

Thermostat Control Panel

Product Manual -Ver3.2

TC0203

TC0303



TC0203



TC0303

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1. Overview

This manual provides you with detailed technical information for the thermostat control panel, including installation and programming details, and explains how to use the thermostat control panel based on examples of practical use. The thermostat control panel can be mounted in a standard 86 bottom box for easy installation and removal. Thermostat control panel can be used to control air conditioners, fan coils, Ventilation System, floor heating, etc. Installed as a system together with other loads via EIB/ KNX bus. Using the engineering design tool software ETS to set up and operate the entire system.

2. Product and Function Overview

2.1 Product Description

Thermostat control panel is mainly used in building and home control system, installed as a system together with other devices on the bus. And the functions are simple and intuitive to operate, users can plan and systematically execute these functions according to their needs.

Thermostat control panel can be used to control air conditioners, fan coils, Ventilation System, floor heating, etc. Thermostat control panel is a standard 86 bottom box mounting device. It is connected to the EIB / KNX system via the EIB bus and uses the engineering tool ETS software (version ETS4 or higher) for the assignment of physical and group addresses and the setting of parameters

The smart touch screen panel is connected directly to the bus via terminal blocks and requires 24 V DC auxiliary power.

2.2 Function Overview

Product name	Product type	Function description
Thermostat Control Panel	TC0203	(1) The switch and feedback display of the air conditioner; (2) Setting and feedback display of air conditioning mode, including cooling, heating, air supply, dehumidification and other modes; (3) Air conditioner wind speed setting and feedback display, the wind speed can be set to low wind speed, medium wind speed, high wind speed; (4) Setting and feedback display of air conditioner temperature; (5) With its own temperature sensor, it supports the display of Celsius and Fahrenheit;
	TC0303	(6) Control output function with room heating; (7) Control output function with fresh air equipment; (8) It can be equipped with proximity sensing function; (9) With background aperture brightness adjustment function; (10) Support the function of timing shutdown (11) Support fresh air system, air conditioning system, floor heating system, fan coil control. (12) It can display the temperature and humidity, HCHO (formaldehyde), TVOC, CO ₂ , CO, PM2.5 data transmitted through the KNX bus;

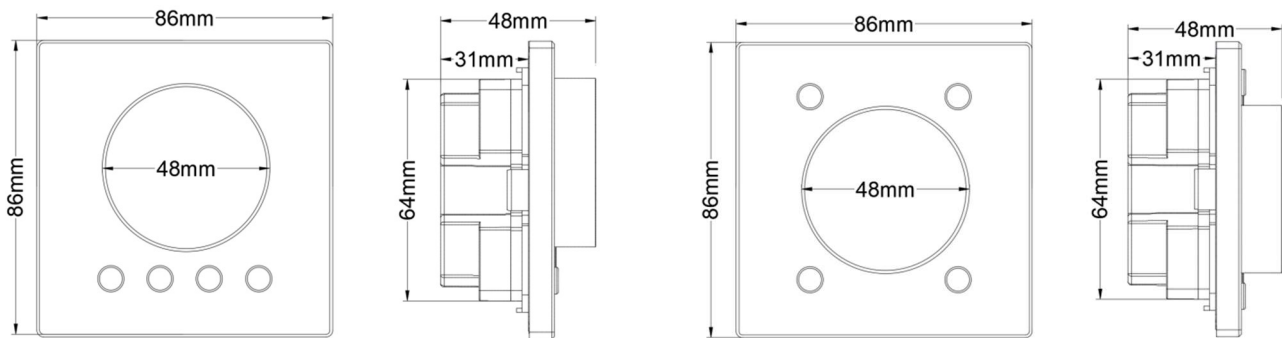
3. Specifications

Thermostat Control Panel **TC0203/TC0303**

Bus voltage	21-30V DC, power from KNX bus
Auxiliary power supply voltage	24 V DC
Bus current	≤12 mA
Bus power	≤ 360mW
Auxiliary current	< 45 mA
Auxiliary power supply power	< 1 W
Temperature detection accuracy	±0.5 °C
Operating temperature	-5°...+45°C
Storage temperature	-25°...+55°C
Transport temperature	-25°...+70°C
Relative humidity	max 90%
Shell material	Metal +PC
Dimension (H x W x D)	86mm × 86mm × 48mm
Weight (approx.)	Approx. 0.1kg
Installation method	86 bottom box

