position	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Curtain position, status	1 byte	C - W T U	percentage (0..100%)

Curtain position

445	KNX Channel 1-...	Up/Down	1 bit	C - W T -	up/down
446	KNX Channel 1-...	Stop	1 bit	C - W T -	step
447	KNX Channel 1-...	Blind position	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Blind position, status	1 byte	C - W T U	percentage (0..100%)

Roller blind position

445	KNX Channel 1-...	Up/Down	1 bit	C - W T -	up/down
446	KNX Channel 1-...	Stop/Slat adj.	1 bit	C - W T -	step
447	KNX Channel 1-...	Blind position	1 byte	C - - T -	percentage (0..100%)
448	KNX Channel 1-...	Slat position	1 byte	C - - T -	percentage (0..100%)
450	KNX Channel 1-...	Blind position, status	1 byte	C - W T U	percentage (0..100%)
451	KNX Channel 1-...	Slat position, status	1 byte	C - W T U	percentage (0..100%)

Venetian blind position and slat

445	KNX Channel 1-...	Open/Close	1 bit	C - W T -	open/close
446	KNX Channel 1-...	Stop	1 bit	C - W T -	step

Curtain step/move

445	KNX Channel 1-...	Up/Down	1 bit	C - W T -	up/down
446	KNX Channel 1-...	Stop	1 bit	C - W T -	step

Roller blind step/move

Fig.6.10.4 "Curtain and blind" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel	Open/Close	1bit	C,T	1.009 open/close

	X-{{...}}				
446	KNX Channel X-{{...}}	Stop	1bit	C,T	1.007 step
447	KNX Channel X-{{...}}	Curtain position	1byte	C,T	5.001 percentage(0..100 %)
450	KNX Channel X-{{...}}	Curtain position, status	1byte	C,W,T, U	5.001 percentage(0..100 %)
Curtain position: apply to open and close curtain. Support to open, close, stop, position adjustment and position status feedback. Obj.445: Used for sending the telegram to the bus, to control curtain open/close. Telegrams: 1——Close the curtain 0——Open the curtain Obj.446: Used for sending the telegram to the bus, to stop curtain movement. Telegrams: 0/1——Stop Obj.447: Used for sending a telegram to control the position of the curtain to the bus. Telegrams: 0...100% Obj.450: Used for receiving a curtain position status in response to the window curtain actuator on the bus. Telegrams: 0...100%					
445	KNX Channel X-{{...}}	Up/Down	1bit	C,T	1.008 up/down

446	KNX Channel X-{{...}}	Stop	1bit	C,T	1.007 step
447	KNX Channel X-{{...}}	Blind position	1byte	C,T	5.001 percentage(0..100 %)
450	KNX Channel X-{{...}}	Blind position, status	1byte	C,W,T, U	5.001 percentage(0..100 %)

Roller blind position: apply to a roller blind without slat. Support to up, down, stop, position adjustment and position status feedback.

Obj.445: Used for sending the telegram to the bus, to control blind up/down.

1——Move down

0——Move up

Obj.446: Used for sending the telegram to the bus, to stop curtain movement.

Telegrams:

0/1——Stop

Obj.447: Used for sending a telegram to control the position of the roller blind to the bus.

Telegrams: 0...100%

Obj.450: Used for receiving a roller blind position status in response to the roller blind actuator on the bus. Telegrams: 0...100%

445	KNX Channel X-{{...}}	Up/Down	1bit	C,T	1.008 up/down
446	KNX Channel X-{{...}}	Stop/Slat adj.	1bit	C,T	1.007 step

447	KNX Channel X-{{...}}	Blind position	1byte	C,T	5.001 percentage(0..100 %)
448	KNX Channel X-{{...}}	Slat position	1byte	C,T	5.001 percentage(0..100 %)
450	KNX Channel X-{{...}}	Blind position, status	1byte	C,W,T, U	5.001 percentage(0..100 %)
451	KNX Channel X-{{...}}	Slat position, status	1byte	C,W,T, U	5.001 percentage(0..100 %)

Venetian blind position and slat: apply to a blind with slat. Support to up, down, stop, position and slat adjustment, position and slat status feedback.

Obj.445、Obj.446 和 Obj.447 are same as above.

Obj.448: Used for sending a telegram to the bus to stop the curtain movement or adjust the slat angle. Telegrams:

1——Stop/Slat adj. Down

0——Stop/Slat adj. Up

445	KNX Channel X-{{...}}	Open/Close	1bit	C, T	1.009 open/close
446	KNX Channel X-{{...}}	Stop	1bit	C, T	1.007 step

Curtain step/move: these two communication objects apply to open and close curtain. Support to open, close, stop.

Obj.445: Used for sending the telegram to the bus, to control curtain open/close.

Telegrams:

1—Close the curtain

0—Open the curtain

Obj.446: Used for sending the telegram to the bus, to stop curtain movement.

Telegrams:

0/1—Stop

445	KNX	Channel	Up/Down	1bit	C, T	1.008 up/down
		X-{{...}}				
446	KNX	Channel	Stop	1bit	C, T	1.007 step
		X-{{...}}				

Roller blind step/move: these two communication objects apply to roller blind. Support to up, down, stop.

Obj.445: Used for sending the telegram to the bus, to control blind up/down. Telegrams:

1—Move down

0—Move up

Obj.446 is the same as above.

Table 6.10.4 "Blind""Curtain and blind"communication object

6.10.5 "Air conditioner" communication object

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Power on/off	1 bit	C - - T -	switch
446	KNX Channel 1-...	Current setpoint adjustment	2 bytes	C - - T -	temperature (°C)
448	KNX Channel 1-...	Fan speed	1 byte	C - - T -	percentage (0..100%)
449	KNX Channel 1-...	Vanes swing (1-swing,0-stop)	1 bit	C - - T -	start/stop
451	KNX Channel 1-...	Control mode	1 byte	C - - T -	HVAC control mode
452	KNX Channel 1-...	Power on/off, status	1 bit	C - W T U	switch
453	KNX Channel 1-...	External temperature sensor	2 bytes	C - W T U	temperature (°C)
454	KNX Channel 1-...	Current temperature setpoint, status	2 bytes	C - W T U	temperature (°C)
456	KNX Channel 1-...	Fan speed, status	1 byte	C - W T U	percentage (0..100%)
457	KNX Channel 1-...	Vanes swing (1-swing,0-stop), status	1 bit	C - W T U	start/stop
458	KNX Channel 1-...	Control mode, status	1 byte	C - W T U	HVAC control mode
460	KNX Channel 1-...	Timer	1 bit	C - W - -	enable

