10.1’’ AI Voice Control Smart Touch (M Version)

User Manual -V1.0

.

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Version	Time	Modified Record	Modified Part
1.0	25-0415	Version 1.0 released	

1. Product description

10.1'' AI intelligent voice touch panel (M version), mainly used in building control systems, connected to the bus via EIB terminals, and installed together with other devices on the bus to form an intelligent central control system, with intuitive operation in terms of functionality and interaction, users can configure according to their own needs to design panel functions adapted to various environmental scenarios.

This manual provides users with detailed technical information about this touch panel, including installation and programming details, and explains how to use the central control screen panel in combination with actual usage examples.

The touch panel supports a variety of practical application functions such as switch, dimming, multiple curtain modules, scene, RGB/W dimming, temperature control all-in-one control, environmental and energy data monitoring functions, etc. Different functional layouts can be presented through the configuration panel, and the panel supports the control of 2 local relays, which greatly facilitates the layout planning during pre-installation. The installation method is the standard 86mm box wall mounting method.

The touch panel is connected to the bus via the EIB terminal and requires additional power supply voltage. The allocation of physical addresses and the setting of parameters can be done using the engineering design tool software ETS (version ETS5.7 or above) with.knxprod file.

The functions of the touch panel are numerous and complex, applicable to a variety of application fields. The main functions are described as follows:

- 10.1'' high-definition IPS LCD with a resolution of 1280*800, G+G multi-touch capacitive screen
- Basic functions such as switches, dimming (dual color), curtains, and scenes
- Integrated temperature control functions such as HVAC, split air conditioning, floor heating, fresh air, etc
- RGB and RGBW dimming function
- Ambient air quality data monitoring

● Monitoring and display of energy consumption data such as power consumption, current and voltage

● 8 logic group functions

● 8 Event group features (each group with 8 configurable output channels)

● Home navigation for quick UI interaction

● Time and date display and configuration

● Features such as a screen saver and adaptive ambient brightness adjustment, the screen saver can be customized on the Settings page with theme images and access time, etc

● Background wallpaper selection configuration, pictures can be changed via SD card or mini program

● Supports over-the-air (OTA) remote upgrades for devices

● Supports physical buttons and knobs on the panel side to bind device control (dimming switch function)

● Whole-house call, one-way video intercom function

● Supports wireless and Ethernet access network, supports dual network coexistence mode (video intercom occupies Ethernet)

● Supports two local relay switch controls

To ensure that the system works properly, it is necessary to check the wiring before use, while paying attention to the electrical technical characteristics of the load equipment.

The functional configuration of the product needs to be combined with the characteristics of the selected product and the application scenario.

2. Technical performance, dimension diagrams and wiring diagrams

2.1 Technical parameters

Power supply	KNX bus voltage	21-30V DC, obtained via the EIB bus
	The current consumed through the bus	6mA(30V)
	Power consumed through the bus	180mW(30V)
Auxiliary power supply	Auxiliary power supply voltage	21-30V DC
	The current consumed through the auxiliary power supply	<160mA(30V DC)
	Static power consumption of the auxiliary power supply	<5W
Relay output	Number of channels	2 channels
	Rated voltage	230V AC(50/60Hz)
	Rated current	4A/ channel
	Maximum total power	<1800W(Resistive)
	Mechanical life	>1x10^6
	Electrical life	> 2.5 x10^5
Wiring	EIB/KNX bus	Terminal connection (Red/Black)
	Output terminal	0.8mmØ, connect with a copper pole using a screw wire
	Diameter of the wire	0.5-4mm^2
	Torque moment	0.8N-m
Operating system	System version	Android 10.0
Built-in memory	RAM/ROM	1G/8G
Device network	WIFI	5G+2.4G
	Ethernet	10/100M
All-home call	Voice Call	Support
OTA upgrade	System software	Support
Operations and display	Programming button	For device programming physical addresses and diagnostics
	Red indicator light	Instructs the device to enter programming mode
Temperature range	Operating temperature	(-5 ° C... +45℃)

	Storage temperature	(-25 ° C... +55℃)
	Transport temperature	(-25 ° C... +70℃)
Environmental conditions	Ambient humidity	Maximum air humidity <93%, except condensation
Installation	Installation Method	Install in a standard 86 box
Size/Weight	Size	289mm×156mm×52mm
	Weight	0.8 KG

2.2 Dimension drawing

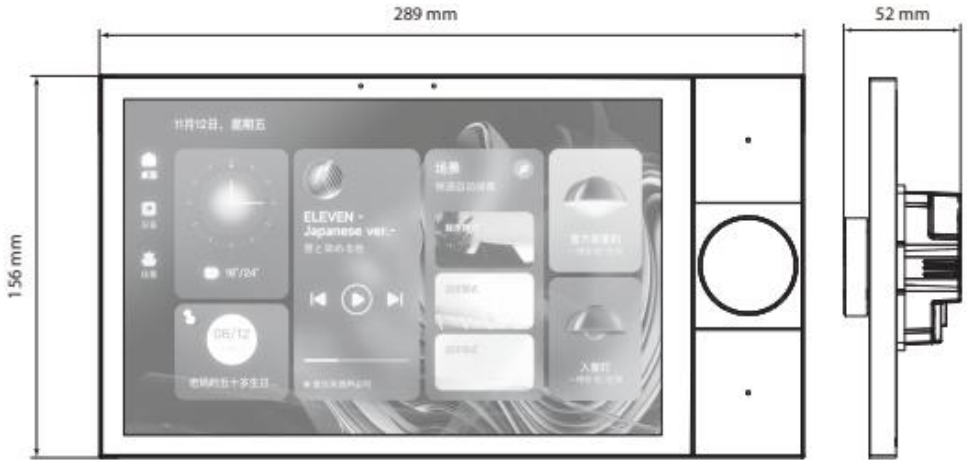


Figure 2.2.1 Structural dimensions of the 10.1'' smart touch M version (traditional 86 box)

2.3 Wiring diagram

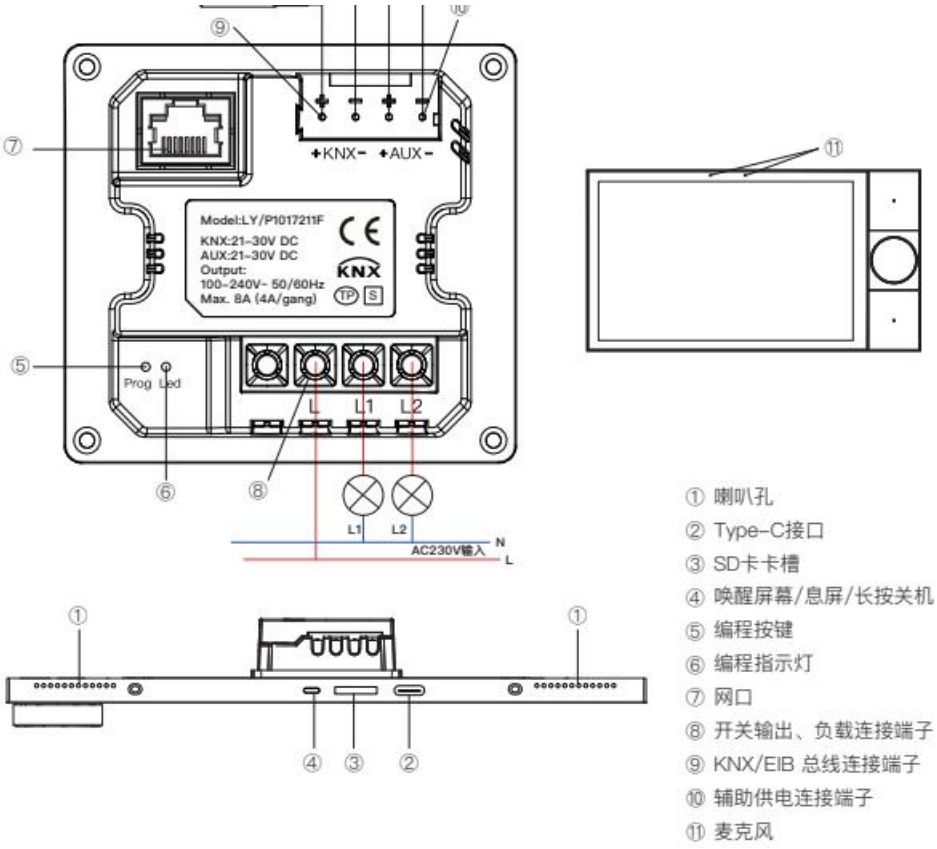


Figure 2.3.1 Wiring diagram of the 10.1'' smart touch (M version)

① Speaker

② Type-C interface

③ SD card slot

④ Device power-off button (short press wake screen, turn off screen)

⑤ Programming button

⑥ Programming LED lights

⑦ RJ45 network interface

⑧ Switch output, load connection terminals

⑨ KNX/EIB bus terminal

⑩ Auxiliary power supply connection terminal

⑪ Dual microphone

3. Project design and application

Applications	Maximum number of communication objects	Maximum number of group addresses	Maximum number of union tables
T10 Multifunc-Smart Center Screen 2S40	1153	2600	2600

Function description:

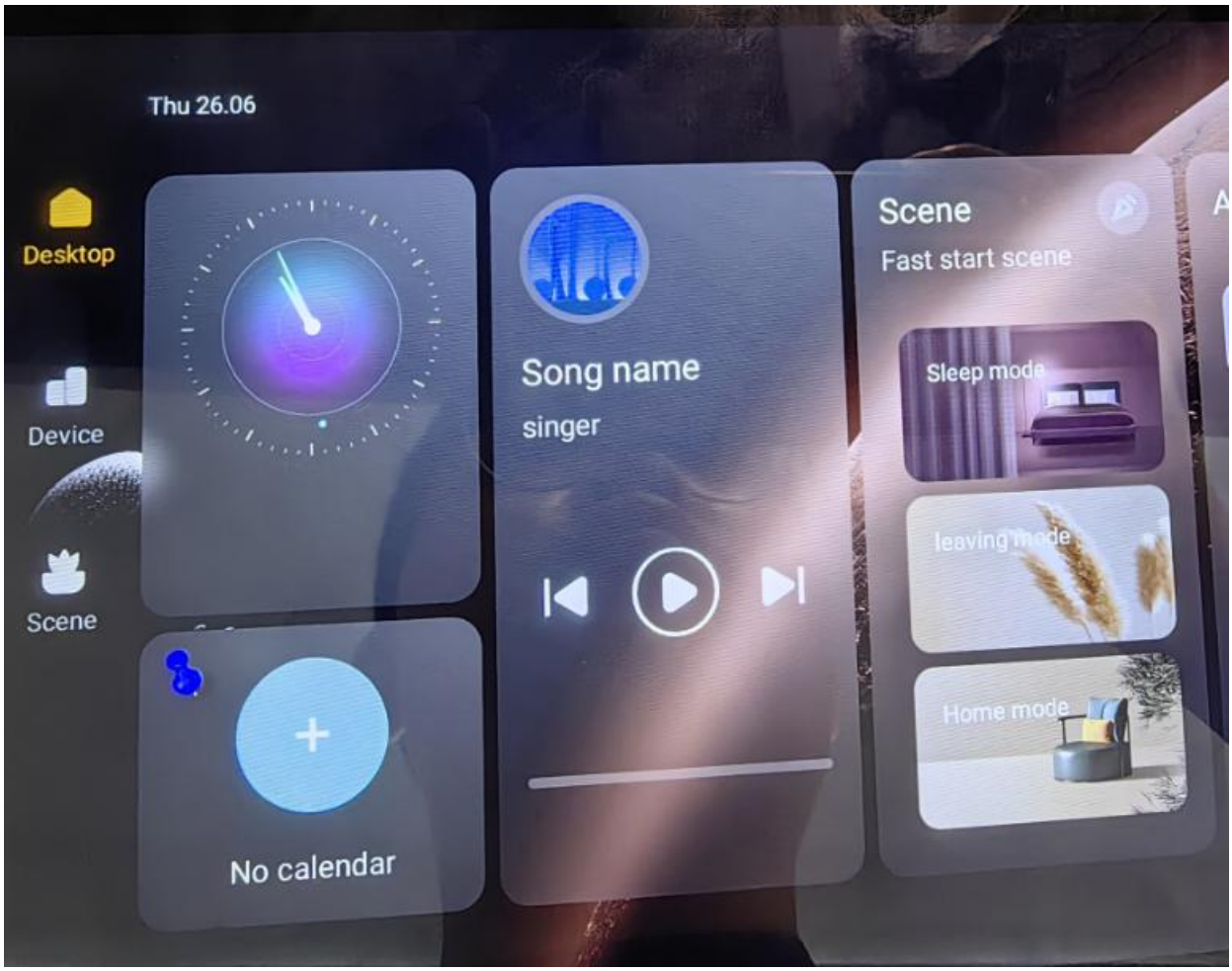


Figure 3.1 Home Page

General Features

This feature includes device information display and settings, system language selection and time date configuration, WIFI and LAN configuration, bluetooth push device configuration, display with brightness adaptive, manual adjustment, screen saver and pictures and time settings, desktop wallpaper customization, system volume and sound effect adjustment, quick knob button configuration, home quick configuration, system and response OTA via software

In addition, you can also set up additional functions such as scheduled device shutdown and restart, as well as different environment mode adaptations.

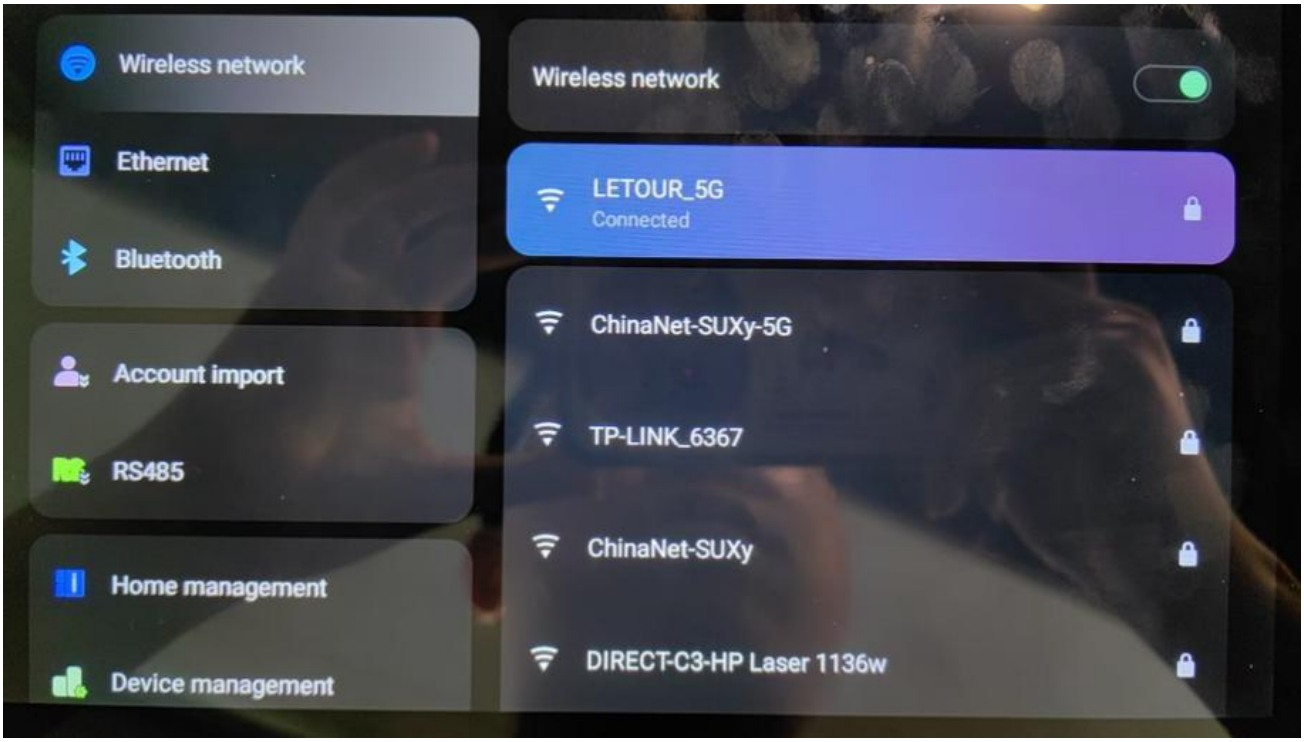


Figure 3.2 Setting page

Device dropdown menu functionality

This drop-down menu configures basic parameters of the device such as brightness adjustment, device system volume, and quick jumps to the home page, Settings page, and APP page.

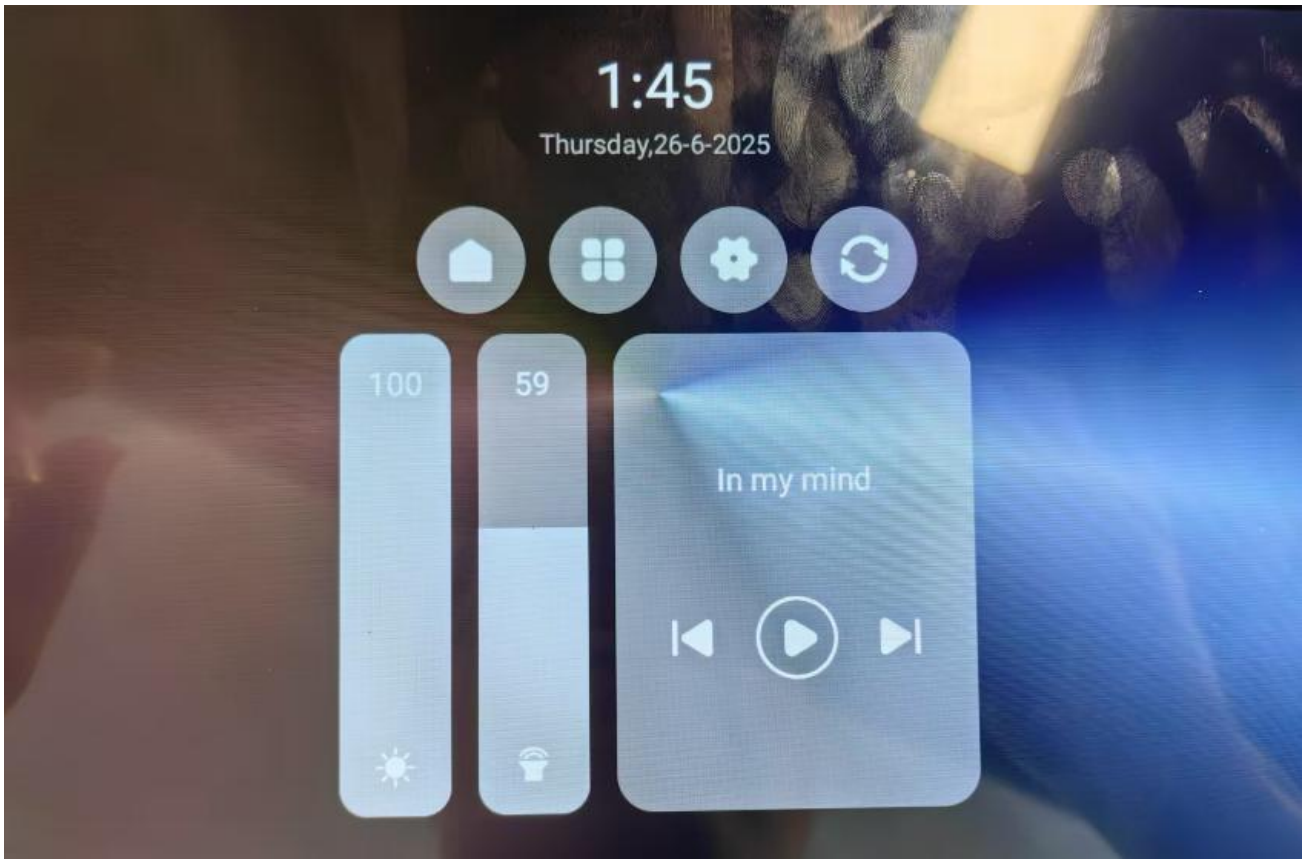


Figure 3.3 Device dropdown menu page

Home Desktop Features

Quick linkage and display of devices can be configured on the home page, and quick tiles such as time and date, scene, third-party apps, and device items on the device control page can be customized for quick device interaction and human-machine operation, as shown in Figure 3.1 Home Page interaction

Device Page Controls

The configurable features of the device page include basic lighting control, curtain and louver control, HVAC control, temperature control function, background music control, RGB/W dimming, ambient air quality data monitoring, energy and electrical data monitoring, etc

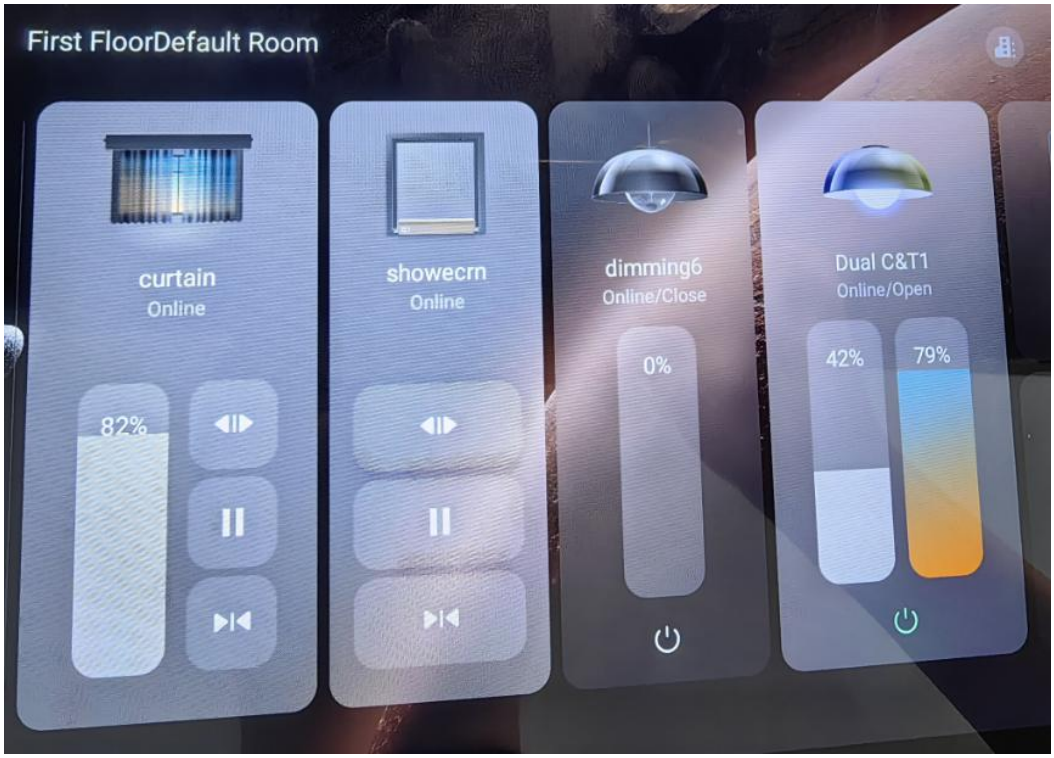


Figure 3.4 Control function page

Scene Page Controls

The scene page is configured through the database and displayed on the device side by itself. The corresponding scene background image and name can be redefined and modified. Clicking the corresponding scene icon can invoke KNX's scene function to trigger the device linkage

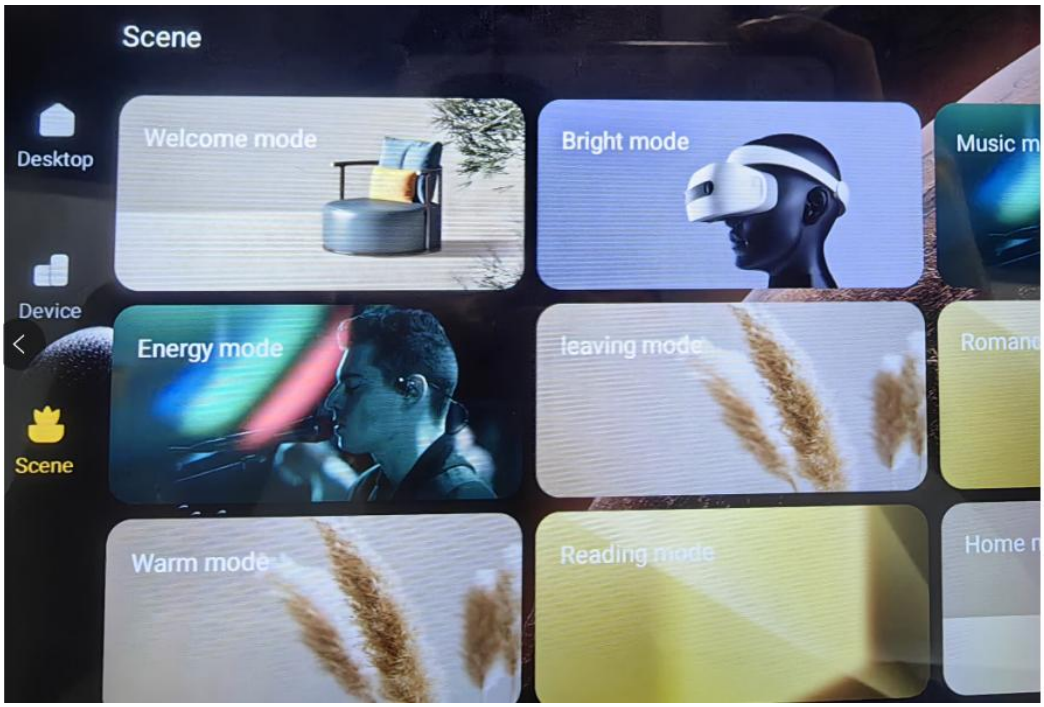


Figure 3.5 Scene Call Function Page

Lighting function

Mainly used to control switches and devices that perform dimming, the dimming mode can be selected as absolute or relative dimming, and the type can be configured as single color or double color

Curtain and blinds control function

Mainly used to control the execution of curtains or devices with blinds adjustment. Curtain types can be divided into roller curtains and opening and closing curtains, which can be configured according to different scenes.