4. Dimensional Drawing and Wiring Diagram

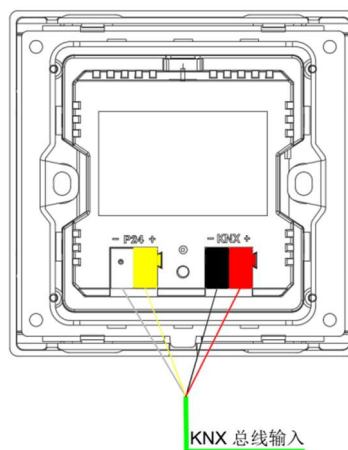
4.1 Dimensional Drawing



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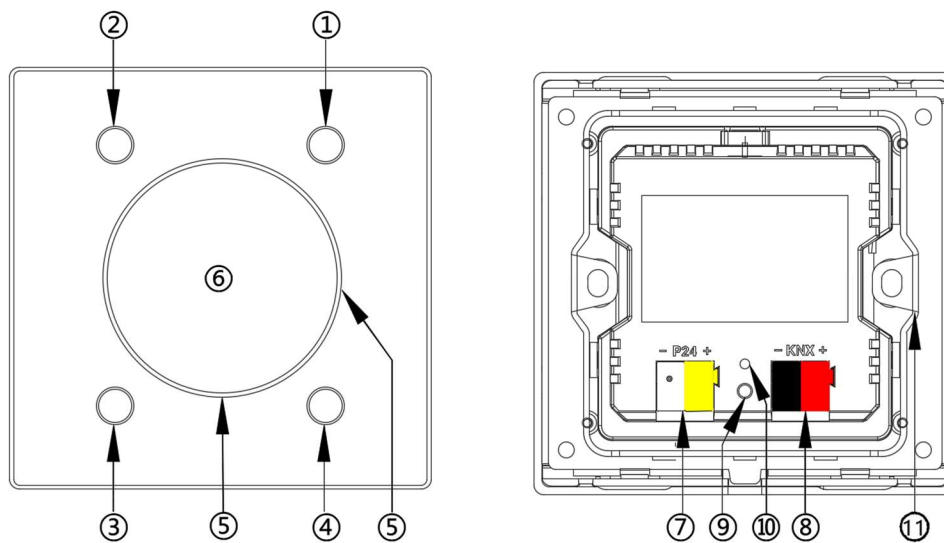
4.2 Wiring Diagram



5. Product Operating and Installation Instructions

5.1 Product Operating Instructions

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①Description: On/Off button;

②Description: Mode switching button:

(1) Including the cooling mode, heating mode, air supply mode and dehumidification mode of the air conditioner;
 (2) Long press this button for 5s to switch the function interface (air conditioning function interface → floor heating function interface → fresh air function interface → air quality display interface);

③Description: Wind speed adjustment button: used to adjust the automatic, high, medium and low gears of the corresponding mode;

④Description: Panel setting buttons:

(1) Short press this button to turn on/off the timer shutdown function;

(2) Long press this button for 5s to enter the time setting of the timer shutdown function, set the time by turning the knob ⑤, and then press this button ④ to confirm the completion;

(3) Press and hold this button for 10 seconds to enter the panel setting interface, and set the function by rotating the knob ⑤, the button ① means return, and the button ④ means confirmation is completed;

⑤Description: temperature adjustment knob/selection knob;

⑥Description: display screen;

⑦Description: Auxiliary power supply terminal;

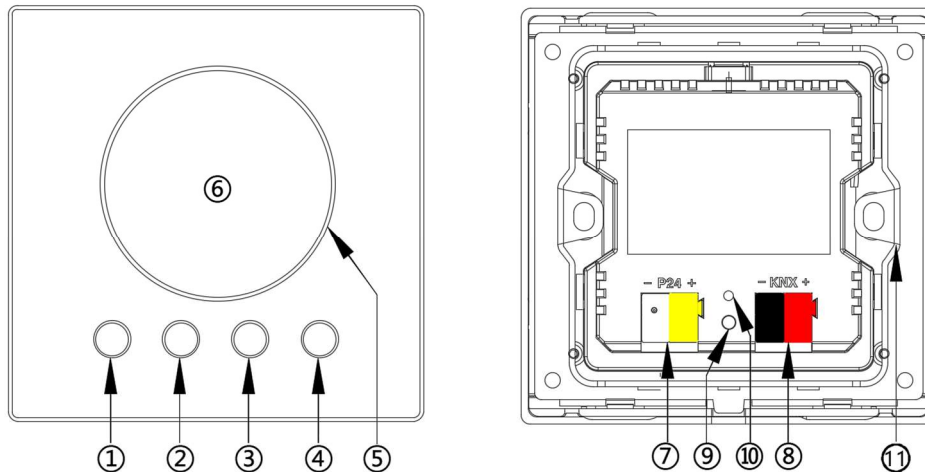
⑧Description: KNX power supply terminal;