Air conditioner

Fig.6.10.5 Air conditioner control"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Power on/off	1bit	C,T	1.001 switch
The communication object is used to send the power on/off telegram of air condition, to control air condition power on/off on the KNX bus.					
446	KNX Channel X-{{...}}	Current setpoint adjustment	2byte 1byte e	C,T	9.001 temperature 5.010 counter pulses
The communication object is used to adjust setpoint temperature via the bus, and send telegram value to the bus.					
Note: the object type is set by parameters, 2byte is suitable for KNX standard, 1byte is KNX non-standard, usually suitable for some customized control classes, the telegram value is the actual temperature value, such as 17 °C telegram value					

is 17 (decimal number).					
448	KNX Channel X-{{...}}	Fan speed	1byte	C,T	5.001 percentage 5.100 fan stage
The communication object is used to send control telegram of each fan speed to the bus. Telegram value is determined by parameter setting datatype.					
449	KNX Channel X-{{...}}	Vanes swing (1-swing,0-stop)	1bit	C,T	1.010 start/stop
This communication object is visible when "Air conditioner (with swing)" is selected.Used to send telegram controlling vanes swing to the bus. Telegrams:					
451	KNX Channel X-{{...}}	Control mode	1byte	C,T	20.105 HVAC control mode
The communication object is used to send control telegram of each air condition mode to the bus. Different telegram means different control mode. 0-Auto, 1- Heating, 3-Cooling, 9-Fan, 14-Dehumidity, other reserved.					
452	KNX Channel X-{{...}}	Power on/off, status	1bit	C, W, T,U	1.001 switch
The communication object is used to receive the power on/off telegram of air condition from the bus, and feedback to screen display. Telegrams: 1——On 0——Off					
453	KNX Channel X-{{...}}	External temperature sensor	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.

454	KNX Channel X-{{...}}	Current temperature setpoint, status	2byte 1byte e	C, W, T,U	9.001 temperature 5.010 counter pulses
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The communication object is used to receive the current setpoint temperature from the bus, and feedback to screen display.

456	KNX Channel X-{{...}}	Fan speed, status	1byte e	C, W, T,U	5.001 percentage 5.100 fan stage
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The communication object is used to receive the current fan speed from the bus, and feedback to screen display. Telegram value is determined by parameter setting datatype.

457	KNX Channel X-{{...}}	Vanes swing (1-swing,0-stop), status	1bit	C, W, T,U	1.010 start/stop
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This communication object is visible when "Air conditioner (with swing)" is selected. Used to receive vanes swing status from the bus. Telegrams:

1—Swing

0—Stop

458	KNX Channel X-{{...}}	Control mode, status	1byte e	C, W, T,U	20.105 HVAC control mode
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The communication object is used to receive the current control mode from the bus, and feedback to screen display. Different telegram means different control mode.

0-Auto, 1- Heating, 3-Cooling, 9-Fan, 14-Dehumidity, other reserved.

460	KNX Channel X-{{...}}	Timer	1bit	C, W	1.003 enable
The communication object is visible when timer function enabled. Used to turn on/off the timing via the bus.Telegrams: 1-On 2-Off					

Table 6.10.5 "Air conditioner control"communication object

6.10.6 "Room temperature unit control" Communication object

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Power on/off	1 bit	C - - T -	switch
446	KNX Channel 1-...	Current setpoint adjustment	2 bytes	C - - T -	temperature (°C)
447	KNX Channel 1-...	Current setpoint adjustment(1bit)	1 bit	C - - T -	step
448	KNX Channel 1-...	Fan speed	1 byte	C - - T -	percentage (0..100%)
449	KNX Channel 1-...	Fan automatic operation	1 bit	C - - T -	enable
450	KNX Channel 1-...	Heating/Cooling mode	1 bit	C - - T -	cooling/heating
451	KNX Channel 1-...	Operation mode	1 byte	C - - T -	HVAC mode
452	KNX Channel 1-...	Power on/off, status	1 bit	C - W - -	switch
453	KNX Channel 1-...	External temperature sensor	2 bytes	C - W T U	temperature (°C)
454	KNX Channel 1-...	Current setpoint adjustment, status	2 bytes	C - W T U	temperature (°C)
456	KNX Channel 1-...	Fan speed, status	1 byte	C - W T U	percentage (0..100%)
457	KNX Channel 1-...	Fan automatic operation, status	1 bit	C - W T U	enable
458	KNX Channel 1-...	Heating/Cooling mode, status	1 bit	C - W T U	cooling/heating
459	KNX Channel 1-...	Operation mode, status	1 byte	C - W T U	HVAC mode
460	KNX Channel 1-...	Timer	1 bit	C - W - -	enable

Room temperature unit

Fig.6.10.6 "Room temperature unit control" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Power on/off	1bit	C,T	1.001 switch
The communication object is used to send the power on/off telegram of RTC, to control RTC power on/off on the KNX bus.					

The system needs to return to the status before voltage failure when voltage recovery, and send status request of function point: control mode, operation mode, fan speed, setpoint temperature, external temperature sensor.

446	KNX	Channel	Current setpoint	2byte	C,T	9.001
		X-{{...}}	adjustment	e		temperature

The communication object is used to send the power on/off telegram of RTC, to control RTC power on/off on the KNX bus.

The system needs to return to the status before voltage failure when voltage recovery, and send status request of function point: control mode, operation mode, fan speed, setpoint temperature, external temperature sensor.

447	KNX	Channel	Current setpoint	1bit	C,T	1.007 step
		X-{{...}}	adjustment(1bit)			

The communication object is visible when object datatype of setpoint temperature adjustment is 1 bit. Through the screen to adjust setpoint temperature, 1 bit object suitable for relatively adjusts, and sent telegram value to the bus.

1——Increase setpoint

0——Decrease setpoint

448	KNX	Channel	Fan speed	1byte	C,T	5.001
		X-{{...}}		e		percentage
						5.100 fan
						stage

The communication object is used to send control telegram of each fan speed to the bus. Telegram value is determined by parameter setting datatype.