Scene control function

Short press to invoke and execute the scene

HVAC functions

It is mainly used for regulating and controlling the room temperature, and adjusting the temperature according to the actual living environment and living needs of the user

Supports manual adjustment of the temperature switch, supports 3 Settings and automatic wind speed adjustment, and operates in four modes: standby, comfort, energy saving and protection

Temperature setting supports both relative and absolute types, as well as coil control type supports two-point and PI control

Air conditioning functions

Air conditioning control types are generally divided into split infrared (home) and air conditioning centralized gateway

The split infrared function is similar to the air conditioning remote control. The control function of the central control panel is to control the air conditioning through the infrared transmission module on the bus or the controller forwarding. The control items include on/off, temperature, mode, and wind speed

The air conditioning gateway is suitable for controlling multi-split systems such as central air conditioning, and it requires a KNX to air conditioning system gateway for control

RGB/W dimming control

It mainly targets the dimming of RGB or RGBW LED light strips and adopts an absolute dimming method

Air quality testing

Timed collection and display of temperature, humidity, PM2.5, PM10, CO2, AQI, VOC, illuminance and wind speed can be set. Up to 4 data can be displayed on a single page

Floor heating control

Supports two-point and PI control modes, automatically controlling valve opening and closing based on temperature difference. In addition, you can set the floor heating timing and scene function, and the temperature support limit range can be adjusted. Be careful not to set abnormal values in reverse

New risk control system

Supports three levels of wind speed adjustment, power on/off, heat exchange switch, filter life, timeout alarm and filter replacement reset

Energy monitor display

The display of data such as current, voltage, power, and power consumption can be set, and these values can be obtained through other KNX execution devices or metering meters, gateways

Event group functionality

By invoking the scene number, eight output message data can be triggered, each data supporting three different data types to choose from, with a total of eight event groups to set

Logical operation function

Supports 8 logical inputs for phase AND, OR, XOR operations, supports gate processing forwarding, converting one output to a single output or multiple outputs; It supports threshold comparators and different data type conversions, with a total of 8 logic groups to set

Whole-Home Call Intercom Function

a. Access: Click "Apps" on the home screen (see Figure 11) to see Whole-Home Call.

b. Toggle off the "Call System" button to disable the device from receiving calls.

c. Call: On the Call System screen, tap the desired group or device to call. You can tap Whole-Home Call to call all devices.

d. Call Back: The gray area on the right side of the Call System screen displays the device's call history. Tap the Call Back icon next to the record to call the original device.

e. Setting Up a Call Group: Step 1: Create a group: Tap "Settings." Tap [Create Call Group], enter a name for the call group, and tap Done. Step 2: Add Members: Tap the newly created call group and tap the + icon to the right of [Call Group Members]. The system will automatically search for available settings. Select the device you want to add and tap Save.

Installing third-party apps

a. In the app, click Browser. A prompt will pop up asking whether to set Sogou as your default browser. Decline to use Google's browser directly. Enter the APK link in the URL bar at the top to download. After downloading, you'll be prompted to install. A pop-up window will appear to confirm the installation. Open it and allow the installation. A successful installation will be displayed on the Apps page.

b. Copy the APK file to a memory card. Insert the memory card into the device (up to 32GB). Scroll down from the top of the screen, select Apps, then File Management. Click the card you see on the left and click Install. Alternatively, press and hold Copy to save to the device.

c. Connect the computer to the device via a USB-C cable and install directly using the ADB command (the computer must have ADB installed).

Family Photo Album

Path: Home Screen --- Apps --- Family Album

How to upload photos:

1) Click the app to open the Family Album app. If no photos are available, scan the QR code on the device to access the app to upload photos.

2) Open the "Smart Central Control Background Music" and search for the connected device (the device ID can be found in “About This Device”). Once connected, click the album in the lower-right corner to upload photos.

Note: The phone and monitor must be on the same local area network. Connection is detected!







Figure 3.6 Family Album Settings Operation

4. Instructions for ETS Parameter Setting

4.1 Overview

The 10.1-inch multi-functional central control panel can be set with different parameters according to the user's needs to achieve functions for different application scenarios. The database configuration of this device is detailed below.

4.2 Parameter setting "General"

4.2.1 Parameter setting “General setting”

The parameter setting interface "General setting" is shown in Figure 4.2.1. Here, the general settings of the device are mainly set, such as system language, temperature type, and status reading configuration, etc.

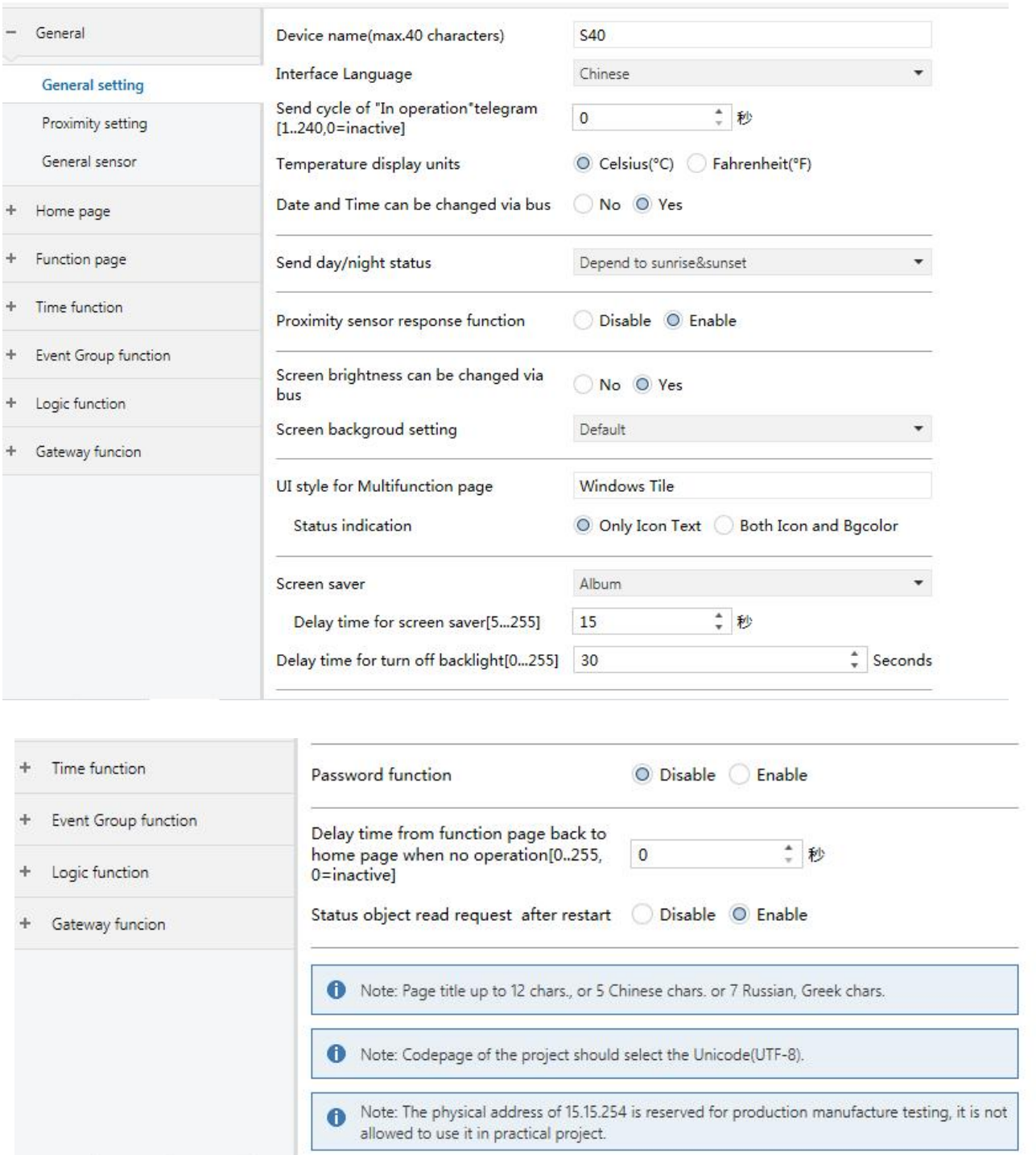


Figure 4.2.1 "General setting" parameter setting

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

This parameter sets the time interval for this module to send messages in a loop via the bus to indicate its normal operation. When set to "0", the object "In operation" will not send messages. If not set to "0", the object "In operation" will send a logically "1" message to the bus at the set time intervals. Optional: 0... 240s, 0= Loop send prohibited

To minimize the bus load as much as possible, choose the maximum time interval based on actual needs

Parameter "Temperature display units"

Set the temperature display units. Optional:

Celsius(℃)

Fahrenheit(℉)

The setting of this parameter shows the temperature data of this device

Parameter "Status object read request after restart"

Whether to send a status request message when the device starts up. Optional:

Disable

Enable

This parameter applies to switch status feedback, dimming status feedback, curtain position feedback, air quality detection display items, outdoor temperature detection, and energy display monitoring in function pages. Once enabled, 1. When the device starts up or the bus is powered back on, the device sends a message reading the status of the switch or dimming brightness value to the bus; 2. When the device starts up or the bus is powered back on, the device sends a message to the bus reading the status of the curtain position; 3. When the device starts up or the bus is powered back on, the device sends messages to the bus that read temperature, humidity, CO2, PM2.5, etc. detected by the sensor; 4. Once enabled, when the device starts up or the bus is powered back on, the device sends messages to the bus for current, voltage, power, energy, etc. monitored by the read actuator

4.4 Parameter setting “Function page”

4.4.1 Parameter setting “Page setting”

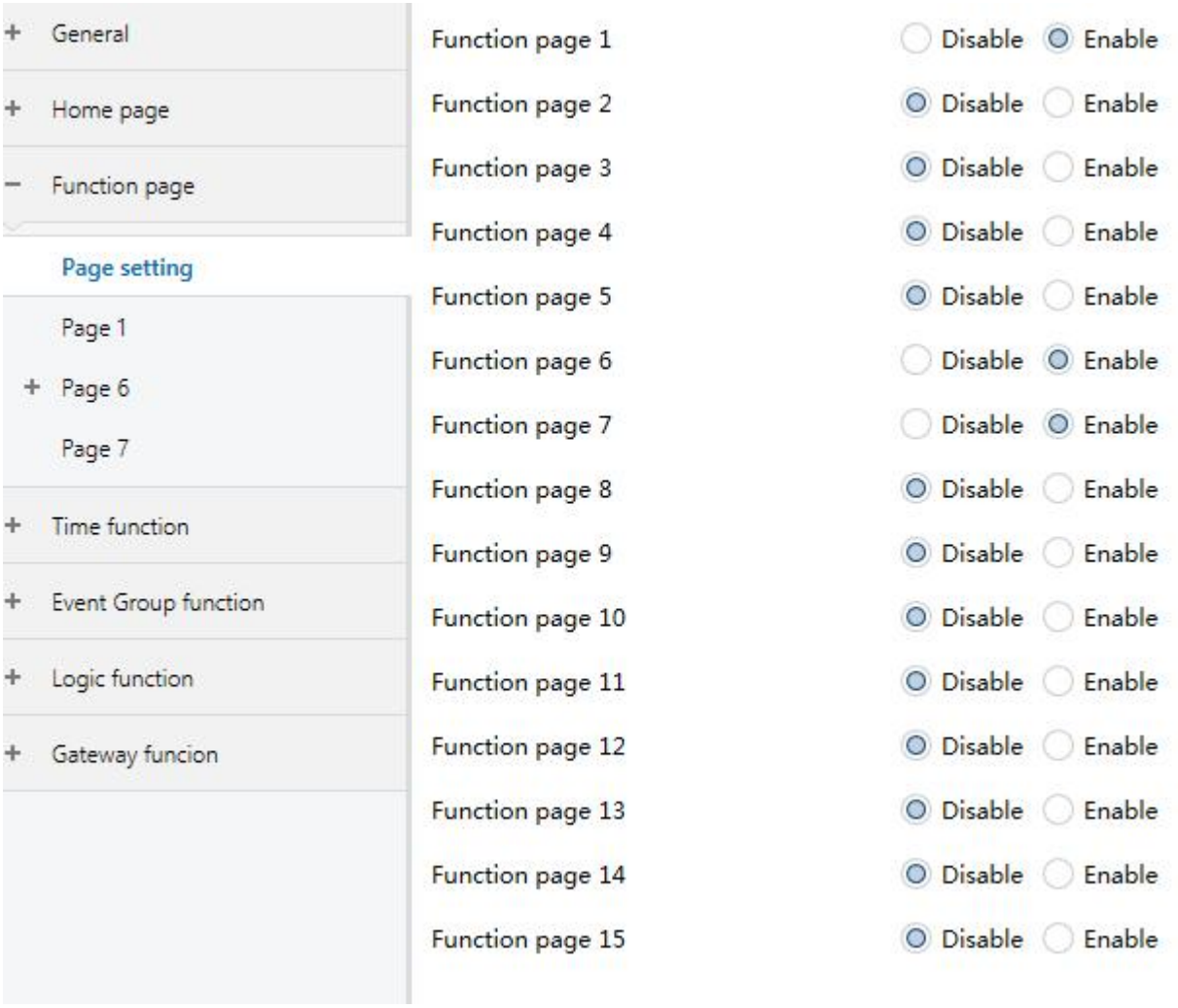


Figure 4.4.1 "Page setting" parameter setting

Parameter "Function page x(x=1.." 15)"

Set whether to enable function page x. Optional:

Disable

Enable

Select "Enable", and the parameter interface "Page x" will be visible, as shown in Figure 5.3.2. This interface sets up the functions of Page x with up to 15 function pages

Note: The first 5 function pages can only be configured for multi-function page control, and the last 10 function pages can be configured for full-function control

4.4.2 Parameter setting "Page x--Multifunction"

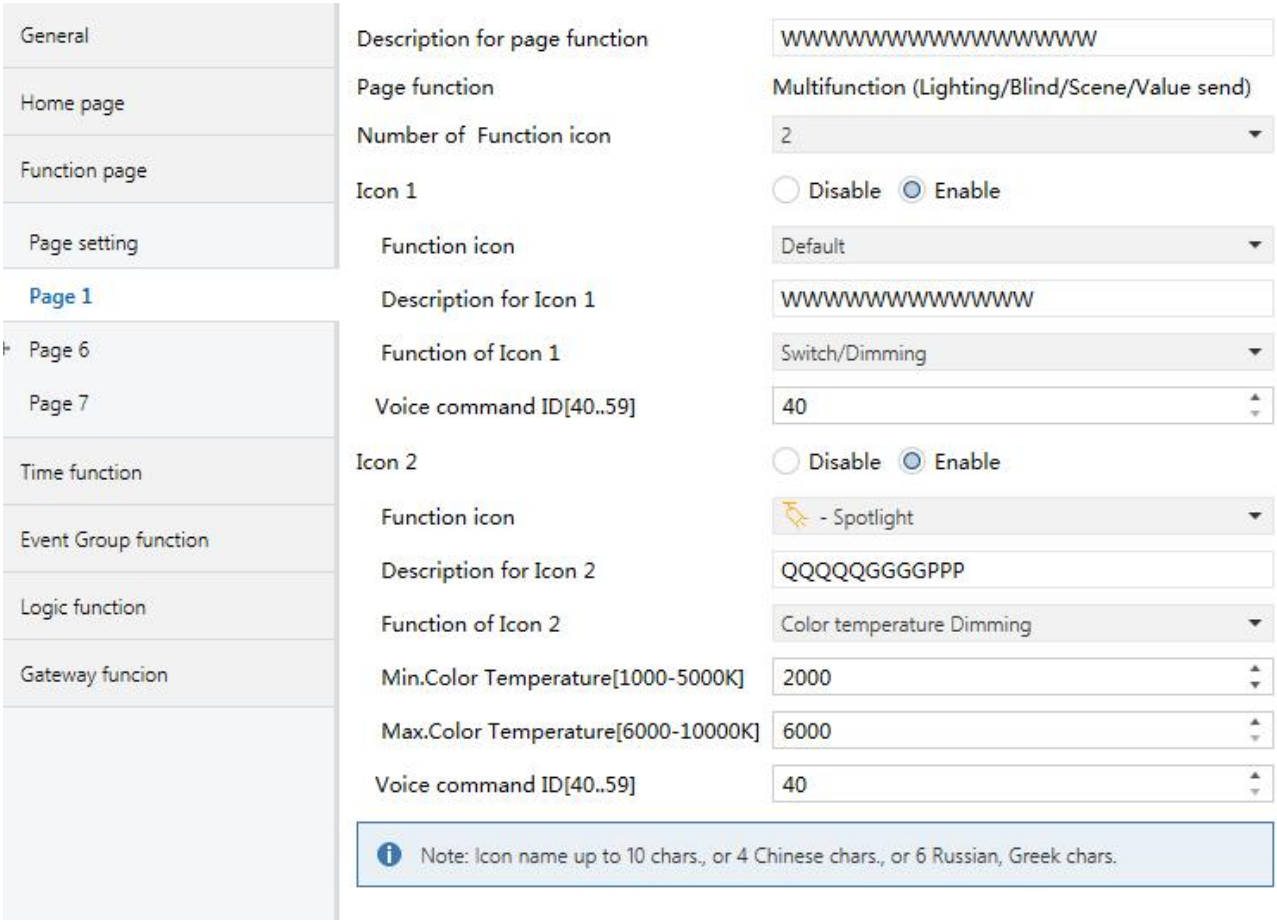


Figure 4.4.2 "Page x" parameter setting

Parameter "Description for page function"

Set the name of the function page interface. You can input up to 15 characters and actually display up to 5 Chinese characters

Parameter "Page function"

Set the page function. Options:

Multi-function (Lighting/Blind/Scene/Value send)

HVAC

Air conditioner

Background Music

RGB dimming

Air Quality display

Floor heating

Ventilation System

Energy Metering display

The display of the interface depends on the selected function. Pages 1 to 5 can only set the multi-function option, pages 6 to 15 the device supports all functions can be set

The parameter Settings for each function will be described in chapters below

The page functions of this chapter mainly introduce the multi-functional parameter Settings, such as lighting, curtains and scene parameter Settings, as follows:

Parameter "Number of Function icon"

Set the number of device channels displayed in a single group on the device page. Options: 1/2/3/4/6/8

Note: For this product, up to 6 ICONS can be set for each feature page

Parameter "Icon x, x=1... 8"

Set whether to enable the function of icon x. Optional:

Disable

Enable

Parameter "Description for Icon x"

Set the name of the device icon x displayed on the screen. A maximum of 12 characters (4 Chinese characters) can be input.

Parameter 'Function of Icon x'

Set the function of icon x. Optional:

Switch

Switch/Dimming

Open/close Blind

Roller Blind(without slat)

Venetian Blinds(with slat)

Blind(open/close/stop)

Blind(up/down/stop)

Scene control

Color temperature(Only supports 1-5 pages of devices)

Switch: For controlling the switch

Objects' Switch 'and' Switch status' are visible. For example, "Switch" corresponds to the Switch object of the Switch actuator, and "Switch Status" corresponds to the Switch Status object. If the object "Switch Status" receives a status response from the switch actuator, the icon status will also be updated synchronously



Figure 4.4.2-1 Switch display on the function page

Switch/Dimming: For switching, also for dimming control

The objects "Switch", "Brightness dimming", "Brightness Status" and "Relative dimming" are visible. A short press operation triggers the switch control. Long press operation opens a slider for dimming, and you can do the dimming by sliding directly over it. Support for relative dimming with two buttons: up and down

For example, "Brightness dimming" corresponds to the Brightness of the dimming driver, and the dimming object "Brightness status" corresponds to the brightness status object of the dimming driver



Figure 4.4.2-2 Monochromatic lighting page display

Value send: The value send feature, which allows you to specify to send values of different data types

Open/close Blind: For open /close blind control

Supports adjusting the position of the blinds in percentage form via the slider, and also supports control with three control buttons: open the blinds, close the blinds, or stop running



Figure 4.4.2-3 Opening and closing curtain page

Roller Blind(without slat): For roller blind or lift curtain control

It supports adjusting the position of the blinds in percentage form via the slider, and also supports control with three control buttons: raise the blinds, lower the blinds, or stop running

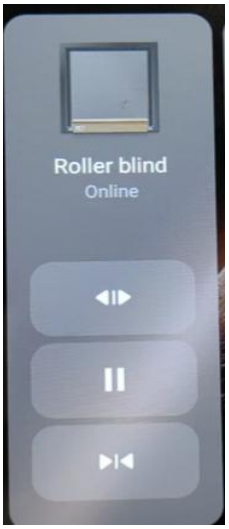


Figure 4.4.2-4 Roller blind page

Venetian Blinds(with slat): For Venetian blinds control

Supports adjusting the position of the blinds and the Angle of the blinds in percentage form via the sliders, and also supports manipulating with three control buttons: raise the blinds, lower the blinds, or stop running

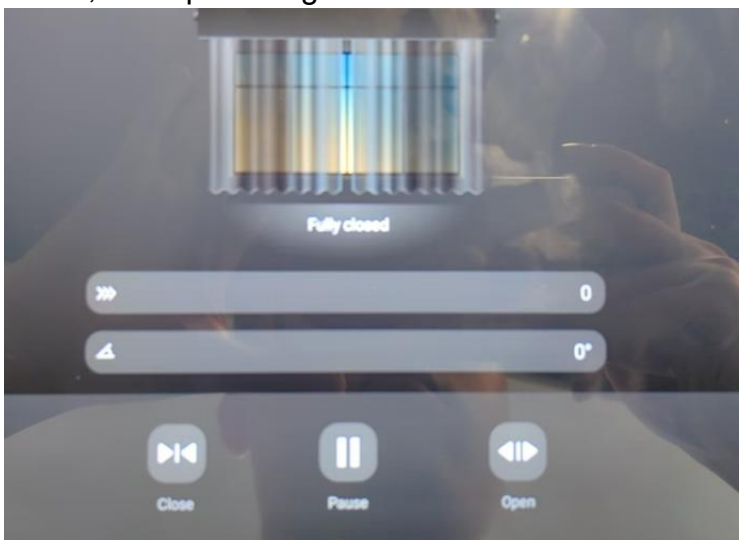


Figure 4.4.2-5 Venetian blinds page

Blind (open/close/stop): Applicable to opening and closing blinds

Supports operation via three control buttons: open the curtain, close the curtain, or stop running

Blind (up/down/stop): For roller blinds

It supports operation through three control buttons: raising the curtain, lowering the curtain, or stopping the operation

Scene control: Scene control

Call the scene when touching and also enable long operations for saving scene functionality

Color temperature Dimming: For switching, also for dimming color temperature control

Objects "Switch", "Brightness dimming", "Brightness Status" and "Relative dimming", "Color Temperature", "Color "Temperature,status" is visible, short press operation triggers switch control; Hold down the operation to enter the dimmer page, which contains sliders for brightness and color temperature, and swipe directly on it to adjust the light and color. It supports relative dimming with two buttons: up and down

Parameter "Output scene NO."

Set the scene number sent by the object during the operation. Optional: 1.. 64

Scenario number 1..64 corresponds to actual message value 0..63

4.4.3 Parameter setting "Page x--HVAC"

The parameter setting interface "Page x-- HVAC" is shown in Figure 4.4.3. It mainly sets the parameters of the fan control and some parameters of the basic control of HVAC