⑨Description: programming button;

⑩Description: programming indicator light;

⑪Description: 86 bottom box mounting bracket;

TC0303



①Description: On/Off button;

②Description: Mode switching button:

(1) Including the cooling mode, heating mode, air supply mode and dehumidification mode of the air conditioner;

(2) Long press this button for 5s to switch the function interface (air conditioning function interface → floor heating function interface → fresh air function interface → air quality display interface);

③Description: Wind speed adjustment button: used to adjust the automatic, high, medium and low gears of the corresponding mode;

④Description: Panel setting buttons:

(1) Short press this button to turn on/off the timer shutdown function;

(2) Long press this button for 5s to enter the time setting of the timer shutdown function, set the time by turning the knob ⑤, and then press this button ④ to confirm the completion;

(3) Press and hold this button for 10 seconds to enter the panel setting interface, and set the function by rotating the knob ⑤, the button ① means return, and the button ④ means confirmation is completed;

⑤Description: temperature adjustment knob/selection knob;

⑥Description: display screen;

⑦Description: Auxiliary power supply terminal;

⑧Description: KNX power supply terminal;

⑨Description: programming button;

⑩Description: programming indicator light;

⑪Description: 86 bottom box mounting bracket;

5.2 Product Installation Instructions

(1) Take off the fixed bracket embedded in the back cover of the knob thermostat panel and install it on the standard 86 bottom box, tighten the screws to fix it

(2) The knob thermostat panel will be stuck into the good fixing bracket, that means the installation is successful;

(3) When the panel needs to be removed, gently pry at the notch under the panel.

6 Parameter Setting

The following is an example of setting parameters in ETS5.

Open the panel parameter setting interface in ETS5, as shown in Figure 6.1.1.

6.1 General

6.1.1 Function

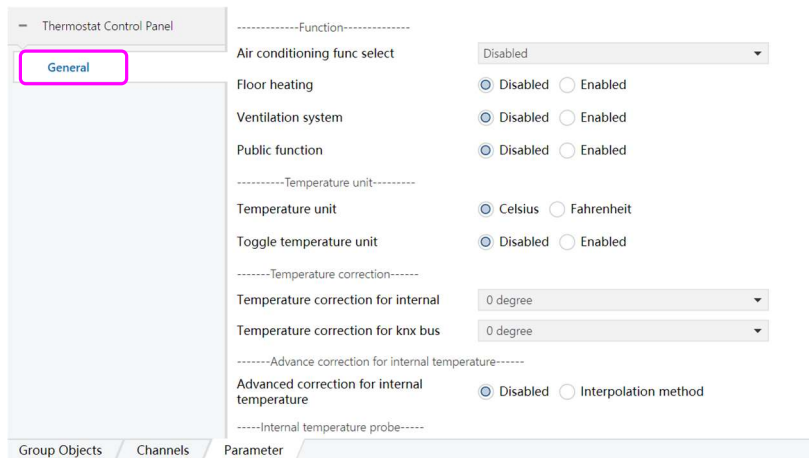


Figure 6.1.1

Parameter: " Air conditioning func select" , user can select the air conditioning functions

Options: Disabled; Air conditioning; Fan coil.

6.1.2 Temperature unit

1) Temperature unit, options: Celsius, Fahrenheit.

2) Toggle temperature unit, options: Disabled, Enabled.

When **Enabled** is selected, the parameter "Temperature unit polarity" has following options: "0: Centigrade, 1:Fahrenheit" , "0: Fahrenheit, 1: Centigrade" .

3) Send toggle temperature unit, options: Disabled, Enabled.