449	KNX	Channel	Fan automatic operation	1bit	C,T	1.003 enable
		X-{{...}}				

The communication object is used to send control telegram of fan automatic operation to the bus. Telegrams: 1——Activate auto 0——Cancel auto					
450	KNX Channel X-{{...}}	Heating/Cooling mode	1bit	C,T	1.100 cooling/heating g
The communication object is used to send telegram for switching cooling and heating functions to the bus. Telegrams: 1——Heating 0——Cooling					
451	KNX Channel X-{{...}}	Operation mode	1byte	C,T	20.102 HVAC mode
The communication object is used to send the telegram of the room operation mode to the bus. Different telegram means different control mode: 1-Comfort, 2-Standby, 3-Economy, 4-Protection, other reserved.					
452	KNX Channel X-{{...}}	Power on/off, status	1bit	C, W	1.001 switch
The communication object is used to receive the power on/off telegram of RTC from the bus, and feedback to screen display. Telegrams: 1——On 0——Off					
453	KNX Channel X-{{...}}	External temperature sensor	2byte	C, W, T,U	9.001 temperature

The communication object is visible when the external sensor is selected.Used to receive the room temperature from the bus, and send read request cyclically, and feedback to screen display.					
454	KNX	Channel	Current setpoint adjustment, status	2byte	C, W, T,U
	X-{{...}}				9.001 temperature
The communication object is used to receive the current setpoint temperature from the bus, and feedback to screen display.					
456	KNX	Channel	Fan speed, status	1byte	C, W, T,U
	X-{{...}}				5.001 percentage 5.100 fan stage
The communication object is used to receive the current fan speed from the bus, and feedback to screen display. Telegram value is determined by parameter setting datatype.					
457	KNX	Channel	Fan automatic operation, status	1bit	C, W, T,U
	X-{{...}}				1.003 enable
The communication object is used to receive feedback status of fan automatic operation from the bus. Telegrams: 1—Automatic 0—Cancel automatic					
458	KNX	Channel	Heating/Cooling mode, status	1bit	C, W, T,U
	X-{{...}}				1.100 cooling/heating
The communication object is used to receive the heating and cooling status from the					

bus, and feedback to screen display. Telegrams:

1 — Heating

0 — Cooling

459	KNX Channel X-{{...}}	Operation mode, status	1byte	C, W, T,U	20.102 HVAC mode
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The communication object is used to receive the telegram of RTC operation mode from the bus. Different telegram means different control mode:

1-Comfort, 2-Standby, 3-Economy, 4-Protection, other reserved.

460	KNX Channel X-{{...}}	Timer	1bit	C, W	1.003 enable
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The communication object is visible when timer function enabled. Used to turn on/off the timing via the bus.

Table 6.10.6 "Room temperature control" communication object

6.10.7 "Ventilation system" communication object

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Power on/off	1 bit	C - - T -	switch
446	KNX Channel 1-...	Filter timer counter	2 bytes	C - - T -	time (h)
447	KNX Channel 1-...	Filter alarm	1 bit	C - - T -	alarm
448	KNX Channel 1-...	Fan speed	1 byte	C - - T -	percentage (0..100%)
449	KNX Channel 1-...	Fan automatic operation	1 bit	C - - T -	enable
450	KNX Channel 1-...	Heat recovery	1 bit	C - - T -	enable
452	KNX Channel 1-...	Power on/off, status	1 bit	C - W - -	switch
453	KNX Channel 1-...	Filter timer counter change	2 bytes	C - W - -	time (h)
454	KNX Channel 1-...	PM 2.5 value	2 bytes	C - W T U	pulses
456	KNX Channel 1-...	Fan speed, status	1 byte	C - W - -	percentage (0..100%)
457	KNX Channel 1-...	Fan automatic operation, status	1 bit	C - W - -	enable
458	KNX Channel 1-...	Heat recovery, status	1 bit	C - W - -	enable
459	KNX Channel 1-...	Filter timer reset	1 bit	C - W - -	reset

Ventilation system

Fig.6.10.7"Ventilation system" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Power on/off	1bit	C,T	1.001 switch
The communication object is used to send the power on/off telegram of ventilation to KNX bus. Telegrams: 1—On 0—Off					
446	KNX Channel X-{{...}}	Filter timer counter	2byte	C,T	7.007 time(h)
The communication object is used to count the length of the filter. When the count value changes, it can be sent to the bus. The unit of filter time counter is in hours.					
447	KNX Channel X-{{...}}	Filter alarm	1bit	C,T	1.005 alarm
When the filter is used for longer than the set value, the communication object issues an alarm to remind the user to replace the filter. Telegram value: 0—Alarm 1— No alarm					
448	KNX Channel X-{{...}}	Fan speed	1byte	C,T	5.001 percentage 5.100 fan stage
This communication object is used to send control messages for various wind speed levels to the bus. The message value is determined by the data type set in the parameters.					
449	KNX Channel X-{{...}}	Fan automatic operation	1bit	C,T	1.003 enable
The communication object is visible when Ventilation system (with auto fan speed) is selected.					

Used to enable the automatic operation of ventilation system.

After the device is reset or programmed, the automatic operation is not enabled by default. Turn off the machine and manually adjust the fan speed. The scene can exit the automatic operation.

There is no parameter definition, default 1 - active, 0 - inactive.

450	KNX	Channel	Heat recovery	1bit	C,T	1.003 enable
		X-{{...}}				

The communication object is visible when the "Heat recovery function" parameter is enabled.Used to send the control command of on/off ventilation system heat recovery, and the status feedback value can also be received. Telegram values:

1—On

0—Off

452	KNX	Channel	Power on/off, status	1bit	C, W	1.001 switch
		X-{{...}}				

The communication object is used to receive the power on/off telegram of ventilation from the bus.

453	KNX	Channel	Filter timer counter	2byt	C, W	7.007 time(h)
		X-{{...}}	change	e		

The communication object is visible when the"Filter timer counter" parameter is enabled.Used to modify the time length of the filter usage by the bus.

454	KNX	Channel	CO2 value	2byt	C, W,T ,U	7.001 pulse
		X-{{...}}		e		9.030
						concentration(ug/m
						3)
						9.008
						parts/million(ppm)

This communication object is visible when Ventilation system (with auto fan speed) is selected. The data type of the object is set by the parameter.

The communication object is used to receive the input of the CO2 value and get the corresponding value from the bus to be updated to the display in ppm. Range: 0~4000ppm

If the control value of the automatic operation is CO2, the ventilation system can be set to automatically adjust the fan speed according to the concentration of CO2.

454	KNX Channel X-{{...}}	VOC value	2byte	C, W, T, U	7.001 pulse 9.030 concentration(ug/m 3) 9.008 parts/million(ppm)
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This communication object is visible when Ventilation system (with auto fan speed) is selected. The data type of the object is set by the parameter.