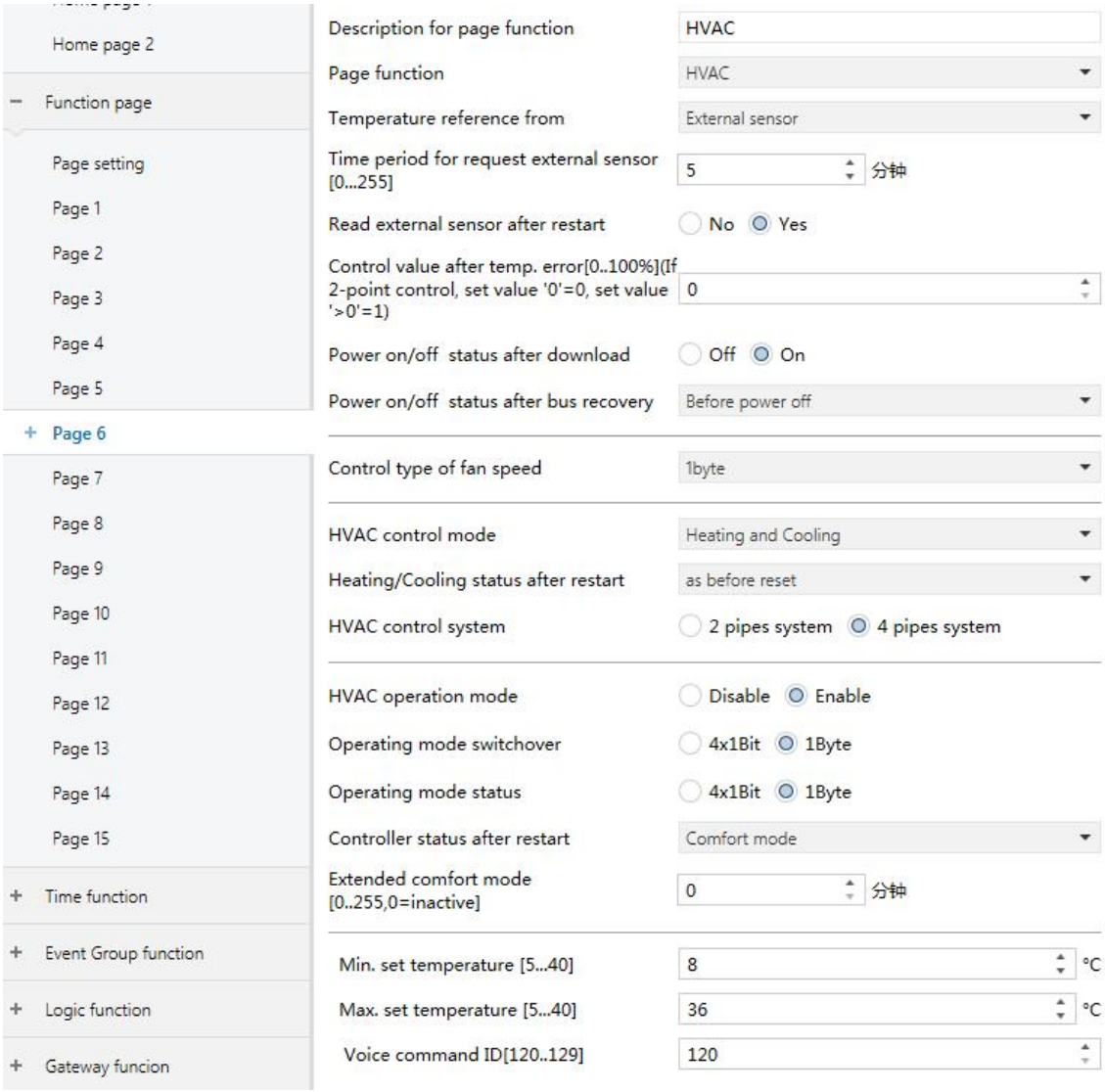


Figure 4.4.3-1 "Page x-- HVAC"parameter setting

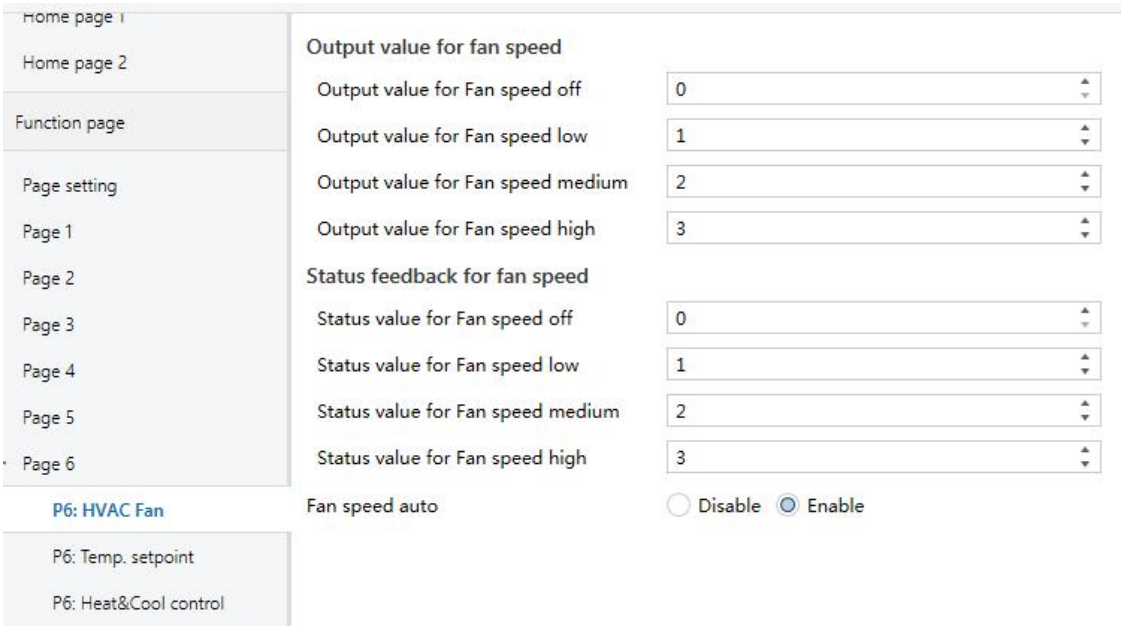


Figure 4.4.3-2 "Page x-- HVAC Fan_1byte" parameter setting

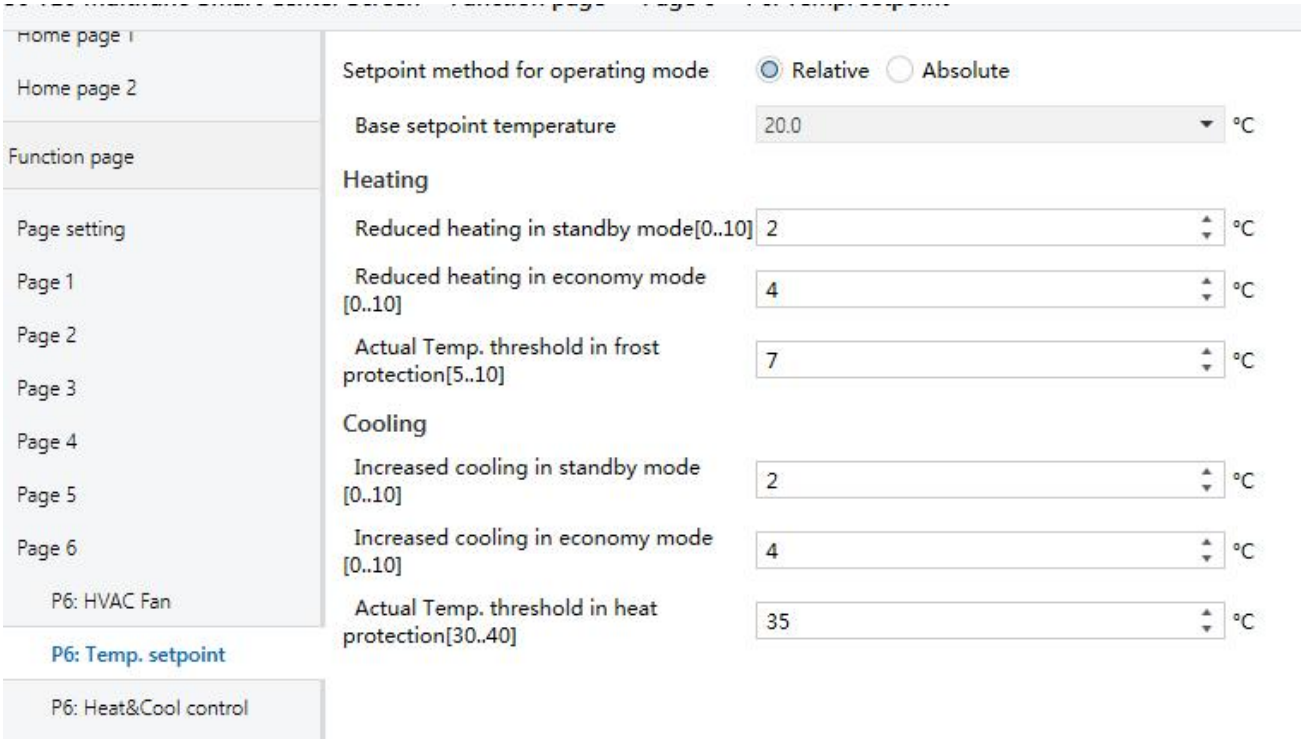


Figure 4.4.3-3 "Page x-- HVAC Temp Relative" parameter setting

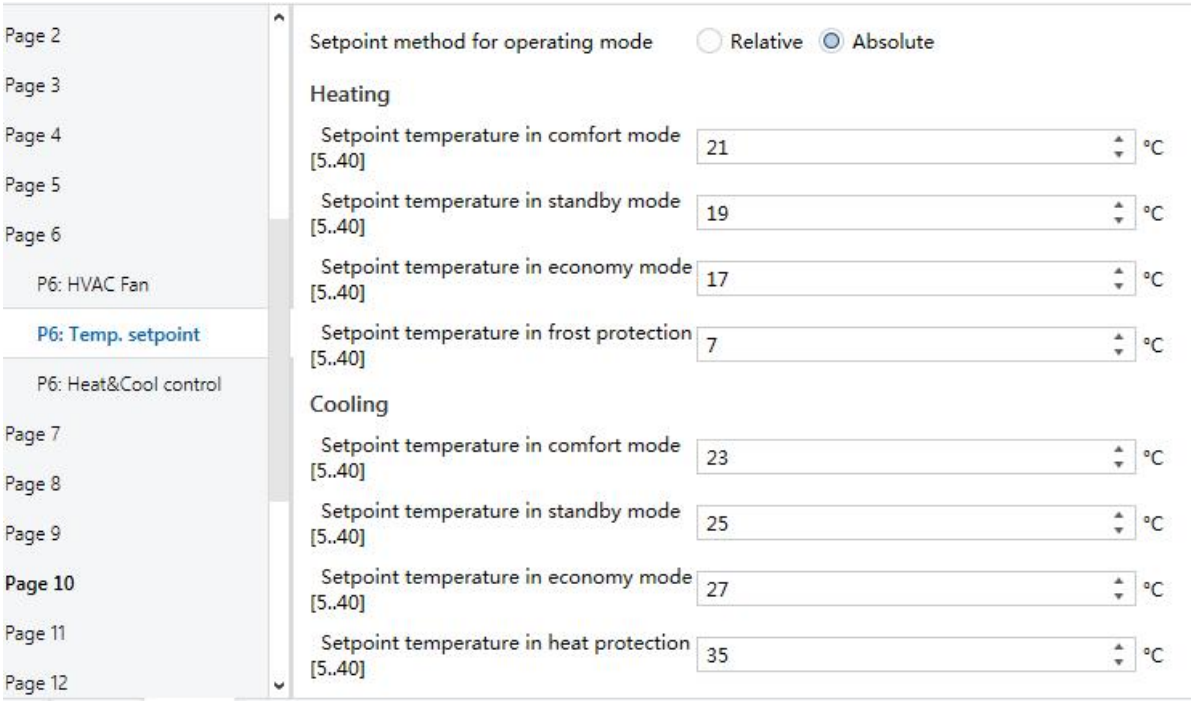


Figure 4.4.3-4 "Page x-- HVAC Temp Absolute" parameter setting

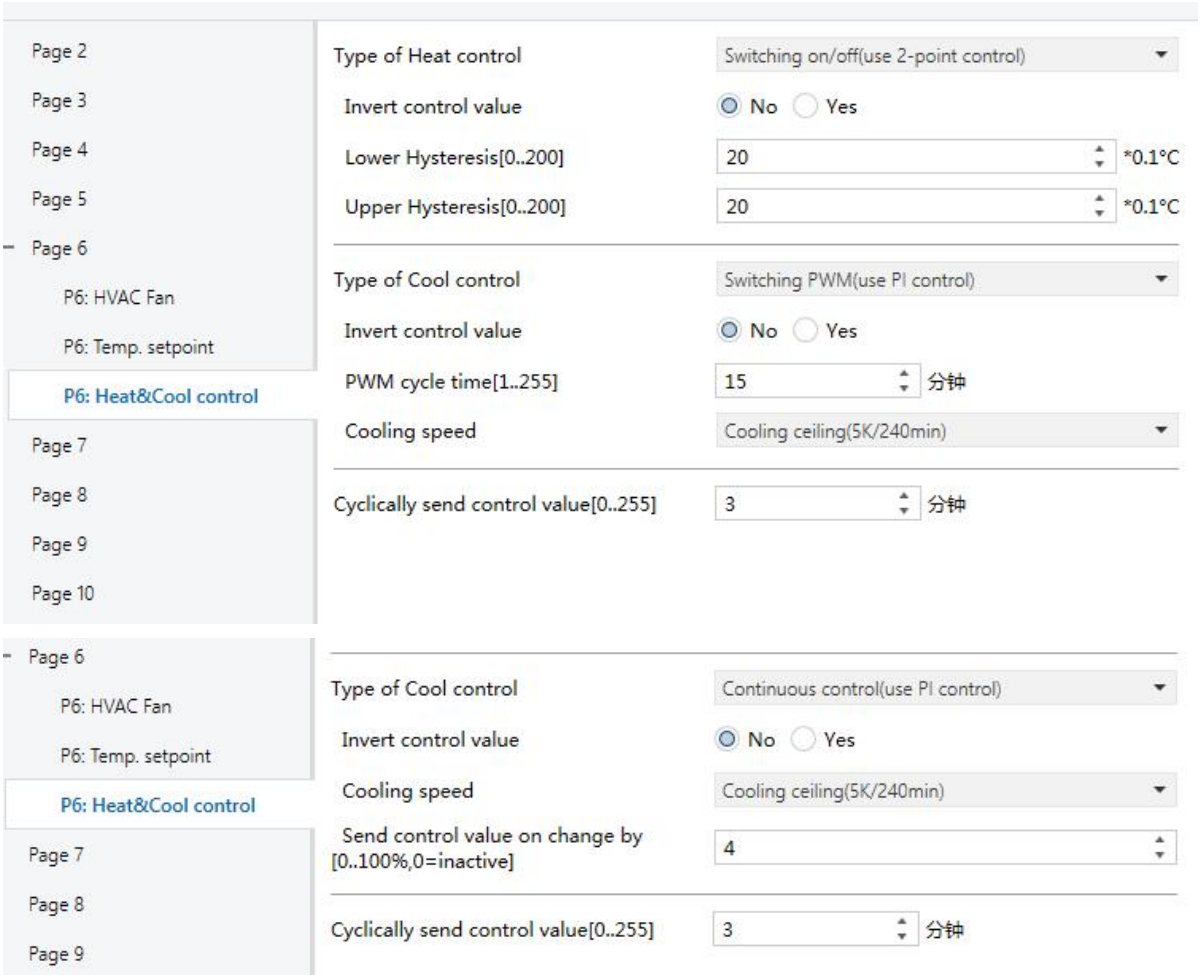


Figure 4.4.3-5 "Page x-- HVAC Heat&Cool control" parameter setting

Parameter "Temperature reference from"

This parameter sets the source of the temperature reference for the HVAC function. Optional:

Internal sensor

External sensor

Internal and External sensor combination of internal and external sensors

The device does not support built-in sensor display when referring to internal sensors.

The following two parameters are visible when the option has an external temperature sensor:

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

This parameter is used to set the time period during which the device sends read requests to an external temperature sensor. Optional: 0... 255

Parameter "Read external sensor after restart"

This parameter is used to set whether the device reads external sensor data after resetting. Options available:

No

Yes

No: Read requests do not occur immediately after an electrical reset or programming on the bus, but are sent only after the loop time is over

Yes: After the electrical reset or programming on the bus is completed, a read request is sent to the external temperature sensing device

Parameter “Combination ratio”

This parameter is visible when HVAC temperature acquisition uses a mix of internal and external sensors, setting the proportion of temperature measured by the internal sensor and the external sensor. Optional:

10% Internal to 90% External

20% Internal to 80% External

80% Internal to 20% External

90% Internal to 10% External

For example, if the option is "40% Internal to 60% External", then the internal sensor takes up 40% of the proportion and the external sensor takes up 60% of the proportion, the control temperature = (temperature of the internal sensor × 40%) + (temperature of the

external sensor ×60%), The HVAC function of the device will perform temperature control and display based on the calculated temperature

When two sensors are combined for detection, if one sensor fails, the temperature value detected by the other sensor is used

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

This parameter sets the control value used when there is a temperature error. Optional: 0.. 100

If the control mode is a two-point switch control mode, then the control value is 0 when the parameter value is 0; When the parameter value is greater than 0, the control value is 1

Parameter "Power on/off status after download"

Set the on/off status of the HVAC interface after the application is downloaded. Options:

Off

On

Parameter "Power on/off status after bus recovery"

Set the on/off status of the HVAC interface after power-on reset on the bus. Options:

On

Off

Before power off

On: When the device is powered on, it will be in the power-on state, at which point the interface is operable, and HVAC will perform internal calculations based on the control mode to determine the current control state;

Off: When the device is powered on, it will be in the off state, at which point the interface will not be operable and no calculations or controls will be performed

Before power off: When the device is powered on, it will return to the state before the power loss. If it is powered on, HVAC will perform internal calculations based on the control mode to determine the current control state of the device

Parameter 'Control type of fan speed'

This parameter is used to set the data type of the wind speed. Optional:

Disable

1bit

1byte

Disable

1bit: The object type for wind speed control is 1bit

1byte: The object type for wind speed control is 1byte, which is also visible in the parameter setting interface as shown above 4.4.3-2

Parameter "Fan speed auto"

This parameter is visible when the previous parameter is set to 1bit or 1byte and is used to set whether to enable automatic operation of wind speed. Options:

Disable

Enable

Enable: After enabling, the wind speed will increase the control of the automatic mode

Parameter "HVAC control mode"

This parameter is used to set the output control mode of the HVAC. Optional:

Heating

Cooling

Heating and Cooling

Heating and Cooling: Can achieve heating, can also achieve cooling. At the same time, the following two parameters are visible

Parameter "Heating/Cooling status after restart"

This parameter is used to set the heating/cooling output control mode after the device starts up. Optional:

Heating Heating

Cooling Refrigeration

As before reset

As before reset: After a power reset on the bus, the control mode of the device after startup is restored to the state before the power loss; If the control mode of the device after startup is uncertain after the application is re-downloaded, the control mode needs to be manually selected

Parameters "HVAC control system"

Used to set the type of HVAC control system, that is, the type of pipe for the inlet and outlet water of the fan coil. Optional:

2 pipes system

4 pipes system

2 pipes system: A two-pipe system where heating and cooling share one inlet and outlet pipe, that is, hot water and cold water share one valve for control

4 pipes system: A four-pipe system with separate inlet and outlet pipes for heating and cooling, requiring two valves to control the inflow and outflow of hot and cold water respectively

Parameters "HVAC operation mode"

This parameter sets whether the operation mode of the HVAC is enabled. Optional:

Disable

Enable

Enable: After enabling, the following four parameters are visible

Parameter "Operating mode switchover"

This parameter sets the type of object for the room operating mode switch. Optional:

4x1bit

1byte

When 1bit is selected, 4 x 1-bit objects are visible. The four objects are: HVAC Output- Comfort mode, HVAC Output- Economy mode, HVAC Output- standby mode, and HVAC Output- Frost/Heat protection mode. When a certain mode is activated, the corresponding object sends the message "1", otherwise "0".

When 1byte is selected, the object "HVAC Output --HVAC mode" is visible, and the sent message values are: "1" for comfort mode, "2" for standby mode, "3" for energy saving mode, "4" for protection mode

Parameter "Operating mode status"

This parameter sets the object type of the room operation mode status feedback. Optional:

4x1bit

1byte

When 1bit is selected, 4 x 1bit objects are visible, and the device updates to different modes based on the ON or Off message received by the object. The four objects are: HVAC Input- Comfort mode, HVAC Input- Economy mode, HVAC Input- Frost/Heat protection mode and HVAC Input--standby mode. When the values of the current three objects are all 0, the operation mode is standby mode

When 1byte is selected, 1 indicates comfort mode, 2 indicates standby mode, 3 indicates energy saving mode, 4 indicates protection mode, and the device will update to the corresponding mode based on the received message value

Parameter "Controller status after restart"

This parameter is used to set the operation mode of the controlled device room after the device starts up. Optional:

Standby mode

Comfort mode

Economy mode

Frost/heat protection

Parameter "Extended comfort mode[0..255,0=inactive]min"

This parameter sets the delay time for automatically returning from comfort mode to energy saving mode. Optional: 0.. 255

When the set value is 0, it means the comfort delay function is not used, that is, the comfort mode will not automatically return to the energy saving mode

This function works when the setting is 1-255 and the room mode is switched from energy saving mode to comfort mode

Comfort mode will automatically switch back to energy mode after the set delay time

This parameter is only for the switching between energy-saving mode and comfort mode

Parameter "Basic setpoint temperature [℃]"

This parameter is visible when the operating mode of the HVAC is not enabled and is used to set the reference value for the set temperature. Optional:

10

10.5

...

35

This setting can be changed through the bus object "Setpoint adjustment", and after the change, the new setting will be saved after the bus loses power

Parameter "Min. / Max.set temperature [5..40]℃"

Used to limit the adjustable range of temperature Settings. Set the minimum value less than the maximum value, otherwise switch to the default value

If the temperature setting exceeds the limit range, output according to the limit

The following parameters are visible when the wind speed control type is selected as 1byte, as shown in Figure 4.4.3-2

Output value for fan speed

Parameter "Output value for Fan speed off/low/medium/high"

These four parameters are visible when the wind speed object type is "1byte" and define the values sent when switching to each wind speed. Optional: 0.. 255

Status feedback for fan speed

Parameter "Status value for Fan speed off/low/medium/high"

These four parameters are visible when the wind speed object type is "1byte" and set the state feedback values for each wind speed condition. The device will display the wind speed update based on the feedback value. Optional: 0.. 255

Parameter "Setpoint method for operating mode"

This parameter is visible when the HVAC operating mode is enabled and is used to set the actual handling method for panel temperature Settings. Optional:

Relative

Absolute

Relative: The temperature setting for energy saving and standby modes will refer to the defined reference temperature setting

Absolute: Absolute adjustment mode, each mode has its own independent temperature setting

The following parameters are visible when the HVAC operation mode is enabled and the temperature Settings are adjusted relative to each other, as shown in Figure 4.4.3-3

Parameter "Basic setpoint temperature [℃]"

A reference for setting the set temperature, from which the set temperature for room comfort mode is generated. Optional:

10

10.5

.. 35

This setting can be changed through the bus object "Setpoint adjustment", and after the change, the new setting will be saved after the bus loses power

Parameter "Reduced heating in standby mode [0..10]℃"

Parameter "Increased cooling in standby mode [0..10]℃"

For setting the temperature setting in standby mode. Optional: 0... 10 [℃]

Heating: The temperature setting value for standby mode is the reference value minus the value set for this parameter

Cooling: The temperature setting for standby mode is the reference value plus the value set for this parameter

Parameter "Reduced heating during economy mode [0..10]℃"

Parameter "Increased cooling during economy mode [0..10]℃"

It is used to set the temperature setting value in the energy-saving mode. Optional: 0... 10 [℃]

Heating: The temperature setting value for energy-saving mode is the reference value minus the value set for this parameter

Cooling: The temperature setting for energy-saving mode is the reference value plus the value set for this parameter

Parameter "Actual Temp.threshold in frost protection[5..10]℃" (for heating)

For setting the temperature setting in frost protection mode of the heating function. Optional: 5... 10 [℃]

In frost protection mode, when the room temperature drops to the set value of this parameter, the controller will trigger a control message that causes the relevant heating actuator to output heating control to prevent the temperature from getting too low

Parameter "Actual Temp.threshold in heat protection[30..40] ° C" (for cooling)

Used to set the temperature setting in the overheat protection mode of the cooling function. Optional: 30... 40 [℃]

In overheat protection mode, when the indoor temperature rises to the set value of this parameter, the controller will trigger a control message that causes the relevant refrigeration actuator to output refrigeration control to prevent the temperature from getting too high

The following parameters are visible when the HVAC operation mode is enabled and the temperature setting values are in absolute adjustment mode, as shown in Figure 4.4.3-4

Parameter "Setpoint Temp.in comfort mode [5..40]℃"

Parameter "Setpoint Temp.in standby mode [5..40]℃"

Parameter "Setpoint Temp.in economy mode [5.40]℃"

Parameter "Setpoint Temp.in frost protection mode [5..40]℃" (for heating)

Parameter "Setpoint Temp.in heat protection mode [5.40]℃" (for cooling)

These parameters are used to set the temperature Settings for each mode. Optional: 5.. 40 ℃

Parameter "Type of Heat/Cool control"

Set the control type for the heating/cooling function, as shown in Figure 4.4.3-5, different control types are suitable for controlling different thermostats, optional:

Switching on/off (use 2-point control)

Switching PWM (use PI control)

Continuous control (use PI control)

Parameter "Invert control value"

Set whether the control object sends the control value normally or takes the invert control value so that the control value fits the type of valve. Optional

No

Yes

Yes: After reversing the control value, send it to the bus via the object

The following two parameters apply to two-point control:

Parameter "Lower Hysteresis [0..200]*0.1 ° C"

Parameter "Upper Hysteresis [0..200]*0.1 ° C"

These two parameters set the high and low hysteresis values of the HVAC heating or cooling. Optional: 0.. 200

Heated,

Stop heating when the actual temperature (T) > set temperature + high lag value

Heating begins when the actual temperature (T) is less than the set temperature - the low hysteresis value

If the low lag value is 1 ° C, the high lag value is 2 ° C, the set temperature is 22 ° C, stop heating when T exceeds 24 ° C, and start heating when T is below 21 ° C; When T is between 21 ° C and 24 ° C, maintain the previous operating state

Cooling mode,

Stop cooling when the actual temperature (T) is less than the set temperature - low lag value

Start cooling when actual temperature (T) > set temperature + high lag value

If the low lag value is 1 ° C, the high lag value is 2 ° C, the set temperature is 26 ° C, stop cooling when T is below 25 ° C, and turn on cooling when T is above 28 ° C; When T is between 25 and 28 ° C, maintain the previous operating state

The two-point control mode is a very simple control method. When adopting this control mode, the upper and lower lag temperatures need to be set through parameters. When setting the lag temperature, the following influences need to be considered:

1. The lag interval is smaller, and the temperature variation range will also be smaller, but the frequent sending of control values will bring a greater load to the bus;
2. When the lag interval is large, the switching frequency is lower, but it is easy to cause uncomfortable temperature changes.