6.1.3 Temperature correction

1) Temperature correction for internal, range: -9 degree~9 degree.

2) Temperature correction for KNX bus, range: -9 degree~9 degree.

6.1.4 Child lock

Child lock control, when **Enabled** is selected, the following parameter "initial value for child lock" has options: unlock, lock; parameter "child lock polarity" has following options: " 0: unlock 1: lock" , "0: lock 1: unlock" ;

6.1.5 Backlight

Backlight settings

When **Enabled** is selected, the options in the red box are shown as in Figure 6.1.5.1

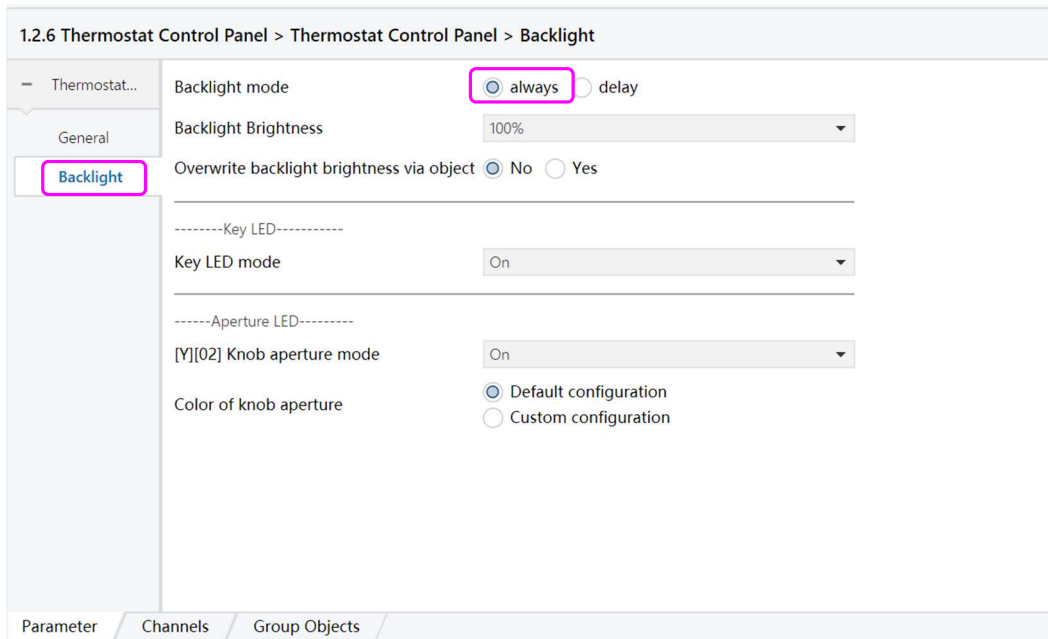


Figure 6.1.5.1

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.1.5.2

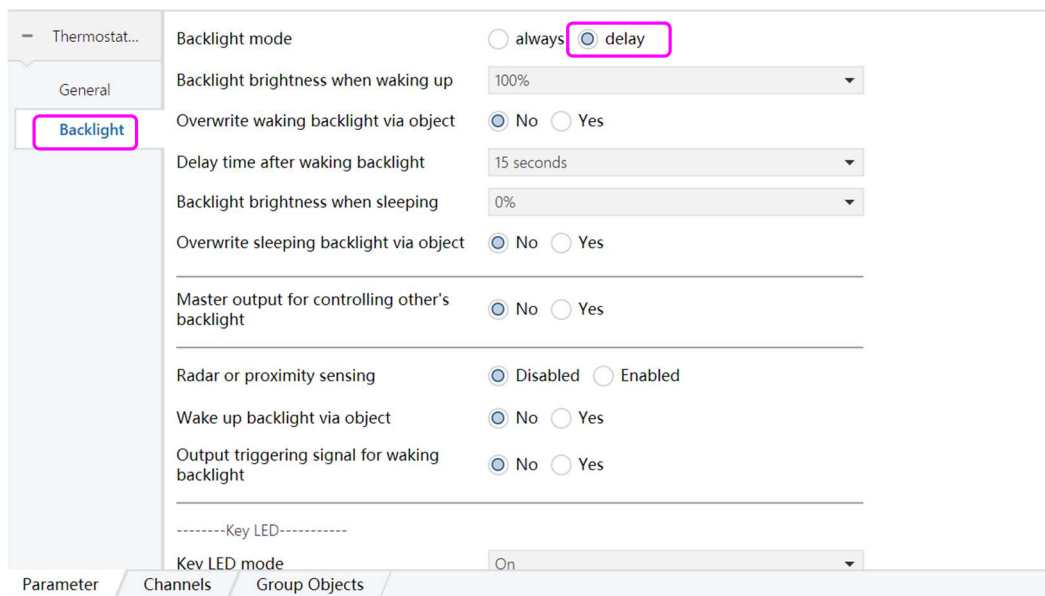


Figure 6.1.5.2

Backlight mode has the following options: Always, Delay;

When the parameter **Always** is selected, the following parameters appear:

Parameter	Description
Backlight brightness	Backlight brightness value, options: 0%, 1%100%
Overwrite backlight brightness via object	Overwrite backlight brightness via object, options: Yes, No.

When the parameter **Delay** is selected, the following parameters appear.:

Parameter	Description
Backlight brightness when waking	Backlight brightness when waking up, options: 0%, 1%, 2%.....100%

up		
Overwrite waking backlight via object		Overwrite waking backlight via object, options: Yes, No;
Delay time after waking backlight		Delay time after waking backlight, options: delay according to master device, delay according to own radar or IR, 1second, 2seconds120minutes.
Backlight brightness when sleeping		Backlight brightness when sleeping , options: 0%, 1%.....100%
Overwrite sleeping backlight via object		Overwrite sleeping backlight via object , options: Yes, No;
Master output for controlling other' s backlight		Master output for controlling other' s backlight, options: Yes, No;
Radar or proximity sensing		Radar or proximity sensing, options : Disabled, Enabled; When Enabled is selected , the parameter "Time to detect sensor circularly for output" has following options: only once when triggered, 1second, 2seconds.....15seconds.
Wake up backlight via object		Wake up backlight via object, options: Yes, No; When Yes is selected , the parameter "The triggering value for waking backlight" has following options: Off is triggering value, On is triggering value.
Output triggering signal for waking backlight		Output triggering signal for waking backlight , options: Yes, No; When Yes is selected , the parameter "The triggering value for output" has following options: Off is triggering value, On is triggering value.