The communication object is used to receive the input of the VOC value and get the corresponding value from the bus to be updated to the display in ppm. Range: 0~4000ppm

If the control value of the automatic operation is VOC, the ventilation system can be set to automatically adjust the fan speed according to the concentration of VOC.

454	KNX Channel X-{{...}}	PM 2.5 value	2byte	C, W, T, U	7.001 pulse 9.030 concentration(ug/m 3) 9.008 parts/million(ppm)
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This communication object is visible when Ventilation system (with auto fan speed) is

selected. The data type of the object is set by the parameter.

The communication object is used to receive the input of PM2.5 value and get the corresponding value from the bus to be updated to display in $\mu\text{g}/\text{m}^3$. Range: 0~999 $\mu\text{g}/\text{m}^3$

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.

456	KNX	Channel	Fan speed, status	1byt	C,	5.001 percentage
		X-{{...}}		e	W	5.100 fan stage

The communication object is used to receive the status feedback of the fan speed. The specific telegram value corresponding to each fan speed is defined by the parameter.

457	KNX	Channel	Fan automatic operation, status	1bit	C,	1.003 enable
		X-{{...}}			W	

This communication object is visible when Ventilation system (with auto fan speed) is selected.

Select Ventilation system(with auto fan speed).Used to receive status feedback from automatic fan speed control to the screen.

458	KNX	Channel	Heat recovery, status	1bit	C,	1.003 enable
		X-{{...}}			W	

The communication object is visible if the parameter "Heat recovery function" is enabled.Used to receive the status feedback of heat recovery, and is updated to screen display.

459	KNX	Channel	Filter timer reset	1bit	C,	1.015 reset
		X-{{...}}			W	

The communication object is visible if the parameter "Filter timer counter" is enabled.Used to reset the filter time, and after the filter is reset, the filter time is used to start counting again. Telegram value:

1—Reset

Table 6.10.7 "Ventilation system" communication object

6.10.8 "Audio control" Communication object

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Power on/off	1 bit	C - - T -	switch
446	KNX Channel 1-...	Play	1 bit	C - - T -	enable
447	KNX Channel 1-...	Pause	1 bit	C - - T -	enable
448	KNX Channel 1-...	Next track	1 bit	C - - T -	enable
449	KNX Channel 1-...	Previous track	1 bit	C - - T -	enable
450	KNX Channel 1-...	Volume+=1/Volume-=0	1 bit	C - - T -	step
451	KNX Channel 1-...	Mute	1 bit	C - - T -	enable
452	KNX Channel 1-...	Next playlist=1/Previous playlist=0	1 bit	C - - T -	step
453	KNX Channel 1-...	Absolute volume	1 byte	C - - T -	percentage (0..100%)
453	KNX Channel 1-...	Play mode	1 byte	C - - T -	counter pulses (0..255)
454	KNX Channel 1-...	Power on/off, status	1 bit	C - W - -	switch
455	KNX Channel 1-...	Play, status	1 bit	C - W T U	enable
456	KNX Channel 1-...	Pause, status	1 bit	C - W T U	enable
458	KNX Channel 1-...	Mute, status	1 bit	C - W T U	enable
457	KNX Channel 1-...	Volume, status	1 byte	C - W T U	percentage (0..100%)
459	KNX Channel 1-...	Play mode, status	1 byte	C - W T U	counter pulses (0..255)
460	KNX Channel 1-...	Track name	14 bytes	C - W T U	Character String (ISO 8859-1)
461	KNX Channel 1-...	Album name	14 bytes	C - W T U	Character String (ISO 8859-1)
462	KNX Channel 1-...	Artist name	14 bytes	C - W T U	Character String (ISO 8859-1)
463	KNX Channel 1-...	Playlist name	14 bytes	C - W T U	Character String (ISO 8859-1)

Fig.6.10.8 "Audio control" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Power on/off	1bit	C,T	1.001 switch

The communication object is visible when power on/off is enabled. Used to send the telegram to the bus. Telegrams:

1—On

0—Off

446	KNX Channel X-{{...}}	Play=1/Pause=0	1bit	C,T	1.010 start/stop
446	KNX Channel X-{{...}}	Play	1bit	C,T	1.003 enable
447	KNX Channel X-{{...}}	Pause	1bit	C,T	1.003 enable

The communication object is visible when control play/pause with one object. Used to play/stop the music in the audio module. Telegrams:

1—Play music

0—Pause playing music

When two objects are independent, the telegram is 1 for both.

448	KNX Channel X-{{...}}	Next track=1/Previous track=0	1bit	C,T	1.007 step
448	KNX Channel X-{{...}}	Next track	1bit	C,T	1.003 enable
449	KNX Channel X-{{...}}	Previous track	1bit	C,T	1.003 enable

The communication object is visible when control next track/previous track with one object. Used to switch the playing track of the audio module, to switch the previous track/the next track. Telegram:

1—Play the next track

0—Play the previous track

When two objects are independent, the telegram is 1 for both.

450	KNX Channel X-{{...}}	Volume+=1/Volum e=0	1bit	C,T	1.007 step
453	KNX Channel X-{{...}}	Absolute volume	1byte	C,T	5.001 percentage 5.004 percentage

This communication object is used to adjust the volume of music through the screen.

1-bit object,Telegram:

1—Increase volume

0—Decrease volume

1 byte object, the telegram depends on the object type: 0...100/0...255

451	KNX Channel X-{{...}}	Mute	1bit	C,T	1.003 enable
The communication object is visible when mute is enabled. Used to control mute of audio module via the screen. Telegrams: 1—Mute 0—Cancel mute					
453	KNX Channel X-{{...}}	Play mode	1byte	C,T	5.010 counter pulses
The communication object is used to send control telegram of the audio module play mode, different mode telegrams are preset by parameters.					
454	KNX Channel X-{{...}}	Power on/off, status	1bit	C,W,T, U	1.001 switch
This communication object is used to receive the background music switch status from the bus and feed it back to the screen for display. Telegrams: 1—ON 0—OFF					
455	KNX Channel X-{{...}}	Play=1/Pause=0, status	1bit	C,W,T, U	1.010 start/stop
455	KNX Channel X-{{...}}	Play, status	1bit	C,W,T, U	1.003 enable
456	KNX Channel X-{{...}}	Pause, status	1bit	C,W,T, U	1.003 enable
These communication objects are used to receive the music play/stop status fed back from the bus and transmit it to the screen for display.When sharing a single object.Telegrams:					

1—Play music

0—Pause music

When using two independent objects, the valid telegrams values of both are 1.