The following two parameters are applicable to PI control:

Parameter "Heating speed"

Parameter "Cooling speed"

Set the response speed of the heating or cooling PI controller, and different response speeds are suitable for different environments. Optional:

Hot water heating (5K/150min)
Underfloor heating (5K/240 min)
Electrical heating (4K/100min)
Split unit/ Fan coil unit (4K/90min)
User defined parameters

Optional:
Cooling ceiling (5K/240min)
Split unit (4K/90min)
Fan coil unit(4K/90min)
User defined parameters

Parameter "Proportional range[10..100]*0.1 ° C" (P value)

Parameter "Reset time[0..255]min" (I value)

Visible when the parameter "Heating /Cooling speed" option is "User defined", it is used to set the PI value of the PI controller

Parameter "PWM cycle time [1..255] min"

This parameter is only visible when the control type is "Switching PWM (use PI control)" and is used to set the period during which the control object circulates to send switch control values. The object sends switch values based on the duty cycle of the control values, for example, suppose the set period is 10min and the control values are 80%. Then the object will send an on message every 8 minutes, an off message every 2 minutes, and so on in a loop. If the control values change, the time duty cycle for the object to send on/off messages will also change, but the period remains the time set by the parameter

Optional: 1... 255

The PI control values for the "Switching PWM (use PI control)" and "Continuous control (use PI control)" control types are the same, only the control objects are different. The control object of "Continuous control" outputs the PI control value (1byte) directly, while the control object of "Switching PWM" outputs an "on/off" control message based on the duty cycle of the PI control value

Parameter "Send control value on change by [0..100%, 0=inactive]"

This parameter is only visible when the control type is "Continuous control (use PI control)" and is used to set how much the control value changes before being sent to the bus. Optional: 0.. 100, 0 = Change not send

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

Set the time period for cyclically sending control values to the bus. Optional: 0.. 255

Under PI control mode, the predefined control parameters recommended for each PI controller in the heating or cooling system are as follows:

1- Heating system

Heating type	P parameter value"	I parameter value	Recommend PI control type	Recommend PWM cycle periods
Hot water Heating	5K	150min	Continuous/PWM	15min
Underfloor heating	5K	240min	PWM	15-20min
Electrical heating	4K	100min	PWM	10-15min
Split unit	4K	90min	PWM	10-15min
Fan coil unit	4K	90min	Continuous	--

2 - Cooling system

Heating type	P parameter value"	I parameter value	Recommend PI control type	Recommend PWM cycle periods
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 values of P (proportionality coefficient) and I (integration time) can be set through the parameters. When adjusting the parameters, refer to the fixed PI values mentioned in the table above. Even a small adjustment to the control parameters can result in a significant difference in control behavior

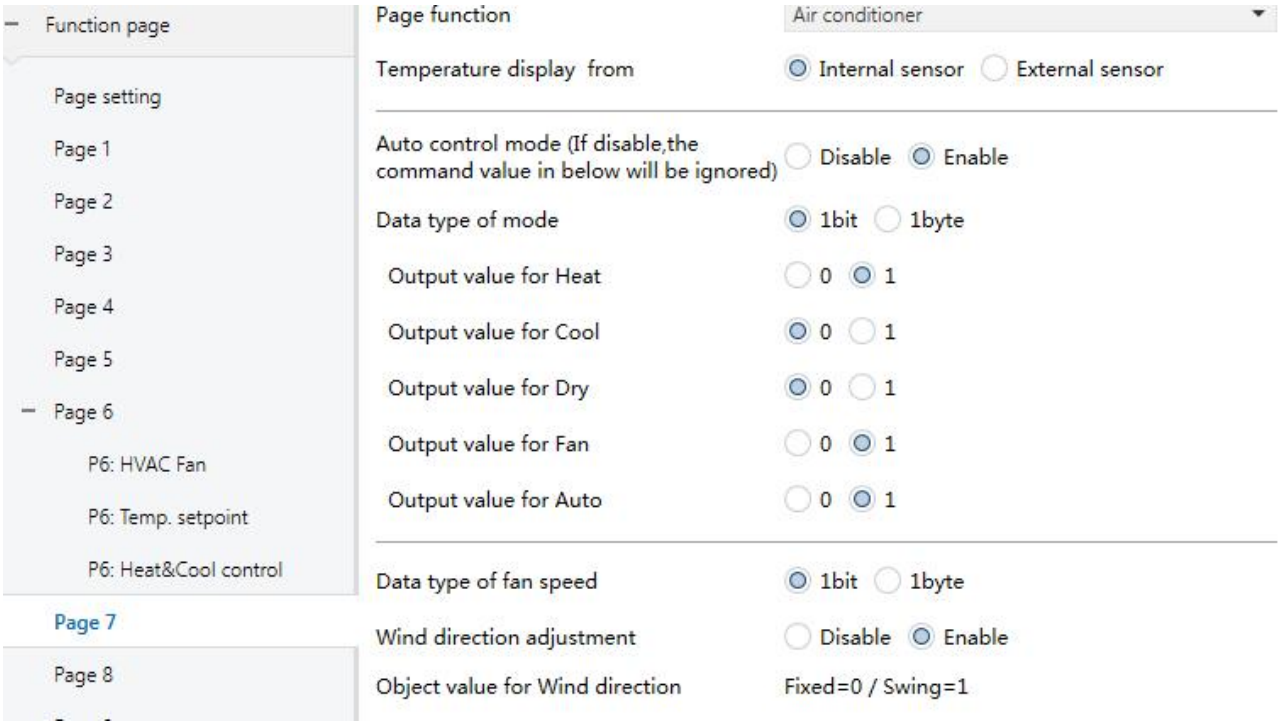
In addition, the integration time should be set appropriately. If the integration time is too large, the adjustment will be slow and the oscillation will not be obvious; If the integration time is too short, the adjustment will be very fast, but oscillations will occur. 0 indicates that the integration term is not used

Settings and effects of user-defined parameters:

Parameter Settings	Influence
K: The scale range is too small	Adjust quickly, and overshoot will occur
K: The proportional range is too large	The adjustment is slow, but there won't be overshoot
TN: The integration time is too short	Adjust quickly, but oscillations will occur
TN: The integration time is too long	The adjustment is slow and the oscillation is not obvious

4.4.4 Parameter setting "Page x--Air conditioner"

The parameter setting interface "Page x-- Air conditioner" is shown in Figure 4.4.4. It mainly sets some parameters of the basic control of the air conditioning equipment



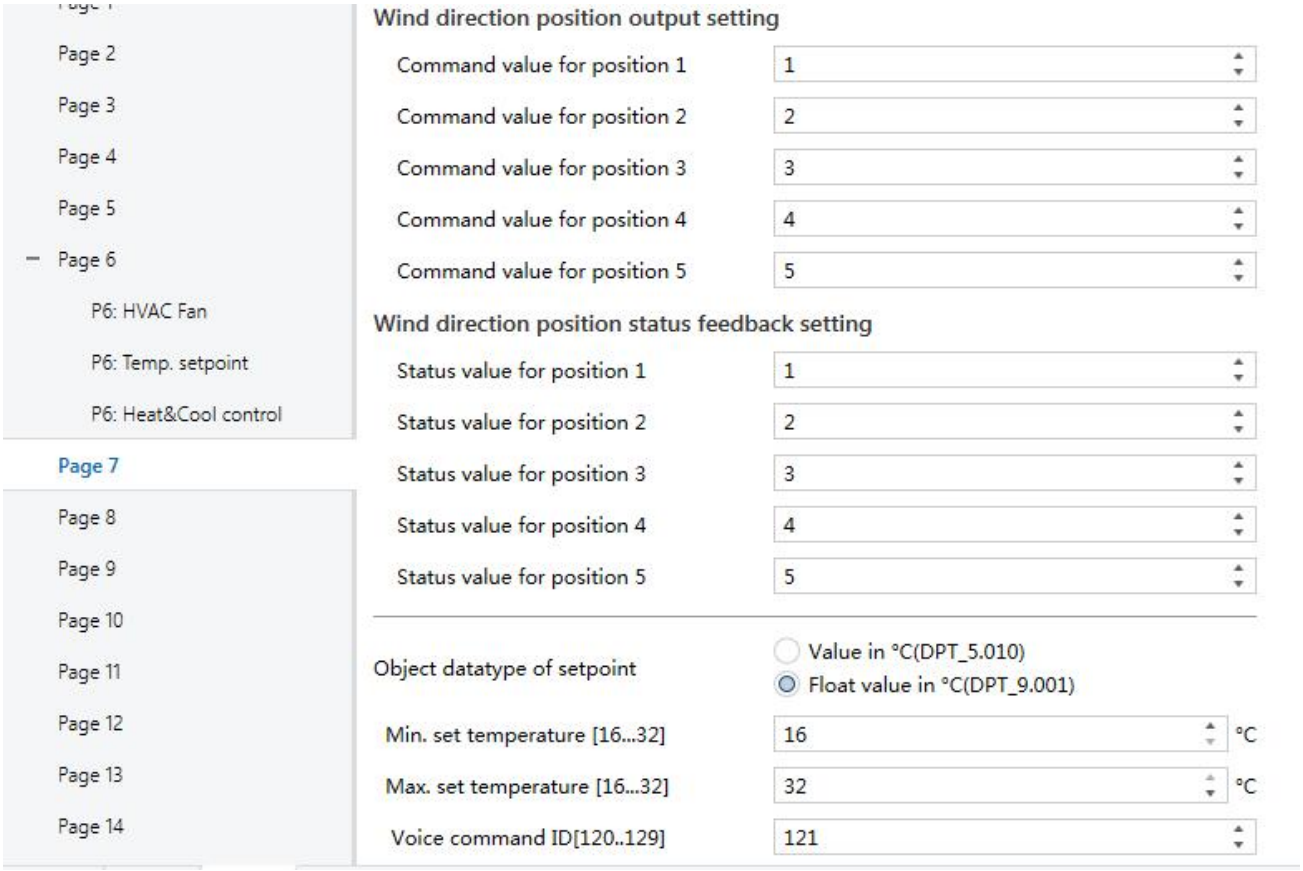
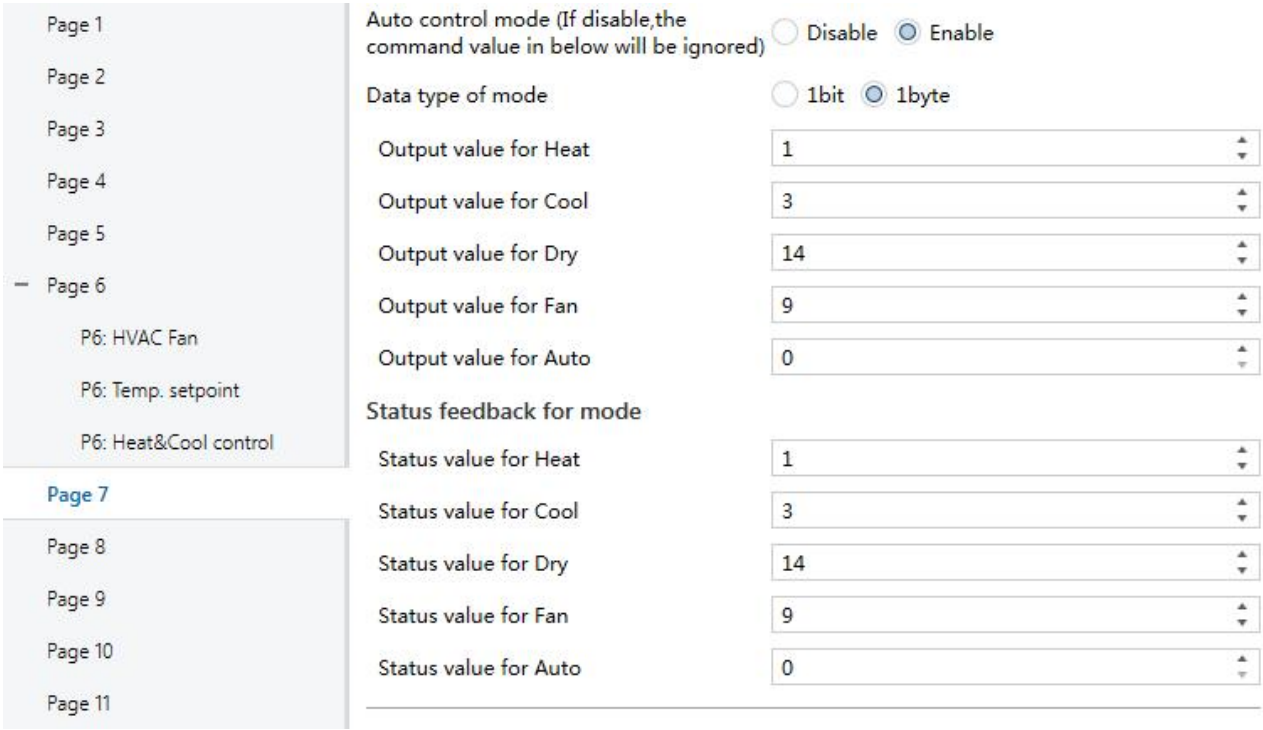


Figure 4.4.4-1 "Page x-- Air conditioner -1bit ctrl" parameter setting



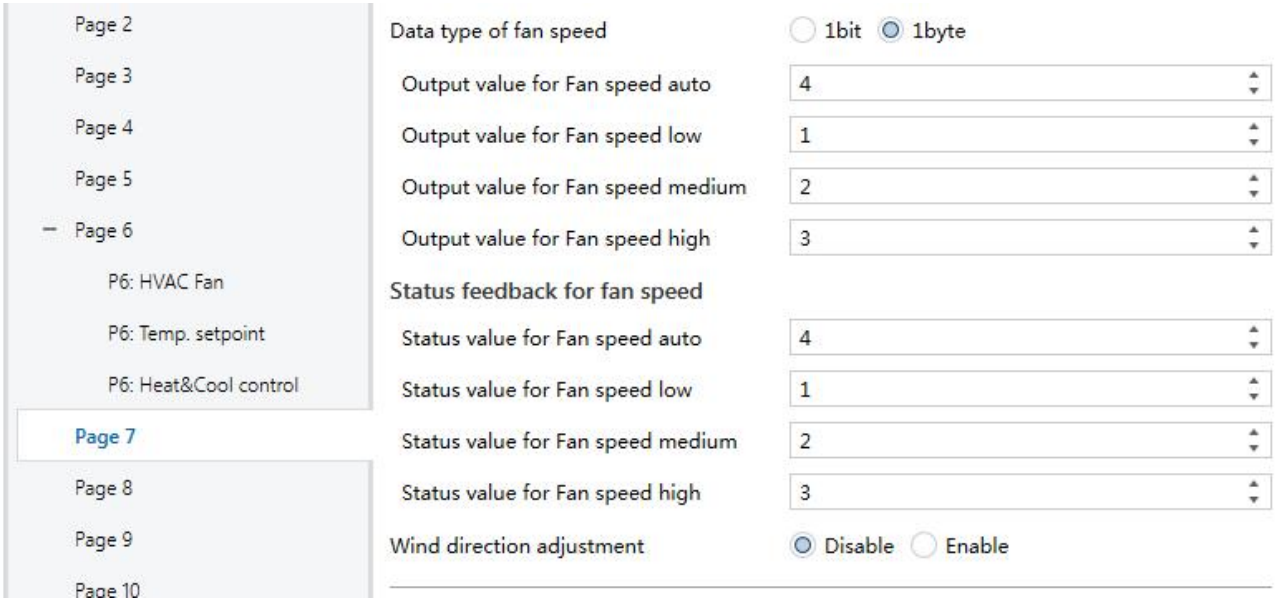


Figure 4.4.4-2 "Page x-- Air conditioner -1byte ctrl" parameter setting

Parameter "Temperature display from"

Set the source of the reference to the actual indoor temperature shown on the air conditioning interface. Optional:

Internal sensor

External sensor

The temperature setting parameters of the air conditioner are similar to those of the HVAC function (except for the temperature measurement option without a combined sensor), as described in Section 4.4.3

Parameter "Auto control mode(if disable,the command value in below will be ignored)"

This parameter is used to set whether the automatic control mode of the air conditioner is enabled. Optional:

Disable

Enable

Disable: When this option is selected, there will be no "Auto" function on the air conditioning interface, and the following control values will be ignored

Enable: When enabled, the "Auto Mode" feature is supported on the air conditioning interface

Parameter 'Data type of mode'

Define the type of communication object that controls the air conditioning mode. Optional:

1bit

1byte

Parameter "Output value for Heat/Cool/Dry/Fan/Auto"

These parameters are visible when the air conditioning mode object type is "1byte" or "1bit", defining the specific values sent when switching to each mode

Optional: 0.. 255

Optional: 0/1

The following parameters are visible when the air conditioning mode object type is "1byte" and set the state feedback values for each mode

Parameter "Status value for Heat/Cool/Dry/Fan/Auto"

These parameters are used to set the status feedback values for each mode, and the device will update the icon status of the mode based on the received feedback values. Optional:

0.. 255

Parameter "Data type of fan speed"

This parameter is used to set the data type of the wind speed. Optional:

1bit

1byte

Parameter "Output value for fan speed auto/low/medium/high"

These parameters are visible when the wind speed object type is "1byte" and define the specific values sent when switching to each wind speed. Optional: 0.. 255

The following parameters are visible when the wind speed object type is "1byte", set the state feedback values for each wind speed

Parameter "Status value for fan speed auto/low/medium/high"

These parameters are used to set the status feedback values for each wind speed, and the device will update the wind speed icon status based on the received feedback values. Optional: 0.. 255

Parameters "Wind direction adjustment"

This parameter sets whether the wind direction adjustment function is enabled. Optional:

Disable

Enable

Enable: After enabling, the following parameters are visible

Parameter "Object value for Wind direction"

This parameter annotates the object value for wind direction adjustment. Fixed wind direction, object "Wind direction fixed/swing, In/Out" sends message value "0", swing wind direction, object sends message value "1". When the wind direction is fixed, there are five wind direction positions to choose from, as follows:

Wind direction position output setting

The following parameters are used to set the values sent by the object "Wind direction position, Out" when switching to each wind direction position

Parameter "Command value for position 1/2/3/4/5"

These parameters define the control values corresponding to five wind direction positions. Optional: 0.. 255

Wind direction position status feedback setting

The following parameters set the state feedback values for each wind direction. Wind direction 4 and 5 are not supported for UI interaction reasons

Parameter "Status value for position 1/2/3/4/5"

These parameters are used to set the status feedback values for each wind direction, and the device will update the status of the wind direction position icon based on the received feedback values. Optional: 0.. 255

Parameter "Object datatype of setpoint"

This parameter is used to set the data type of the temperature setting value. Optional:

Value in ℃(DPT_5.010)

Float value in ℃(DPT_9.001)

Parameter "Min. /Max. set temperature [16..32]℃"

These two parameters are used to limit the adjustable range of the temperature set value. The minimum set value should be less than the maximum set value. If the temperature set value exceeds the limit range, output according to the limit value

4.4.6 Parameter setting "Page x-- RGB dimming"

The parameter setting interface "Page x-- RGB dimming" is shown in Figure 4.4.6

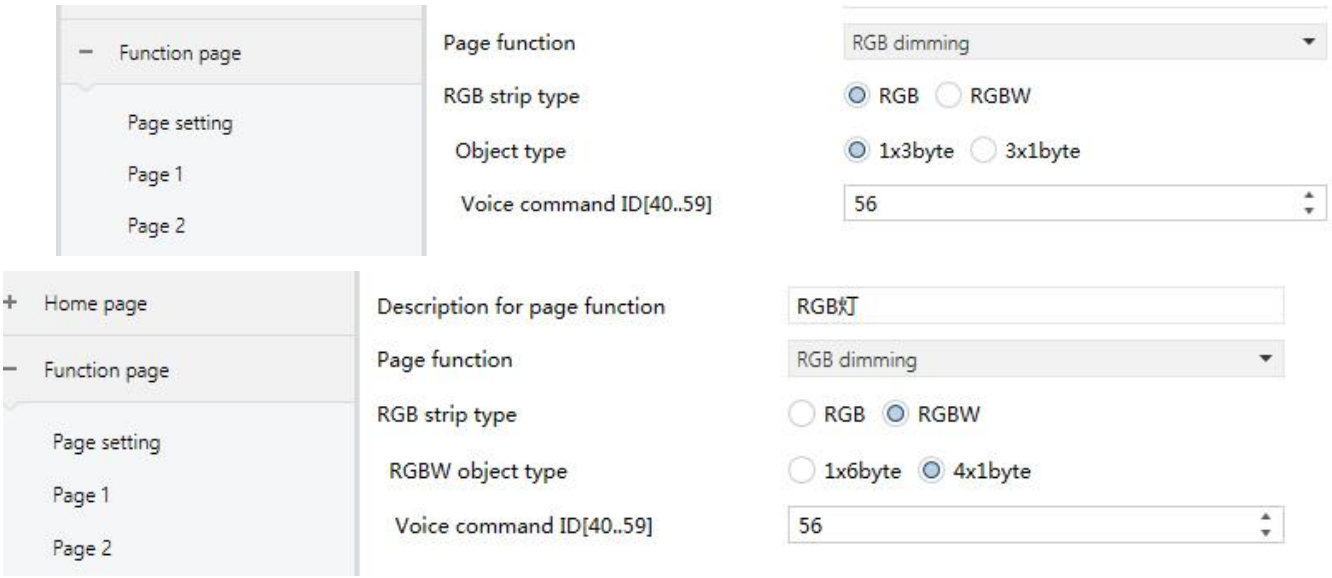


Figure 4.4.6 "Page x-- RGB dimming" parameter setting

Parameter "RGB strip type"

Set the type of the RGB strip, optional:

RGB

RGBW

RGB: Suitable for adjusting RGB three-color lights

RGBW: Suitable for adjusting RGBW four-color lamps

Parameter 'Object type'

Used to set the communication object type for RGB or RGBW. Optional:

For RGB types:

1x3byte RGB dimming with a 3byte object

3x1byte performs RGB dimming with three 1byte objects

For RGBW type:

1x6byte perform RGBW dimming with a 6byte object

4x1byte for RGBW dimming through four 1byte objects

4.4.7 Parameter setting "Page x-- Air Quality display"

The parameter setting interface "Page x-- Air Quality display" is shown in Figure 4.4.7 and is used to set the air quality display function, which can set the display of AQI, temperature, humidity, PM2.5, PM10, VOC, CO2, illuminance and wind speed. Up to four data items can be set in one interface

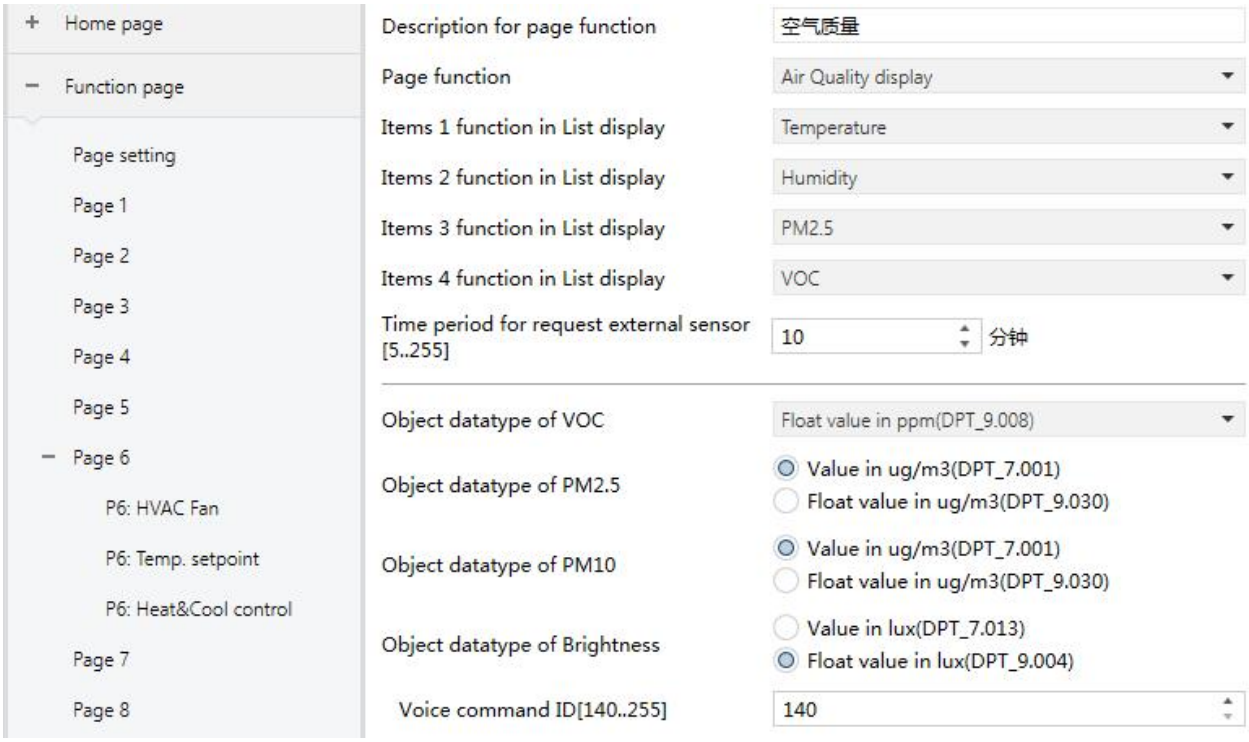


Figure 4.4.7 "Page x-- Air Quality display" parameter setting

Parameter "Items x(x=1.." 4) function in List display"

Set what is displayed for each item, up to 4 items can be set. Optional:

Disable
Temperature
Humidity
PM2.5
PM10
CO_2
VOC
AQI
Brightness
Wind speed

These values are detected by external sensors and then sent to the device for display on the screen. The parameters set the display items, and the screen will be empty if the device does not receive these detection. Display range for each item:

Temperature: -40 to 80 ° C

Humidity: 0-100%

PM2.5: 0-999ug/m ³

PM10: 0~999ug/m3

CO2: 0~4000ppm

VOC: 0-999ug/m ³ or 0-4000ppm

AQI: 0~500

Illumination: 0-5000lux

Wind speed: 0-50m/s

Parameter "Time period for request external sensor [5..255]min"

This parameter is used to set the time period for the device to send read requests to the external sensor. Option :5... 255

Parameter "Object datatype of VOC"

This parameter sets the data type of the VOC object. Optional:

Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030)

Float value in ppm(DPT_9.008)

Parameter "Object datatype of PM2.5"

This parameter sets the data type of the PM2.5 object. Optional:

Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030)

Parameter "Object datatype of PM10"

This parameter sets the data type of the PM10 object. Optional:

Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030)

Parameter "Object datatype of Brightness"

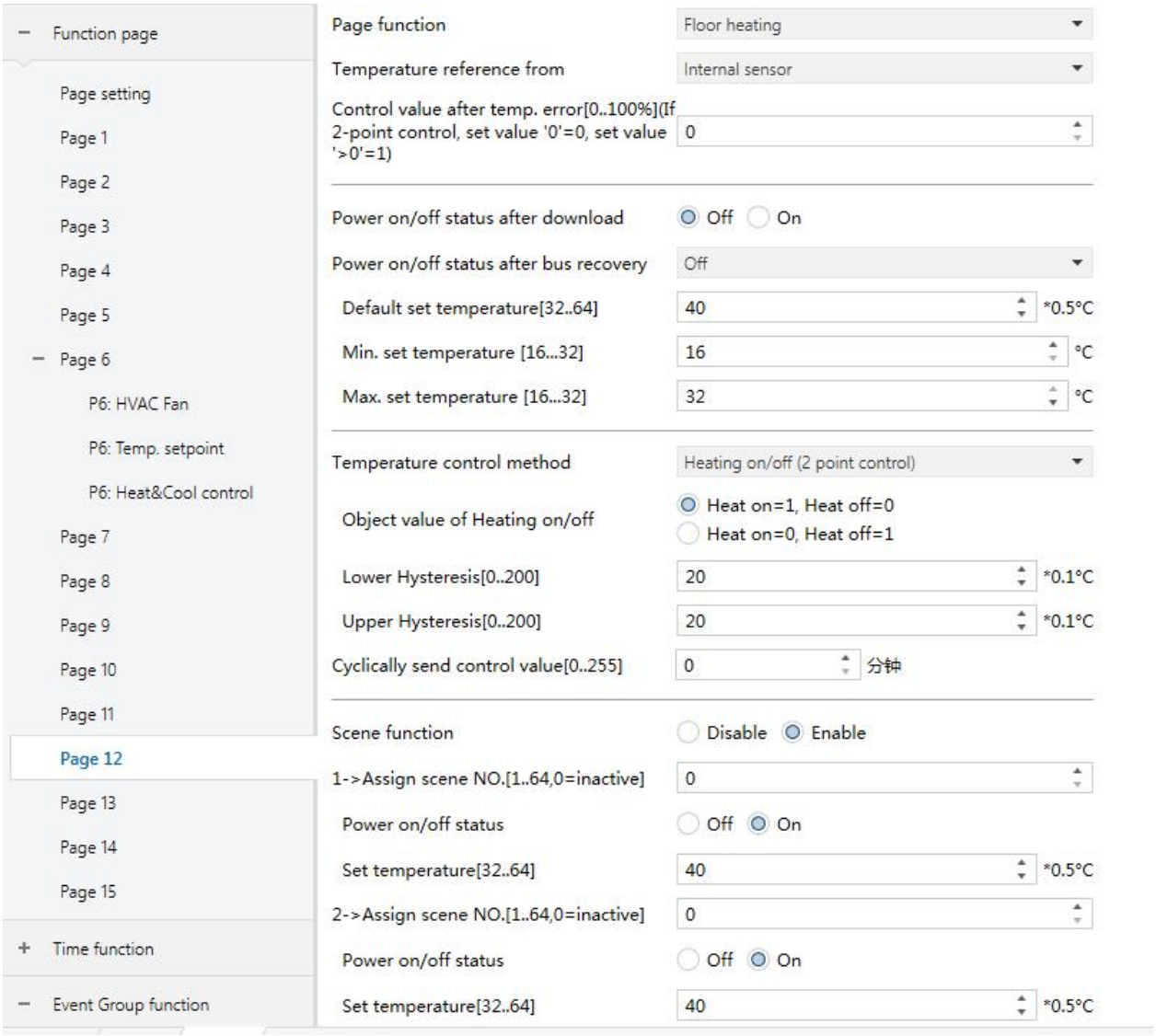
This parameter sets the data type of the Brightness object. Optional:

Value in lux(DPT_7.013)

Float value in lux(DPT_9.004)

4.4.8 Parameter setting "Page x-- Floor heating"

The parameter setting interface "Page x--Floor heating" is shown in Figure 4.4.8 and mainly sets the parameters controlled by the floor heating actuator



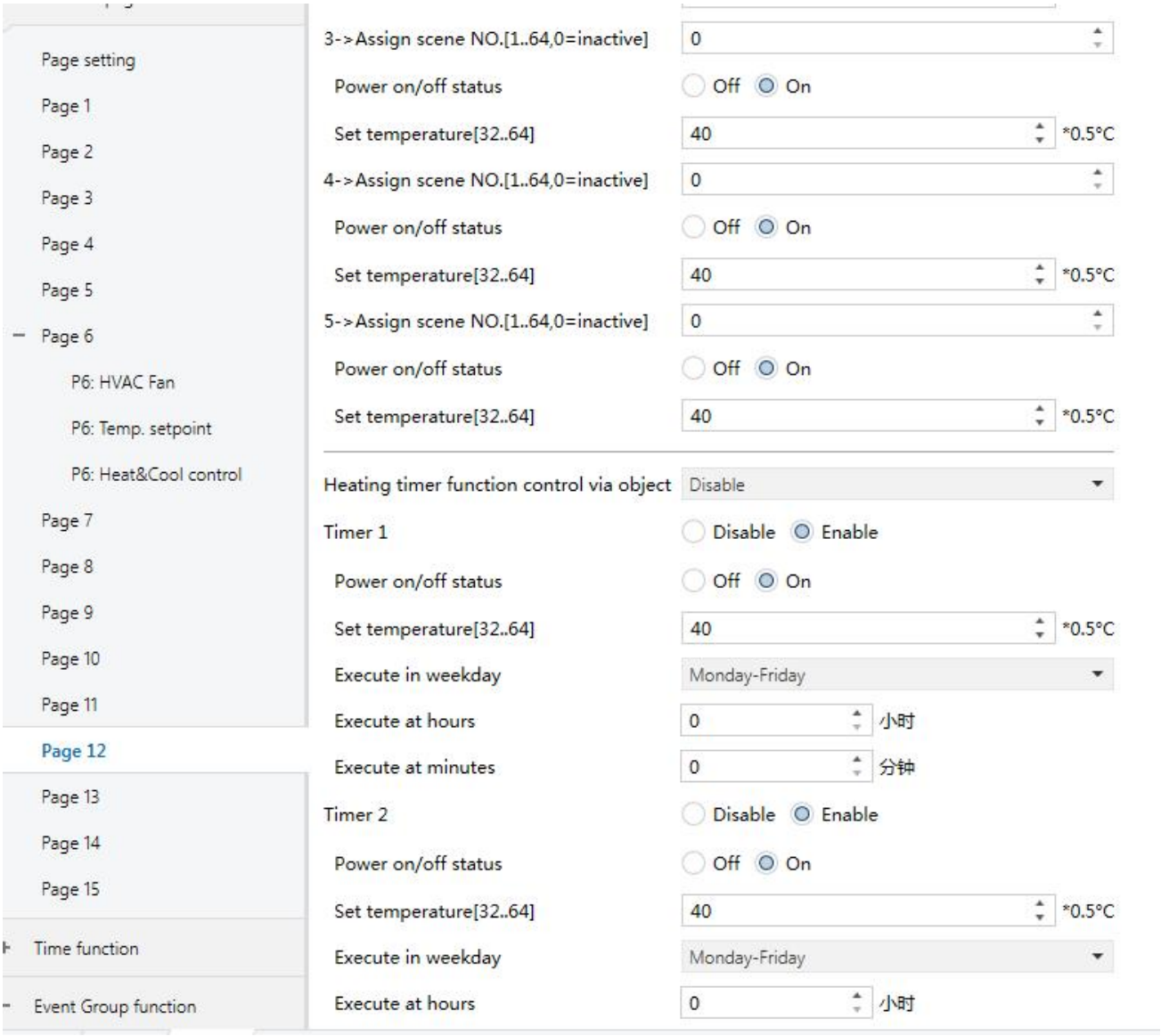


Figure 4.4.8 "Page x-- Floor heating" parameter setting

Parameter "Temperature reference from"

This parameter sets the source of the temperature reference for the underfloor heating function. Optional:

Internal sensor

External sensor

Internal and External sensor combination

The temperature setting parameters for underfloor heating are similar to those for HVAC functions, as described in Section 4.4.3

Parameters "Power on/off status after download"

Set the on/off status of the floor heating interface after the app is downloaded. Optional:

Off

On

Parameter "Power on/off status after bus recovery"

Set the on/off status of the floor heating interface after power-on reset on the bus. Optional:

On

Off

Before power off

On: When the device is powered on, it will be in the power-on state, at which point the interface is operable, and the floor heating will perform internal calculations based on the control mode to determine whether the heating is on or off

Off: When the device is powered on, it will be turned off. At this time, except for the timer and switch ICONS, no other interface ICONS can be operated

Before power off: When the device is powered on, it will return to the state before the power loss. If it is powered on, the device will perform internal operations according to the control mode and then output the control of the heating state

Parameter "Default set temperature[32..64]*0.5 ° C"

Set the initial temperature when the floor heating is turned on. Optional: 32.. 64

Parameter "Min./ Max.set temperature[16..32]℃"

For limiting the adjustable range of temperature Settings, the minimum set should be less than the maximum

When the temperature set exceeds the limit range, output according to the limit. Optional: 16.. 32

Parameter 'Temperature control method'

Set the temperature control type for the floor heating, different control types are suitable for controlling different thermostats, options available:

Heating on/off (use 2-point control) two-point control mode

Heating PWM (use PI control) PWM switch control mode

Heating continuous control (use PI control) Continuous control mode

When the parameter "Temperature control method" selects "Heating on/off (use 2-point control)", the following parameters are visible

Using the two-point control method, heat off when the temperature is above a certain set temperature and on when it is below a certain set temperature

Parameter "Object value of Heating on/off"

Define the trigger value for turning the floor heating on/off. Optional:

Heat on=1, Heat off=0

Heat on=0, Heat off=1

Parameter "Lower Hysteresis [0..200]*0.1 ° C"

Parameter "Upper Hysteresis [0..200]*0.1 ° C"

These two parameters are set to represent the high and low lag values of the set temperature for floor heating control. Optional: 0.. 200

Stop heating when the actual temperature (T) > set temperature + high hysteresis value

Start heating when actual temperature (T) < set temperature - low lag value

If the low lag value is 1 ° C, the high lag value is 2 ° C, the set temperature is 16 ° C, stop heating when T exceeds 18 ° C; If T is below 15℃, turn on the heating; When T is between 15 ° C and 18 ° C, maintain the previous operating state

When the parameter "Temperature control method" selects "Heating PWM (use PI control)" or "Heating continuous control(use PI control)", the following parameters are visible

When using PWM switch control mode, the floor heating system periodically switches the valve on/off according to the control value

When using continuous control mode, the floor heating controls the opening and closing degree of the valve according to the control value

Parameter 'Invert control value'

Set whether the control object sends the control value normally or takes the invert control value so that the control value fits the type of valve. Optional

No

Yes

Yes: After reversing the control value, send it to the bus via the object

Parameter "PWM cycle time [1..255] min"

This parameter is only visible when the control type is "Heating PWM (use PI control)" and is used to set the period during which the control object circulates the switch value, and the object sends the switch value based on the duty cycle of the control value, for example,

suppose the set period is 10min and the control value is 80%. Then the object will send an on message every 8 minutes, a off message every 2 minutes, and so on in a loop. If the control values change, the time duty cycle for the object to send on/off messages will also change, but the period remains the time set by the parameter. Option :1... 255

Parameter "Heating speed"

Set the response speed of the heating PI controller. Different response speeds are suitable for different environments, optional:

Hot water heating (5K/150min)

Underfloor heating (5K/240 min)

Electrical heating (4K/100min)

User defined parameters

Parameter "Proportional range[10..100]*0.1 ° C" (P value)

Parameter "Reset time[0..255]min" (I value)

Visible when the parameter "Heating speed" option is set to "User defined", it is used to set the control value of the PI controller

For more descriptions of two-point control mode and PI control mode, see Section 4.4.3

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

Set the time period for cyclically sending control values to the bus. Optional: 0.. 255

Parameter "Scene function"

For enabling the floor heating scene call function, there are 5 scenes available for setting. Optional:

Disable

Enable

Parameter "x->Assign scene NO. [1..64,0 = inactive], x=1 to 5"

Used to set the scene number. Optional: 0.. 64,0 = inactive

Parameter "Power on/off status"

Set the switch status of the floor heating interface in scene x. Optional:

Off

On

Parameter "Set temperature[32..64]*0.5℃"

This parameter is visible when the previous parameter option is "On" and is used to set the set temperature for scene x. Optional: 32.. 64

Parameter "Heating timer function control via object"

Set whether you can enable or disable the heating timer function through the object. There are 8 timers available for setting. Optional:

Disable the timing function cannot be disabled or enabled through an object

Disable=0/Enable=1

Disable=1/Enable=0 1

When the latter two are selected, the object used to disable/enable the timing function is visible

Meanwhile, when the timing function that can be disabled/enabled through the object is selected, it defaults to the disabled state after programming is completed or reset

The timing function exits when the device is turned off or the scene function configured for the floor heating is invoked

Parameter "Timer x, x=1 to 8"

This parameter is used to enable timing x. Optional:

Disable

Enable

Parameter "Power on/off status"

Set the on-off status of the floor heating interface for timed x. Optional:

Off

On

Parameter "Set temperature [32..64]*0.5℃"

This parameter is visible when the previous parameter option is "On" and is used to set the set temperature for timing x. Optional: 32.. 64

Parameters "Execute in weekday/at hours(h)/at minutes(min)"

Set the time point of timing x, and when the time point arrives, execute the action of timing x. Optional:

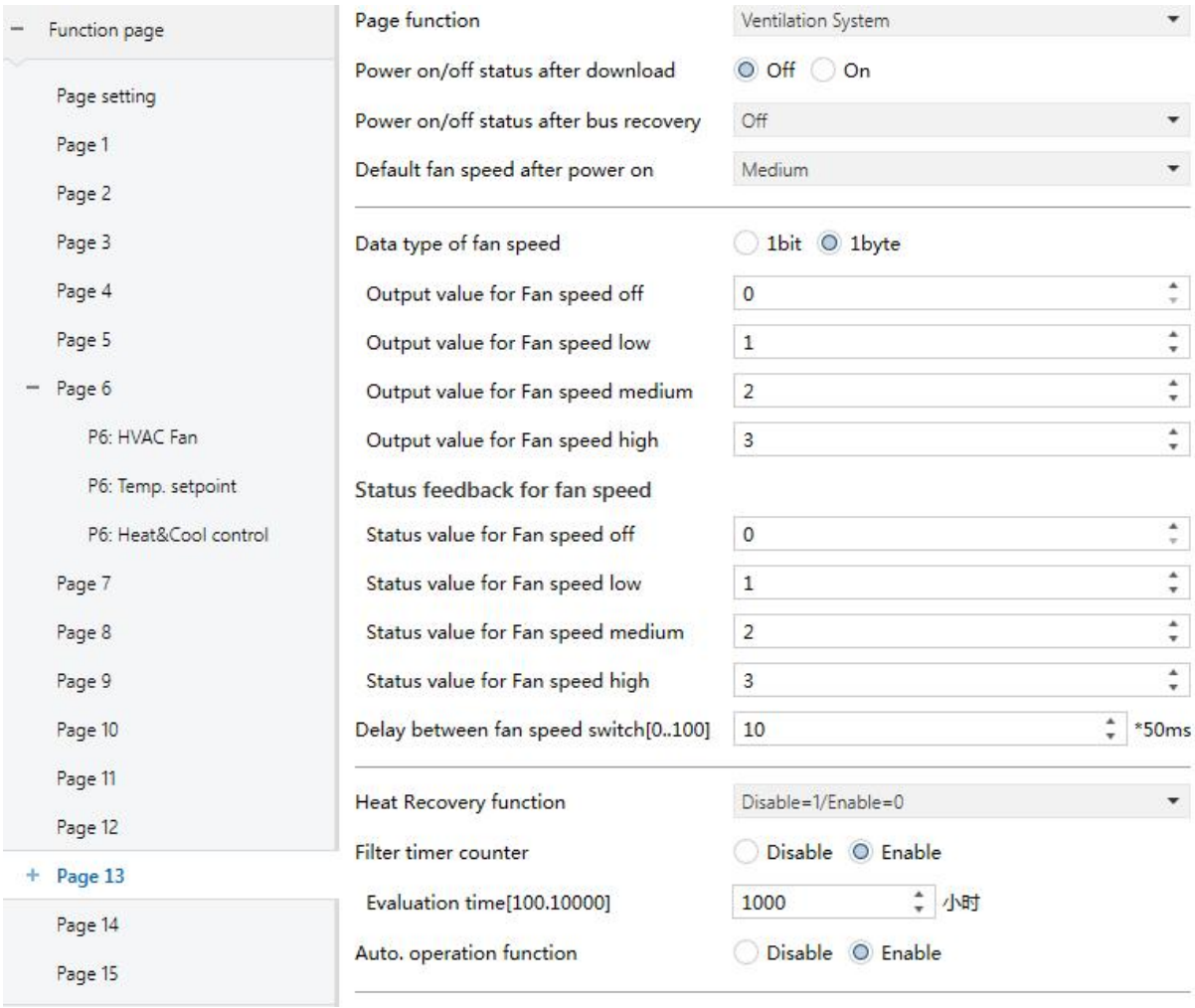
Monday

Tuesday

Wednesday
Thursday
Friday
Saturday
Sunday
Monday-Friday
Saturday-Sunday
Monday-Sunday
Hours: 0.. 23
Minutes: 0.. 59

4.4.9 Parameter setting "Page x-- Ventilation System"

The parameter setting interface "Page x--Ventilation System" is shown in Figure 4.4.9, which mainly sets the parameters controlled by the fresh air equipment



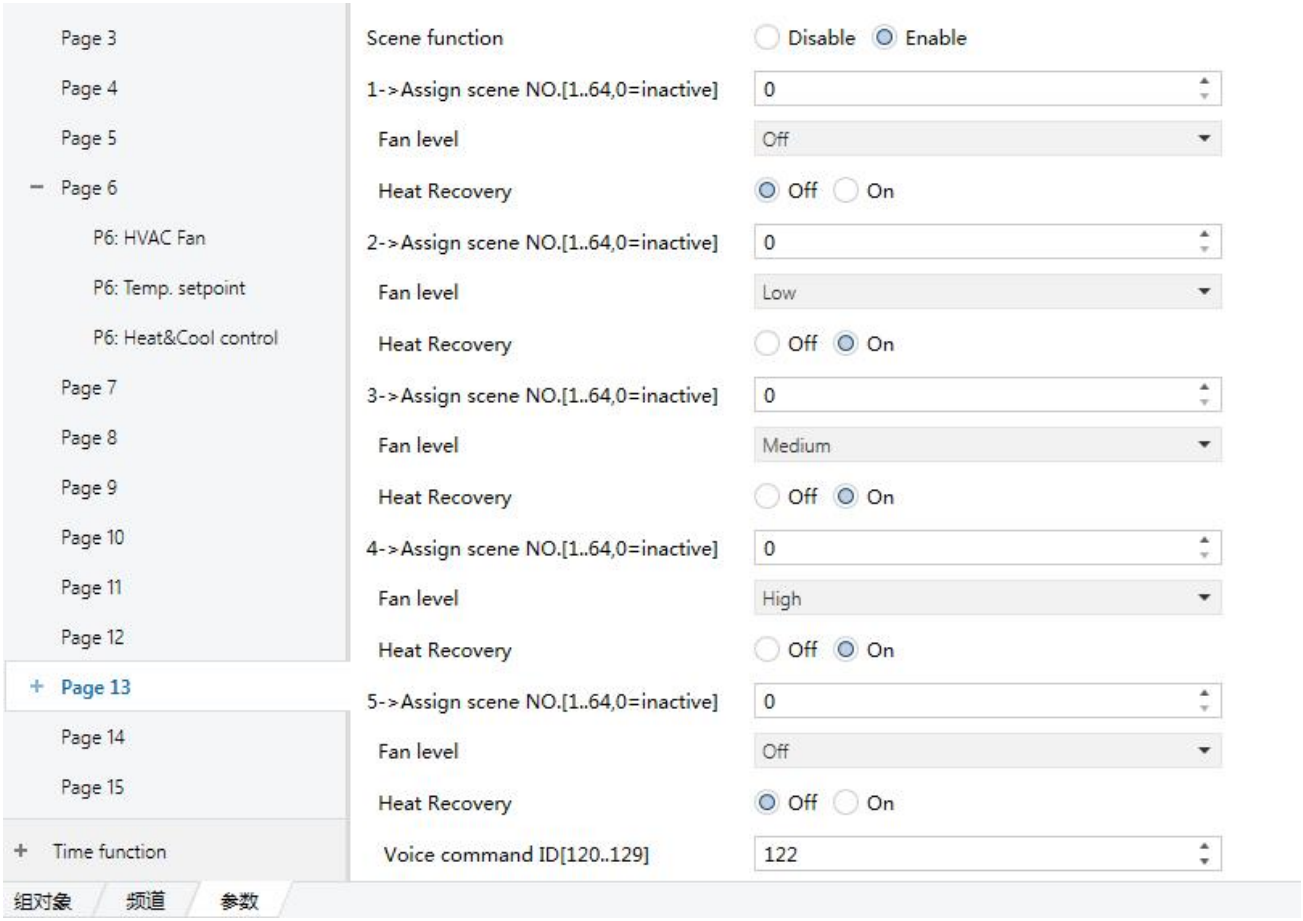


Figure 4.4.9-1 "Page x-- Ventilation system" parameter setting

Parameter "Power on/off status after download"

Set the on/off status of the fresh air interface after the app is downloaded. Optional:

Off

On

Parameter "Power on/off status after bus recovery"

Set the on/off status of the fresh air interface after power-on reset on the bus. Optional:

On

Off

Before power off

On: The device will be powered on when powered on, at which point the interface is operable

Off: When the device is powered on, it will be turned off. At this time, except for the filter reset icon and the switch icon, other interface icons are not operable

Before power off: When the device is powered on, the fresh air interface will return to the switch state before the power loss

Parameter "Default fan speed after power on"

Set the initial wind speed when the fresh air is on. Options:

Low

Medium

High

Parameter "Data type of fan speed"

The data type used to set the wind speed. Optional:

1bit

1byte

Parameter "Output value for Fan speed off/low/medium/high"

When the data type of wind speed is "1byte", define the values sent for switching to each wind speed. Optional: 0.. 255

The following parameters are visible when the wind speed data type is "1byte", set the state feedback values for each wind speed

Parameter "Status value for Fan speed off/low/medium/high"

Used to set the status feedback values for each wind speed, the device will update the wind speed icon status based on the received feedback values. Optional: 0.. 255

Parameter "Object value for Fan speed off/low/medium/high"

Visible when the wind speed object type is "1bit", define the values sent for switching to each wind speed, sent simultaneously by three 1bit objects. Optional:

No.1=0, No.2=0, No.3=0

No.1=1, No.2=0, No.3=0

No.1=0, No.2=1, No.3=0

No.1=1, No.2=1, No.3=0

No.1=0, No.2=0, No.3=1

No.1=1, No.2=0, No.3=1

No.1=0, No.2=1, No.3=1

No.1=1, No.2=1, No.3=1

Parameter "Delay between fan speed switch [0..100]*50ms"

Define the conversion delay, and the time can be considered according to the technical characteristics of the fan. Optional: 0... 100

When switching wind speed, turn off the wind speed first, and then turn it on after the delay time before sending the message to the bus

When the delay time is set to 0, it will not turn off first and then on, but switch directly to the next wind speed

Parameter "Heat Recovery function"

Used to set whether to enable the heat exchange function of the fresh air. Optional:

Disable

Disable=0/Enable=1

Disable=1/Enable=0

If the last two options are selected, the heat exchange of the fresh air system is set to enable by default, meaning it is enabled upon startup. When not enabled, the heat exchange is uncontrollable

Parameter "Filter timer counter"

Used to set whether to enable the filter to use the timer function. Optional:

Disable

Enable

When enabled, the next parameter is visible

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

Used to set the lifespan of the filter's use. Optional: 100.. 10000

If the filter is used longer than the set time, the filter will sound an alarm to prompt the filter to be cleaned.

Filter time can be reset by using the object "Filter timer reset, In".

The Filter usage time can be counted by the object "Filter timer counter, In/Out", and the counting time is in hours. When the count changes, it is sent to the bus, and the filter's counting time can also be modified via the bus

Parameter "Scene function"

For the scene function to enable fresh air, there are 5 scenes available for setting. Optional:

Disable

Enable

Parameter "x->Assign scene NO.[1..64,0=inactive], x=1 to 5"

Used for setting the scene number. Optional: 0.. 64,0 = inactive

Parameter "Fan level"

Set the wind speed status of scene x. Optional:

Off

Low

Medium

High

Parameters "Heat Recovery"

Set the heat exchange status for scene x. Optional:

Off

On

This parameter is ineffective when heat exchange is not enabled

4.4.10 Parameter setting "Page x-- Energy Metering display"

The "Energy Metering display" parameter setting interface, as shown in Figure 4.4.10, is used to set the energy measurement display function, which can set the display of current, voltage, power and energy consumption, up to 4 items can be set in one interface

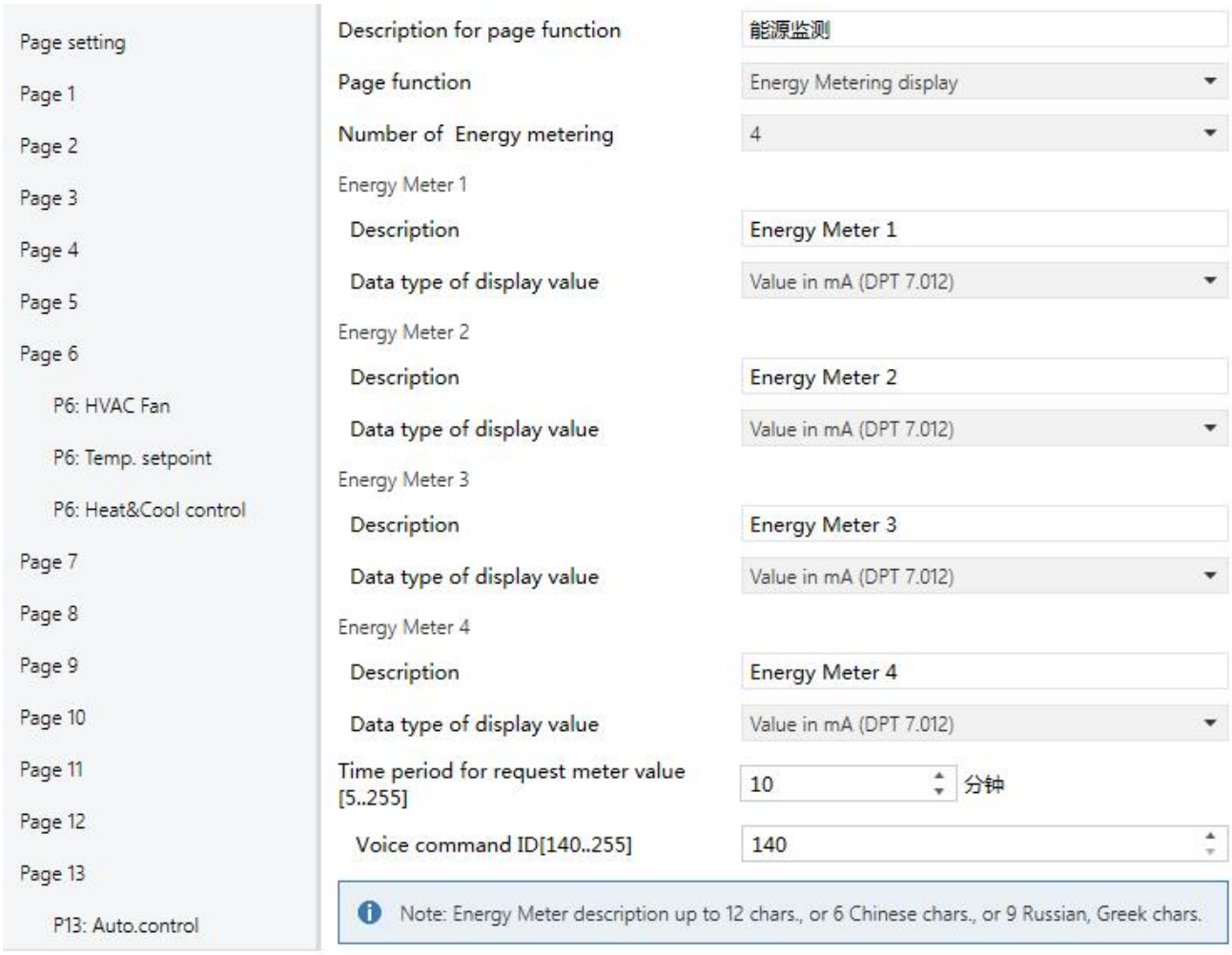


Figure 4.4.10 "Page x --Energy Metering display" parameter setting

Parameter "Number of Energy metering"

Set the number of measurement items that can be displayed on the energy page. Optional: 1/2/3/4

Up to 4 display items can be set

Energy Meter x[x=1..8]

Parameter 'Description'

Set the name description information for the energy data item

Parameter "Data type of display value"

Set the data type of the energy display item. Optional:

Value in mA(DPT 7.012) applies to mA current, integer

Float value in mA(DPT 9.021) applies to mA current, floating-point type

Float value in A(DPT 14.019) applies to A current, floating-point type

Float value in mV(DPT 9.020) applies to mV voltage, floating-point type

Float value in V(DPT 14.027) applies to V voltage, floating-point type

Float value in W(DPT 14.056) applies to W power, floating-point type

Float value in kW(DPT 9.024) applies to kW power, floating-point type

Value in Wh(DPT 13.010) applies to Wh electricity, integer

Value in kWh(DPT 13.013) applies to kWh of electricity, integer

Parameter "Time period for request meter value[5..255]Min"

Set the time period for the device to send read request measurements to an external measurement actuator. Optional: 5... 255

4.6 Parameter setting "Event Group function"

The parameter setting interface "Event Group function" is shown in Figure 4.6.1 for enabling the event group function, with up to 8 groups of event functions available for setting, each group having 8 outputs, as shown in Figure 4.6.2