Key LED mode		Key LED mode, options: Associated backlight delay, Off, On;
Aperture LED	[Y][02] Knob aperture mode	[Y][02] Knob aperture mode, Options: Associated backlight delay, Off, On;
	Color of knob aperture	Color of knob aperture, options: Default configuration, Custom configuration. When Custom Configuration is selected, the parameters of Aperture color are shown as follows.
Aperture color	RGB value for cool mode	Parameter: ① R value of the aperture for cool mode, options: 0, 1, 2.....255; ② G value of the aperture for cool mode, options: 0, 1, 2.....255; ③ B value of the aperture for cool mode, options: 0, 1, 2.....255;
	RGB value for heat mode	Parameter: ① R value of the aperture for heat mode, options: 0, 1, 2.....255; ② G value of the aperture for heat mode, options: 0, 1, 2.....255; ③ B value of the aperture for heat mode, options: 0, 1, 2.....255;
	RGB value for dry mode	Parameter: ① R value of the aperture for dry mode, options: 0, 1, 2.....255; ② G value of the aperture for dry mode, options: 0, 1, 2.....255; ③ B value of the aperture for dry mode, options: 0, 1, 2.....255;
	RGB value for vent mode	Parameter: ① R value of the aperture for vent mode, options: 0, 1, 2.....255; ② G value of the aperture for vent mode, options: 0, 1, 2.....255; ③ B value of the aperture for vent mode, options: 0, 1, 2.....255;
	RGB value for auto mode	Parameter: ① R value of the aperture for cool mode, options: 0, 1, 2.....255; ② G value of the aperture for cool mode, options: 0, 1, 2.....255; ③ B value of the aperture for cool mode, options: 0, 1, 2.....255;
	RGB value for floor heat	Parameter: ① R value of the aperture for floor mode, options: 0, 1, 2.....255; ② G value of the aperture for floor mode, options: 0, 1, 2.....255; ③ B value of the aperture for floor mode, options: 0, 1, 2.....255;
	RGB value for	Parameter: ① R value of the aperture for fresh air mode, options: 0, 1, 2.....255;

	fresh air	② G value of the aperture for cool mode, options: 0, 1, 2.....255; ③ B value of the aperture for cool mode, options: 0, 1, 2.....255;
	RGB value for air data	Parameter: ① R value of the aperture for air data, options: 0, 1, 2.....255; ② G value of the aperture for air data, options: 0, 1, 2.....255; ③ B value of the aperture for air data, options: 0, 1, 2.....255;

6.2 Air conditioning

When **Air conditioning** is selected for the parameter "Air conditioning func select", the options in the red box appear are shown as in Figure 6.2.1.