457	KNX Channel X-{{...}}	Volume, status	1byte	C,W,T, U	5.001 percentage 5.004 percentage
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This communication object is only applicable to the volume adjustment function of 1byte. When 1byte, the communication object is used to receive the volume status in audio module, and feed back to screen display.

Telegrams value is according to different object types: 0..100 / 0..255

458	KNX Channel X-{{...}}	Mute, status	1bit	C,W,T, U	1.003 enable
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The communication object is visible when mute is enabled. Used to receive the mute status of the audio module from the bus, and feed back to screen display.

459	KNX Channel X-{{...}}	Play mode, status	1byte	C,W,T, U	5.010 counter pulses
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The communication object is used to receive the status feedback of play mode in the audio module, the receiving telegrams should be preset by parameters before the display status on the screen can be updated.

460	KNX Channel X-{{...}}	Track name	14byte s	C,W,T, U	16.001 character string (ISO 8859-1)
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The communication object is used to receive the track name via the bus, and display on the screen.

461	KNX Channel X-{{...}}	Album name	14byte s	C,W,T, U	16.001 character string (ISO 8859-1)
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The communication object is used to receive the album name via the bus, and display on the screen.

462	KNX Channel X-{{...}}	Artist name	14byte s	C,W,T, U	16.001 character string (ISO 8859-1)
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The communication object is used to receive the artist name via the bus, and display on

the screen.

463	KNX Channel X-{{...}}	Playlist name	14byte s	C,W,T, U	16.001 character string (ISO 8859-1)
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The communication object is used to receive the playlist name via the bus, and display on the screen.

Table 6.10.8"Audio control" communication object

6.10.9 "Sensor" Communication object

	443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
	445	KNX Channel 1-...	Temperature value	2 bytes	C - W T U	temperature (°C)
	446	KNX Channel 1-...	Low temperature alarm	1 bit	C R - T -	alarm
	447	KNX Channel 1-...	High temperature alarm	1 bit	C R - T -	alarm

Temperature sensor

	443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
	445	KNX Channel 1-...	Humidity value	2 bytes	C - W T U	humidity (%)
	446	KNX Channel 1-...	Low humidity alarm	1 bit	C R - T -	alarm
	447	KNX Channel 1-...	High humidity alarm	1 bit	C R - T -	alarm

Humidity sensor

	443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch	低
	445	KNX Channel 1-...	PM2.5 value	2 bytes	C - W T U	pulses	低
	446	KNX Channel 1-...	PM2.5 alarm	1 bit	C R - T -	alarm	低

PM2.5 sensor

	443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
	445	KNX Channel 1-...	PM10 value	2 bytes	C - W T U	pulses
	446	KNX Channel 1-...	PM10 alarm	1 bit	C R - T -	alarm

PM10 sensor

	443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
	445	KNX Channel 1-...	VOC value	2 bytes	C - W T U	concentration (µg/m³)
	446	KNX Channel 1-...	VOC alarm	1 bit	C R - T -	alarm

VOC sensor

	443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
	445	KNX Channel 1-...	AQI value	2 bytes	C - W T U	pulses
	446	KNX Channel 1-...	AQI alarm	1 bit	C R - T -	alarm

AQI sensor

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
445	KNX Channel 1-...	CO2 value	2 bytes	C - W T U	parts/million (ppm)
446	KNX Channel 1-...	CO2 alarm	1 bit	C R - T -	alarm

CO2 sensor

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
445	KNX Channel 1-...	Brightness value(lux)	2 bytes	C - W T U	lux (Lux)

Brightness sensor

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
445	KNX Channel 1-...	Wind speed	2 bytes	C - W T U	speed (m/s)
446	KNX Channel 1-...	Wind alarm	1 bit	C R - T -	alarm

Wind sensor

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
445	KNX Channel 1-...	I/O signal	1 bit	C - W T U	switch

I/O sensor

Fig.6.10.9 "Sensor" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Temperature value	2byte	C,W,T,U	9.001 temperature
445	KNX Channel X-{{...}}	Humidity value	2byte	C,W,T,U	9.007 humidity
445	KNX Channel X-{{...}}	PM2.5 value	2byte	C,W,T,U	7.001 pulse 9.030 concentration(ug/m3)
445	KNX Channel X-{{...}}	PM10 value	2byte	C,W,T,U	7.001 pulse 9.030 concentration(ug/m3)
445	KNX Channel X-{{...}}	VOC value	2byte	C,W,T,U	7.001 pulse 9.030 concentration(ug/m3)

445	KNX Channel X-{{...}}	AQI value	2byte	C,W,T,U	7.001 pulses
445	KNX Channel X-{{...}}	CO2 value	2byte	C,W,T,U	7.001 pulse 9.008 parts/million(ppm)
445	KNX Channel X-{{...}}	Brightness value(lux)	2byte	C,W,T,U	7.013 brightness(lux) 9.004 lux(lux)
445	KNX Channel X-{{...}}	Wind speed	2byte	C,W,T,U	9.005 speed 9.028 wind speed
445	KNX Channel X-{{...}}	I/O signal	1bit	C,W,T,U	1.001 switch

These communication objects are used to receive air quality information from the bus and update it to the on-screen display. The screen can display settings for temperature, humidity, PM2.5, PM10, VOC, AQI, CO2, brightness, wind speed and I/O signal values.

The data type of the object is set by the parameter. All objects send read requests to the bus on restart.

446	KNX Channel X-{{...}}	Low temperature alarm	1bit	C,R,T	1.005 alarm
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The communication object is used for the low temperature alarm object to send an alarm signal to the bus when the temperature falls below a low threshold. The threshold value is defined by the parameter. Telegrams:

1—Low temperature alarm

0—No alarm

447	KNX Channel X-{{...}}	High temperature	1bit	C,R,T	1.005 alarm
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		alarm			
This communication object is used for the high temperature alarm object to send an alarm signal to the bus when the temperature g is above a threshold value. The threshold value is defined by the parameter. Telegrams: 1—High temperature alarm 0—No alarm					
446	KNX Channel X-{{...}}	Low humidity alarm	1bit	C,R,T	1.005 alarm
This communication object is used for the low humidity alarm object to send an alarm signal to the bus when the humidity falls below a threshold value. The threshold value is defined by the parameter. Telegrams: 1—Low humidity alarm 0—No alarm					
447	KNX Channel X-{{...}}	High humidity alarm	1bit	C,R,T	1.005 alarm
This communication object is used for the high humidity alarm object to send an alarm signal to the bus when the humidity is above a threshold value. The threshold value is defined by the parameter. Telegrams: 1—High humidity alarm 0—No alarm					
446	KNX Channel X-{{...}}	PM2.5 alarm	1bit	C,R,T	1.005 alarm
446	KNX Channel X-{{...}}	PM10 alarm	1bit	C,R,T	1.005 alarm
446	KNX Channel	AQI alarm	1bit	C,R,T	1.005 alarm