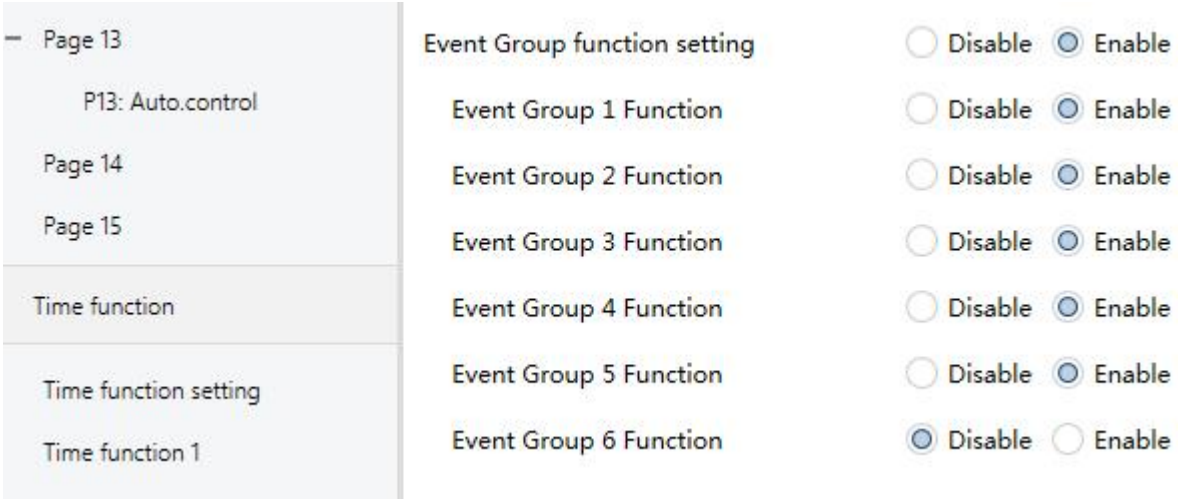


Figure 4.6.1 The "Event Group function" parameter setting

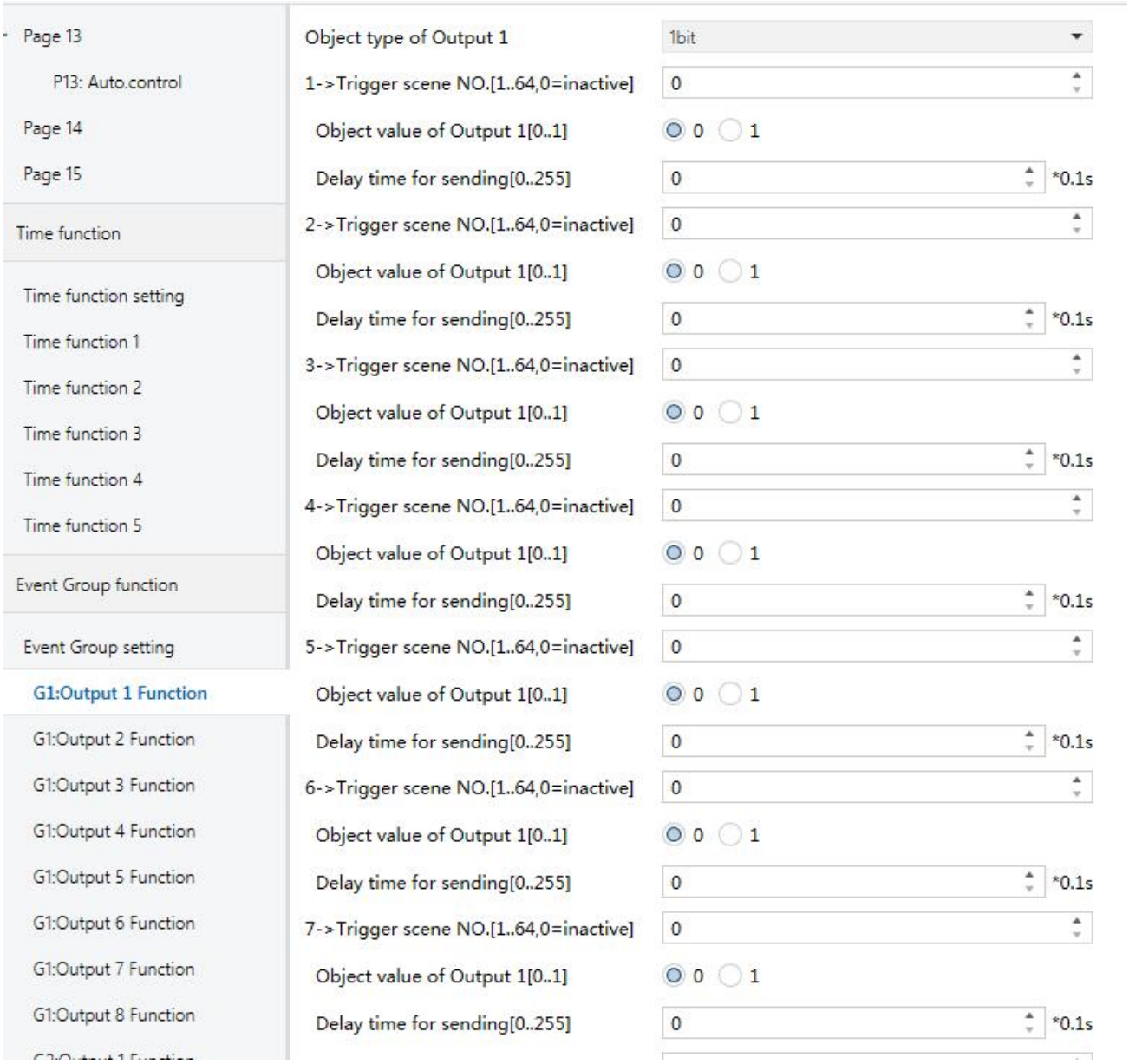


Figure 4.6.2 "Groupx:Output y function" parameter setting

Parameter "Event Group x Function (x:1 to 8)"

For enabling the Event group x function. Optional:

Disable

Enable

When a set of features is enabled, the eight output configuration parameters of that set are visible

Since the functions of the 8 groups are the same, and the 8 output functions in the group are also the same, let's take one of the outputs in one of the groups as an example to illustrate the parameters:

Parameter "Object type of Output y (y:1 to 8)"

Define the data type of output y in group x. Optional:

1bit

1byte

2byte

Parameter "z->Trigger scene NO.[1-64,0=inactive]" (z:1-8)

Define the scene number at which output y is triggered in group x. Each output can provide up to 8 touch scene sends, option: 0.. 64,0 = Inactive

Parameter "Object value of Output y [0..1/0..255/0..65535]"

Set the output value, the range of which is determined by the data type of the output y: 1bit 0.. 1/1byte 0.. 255/ 2byte 0.. 65535

The parameter "Delay time for sending [0...255]*0.1s"

Set the delay time for the output value to be sent to the bus. Optional: 0.. 255

4.7 Parameter setting "Logic function setting"

The parameter setting interface "Logic function setting" is shown in Figure 4.7.1 and is used to enable logic functions, with up to 8 logic functions available for setting

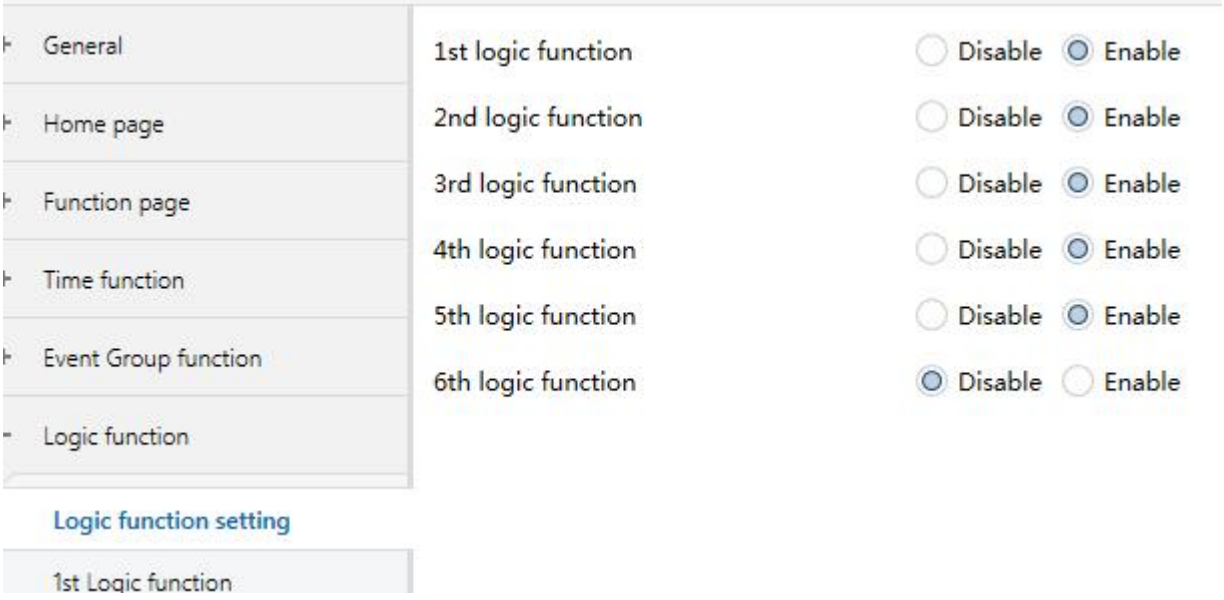


Figure 4.7.1 "Logic function setting" parameter setting

Parameter "Function of channel"

Used to set the logical functionality of the channel, as shown in Figure 4.7.2 below. Optional:

AND AND operations

OR OR operation

XOR XOR operation

Gate forwarding is a logical gate forwarding

Threshold comparator

Format convert

AND/OR/XOR: The parameters are similar to the communication object, but the logic algorithm is different. The following will illustrate the parameters of one of the options

4.7.1 Parameter setting AND/OR/XOR"

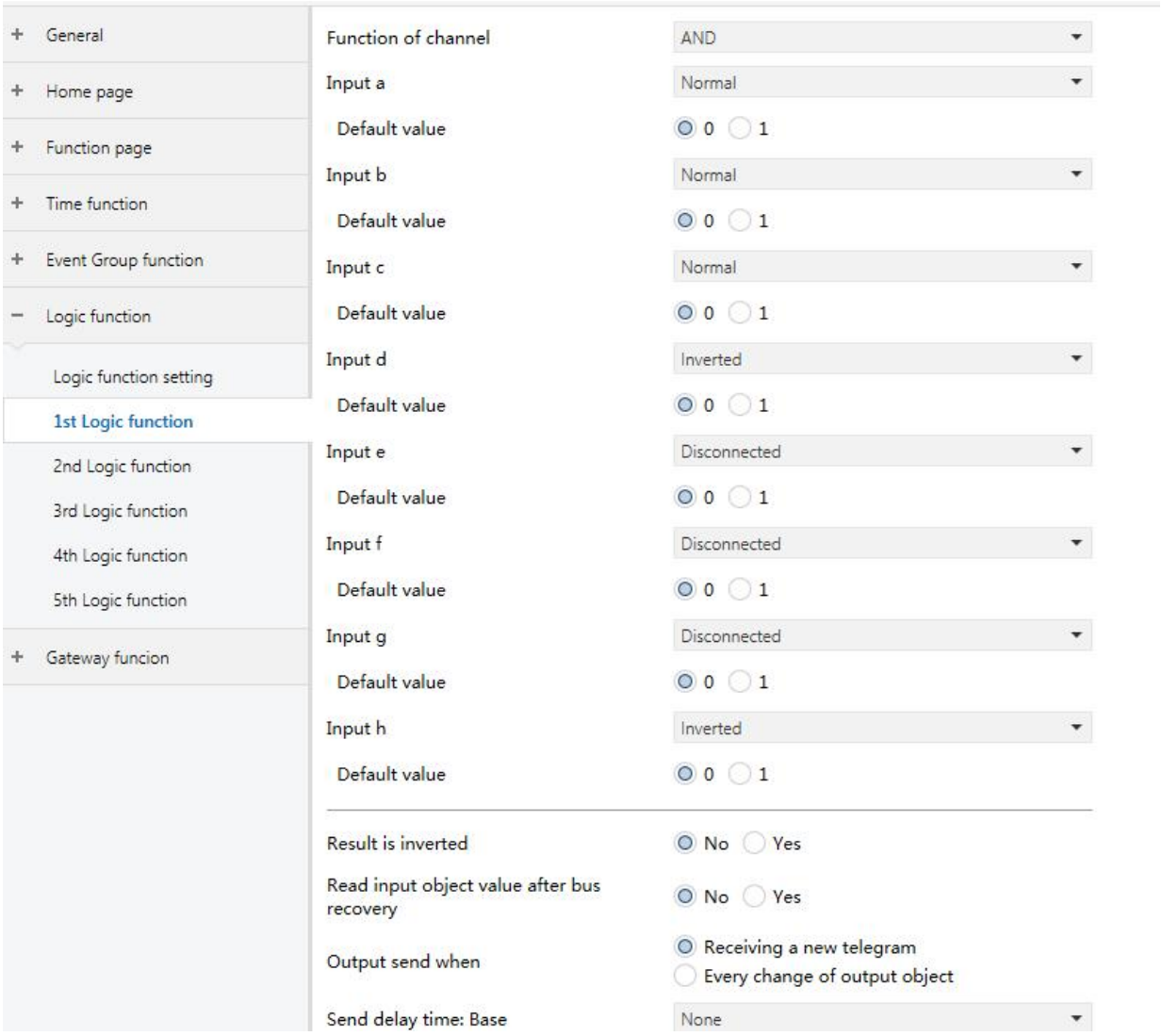


Figure 4.7.1 "Logic --AND/OR/XOR" parameter setting

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

Set whether the logical input input x participates in the operation, whether it participates normally or in reverse. Optional:

Disconnected

Normal

Inverted

Disconnected: Not connected, not involved in computations

Normal: The input value is directly involved in the operation

Inverted: Invert the input value before participating in the operation. **Note: Do not perform an inversion operation on the initial value**

Parameter "Default value"

Set the initial value of the logical input input x. Optional:

0

1

Parameter "Result is inverted"

Set whether to perform the negation operation on the result of the logical operation. Optional:

No

Yes

No: Direct output

Yes: Negate and output again

Parameter "Read input object value after bus voltage recovery"

Set whether to send a read request to the logical input object after power-on reset or programming on the bus. Optional:

No

Yes

Parameter "Output send when"

Set the conditions for sending the results of logical operations. Optional:

Receiving a new telegram

Every change of output object

Receiving a new telegram: Every time a new logical input value is received, the logical result is sent to the bus

Every change of output object: Sent to the bus only when the logical result changes

Note: When the logical operation is performed for the first time, if the result of the logical operation does not change, it will be sent

Parameter "Send delay time"

Base: None

0.1 s

1s

... 10s

25s

Factor: 1.. 255

Set the delay time for sending the results of logical operations to the bus. Delay = Base x Factor, if the Base option is "None", there is no delay

4.7.3 Parameter setting "Gate forwarding"

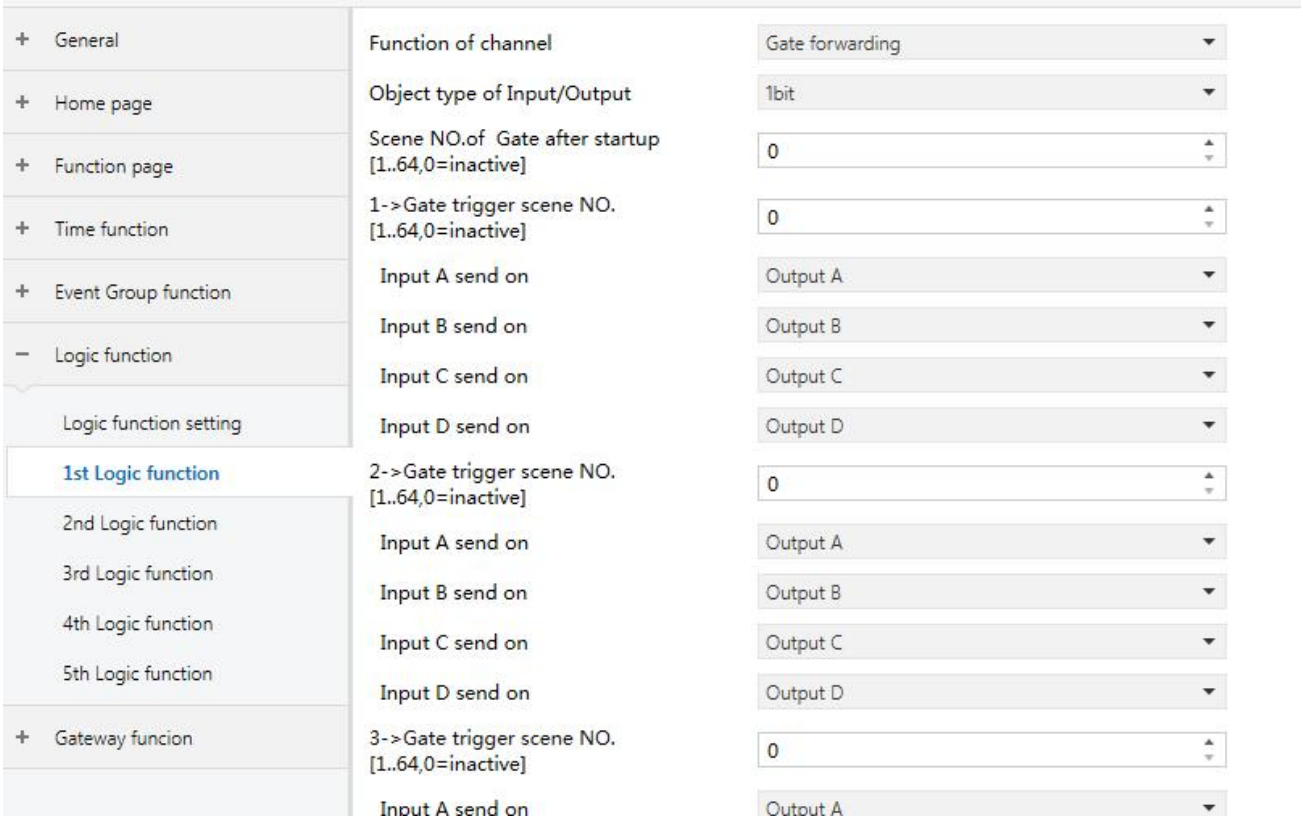


Figure 4.7.3 "Logic function_Gate forwarding" parameter setting

Parameter "Object type of Input/Output"

Set the data type of the input/output object. Optional:

1bit

4bit

1byte

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

Set the initial scenario where logic gate forwarding can be performed by default after the device starts up. This scenario needs to be configured in the parameters

Options: 1.. 64,0 = Inactive

Hint: It is recommended to select the door scene before the operation, otherwise the initial scene will be enabled by default

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

Set the scene number forwarded by the logic gate. Each logic provides up to 8 trigger scene Settings, options: 1.. 64,0 = Inactive

Parameter "Input A/B/C/D send on"

Set the output of input X (X=A/B/C/D) after gate forwarding. Optional:

Output A

Output B

... Output B,C,D

Depending on the options, one input can be forwarded to one or more outputs. The input values are the same as the output values

4.7.4 Parameter setting "Threshold comparator"

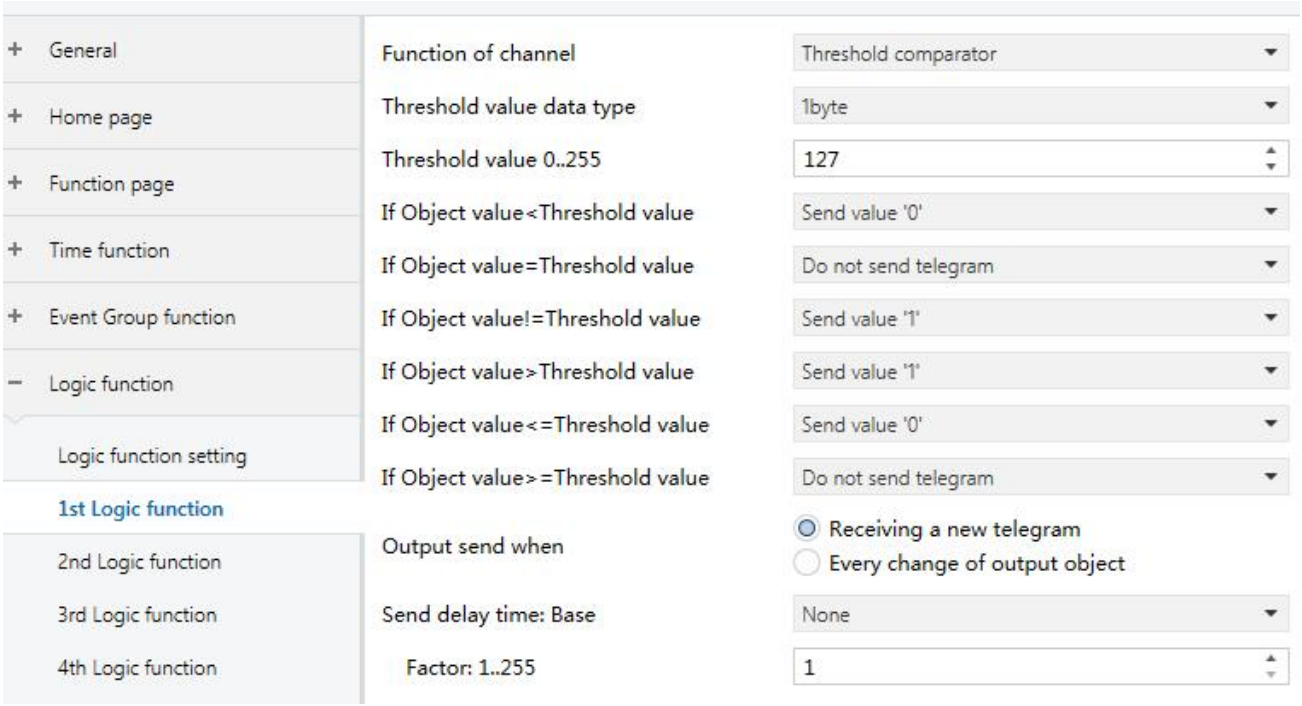


Figure 4.7.4 "Logic function_Threshold comparator" parameter setting

Parameter "Threshold value data byte"

Set the data type for the threshold. Optional:

4bit

1byte

2byte

4byte

Parameter "Threshold value 0.. 255"

Set thresholds, the range of which is determined by the data type. 4bit 0.. 15/1byte 0.. 255/ 2byte 0.. 65535 /4byte 0.. 4294967295

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 used to set the logical result values to be sent when the threshold of the object input is less than, equal to, not equal to, greater than, less than equal to, or greater than equal to the set threshold. Optional:

Do not send telegram

Send value "0"

Send value "1"

Do not send telegram: Do not consider the parameters for selecting this option;

Send value "0"/" 1 ": When the conditions are met, send the message value of 0 or 1

If there is a conflict in the setting options among the parameters, the value that should be sent when the final parameter condition is reached shall prevail. **For example: The parameter "If Object value=Threshold value" sets Send value "0"; Parameter "If Object value<=Threshold value" sets Send value "1"; When the object value is equal to the threshold, the logical result sends the value "1".**

Parameter "Output send when"

Set the conditions for sending the results of logical operations. Optional:

Receiving a new telegram

Every change of output object

Receiving a new telegram: Every time an object receives a new input value, the logical result is sent to the bus

Every change of output object: Sent to the bus only when the logical result changes

Hint: For the first logical operation, if the result of the logical operation does not change, it will also be sent

Parameter "Send delay time: Base"

Base:

None

0.1 s

1s

... 25s

Factor: 1.. 255

Used to set the delay time for sending the results of logical operations to the bus. Delay = Base x Factor, if the Base option is "None", there is no delay

4.7.5 Parameter setting "Format convert"

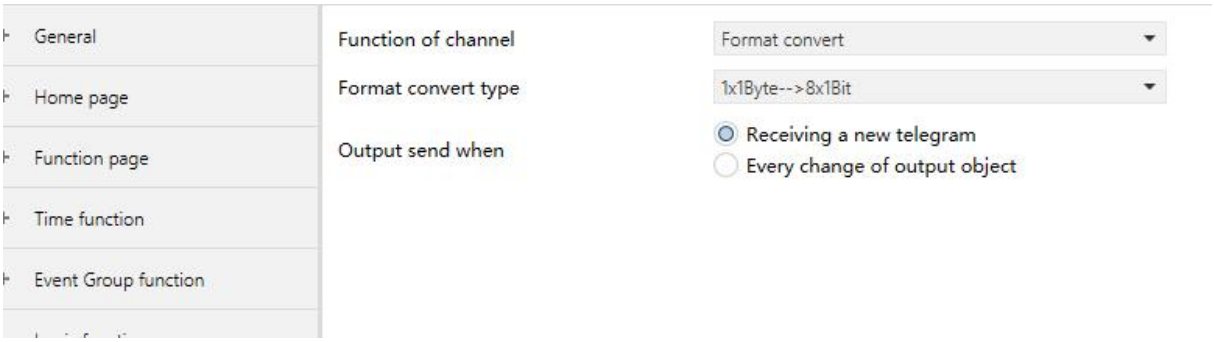


Figure 4.7.5 "Logic function_Format convert" parameter setting

Parameter "Format convert type"

Set the data conversion type. Optional:

2x1bit-->1x2bit

8x1bit-->1x1byte

1x1byte-->1x2byte

2x1byte-->1x2byte

2x2byte-->1x4byte

1x1byte-->8x1bit

1x2byte-->2x1byte

1x4byte-->2x2byte

1x3byte-->3x1byte

3x1byte-->1x3byte

Parameter "Output send when"

Set the conditions for sending logical results. Optional:

Receiving a new telegram

Every change of output object

Receiving a new telegram: Every time an object receives a new input value, the logical result is sent to the bus

Every change of output object: Sent to the bus only when the logical result changes

5. Communicate object description

A communication object is the medium through which a device communicates with other devices on the bus, that is, only communication objects can communicate on the bus. Each communication is described in detail below

Note: In the table properties column below, "C" represents the communication function enable of the communication object, "W" represents the value of the communication object can be rewritten via the bus, "R" represents the value of the communication object can be read via the bus, "T" represents the transmission function of the communication object, and "U" represents the value of the communication object can be updated