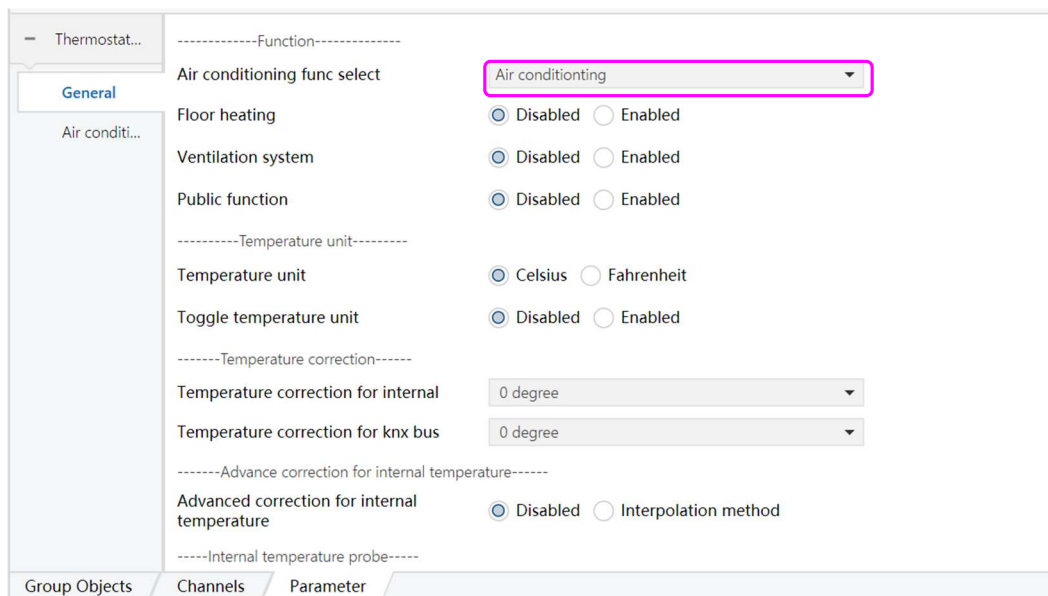


Figure 6.2.1

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.2.2

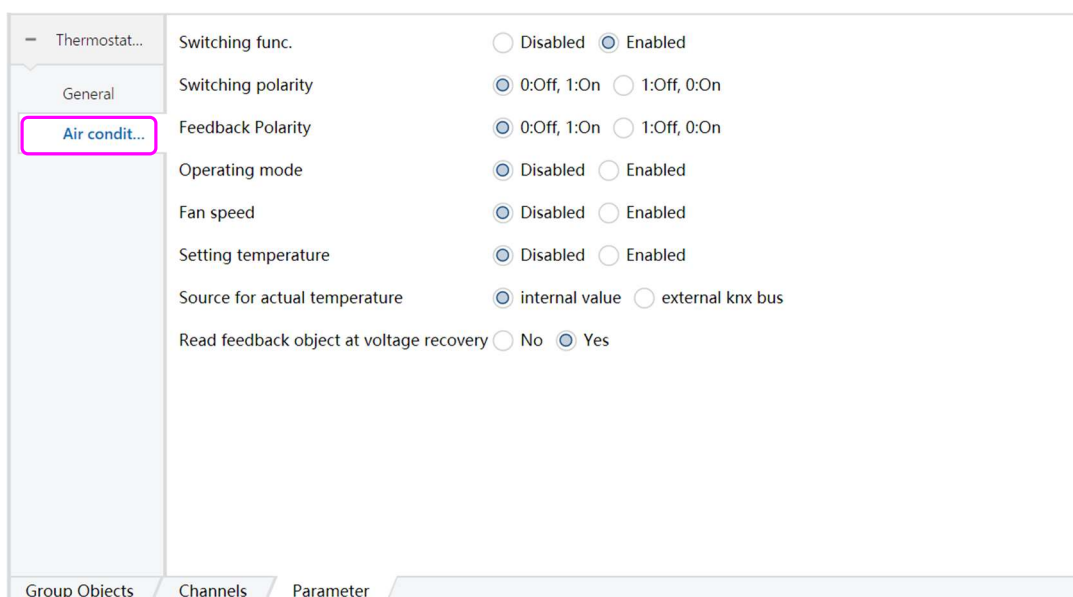


Figure 6.2.2

1) " Switching func." Switching function, when **Enabled** is selected, the following two parameters appear:

Switching polarit. Options: 0: off, 1: on; 1: off, 0: on;
Feedback polarity. Options: 0: off, 1: on; 1: off, 0: on

2) Operating mode, when **Enabled** is selected, the options in the red box as in Figure 6.2.3 appear.