	X-{{...}}				
446	KNX Channel X-{{...}}	CO2 alarm	1bit	C,R,T	1.005 alarm
446	KNX Channel X-{{...}}	VOC alarm	1bit	C,R,T	1.005 alarm
446	KNX Channel X-{{...}}	Wind alarm	1bit	C,R,T	1.005 alarm

These communication objects are used when PM2.5/PM10/AQI/CO2/VOC/Wind exceeds the alarm value, and the PM2.5/PM10/AQI/CO2/VOC/Wind alarm object sends an alarm signal to the bus.Telegrams:

1—Alarm

0—No alarm

Table 6.10.9 "Sensor" communication object

6.9.10 "Value sender" Communication object

	444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
	445	KNX Channel 1-...	Send 1bit value	1 bit	C - W T -	switch
	447	KNX Channel 1-...	Send 1bit value, long	1 bit	C - W T -	switch

1bit value[ON/OFF]

	444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
	445	KNX Channel 1-...	Send 2bit value	2 bit	C - W T -	switch control
	447	KNX Channel 1-...	Send 2bit value, long	2 bit	C - W T -	switch control

2bit value[0...3]

	444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
	445	KNX Channel 1-...	Send 4bit value	4 bit	C - W T -	dimming control
	447	KNX Channel 1-...	Send 4bit value, long	4 bit	C - W T -	dimming control

4bit value[0...15]

444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Send 1byte value	1 byte	C - W T -	counter pulses (0..255)
447	KNX Channel 1-...	Send 1byte value, long	1 byte	C - W T -	counter pulses (0..255)

1byte value[0...255]

444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Send 2byte value	2 bytes	C - W T -	pulses
447	KNX Channel 1-...	Send 2byte value, long	2 bytes	C - W T -	pulses

2byte value[0...65535]

444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Send 2byte float value	2 bytes	C - W T -	2-byte float value
447	KNX Channel 1-...	Send 2byte float value, long	2 bytes	C - W T -	2-byte float value

2byte float value

444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Send 4byte value	4 bytes	C - W T -	counter pulses (unsigned)
447	KNX Channel 1-...	Send 4byte value, long	4 bytes	C - W T -	counter pulses (unsigned)

4byte value[0...4294967295]

444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
445	KNX Channel 1-...	Send 4byte float value	4 bytes	C - W T -	4-byte float value
447	KNX Channel 1-...	Send 4byte float value, long	4 bytes	C - W T -	4-byte float value

4byte float value

Fig.6.10.10 "Value sender"

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Send 1bit value	1bit	C,T,W	1.001 switch
445	KNX Channel X-{{...}}	Send 2bit value	2bit	C,T,W	2.001 switch control
445	KNX Channel X-{{...}}	Send 4bit value	4bit	C,T,W	3.007 dimming
445	KNX Channel X-{{...}}	Send 1byte value	1byte	C,T,W	5.010 counter pulses
445	KNX Channel	Send 2byte value	2byte	C,T,	7.001 pulses

	X-{{...}}		e	W	
445	KNX Channel X-{{...}}	Send 2byte float value	2byte	C,T, W	9.x float value
445	KNX Channel X-{{...}}	Send 4byte value	4byte	C,T, W	12.001 counter pulses
445	KNX Channel X-{{...}}	Send 4byte float value	4byte	C,T, W	14.x float value
The communication object is used to send the preset output value of the parameter, and if the long press. operation is distinguished from the short press operation, only the output value of the short press operation is sent. The object type and value range are determined by the data type set by the parameter.					
447	KNX Channel X-{{...}}	Send 1bit value, long	1bit	C,T, W	1.001 switch
447	KNX Channel X-{{...}}	Send 2bit value, long	2bit	C,T, W	2.001 switch control
447	KNX Channel X-{{...}}	Send 4bit value, long	4bit	C,T, W	3.007 dimming
447	KNX Channel X-{{...}}	Send 1byte value, long	1byte e	C,T, W	5.010 counter pulses
447	KNX Channel X-{{...}}	Send 2byte value, long	2byte e	C,T, W	7.001 pulses
447	KNX Channel X-{{...}}	Send 2byte float value, long	2byte e	C,T, W	9.x float value
447	KNX Channel X-{{...}}	Send 4byte value, long	4byte e	C,T, W	12.001 counter pulses

447	KNX Channel X-{{...}}	Send 4byte float value, long	4byt e	C,T, W	14.x float value
The communication object is visible when the long press operation is distinguished from the short press operation, used to send the output value when long operation.					

Table 6.10.10 "Value sender"

6.10.11 "Scene" Communication object

 444	KNX Channel 1-...	Locking object	1 bit	C - W - -	enable
 445	KNX Channel 1-...	Scene	1 byte	C - W T -	scene control

Fig.6.10.11 "Scene" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Scene	1byte	C,T, W	18.001 scene control
The communication object is visible when scene function enabled. Used to recall/storage scene via bus.A short press can be used to call up the scene, and a long press can be used to choose whether to storage the scene.					

Table 6.10.11 "Scene" communication object

6.10.12 "Energy Metering"Communication object

 443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
 447	KNX Channel 1-...	Power value	4 bytes	C - W T U	power (W)
 448	KNX Channel 1-...	Energy value	4 bytes	C - W T U	active energy (Wh)

Energy metering(power & energy)

 443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
 445	KNX Channel 1-...	Current value	2 bytes	C - W T U	current (mA)
 447	KNX Channel 1-...	Power value	4 bytes	C - W T U	power (W)
 448	KNX Channel 1-...	Energy value	4 bytes	C - W T U	active energy (Wh)

Energy metering(power & energy & current)

443	KNX Channel 1-...	Device online, status	1 bit	C - W T U	switch
445	KNX Channel 1-...	Current value	2 bytes	C - W T U	current (mA)
446	KNX Channel 1-...	Voltage value	4 bytes	C - W T U	electric potential (V)
447	KNX Channel 1-...	Power value	4 bytes	C - W T U	power (W)
448	KNX Channel 1-...	Energy value	4 bytes	C - W T U	active energy (Wh)

Energy metering(power & energy & current & voltage)