5.1 "General" communication object



678	General	Panel block	新建群组地址	0/0/1	1 bit	C	-	W	-	-	enable
679	General	In operation	新建群组地址	0/0/2	1 bit	C	-	-	T	-	switch
680	General	Date	新建群组地址	0/0/3	3 bytes	C	-	W	-	-	date
681	General	Time	新建群组地址	0/0/4	3 bytes	C	-	W	-	-	time of day
682	General	Day/Night	新建群组地址	0/0/5	1 bit	C	-	W	T	-	day/night
683	General	Screen backlight brightness	新建群组地址	0/0/6	1 byte	C	-	W	-	-	percentage (0..100%)
684	Internal sensor	Actual humidity	新建群组地址	0/7/1	2 bytes	C	R	-	T	-	humidity (%)
685	External sensor	Humi.error report	新建群组地址	0/7/2	1 bit	C	R	-	T	-	alarm
686	General	Proximity sense, 1bit value	新建群组地址	0/0/71	1 bit	C	-	W	T	-	switch
687	General	Password trigger, 1bit value	新建群组地址	0/0/72	1 bit	C	-	-	T	-	switch

Figure 5.1 "General" communication object

Numbered	Features	Communication Object Name	Type	Attributes	DPT
679	In operation	General	1bit	C,T	1.001 switch
This communication object is used to periodically send the message "1" to the bus to indicate that the device is functioning properly					

Table 5.1 "General" Communication Object

5.3 " Function Page" communication Object

5.3.1 "Multifunction" communication object

Note: The following takes the first icon on the home page as an example, and the rest of the information except for the serial number is the same

1	Page 1-Icon 1	Switch	1 bit	C	-	-	T	-	switch
3	Page 1-Icon 1	Switch status	1 bit	C	-	W	T	U	switch

Switch function

1	Page 1-Icon 1	Switch	1 bit	C	-	-	T	-	switch
2	Page 1-Icon 1	Brightness dimming	1 byte	C	-	-	T	-	percentage (0..100%)
3	Page 1-Icon 1	Brightness status	1 byte	C	-	W	T	U	percentage (0..100%)
4	Page 1-Icon 1	Relative dimming	4 bit	C	-	W	T	-	dimming control

Switch/Dimming function

1	Page 1-Icon 1	Send 1byte unsigned value	1 byte	C	-	-	T	-	counter pulses (0..255)
2	Page 1-Icon 1	Send 1byte unsigned value, long	1 byte	C	-	-	T	-	counter pulses (0..255)

Value send function

1	Page 1-Icon 1	Open/Close	1 bit	C	-	W	T	-	open/close
2	Page 1-Icon 1	Stop	1 bit	C	-	-	T	-	step
3	Page 1-Icon 1	Blind position/status	1 byte	C	-	W	T	U	percentage (0..100%)

Open/Close blind function

1	Page 1-Icon 1	Up/Down	1 bit	C	-	W	T	-	up/down
2	Page 1-Icon 1	Stop	1 bit	C	-	-	T	-	step
3	Page 1-Icon 1	Blind position/status	1 byte	C	-	W	T	U	percentage (0..100%)

Roller blind function(without slat)

1	Page 1-Icon 1	Open/Close	1 bit	C	-	W	T	-	open/close
2	Page 1-Icon 1	Stop	1 bit	C	-	-	T	-	step

Blind(open/close/stop)function

1	Page 1-Icon 1	Up/Down	1 bit	C	-	W	T	-	up/down
2	Page 1-Icon 1	Stop	1 bit	C	-	-	T	-	step

Blind(up/down/stop)function

1	Page 1-Icon 1	Recall/storage scene No.	1 byte	C	-	W	T	-	scene control

Scene control function



Color Temperature Dimming function

Feagure 5.3.1 “The device basically controls” communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
1	Switch	Page x-Icon y	1bit	C,T	1.001 switch
This communication object is used to send on/off messages to the bus, and control the on/off and on-off message values of the light: 1-on, 0-off					
3	Switch status	Page x-Icon y	1bit	C,W,T,U	1.001 switch
This communication object is used to receive the on/off status of other bus devices, such as the status of dimmers and switches					
2	Brightness dimming	Page x-Icon y	1byte	C,T	5.001 percentage(0..100%)
This communication object is used to send dimming packets to the bus, that is, to send the actual brightness value. Message 0... 100%					
3	Brightness Status	Page x-Icon y	1byte	C,W,T,U	5.001 percentage(0..100%)
This communication object is used to receive feedback from the dimmer on the brightness status of the light. Message 0... 100%					
4	Relative dimming	Page x-Icon y	4bit	C,W,T	3.007 dimming control
This communication object is used to send relative dimming packets to the bus to up/down/stop the message					
1	Open/Close	Page x-Icon y	1bit	C,W,T	1.009 open/close
2	Stop	Page x-Icon y	1bit	C,T	1.007 step
3	Blind position/status	Page x-Icon y	1byte	C,W,T,U	5.001 percentage(0..100%)
The object description is as follows: OBJ.1: This communication object is used to send a message to the bus that controls the opening/closing of the open/close curtain. Message value: 1-Close the curtain 0- Open the curtains OBJ.2: This communication object is used to send a message to the bus that stops the curtain from moving. Message value: 1 - Shutdown stops 0 - Open Stop Obj.3: This communication object is used to send a message controlling the percentage of the curtain position to or from the bus to receive feedback from the curtain actuator on the curtain position status. Message value: 0... 100%					
1	Up/Down	Page x-Icon y	1bit	C,W,T	1.008 up/down
2	Stop	Page x-Icon y	1bit	C,T	1.007 step
3	Blind position/status	Page x-Icon y	1byte	C,W,T,U	5.001 percentage(0..100%)
Suitable for roller blinds, without venetian blinds. The target description is as follows: OBJ.1: This communication object is used to send messages to the bus that control the opening/closing of the lifting curtain. Message value: 1- Close the curtain downward 0-Open the curtains upwards					

Obj.2 and Obj.3 as above					
1	Up/Down	Page x-Icon y	1bit	C,W,T	1.008 up/down
2	Stop	Page x-Icon y	1bit	C,T	1.007 step
3	Blind position/status	Page x-Icon y	1byte	C,W,T,U	5.001 percentage(0..100%)
4	Slat position/status	Page x-Icon y	1byte	C,W,T,U	5.001 percentage(0..100%)
Suitable for venetian blinds with louver angle adjustment. The object description is as follows: Same as above for Obj.1 and Obj.3 Obj.2: This communication object is used to send a message to the bus to stop the curtain from moving or adjusting the angle of the louver. Message value: 1 - Stop/decrease louver angle 0 - Stop/increase the louver angle OBJ.4: This communication object is used to send a message controlling the angular position of the blinds to the bus or to receive feedback from the louver actuator on the bus. Message value: 0... 100%					
1	Open/Close	Page x-Icon y	1bit	C,W,T	1.009 open/close
2	Stop	Page x-Icon y	1bit	C,T	1.007 step
Suitable for open/close curtain The object description is as follows: OBJ.1: This communication object is used to send a message to the bus that controls the opening/closing of the open/close curtain. Message value: 1-Close the curtain 0- Open the curtains Obj.2: This communication object is used to send a message to the bus to stop the curtain movement. Message value: 1 - Shutdown stops 0 - Open Stop					
1	Open/Close	Page x-Icon y	1bit	C,W,T	1.008 up/down
2	Stop	Page x-Icon y	1bit	C,T	1.007 step
Suitable for roller blind, the object description is as follows: OBJ.1: This communication object is used to send messages to the bus that control the opening/closing of the lifting curtain. Message value: 1- Close the curtain downward 0 - Open the curtains upwards Obj.2 Same as above					
1184	Color Temperature	Page x-Icon y	2bytes	C,W,T,U	7.600 absolute colour temperature(K)
This communication object is used to send dimming color temperature messages to the bus, that is, to send the actual color temperature value. The message limit is determined by the specific parameters					
1185	Color Temperature,status	Page x-Icon y	2bytes	C,W,T,U	7.600 absolute colour temperature(K)
This communication object is used to receive the color temperature value status fed back by the dimmer. The message limit is determined by the specific parameters					

Table 5.3.1 “Multifunction” Communication Object

5.3.2 "HVAC" communication object

Note: The following takes HVAC page 6 as an example, and the object information of the remaining function pages except for the serial number is the same

161	Page 6-HVAC Input	External temperature sensor	2 bytes	C	-	W	T	U	temperature (°C)
162	Page 6-HVAC Input	Setpoint adjustment	2 bytes	C	-	W	-	-	temperature (°C)
163	Page 6-HVAC Input	Switch Heating/Cooling mode	1 bit	C	-	W	-	U	cooling/heating
164	Page 6-HVAC Input	Comfort mode	1 bit	C	-	W	-	-	enable
165	Page 6-HVAC Input	Standby mode	1 bit	C	-	W	-	-	enable
166	Page 6-HVAC Input	Economy mode	1 bit	C	-	W	-	-	enable
167	Page 6-HVAC Input	Frost/Heat protection mode	1 bit	C	-	W	-	-	enable
168	Page 6-HVAC Input	Fan speed low	1 bit	C	-	W	-	U	switch
169	Page 6-HVAC Input	Fan speed medium	1 bit	C	-	W	-	U	switch
170	Page 6-HVAC Input	Fan speed high	1 bit	C	-	W	-	U	switch
171	Page 6-HVAC Input	Fan speed off	1 bit	C	-	W	-	U	switch
172	Page 6-HVAC Input	Fan Automatic operation	1 bit	C	-	W	-	U	enable
173	Page 6-HVAC Output	Instantaneous setpoint	2 bytes	C	R	-	T	-	temperature (°C)
174	Page 6-HVAC Output	Heating/Cooling mode	1 bit	C	R	-	T	-	cooling/heating
175	Page 6-HVAC Output	Comfort mode	1 bit	C	-	-	T	-	enable
176	Page 6-HVAC Output	Standby mode	1 bit	C	-	-	T	-	enable
177	Page 6-HVAC Output	Economy mode	1 bit	C	-	-	T	-	enable
178	Page 6-HVAC Output	Frost/Heat protection mode	1 bit	C	-	-	T	-	enable
179	Page 6-HVAC Output	Heating control value	1 bit	C	-	-	T	-	switch
180	Page 6-HVAC Output	Cooling control value	1 bit	C	-	-	T	-	switch
181	Page 6-HVAC Output	Fan speed low	1 bit	C	-	-	T	-	switch
182	Page 6-HVAC Output	Fan speed medium	1 bit	C	-	-	T	-	switch
183	Page 6-HVAC Output	Fan speed high	1 bit	C	-	-	T	-	switch
184	Page 6-HVAC Output	Fan speed off	1 bit	C	-	-	T	-	switch
185	Page 6-HVAC Output	Fan Automatic operation	1 bit	C	-	-	T	-	enable
186	Page 6-HVAC Output	HVAC on/off	1 bit	C	-	W	T	U	switch
187	Page 6-HVAC Output	Base setpoint temperature	2 bytes	C	R	-	T	-	temperature (°C)
179	Page 6-HVAC Output	Heating control value	1 byte	C	-	-	T	-	percentage (0..100%)
180	Page 6-HVAC Output	Cooling control value	1 byte	C	-	-	T	-	percentage (0..100%)
164	Page 6-HVAC Input	HVAC mode	1 byte	C	-	W	-	-	HVAC mode
168	Page 6-HVAC Input	Fan speed	1 byte	C	-	W	-	U	percentage (0..100%)
175	Page 6-HVAC Output	HVAC mode	1 byte	C	R	-	T	-	HVAC mode
179	Page 6-HVAC Output	Heating/cooling control value	1 bit	C	-	-	T	-	switch
181	Page 6-HVAC Output	Fan speed	1 byte	C	-	-	T	-	percentage (0..100%)
179	Page 6-HVAC Output	Heating/cooling control value	1 byte	C	-	-	T	-	percentage (0..100%)

Figure 5.3.2 "HVAC" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
161	External temperature	Page x- HVAC Input	2Bytes	C,W,T,U	9.001 temperature (℃)
This communication object is used to receive measured values from the temperature sensor on the bus. Range: -40-80°C					
162	Setpoint adjustment	Page x- HVAC Input	2Bytes	C,W	9.001 temperature (℃)
When the HVAC operating mode is not enabled, this communication object is used to modify the reference value of the set temperature. When the HVAC operation mode is enabled and the set temperature is adjusted relatively, the communication object is used to modify the benchmark value of the set temperature, that is, the temperature set value of the comfort mode, and the set temperature of the standby and energy saving modes is changed according to the relative change amount. In protected mode, only the temperature setpoint in protected mode is modified. When the HVAC operating mode is enabled and the set temperature is set to absolute adjustment, the communication object is used to modify the temperature set value of the current room operating mode					

163	Switch Heating/Cooling mode	Page x- HVAC Input	1bit	C,W,U	1.100 cooling/heating
This communication object is used to receive feedback on the heating and cooling status from the bus, and the screen will be displayed according to the updated icon of the received message value. Message value: 1-heated 0- Refrigeration					
164	HVAC mode	Page x- HVAC Input	1byte	C,W	20.102 HVAC mode
The relationship between the input values and the operating mode is as follows: 0: Reserved 1: Comfort Mode 2: Standby Mode 3: Energy Saving Mode 4: Protected Mode 5-255: Reserved, unused					
164	Comfort mode	Page x- HVAC Input	1bit	C,W	1.003 enable
When the object receives message “1”, the comfort mode is activated, and the mode display status on the screen is updated synchronously					
165	Standby mode	Page x- HVAC Input	1bit	C,W	1.003 enable
When the object receives the message "1", the standby mode is activated, and the mode display status on the screen will also be updated simultaneously.					
166	Economy mode	Page x- HVAC Input	1bit	C,W	1.003 enable
When the object receives the message “1”, the standby mode is activated, and the mode display status on the screen is updated synchronously					
167	Frost/heat protection mode	Page x- HVAC Input	1bit	C,W	1.003 enable
When the object receives the message “1”, the protection mode is activated, and the mode display status on the screen is updated synchronously					
168	Fan speed	Page x- HVAC Input	1byte	C,W,U	5.001 percentage(0..100%)
168	Fan speed low	Page x- HVAC Input	1bit	C,W,U	1.001 switch
169	Fan speed medium	Page x- HVAC Input	1bit	C,W,U	1.001 switch
170	Fan speed high	Page x- HVAC Input	1bit	C,W,U	1.001 switch
171	Fan speed off	Page x- HVAC Input	1bit	C,W,U	1.001 switch
HVAC wind speed can receive status feedback via 4 x 1 bit objects (objects 168,169,170,171) or 1 x 1 byte object fan speed At 1bit: Object 168 - Low wind speed Object 169 - Medium wind speed Object 170 - High wind speed Object 171 - Wind speed off When the object receives message “1”, activate the corresponding wind speed, and the wind speed display status on the screen will also be updated synchronously. When the wind speed is off, the message value of all wind speeds must be 0 1byte: The wind speed status value is defined by the database parameters. When the object receives the set value, the wind speed display status on the screen is updated synchronously.					
172	Fan Automatic operation	Page x- HVAC Input	1bit	C,W,U	1.003 enable
This object is used to receive the status feedback message value of automatic wind speed control. Message: 1 - Auto 0 - Exit Auto					
173	Instantaneous setpoint	Page x- HVAC output	2Bytes	C,R,T	9.001 temperature (℃)
This communication object is used to send the temperature setpoint of the current operating mode to the bus					
174	Heating/Cooling mode	Page x- HVAC output	1bit	C,R,T	1.100 cooling/heating

This communication object is used to send messages switching cooling and heating modes to the bus. Message value: 1-Heating 0- Refrigeration					
175	HVAC mode	Page x- HVAC output	1byte	C,R,T	20.102 HVAC mode
175	Comfort mode	Page x- HVAC output	1bit	C,T	1.003 enable
176	Standby mode	Page x- HVAC output	1bit	C,T	1.003 enable
177	Economy mode	Page x- HVAC output	1bit	C,T	1.003 enable
178	Frost/heat protection mode	Page x- HVAC output	1bit	C,T	1.003 enable
These communicators are used to send messages from the room operation mode to the bus.If the object type is 1byte, different message values mean different working modes, as follows: 0: Reserved 1: Comfort mode 2: Standby mode 3: Energy saving mode 4: Protection mode 5-255: Reserved, unused If the object type is set to 1bit, switch to the corresponding mode, and send 1 to the corresponding communication object to the bus					
179	Heating/Cooling control value	Page x- HVAC output	1byte 1bit	C,T	5.001 percentage(0..100%) 1.001 switch
179	Heating control value	Page x- HVAC output	1byte 1bit	C,T	5.001 percentage(0..100%) 1.001 switch
180	Cooling control value	Page x- HVAC output	1byte 1bit	C,T	5.001 percentage(0..100%) 1.001 switch
This communication object is used to send the control value of the heating or cooling function to control the HVAC hot and cold switch and adjust the indoor temperature. Send message value (Switch on/off ->2-point control): on/off Send message value (Switch PWM ->PI control): on/off Send message value (Continuous control ->PI control): 0... 100%					
181	Fan speed	Page x- HVAC output	1byte	C,T	5.001 percentage(0..100%)
181	Fan speed low	Page x- HVAC output	1bit	C,T	1.001 switch
182	Fan speed medium	Page x- HVAC output	1bit	C,T	1.001 switch
183	Fan speed high	Page x- HVAC Input	1bit	C,T	1.001 switch
184	Fan speed off	Page x- HVAC Input	1bit	C,T	1.001 switch
The output object of HVAC wind speed is used to send control message to bus 1bit: Object 181 - Low wind speed Object 182 - Medium wind speed Object 183 - High wind speed Object 184 - Wind speed off When the corresponding wind speed is triggered by clicking on the screen, the corresponding communication party sends "1" to the bus, and the wind speed is 0 when the wind speed is off. 1byte: The value of the wind speed control is defined by the database, click the different wind speed button of the HVAC, this object will send different message values to the bus					
185	Fan Automatic operation	Page x- HVAC output	1bit	C,T	1.003 enable
This communication object is used to send an automatic control message of the wind speed to Bus. Message value: 1 - Auto 0 - Exit Auto					
186	HVAC on/off	Page x- HVAC output	1bit	C,W,T,U	1.001 switch

This communication object is used to switch on and off the HVAC function of the device, and the corresponding automatic control is also turned off when the HVAC is off					
187	Base setpoint temperature	Page x- HVAC output	2Bytes	C,R,T	9.001 temperature (℃)
This communication object is visible when the HVAC operating mode is enabled and the adjustment mode of the temperature setpoint is relative and is used to send the reference setting temperature value to the bus					

Table 5.3.2 "HVAC" Communication Object

5.3.3 “Air conditioner” communication object

Note: The following takes page 6 of the Air conditioner as an example, and the object information of the remaining function pages except for the serial number is the same



Figure 5.3.3-1 "Air conditioner" sets 1byte communication object



Figure 5.3.3-2 "Air conditioner" sets1 bit communication object

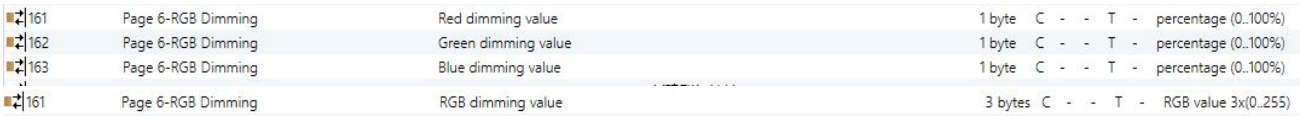
No.	Function	The name of the correspondence	Type	Attribute	DPT
161	External temperature sensor,In	Page x- AC	2Bytes	C,W,T,U	9.001 temperature (℃)
This communication object is used to receive the measured values from the temperature sensor on the bus and display them in the function page in the range of -40 to 80 °C.					
162	Power on/off,Out	Page x- AC	1bit	C,T	1.001 switch
This communication object is used to send air conditioner switch messages					

163	Status of Power,In	Page x- AC	1bit	C,W,T,U	1.001 switch
This communicator is used to receive feedback on the status of the air conditioner's switch					
164	Control mode,Out	Page x- AC	1byte	C,T	20.102 HVAC mode
This communication object is visible in the air conditioner gateway mode and the mode type is 1byte. It is used to send control messages for each mode of the air conditioner.					
164	Heat mode,In/Out	Page x- AC	1bit	C,W,T,U	1.003 enable
This communication object is visible in the air conditioner gateway mode and the mode type is 1bit. It is used to send air conditioning mode-heating control messages and can also receive mode status feedback.					
165	Status of control mode,In	Page x- AC	1byte	C,W,T,U	20.102 HVAC mode
165	Cool mode,In/Out	Page x- AC	1bit	C,W,T,U	1.003 enable
Status of control mode,In: Visible when the mode type is 1 byte, used to receive status feedback message for each mode of the air conditioner. Cool mode, In/Out: Visible when the mode type is 1bit, used to send air conditioning mode-cooling control messages and also receive status feedback					
166	Dry mode,In/Out	Page x- AC	1bit	C,W,T,U	1.003 enable
It is visible when the communication object mode type is 1bit, and is used to send control messages for air conditioning mode - dehumidification, and can also receive status feedback					
167	Fan mode,In/Out	Page x- AC	1bit	C,W,T,U	1.003 enable
It is visible when the communication object mode type is 1bit, and is used to send control messages from air conditioning mode to air supply, and can also receive status feedback					
168	Auto mode,In/Out	Page x- AC	1bit	C,W,T,U	1.003 enable
It is visible when the communication object mode type is 1bit, and is used to send air conditioning mode-automatic control messages, and can also receive status feedback					
169	Fan speed,Out	Page x- AC	1byte	C,T	5.001 percentage(0..100%)
169	Fan speed low,In/Out	Page x- AC	1bit	C,W,T,U	1.001 switch
Fan speed Out: This communication object is visible when the wind speed type is 1 byte, and is used to send control message for each wind speed Fan speed low, In/Out: This communication object is visible when the wind speed type is 1bit, which is used to send control messages from wind speed to low level, and can also receive status feedback					
170	Status of Fan speed,In	Page x- AC	1byte	C,W,T,U	5.001 percentage(0..100%)
170	Fan speed medium,In/Out	Page x- AC	1bit	C,W,T,U	1.001 switch
Status of Fan speed,In: Visible when the wind speed type of this communication object is 1byte, it is used to receive the status feedback of each wind speed Fan speed medium,In/Out: Visible when the wind speed type of this communication object is 1bit, it is used to send the control message of wind speed - medium, and can also receive status feedback					
171	Fan speed High,In/Out	Page x- AC	1bit	C,W,T,U	1.001 switch
Fan speed High, In/Out: This communication object is visible when the wind speed type is 1bit, and is used to send control messages of wind speed - high, and can also receive status feedback					
172	Fan speed Auto,In/Out	Page x- AC	1bit	C,W,T,U	1.001 switch
This communication object is visible when the wind speed type is 1bit, and is used to send wind speed-automatic control messages, and also to receive status feedback					
173	Wind direction fixed/swing,In/Out	Page x- AC	1bit	C,W,T,U	1.017 trigger

This communication object is visible when wind direction adjustment is enabled and is used to send wind direction control messages. Message value: 1 - Swing wind direction 0 - Fixed wind direction					
174	Wind direction position,Out	Page x- AC	1byte	C,T	5.010 counter pulses(0..255)
This communication object is visible when wind direction adjustment is enabled and is used to send control messages from fixed wind direction position 1..5					
175	Status of Wind direction position,In	Page x- AC	1byte	C,W,T,U	5.010 counter pulses(0..255)
This communicator is visible when wind direction adjustment is enabled and is used to receive status feedback messages from fixed wind direction position 1..5					
176	Temperature setpoint, In/Out	Page x- AC	1byte 2bytes	C,W,T,U	5.010 counter pulses(0..255) 9.001 temperature(℃)
This communication object is used to send and receive the set temperature of the air conditioner Note: The object type is set by the parameters, 2byte is suitable for KNX standard, 1byte is KNX non-standard, usually suitable for some custom control classes, and the message value is the actual temperature, for example, the message value of 17°C is 17 (decimal number)					

Table 5.3.3 “ Air conditioner" communication object

5.3.5 "RGB dimming" communication object



RGB dimming



RGBW dimming

Figure 5.3.5 "RGB dimming" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
161	Red dimming value	Page x-RGB Dimming	1byte	C,T	5.001 percentage(0..100%)
This communication object is used to send the brightness value of the control R (red) channel to the bus. Message value: 0.. 100%					
162	Green dimming value	Page x-RGB Dimming	1byte	C,T	5.001 percentage(0..100%)
This communication object is used to send the brightness value of the control G (green) channel to the bus. Message value: 0.. 100%					

163	Blue dimming value	Page x-RGB Dimming	1byte	C,T	5.001 percentage(0..100%)
This communication object is used to send the brightness value of the control B (blue) channel to the bus. Message value: 0.. 100%					
164	White dimming value	Page x-RGB Dimming	1byte	C,T	5.001 percentage(0..100%)
In the RGBW type, the communication object is used to send the brightness value of the control W (white) channel to the bus, and can also receive the brightness feedback message: 0.. 100%					
161	RGB dimming value	Page x-RGB Dimming	3bytes	C,T	232.600 RGB value 3x(0..255)

This communication object is visible when RGB object type is selected as 1x3byte, which is used to send the RGB dimming object data type with a brightness value of 3 bytes for RGB tri-color strips: U8 U8 U8, as follows:

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

R: Red dimming value
G: Green dimming value
B: Blue dimming value

161	RGBW dimming value	Page x-RGB Dimming	6byte	C,T	251.600 RGB value 4x(0..255)

This communication object is visible when 1x6byte is selected for RGBW object type, and is used to send the RGBW dimming object data type encoding of the RGBW dimming object data type with a brightness value of 6 bytes: 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	00000000	0000BBBB

R: Red dimming value
G: Green dimming value
B: Blue dimming value
W: White dimming value
mR: Determines whether the dimming value of red is valid or not, 0=invalid 1=valid
mG: Determines whether the dimming value of green is valid or not, 0=invalid 1=valid
mB: Determines whether the dimming value of blue is valid, 0=invalid 1=valid
mW: Determines whether the dimming value of white is valid, 0=invalid 1=valid

Table 5.3.5 “RGB dimming” Communication Object

5.3.6 "Air Quality display" communication object

161	Page 6-Air Quality	AQI, In	2 bytes	C	-	W	T	U	pulses
162	Page 6-Air Quality	PM2.5, In	2 bytes	C	-	W	T	U	pulses
163	Page 6-Air Quality	PM10, In	2 bytes	C	-	W	T	U	pulses
164	Page 6-Air Quality	Temperature, In	2 bytes	C	-	W	T	U	temperature (°C)
165	Page 6-Air Quality	Humidity, In	2 bytes	C	-	W	T	U	humidity (%)
166	Page 6-Air Quality	VOC, In	2 bytes	C	-	W	T	U	pulses
167	Page 6-Air Quality	CO2, In	2 bytes	C	-	W	T	U	parts/million (ppm)
168	Page 6-Air Quality	Brightness, In	2 bytes	C	-	W	T	U	brightness (lux)
169	Page 6-Air Quality	Windspeed, In	2 bytes	C	-	W	T	U	speed (m/s)



Figure 5.3.6 "Air Quality display" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
161	AQI,In	Page x-Air Quality	2Bytes	C,W,T,U	7.001 pulses
This communication object is used to receive the input of the AQI value, get the corresponding value update from the bus and display the range: 0~500					
162	PM2.5,In	Page x-Air Quality	2Bytes	C,W,T,U	9.030 concentration(ug/m3) 7.001 pulses
The communication object is used to receive the input of PM2.5 value, get the corresponding value update from the bus and display it, the unit is ug/m3 range: 0~999ug/m3, and the data type of the object is set by the parameter					
163	PM10,In	Page x-Air Quality	2Bytes	C,W,T,U	9.030 concentration(ug/m3) 7.001 pulses
This communication object is used to receive input for PM10 values, obtain corresponding value updates from the bus, and display them in ug/m3. Range: 0~999ug/m3, the data type of the object is set by the parameter					
164	Temperature,In	Page x-Air Quality	2Bytes	C,W,T,U	9.001 temperature (℃)
This communication object is used to receive temperature measurements from the temperature sensor on the bus. Range: -40~80°C					
165	Humidity,In	Page x-Air Quality	2Bytes	C,W,T,U	9.007 humidity（%）
This communication object is used to receive humidity measurements from the humidity sensor on the bus. Range: 0~100%					
166	VOC,In	Page x-Air Quality	2Bytes	C,W,T,U	9.008 parts/million(ppm) 7.001 pulses 9.030 concentration(ug/m3)
The communication object is used to receive the input of VOC value, get the corresponding value update and display from the bus, the unit is ug/m3 range: 0~999ug/m3, and the data type of the object is set by the parameter					
167	CO2,In	Page x-Air Quality	2Bytes	C,W,T,U	9.008 parts/million(ppm)
The communication object is used to receive the input of the CO2 value, and the corresponding value is updated and displayed from the bus, and the unit is ppm. Range: 0~4000ppm					
168	Brightness,In	Page x-Air Quality	2Bytes	C,W,T,U	7.013 brightness(lux) 9.004 lux(Lux)
The communication object is used to receive the input of the illuminance value, get the corresponding value update from the bus and display it, the unit is lux range: 0~5000lux, the data type of the object is determined by the parameter					
169	Windspeed,In	Page x-Air Quality	2Bytes	C,W,T,U	9.005 speed(m/s)
This communication object is used to receive the input of the wind speed value, and obtain the corresponding value update and display it from the bus in m/s. Range: 0~50m/s.					