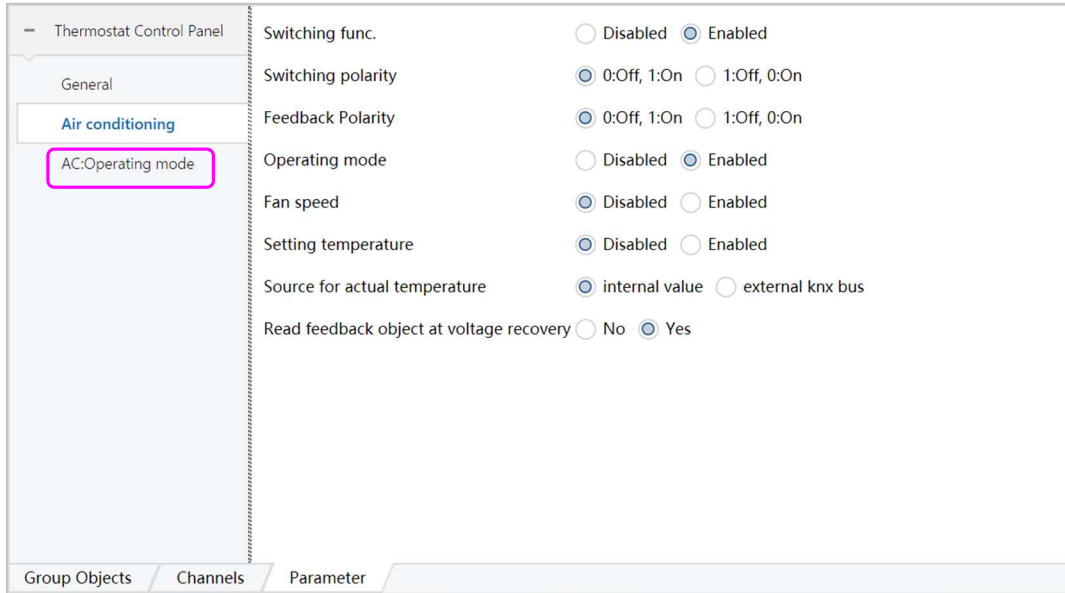


Figure 6.2.3

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.2.4

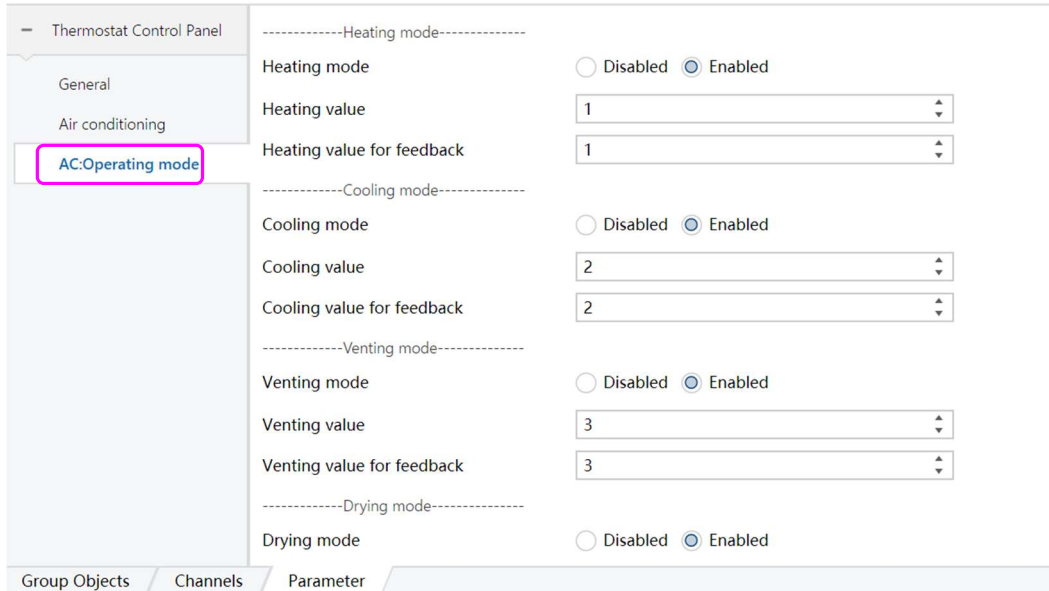


Figure 6.2.4

Parameter		Description
Heating mode, Options: Disabled, Enabled; when Enabled is selected:	Heating value	Heating mode sending values, range: 0-255;
	Heating value for feedback	Heating value for feedback, range: 0-255;
Cooling mode, Options: Disabled, Enabled; when Enabled is selected:	Cooling value	Cooling value, range: 0-255;
	Cooling value for feedback	Cooling value for feedback, range: 0-

		255;
Venting mode, Options: Disabled, Enabled; when Enabled is selected:	Venting value	Venting value, range: 0-255;