Fig.6.10.12 "Energy metering" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
445	KNX Channel X-{{...}}	Current value	2byte	C,W,T,U	7.012 current(mA)
The communication object is used to receive the current value from the bus and update it to the screen display. The display range is 0 ~ 65535 mA, and the resolution is 1 mA.					
445	KNX Channel X-{{...}}	Current value	2byte	C,W,T,U	9.021 current(mA)
The communication object is used to receive the current value from the bus and update it to the screen display. The display range is -670760~670760mA, and the resolution is 0.01mA.					
445	KNX Channel X-{{...}}	Current value	4byte	C,W,T,U	14.019 electric current(A)
The communication object is used to receive the current value from the bus and update it to the screen display. The display range is -99999999.9~99999999.9A, and the resolution is 0.1A.					
446	KNX Channel X-{{...}}	Voltage value	2byte	C,W,T,U	9.020 voltage(mV)
The communication object is used to receive voltage values from the bus and update them to the screen display.					

The display range is -670760mV~670760mV, and the resolution is 0.1mV.

446	KNX	Channel	Voltage	4byte	C,W,T,U	14.027	electric
		X-{{...}}	value			potential(V)	

The communication object is used to receive voltage values from the bus and update them to the screen display.

The display range is: -99999999.9~99999999.9V, and the resolution is 0.1V.

447	KNX	Channel	Power	2byte	C,W,T,U	9.024	power(kW)
		X-{{...}}	value				

The communication object is used to receive the power values from the bus and update them to the screen display.

The display range is: -670760~670760kW, and the resolution is 0.01kW.

447	KNX	Channel	Power	4byte	C,W,T,U	14.056	power(W)
		X-{{...}}	value				

The communication object is used to receive the power values from the bus and update them to the screen display.

The display range is: -99999999.9 ~ 99999999.9W, and the resolution is 0.1W.

448	KNX	Channel	Energy	4byte	C,W,T,U	13.010	active
		X-{{...}}	value			energy(Wh)	

The communication object is used to receive the electrical values from the bus and update them to the screen display.

The display range is: -2147483648~2147483647Wh, and the resolution is 1Wh.

448	KNX	Channel	Energy	4byte	C,W,T,U	13.013	active
		X-{{...}}	value			energy(kWh)	

The communication object is used to receive the electrical values from the bus and update them to the screen display.

The display range is: -2147483648~2147483647kWh, and the resolution is 1kWh.

Table 6.10.12 "Energy metering value display" communication object

6.11 "Home page" Communication object

	1996	Home - Item 1	Ext.temperature value	2 bytes	C - W T U	temperature (°C)
	1996	Home - Item 1	Ext.humidity value	2 bytes	C - W T U	humidity (%)
	1996	Home - Item 1	PM2.5 value	2 bytes	C - W T U	pulses
	1996	Home - Item 1	PM10 value	2 bytes	C - W T U	pulses
	1996	Home - Item 1	VOC value	2 bytes	C - W T U	pulses
	1996	Home - Item 1	CO2 value	2 bytes	C - W T U	parts/million (ppm)
	1996	Home - Item 1	AQI value	2 bytes	C - W T U	pulses
	1996	Home - Item 1	Brightness value	2 bytes	C - W T U	lux (Lux)
	1996	Home - Item 1	Wind speed	2 bytes	C - W T U	speed (m/s)
	1996	Home - Item 1	Rain state	1 bit	C - W T U	switch

Fig.6.11 "Home page" Communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1996	Home - {{Item 1}}	Ext.temperature value	2bytes	C,W,T,U	9.001 temperature
This communication object is used to receive measurement values from the external temperature sensor, obtain the corresponding values from the bus, and update them to the screen for display. Range: -50...99.9°C					
1996	Home - {{Item 1}}	Ext.humidity value	2bytes	C,W,T,U	9.007 humidity
This communication object is used to receive measurement values from the external humidity sensor, obtain the corresponding values from the bus, and update them to the screen for display.					

1996	Home - {{Item 1}}	PM2.5 value PM10 value VOC value	2bytes	C,W,T,U	7.001 pulse 9.030 concentration(ug/m3)
This communication object is used to receive the measured values of PM2.5/PM10/VOC, obtain the corresponding values from the bus, and update them to the screen for display. The unit is $\mu\text{g}/\text{m}^3$. Range: 0~999 $\mu\text{g}/\text{m}^3$. The data type of the object is set by parameters.					
1996	Home - {{Item 1}}	CO2 value	2byte s	C,W,T,U	7.001 pulse 9.008 parts/million(ppm)
This communication object is used to receive the measured value of CO ₂ , obtain the corresponding value from the bus, and update it to the screen for display. The unit is ppm. Range: 0~4000 ppm. The data type of this object is set by parameters.					
1996	Home - {{Item 1}}	AQI value	2byte s	C,W,T,U	7.001 pulse
This communication object is used to receive the measured value of AQI, obtain the corresponding value from the bus, and update it to the screen for display. Range: 0~500					
1996	Home - {{Item 1}}	Brightness value	2byte s	C,W,T,U	7.013 brightness(lux) 9.004 lux
This communication object is used to receive the measured value of illuminance, obtain the corresponding value from the bus, and update it to the screen for display. The unit is lux. Range: 0~65535 lux. The data type of this object is determined by parameters.					
1996	Home - {{Item 1}}	Wind speed	2byte s	C,W,T,U	9.005 speed 9.028 wind speed
This communication object is used to receive the measured value of wind speed, obtain the corresponding value from the bus, and update it to the screen for display. The data type of this object is determined by parameters, and the unit is either m/s or km/h.					
1996	Home - {{Item 1}}	Rain state	1bit	C,W,T,U	1.001 switch
This communication object is used to receive the message of rainy weather status, obtain the corresponding value from the bus, and update it to the screen for display. Telegrams:					

1——Rain

0——No Rain

Table 6.11 "Home page"communication object

6.12 "Extension function" Communication object

1986	Extension function	Screen locking	1 bit	C - W - -	enable
1987	Extension function	Screen on/off	1 bit	C - W - -	switch
1991	Extension function	Night mode	1 bit	C R - T -	day/night
1992	Extension function	Summer time status	1 bit	C - - T -	enable
1993	Extension function	Dis/En Proximity function	1 bit	C - W - -	enable
1994	Extension function	Proximity input	1 bit	C - W - -	switch
1995	Extension function	Proximity output	1 bit	C - - T -	switch

Fig.6.12 "Extension function, Screensaver" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1986	Extension function	Screen locking	1bit	C,W	1.003 enable
The communication object is used to lock the screen. After screen locked, the operation on the screen will not be responded, but can still receive the bus telegram. Telegrams: 0 — Lock 1 — Unlock					
1987	Extension function	Screen on/off	1bit	C,W	1.001 switch
The communication object is used to control the screen on/off. Telegrams: 0 — OFF 1 — ON					
1991	Extension function	Night mode	1bit	C,R, T C,W, T,U	1.024 day/night
The communication object is used to send day/night status to the bus. The telegram is					

defined by the parameter.Telegram :

The object flag is C,W,T,U when the day/night status is switched according to the object, receive the telegram value via bus to switch;

The object flag is C,R,T when the day/night status is switched according to the time point or sunrise and sunset time, can not receive the telegram value via bus to switch.