Feature 5.3.6 “Air Quality Display” communication object

5.3.7 “Floor heating” communication object



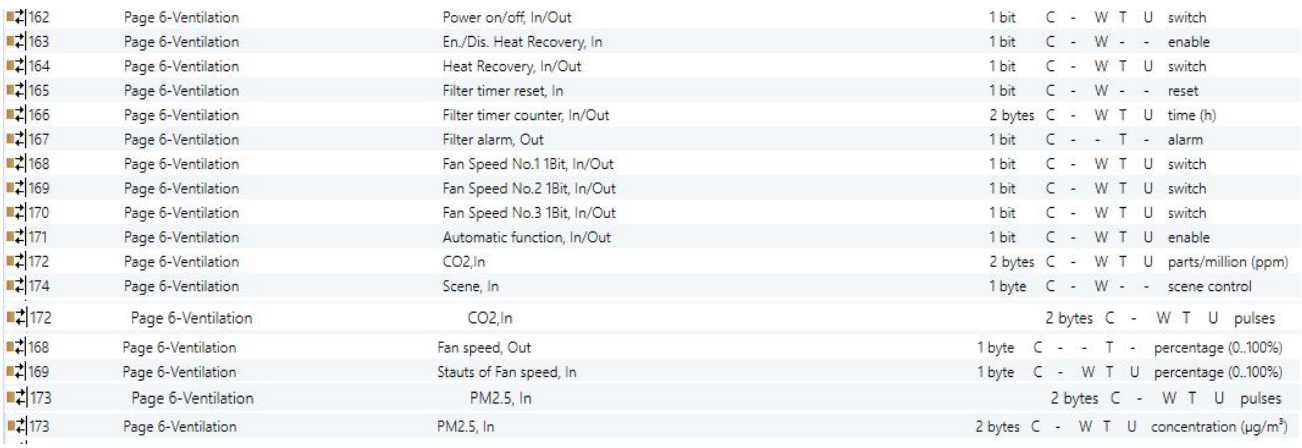
161	Page 6-Floor heating	External temperature sensor, In	2 bytes	C	-	W	T	U	temperature (°C)
162	Page 6-Floor heating	Power on/off, In/Out	1 bit	C	-	W	T	U	switch
163	Page 6-Floor heating	Heating control value, Out	1 byte	C	-	W	T	U	percentage (0..100%)
164	Page 6-Floor heating	Setpoint, In/Out	2 bytes	C	-	W	T	U	temperature (°C)
166	Page 6-Floor heating	Scene, In	1 byte	C	-	W	-	-	scene control
163	Page 6-Floor heating	Heating on/off, In/Out	1 bit	C	-	W	T	U	switch

Figure 5.3.7 "Floor heating" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
161	External temperature sensor,In	Page x- Floor heating	2Bytes	C,W,T,U	9.001 temperature (℃)
This communication object is visible when the temperature source selects an external sensor and is used to receive the measured values obtained from the temperature sensor on the bus. Range: -40~80°C					
162	Power on/off,In/Out	Page x- Floor heating	1bit	C,W,T,U	1.001 switch
The communication object is used to send the switch message of the floor heating control, and can also receive the state of the floor heating power on/off Message value: 1 - The floor heating control interface is open, and the interface is operable 0- The floor heating control interface is off, and the interface is not operable **Note: In the shutdown state, except for the timing and switch icons, other icons cannot be operated**					
163	Heating on/off, In/Out	Page x- Floor heating	1bit	C,W,T,U	1.001 switch
163	Heating control value, Out	Page x- Floor heating	1byte	C,W,T,U	5.001 percentage(0..100%)
This communication object is used to send the control message value of floor heating to control the opening and closing of the floor heating valve. Send the message value (Heating on/off ->2 point control): on/off Send the message value(Heating PWM ->PI control): on/off Send the message value (Heating continuous control ->PI control): 0... 100%					
164	Setpoint , In/Out	Page x- Floor heating	2Bytes	C,W,T,U	9.001 temperature (℃)
This communication object is used to send the temperature setpoint to the bus and also receive feedback on the temperature setpoint. Range: 16~32°C					
165	En./Dis. Timer, In	Page x- Floor heating	1bit	C,W	1.003 enable
This communication object is used to disable/enable the timer function of floor heating. The message values of the disable/enabled are defined by the database parameters					
166	Scene, In	Page x- Floor heating	1byte	C,W	18.001 scene control
This communication object is used to invoke the scene control of underfloor heating. If the parameter is set to 1~64, the actual corresponding message value is 0~63					

Figure 5.3.7 "Floor heating" communication object

5.3.8 "Ventilation System" communication object



162	Page 6-Ventilation	Power on/off, In/Out	1 bit	C	-	W	T	U	switch
163	Page 6-Ventilation	En./Dis. Heat Recovery, In	1 bit	C	-	W	-	-	enable
164	Page 6-Ventilation	Heat Recovery, In/Out	1 bit	C	-	W	T	U	switch
165	Page 6-Ventilation	Filter timer reset, In	1 bit	C	-	W	-	-	reset
166	Page 6-Ventilation	Filter timer counter, In/Out	2 bytes	C	-	W	T	U	time (h)
167	Page 6-Ventilation	Filter alarm, Out	1 bit	C	-	-	T	-	alarm
168	Page 6-Ventilation	Fan Speed No.1 1Bit, In/Out	1 bit	C	-	W	T	U	switch
169	Page 6-Ventilation	Fan Speed No.2 1Bit, In/Out	1 bit	C	-	W	T	U	switch
170	Page 6-Ventilation	Fan Speed No.3 1Bit, In/Out	1 bit	C	-	W	T	U	switch
171	Page 6-Ventilation	Automatic function, In/Out	1 bit	C	-	W	T	U	enable
172	Page 6-Ventilation	CO2,In	2 bytes	C	-	W	T	U	parts/million (ppm)
174	Page 6-Ventilation	Scene, In	1 byte	C	-	W	-	-	scene control
172	Page 6-Ventilation	CO2,In	2 bytes	C	-	W	T	U	pulses
168	Page 6-Ventilation	Fan speed, Out	1 byte	C	-	-	T	-	percentage (0..100%)
169	Page 6-Ventilation	Stauts of Fan speed, In	1 byte	C	-	W	T	U	percentage (0..100%)
173	Page 6-Ventilation	PM2.5, In	2 bytes	C	-	W	T	U	pulses
173	Page 6-Ventilation	PM2.5, In	2 bytes	C	-	W	T	U	concentration (µg/m³)

Figure 5.3.8 "Ventilation System" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
162	Power on/off,In/Out	Page x- Ventilation	1bit	C,W,T,U	1.001 switch
This communication object is used to send switch messages for fresh air control, and can also receive the switch status of fresh air on and off Message value: 1- The fresh air control interface is open, and the interface is operable 0- The fresh air control interface is off, and the interface is not operable					
163	En./Dis. Heat Recovery,In	Page x- Ventilation	1bit	C,W	1.003 enable
This communication object is used to disable/enable the heat exchange function of fresh air. The values of the disable/enabled message are defined by the database parameters. When it is prohibited, the heat exchange function is off and cannot be controlled					
164	Heat Recovery, In/Out	Page x- Ventilation	1bit	C,W,T,U	1.001 switch
This communication object is used to send the control command to turn on/off the fresh air heat exchange, and can also receive the corresponding status value. Message value: 1-on 0-off					
165	Filter time reset,In	Page x- Ventilation	1bit	C,W	1.015 reset
This communication object is used to reset the filter time. After the reset, the filter usage time starts counting again. Message value: 1-reset					
166	Filter time counter, In/Out	Page x- Ventilation	2Bytes	C,W,T,U	7.001 pluses
This communication object is used to count the time spent on the filter, which can be modified via the bus. The duration of the filter is measured in hours					
167	Filter alarm, Out	Page x- Ventilation	1bit	C,T	1.005 alarm
When the filter is used for more than the set value, the communication object will send an alarm to remind the user to replace the filter. Message value: 1- Alarm					
168	Fan speed, Out	Page x- Ventilation	1byte	C,T	5.001 percentage(0..100%)
This communication object is visible when the wind speed type is 1byte and is used to send a message to control the wind speed to the bus. The specific message value for each wind speed speed is defined by the					

parameters					
169	Status of Fan speed, In	Page x- Ventilation	1byte	C,W,T,U	5.001 percentage(0..100%)
This communication object is visible when the wind speed type is 1 byte and is used to receive and display status message of the wind speed. The specific message value for each wind speed speed is defined by the parameters					
168	Fan Speed No.1 1Bit, In/Out	Page x- Ventilation	1bit	C,W,T,U	1.001 switch
169	Fan Speed No.2 1Bit, In/Out	Page x- Ventilation	1bit	C,W,T,U	1.001 switch
170	Fan Speed No.3 1Bit, In/Out	Page x- Ventilation	1bit	C,W,T,U	1.001 switch
These three communication objects are visible when the wind speed type is "1bit". The wind speed is controlled by the three objects at the same time. The specific message value corresponding to each wind speed is defined by parameters. Status feedback can be received, but the feedback value must also correspond to the parameter definition value before the on-screen display information can be updated.					
171	Automatic function, In/Out	Page x- Ventilation	1bit	C,W,T,U	1.003 enable
This communication object is used to enable the automatic control function of fresh air. After bus power-on reset or programming, automatic control is not enabled by default. The automatic function can be exited by shutting down the machine, manually adjusting the wind speed, and scenes. The message values for enabling/disabling the automatic function are specifically defined by parameters.					
174	Scene, In	Page x- Ventilation	1byte	C,W	18.001 scene control
This communication object is used to invoke the scene control of the fresh air. If the parameter is set to 1~64, the actual corresponding message value is 0~63					

Table 5.3.8 "Ventilation System" Communication Object

5.3.9 "Energy Metering display" communication object

161	Page 6-Energy Meter 1	Current in mA (DPT 7.012)	2 bytes	C	-	W	T	U	current (mA)
162	Page 6-Energy Meter 2	Current in mA (DPT 9.021)	2 bytes	C	-	W	T	U	current (mA)
163	Page 6-Energy Meter 3	Current in A (DPT 14.019)	4 bytes	C	-	W	T	U	electric current (A)
164	Page 6-Energy Meter 4	Voltage in mV (DPT 9.020)	2 bytes	C	-	W	T	U	voltage (mV)
193	Page 7-Energy Meter 1	Voltage in V (DPT 14.027)	4 bytes	C	-	W	T	U	electric potential (V)
194	Page 7-Energy Meter 2	Power in W (DPT 14.056)	4 bytes	C	-	W	T	U	power (W)
195	Page 7-Energy Meter 3	Power in kW (DPT 9.024)	2 bytes	C	-	W	T	U	power (kW)
196	Page 7-Energy Meter 4	Active energy in Wh (DPT 13.010)	4 bytes	C	-	W	T	U	active energy (Wh)
225	Page 8-Energy Meter 1	Active energy in kWh (DPT 13.013)	4 bytes	C	-	W	T	U	active energy (kWh)

Figure 5.3.9 "Energy Metering display" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
161	Current in mA(DPT 7.012)	Page x-Energy Meter y	2Bytes	C,W,T,U	7.012 current (mA)
This communication object is used to receive the current value from the bus and update it to the screen display. Display range: 0~65535mA, resolution 1mA					
162	Current in mA(DPT 9.021)	Page x-Energy Meter y	2Bytes	C,W,T,U	9.021 current (mA)

This communication object is used to receive the current value from the bus and update it to the screen display. Display range: -670760~670760mA, resolution 1mA					
163	Current in A(DPT 14.019)	Page x-Energy Meter y	4Bytes	C,W,T,U	14.019 electric current (A)
This communication object is used to receive the current value from the bus and update it to the screen display. Display range: --99999999~99999999A, resolution 1A					
164	Voltage in mV(DPT 9.020)	Page x-Energy Meter y	2Bytes	C,W,T,U	9.020 voltage (mV)
This communication object is used to receive the voltage value from the bus and update it to the screen display. Display range:-670760mV~670760mV,resolution 1mV					
193	Voltage in V(DPT 14.027)	Page x-Energy Meter y	4Bytes	C,W,T,U	14.027 electric potential (V)
This communication object is used to receive the voltage value from the bus and update it to the screen display. Display range:-99999999~99999999V, resolution 1V					
194	Power in W(DPT 14.056)	Page x-Energy Meter y	4Bytes	C,W,T,U	14.056 power (W)
This communication object is used to receive the power value from the bus and update it to the screen display. Display range: -99999999~99999999W, resolution 1W					
195	Power in kW(DPT 9.024)	Page x-Energy Meter y	2Bytes	C,W,T,U	9.024 power (kW)
This communication object is used to receive the power value from the bus and update it to the screen display. Display range:-670760~670760kW, resolution 1kW					
196	Active energy in Wh(DPT 13.010)	Page x-Energy Meter y	4Bytes	C,W,T,U	13.010 active energy (Wh)
This communication object is used to receive the power value from the bus and update it to the screen display.Display range:-99999999~99999999VWh,resolution 1Wh					
225	Active energy in kWh(DPT 13.013)	Page x-Energy Meter y	4Bytes	C,W,T,U	13.013 active energy (kWh)
This communication object is used to receive the power value from the bus and update it to the screen display. Display range:-99999999~99999999VkWh, resolution 1kWh					

Table 5.3.9 "Energy Metering display" Communication Object

5.5 "Event Group" communication object

520	Event	Main scene recall	1 byte	C	-	W	-	-	scene number
521	1st Event Group	Sub event Output 1	1 bit	C	-	-	T	-	switch
522	1st Event Group	Sub event Output 2	1 byte	C	-	-	T	-	counter pulses (0..255)
523	1st Event Group	Sub event Output 3	2 bytes	C	-	-	T	-	pulses
524	1st Event Group	Sub event Output 4	1 bit	C	-	-	T	-	switch
525	1st Event Group	Sub event Output 5	1 bit	C	-	-	T	-	switch
526	1st Event Group	Sub event Output 6	1 bit	C	-	-	T	-	switch
527	1st Event Group	Sub event Output 7	1 bit	C	-	-	T	-	switch
528	1st Event Group	Sub event Output 8	1 bit	C	-	-	T	-	switch

Figure 5.5 "Event Group" communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
520	Main scene recall	Event	1byte	C,W	17.001 scene number
This communication object triggers each output in the event group to send a specific value to the bus by calling the scene number. Message value: 0.. 63					

521...	Sub event Output 1..8	1st /.../8th Event Group	1byte	C,T	1.001 switch 5.010 counter pulses(0..255) 7.001 pulses
When a scene is called, this communication object is used to send the corresponding output value of the scene to the bus. If the output does not have this scene set, it will not be sent					

5.6 “Logic function” communication object

5.6.1 “AND/OR/XOR”communication object

585	1st Logic	Input a	1 bit	C	-	W	T	U	boolean	低
586	1st Logic	Input b	1 bit	C	-	W	T	U	boolean	低
587	1st Logic	Input c	1 bit	C	-	W	T	U	boolean	低
588	1st Logic	Input d	1 bit	C	-	W	T	U	boolean	低
589	1st Logic	Input e	1 bit	C	-	W	T	U	boolean	低
590	1st Logic	Input f	1 bit	C	-	W	T	U	boolean	低
591	1st Logic	Input g	1 bit	C	-	W	T	U	boolean	低
592	1st Logic	Input h	1 bit	C	-	W	T	U	boolean	低
593	1st Logic	Logic result	1 bit	C	-	-	T	-	boolean	低

Figure 5.6.1 “Logic function_AND/OR/XOR”communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
585...	Input	1st /.../8th Logic	1bit	C,W,T,U	1.002 boolean
This communication object is used to receive the value of the logic input Input x					
593	Logic result	1st /.../8th Logic	1bit	C,T	1.002 boolean
This communication object is used to send logical operation results					

Table 5.6.1 “Logic function_AND/OR/XOR” communication object

5.6.2 “Gate forwarding” communication object

586	1st Logic	Input A	4 bit	C	-	W	-	-	dimming control	低
587	1st Logic	Input B	4 bit	C	-	W	-	-	dimming control	低
588	1st Logic	Input C	4 bit	C	-	W	-	-	dimming control	低
589	1st Logic	Input D	4 bit	C	-	W	-	-	dimming control	低
590	1st Logic	Output A	4 bit	C	-	-	T	-	dimming control	低
591	1st Logic	Output B	4 bit	C	-	-	T	-	dimming control	低
592	1st Logic	Output C	4 bit	C	-	-	T	-	dimming control	低
593	1st Logic	Output D	4 bit	C	-	-	T	-	dimming control	低
594	2nd Logic	Input a	1 bit	C	-	W	T	U	boolean	低

Figure 5.6.2 “Logic function_Gate forwarding”communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
585	Gate value select	1st /.../8th Logic	1byte	C,W	17.001 scene number
This communication object is used to select the logic gate forwarding scenario					
586...589	Input x	1st /.../8th Logic	1bit 4bit 1byte	C,W	1.001 switch 3.007 dimming control 5.010 counter pulses(0..255)
This communication object is used to receive the value of the logic gate input Input x					
590...593	Output x	1st /.../8th Logic	1bit 4bit 1byte	C,T	1.001 switch 3.007 dimming control 5.010 counter pulses(0..255)
This 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 to one or more outputs, which is set by the database parameters.					

Table 5.6.2 “Logic function_Gate forwarding” communication object

5.6.3 “Threshold comparator” communication object

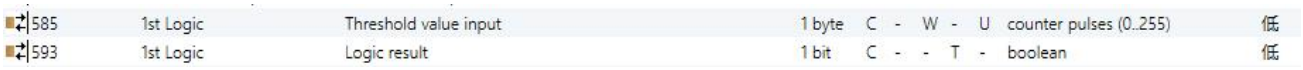


Figure 5.6.3 “Logic function_Threshold comparator”communication object

No.	Function	The name of the correspondence	Type	Attribute	DPT
585	Threshold value input	1st /.../8th Logic	4bit 1byte 2byte 4byte	C,W,U	3.007 dimming control 5.010 counter pulses(0..255) 7.001 pulses 12.001 counter pulses
This communication object is used to input the threshold					
593	Logic result	1st /.../8th Logic	1bit	C,T	1.002 boolean
This communication object is used to send the result of logic operation. That is, after the object input threshold is compared with the parameter setting threshold, the corresponding operation value is output.					

Table 5.6.3 “Logic function_Threshold comparator” communication object

5.6.4 “Format convert” communication object

585	1st Logic	Input 1bit-bit0	1 bit	C	-	W	-	U	switch	低
586	1st Logic	Input 1bit-bit1	1 bit	C	-	W	-	U	switch	低
593	1st Logic	Output 2bit	2 bit	C	-	-	T	-	switch control	低

Convert two 1-bit values into a 2-bit value, such as Input bit1=1, bit0=1--> Output 2bit=3

585	1st Logic	Input 1bit-bit0	1 bit	C	-	W	-	U	switch	低
586	1st Logic	Input 1bit-bit1	1 bit	C	-	W	-	U	switch	低
587	1st Logic	Input 1bit-bit2	1 bit	C	-	W	-	U	switch	低
588	1st Logic	Input 1bit-bit3	1 bit	C	-	W	-	U	switch	低
589	1st Logic	Input 1bit-bit4	1 bit	C	-	W	-	U	switch	低
590	1st Logic	Input 1bit-bit5	1 bit	C	-	W	-	U	switch	低
591	1st Logic	Input 1bit-bit6	1 bit	C	-	W	-	U	switch	低
592	1st Logic	Input 1bit-bit7	1 bit	C	-	W	-	U	switch	低
593	1st Logic	Output 1byte	1 byte	C	-	-	T	-	counter pulses (0..255)	低

Convert 8 1-bit values into a 1-byte value, such as Input bit3=1, bit2=1, bit1=1, bit0=1, and other bits are 0 --> Output 1byte=15

585	1st Logic	Input 1byte	1 byte	C	-	W	-	U	counter pulses (0..255)	低
593	1st Logic	Output 2byte	2 bytes	C	-	-	T	-	pulses	低

Convert a 1-byte value to a 2-byte value, such as Input 1byte=125--> Output 2byte=125. Although the value does not change, the data type of the value is different.

585	1st Logic	Input 1byte-low	1 byte	C	-	W	-	U	counter pulses (0..255)	低
586	1st Logic	Input 1byte-high	1 byte	C	-	W	-	U	counter pulses (0..255)	低
593	1st Logic	Output 2byte	2 bytes	C	-	-	T	-	pulses	低

Convert 2 1-byte values to a 2-byte value, such as Input 1byte-low = 255 ($FF), Input 1byte-high = 100 ($64) --> Output 2byte = 25855 ($64 FF)

585	1st Logic	Input 2byte-low	2 bytes	C	-	W	-	U	pulses	低
586	1st Logic	Input 2byte-high	2 bytes	C	-	W	-	U	pulses	低
593	1st Logic	Output 4byte	4 bytes	C	-	-	T	-	counter pulses (unsigned)	低

Convert 2 2-byte values to a 4-byte value, such as Input 2byte-low = 65530 ($FF FA), Input 2byte-high = 32768 ($80 00)--> Output 2byte = 2147549178 ($80 00 FF FA)

585	1st Logic	Input 1byte	1 byte	C	-	W	-	U	counter pulses (0..255)	低
586	1st Logic	Output 1bit-bit0	1 bit	C	-	-	T	-	switch	低
587	1st Logic	Output 1bit-bit1	1 bit	C	-	-	T	-	switch	低
588	1st Logic	Output 1bit-bit2	1 bit	C	-	-	T	-	switch	低
589	1st Logic	Output 1bit-bit3	1 bit	C	-	-	T	-	switch	低
590	1st Logic	Output 1bit-bit4	1 bit	C	-	-	T	-	switch	低
591	1st Logic	Output 1bit-bit5	1 bit	C	-	-	T	-	switch	低
592	1st Logic	Output 1bit-bit6	1 bit	C	-	-	T	-	switch	低
593	1st Logic	Output 1bit-bit7	1 bit	C	-	-	T	-	switch	低

Convert a 1-byte value into 8 1-bit values, such as Input 1byte=63--> Output bit0=1, bit1=1, bit2=1, bit3=1, bit4=1, bit5=0, bit6=0, bit7=0

585	1st Logic	Input 2byte	2 bytes	C	-	W	-	U	pulses	低
592	1st Logic	Output 1byte-low	1 byte	C	-	-	T	-	counter pulses (0..255)	低
593	1st Logic	Output 1byte-high	1 byte	C	-	-	T	-	counter pulses (0..255)	低

Convert a 2-byte value to two 1-byte values, such as Input 2byte = 55500 ($D8 CC) --> Output 1byte-low = 204 ($CC), Output 1byte-high = 216 ($D8)

585	1st Logic	Input 4byte	4 bytes	C	-	W	-	U	counter pulses (unsigned)	低
592	1st Logic	Output 2byte-low	2 bytes	C	-	-	T	-	pulses	低
593	1st Logic	Output 2byte-high	2 bytes	C	-	-	T	-	pulses	低

Convert a 4-byte value to two 2-byte values. For example, Input 4byte = 78009500 ($04 A6 54 9C) -> Output 2byte-low = 21660 ($54 9C), Output 2byte-high = 1190 ($04 A6)



Convert a 3-byte value into 3 1-byte values, such as Input 3byte = $78 64 C8--> Output 1byte-low = 200 ($C8) , Output 1byte-middle = 100 ($64) , Output 1byte-high =120 ($78)



Convert 3 1-byte values into 1 3-byte value, such as Input 1byte-low = 150 ($96), Input 1byte-middle = 100 ($64), Input 1byte-high = 50 ($32)--> Output 3byte = $32 64 96

No.	Function	The name of the correspondence	Type	Attribute	DPT
585	Input ...	1st /.../8th Logic	1bit 1byte 2byte 3byte 4byte	C,W,U	1.001 switch 5.010 counter pulses(0..255) 7.001 pulses 232.600 RGB value 3x(0..255) 12.001 counter pulses
This communication object is used to input the value to be converted					
593	Output ...	1st /.../8th Logic	1bit 2bit 1byte 2byte 3byte 4byte	C,T	1.001 switch 2.001 switch control 5.010 counter pulses(0..255) 7.001 pulses 232.600 RGB value 3x(0..255) 12.001 counter pulses
This communication object is used to output the converted value					

Table 5.6.4 “Logic function_Format convert”communication object