1992	Extension function	Summer time status	1bit	C,T	1.003 enable
The communication object is used to send the status telegrams of the summer time to the bus. Telegrams: 1 — Summer time enable 0 — Summer time disable					
1993	Extension function	Dis/En Proximity function	1bit	C,W	1.003 enable
The communication object is used to enable/disable proximity function.					
1994	Extension function	Proximity input	1bit	C,W	1.001 switch
The communication object is visible when proximity function is triggered by the object. Receive the telegram value from bus: 1—Trigger proximity function 0—Leaving (No proximity)					
1995	Extension function	Proximity output	1bit 1byte	C,T	1.001 switch 5.010 counter pulses 17.001 scene

					number 5.001 percentage
The communication object is determined by the parameter "Object type of output value". When a person is detected approaching the sensing area, the object can send a specified value (1 byte) or ON (1 bit) to the bus. The range of values is determined by the selected data type.					

Table 6.12 "Extension function, Screensaver" communication object

6.13 "Input x" Communication object

 1973	Input 1 - ...	Disable	1 bit	C - W - -	enable
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Fig.6.13 "Input x" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1973	Input X-{{...}}	Disable	1bit	C,W	1.003 enable
Disable/enable the Input function					

Table 6.13 "Input x" communication object

6.13.1 "Switch" communication object

 1974	Input 1 - ...	Switch	1 bit	C R W T U	switch
 1974	Input 1 - ...	Close, Switch	1 bit	C R W T U	switch
 1975	Input 1 - ...	Open, Switch	1 bit	C R W T U	switch
 1974	Input 1 - ...	Short, Switch	1 bit	C R W T U	switch
 1975	Input 1 - ...	Long, Switch	1 bit	C R W T U	switch

Fig.6.13.1 "Switch" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1974	Input X-{{...}}	Switch	1bit	C,W,T ,U	1.001 switch
1974	Input X-{{...}}	Close, Switch	1bit	C,W,T ,U	1.001 switch
1974	Input X-{{...}}	Short, Switch	1bit	C,W,T ,U	1.001 switch
1975	Input X-{{...}}	Open, Switch	1bit	C,W,T ,U	1.001 switch
1975	Input X-{{...}}	Long, Switch	1bit	C,W,T ,U	1.001 switch
one object option: No action is displayed during short or long operation/release operation. two object option: When distinguishing between long and short operations, display short... /long... ; Display close without distinction... /open...					

Table 6.13.1 "Switch" communication object

6.13.2 "Actual temperature, Sensor" communication object

1974	Input 1 - ...	Actual temperature, Sensor	2 bytes	C R - T -	temperature (°C)
1975	Input 1 - ...	Temperature error report, Sensor	1 bit	C R - T -	alarm

Fig.6.13.2 "Actual temperature, Sensor" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
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1974	Input X-{{...}}	Actual temperatur e, Sensor	2byt e	Actual tempe rature , Senso r	9.001 temperature
1975	Input X-{{...}}	Temperatu re error report, Sensor	1bit	C,R,T	1.005 alarm
Visible when the option External NTC sensor is selected.					

Table 6.13.2 "Actual temperature, Sensor"communication object

6.13.3 "Scene" communication object

 1974	Input 1 - ...	Scene	1 byte	C - - T -	scene control
 1974	Input 1 - ...	Close, Scene	1 byte	C - - T -	scene control
 1975	Input 1 - ...	Open, Scene	1 byte	C - - T -	scene control
 1974	Input 1 - ...	Short, Scene	1 byte	C - - T -	scene control
 1975	Input 1 - ...	Long, Scene	1 byte	C - - T -	scene control

Fig.6.13.3 "Scene"communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1974	Input X-{{...}}	Scene	1byt e	C,T	18.001 scene control
1974	Input X-{{...}}	Close, Scene	1byt e	C,T	18.001 scene control

1974	Input X-{{...}}	Short, Scene	1byt e	C,T	18.001 scene control
1975	Input X-{{...}}	Open, Scene	1byt e	C,T	18.001 scene control
1975	Input X-{{...}}	Long, Scene	1byt e	C,T	18.001 scene control

one object option: No action is displayed during short or long operation/release operation.

two object option: When distinguishing between long and short operations, display short... /long... ; Display close without distinction... /open...

Table 6.13.3 "Scene" communication object

6.13.4 "String" communication object

 1974	Input 1 - ...	String	14 bytes	C - - T -	Character String (ISO 8859-1)
 1974	Input 1 - ...	Close, String	14 bytes	C - - T -	Character String (ISO 8859-1)
 1975	Input 1 - ...	Open, String	14 bytes	C - - T -	Character String (ISO 8859-1)
 1974	Input 1 - ...	Short, String	14 bytes	C - - T -	Character String (ISO 8859-1)
 1975	Input 1 - ...	Long, String	14 bytes	C - - T -	Character String (ISO 8859-1)

Fig.6.13.4 "String" communication object

NO.	Name	Object Function	Data Type	Flag	DPT
1974	Input X-{{...}}	String	14by te	C,T	16.001 character string (ISO 8859-1)
1974	Input X-{{...}}	Close, String	14by te	C,T	16.001 character string (ISO 8859-1)
1974	Input	Short,	14by	C,T	16.001 character string

	X-{{...}}	String	te		(ISO 8859-1)
1975	Input X-{{...}}	Open, String	14by te	C,T	16.001 character string (ISO 8859-1)
1975	Input X-{{...}}	Long, String	14by te	C,T	16.001 character string (ISO 8859-1)
one object option: No action is displayed during short or long operation/release operation. two object option: When distinguishing between long and short operations, display short... /long... ; Display close without distinction... /open...					

Table 6.13.4 "String" communication object