	Venting value for feedback	Venting value for feedback, range: 0-255;
Drying mode, Options: Disabled, Enabled; when Enabled is selected:	Drying value	Drying value, range: 0-255;
	Drying value for feedback	Drying value for feedback, range: 0-255;
Automatic mode, Options: Disabled, Enabled; when Enabled is selected:	Automatic value	Automatic value, range: 0-255;
	Automatic value for feedback	Automatic value for feedback, range: 0-255;

3) When **Enabled** is selected for Fan speed, the options in the red box are shown as in Figure 6.2.5.

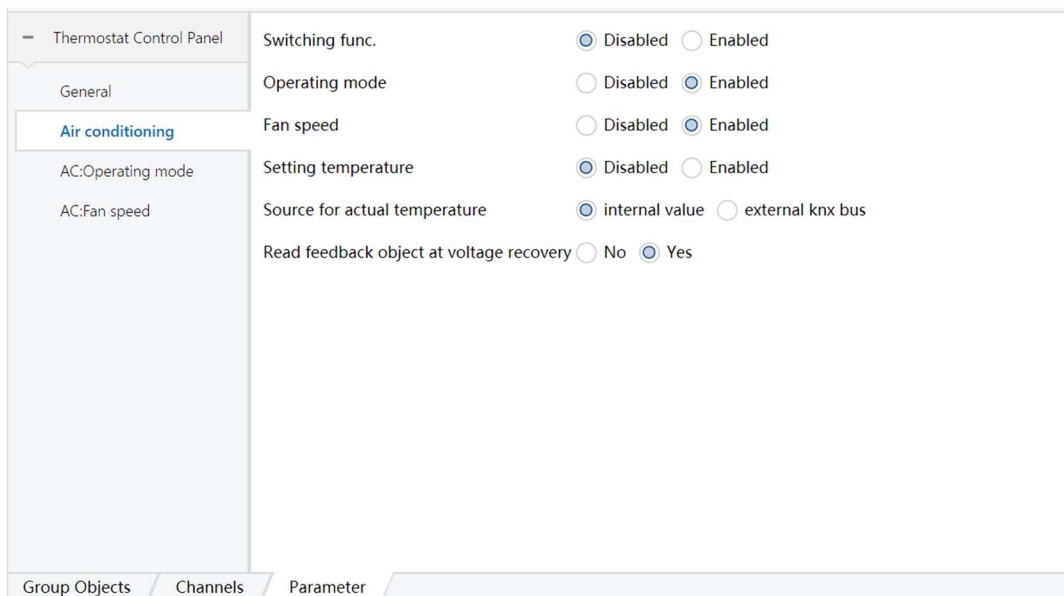


Figure 6.2.5

Click the option in the red box below to set the relevant parameters, as shown in Figure 6.2.6

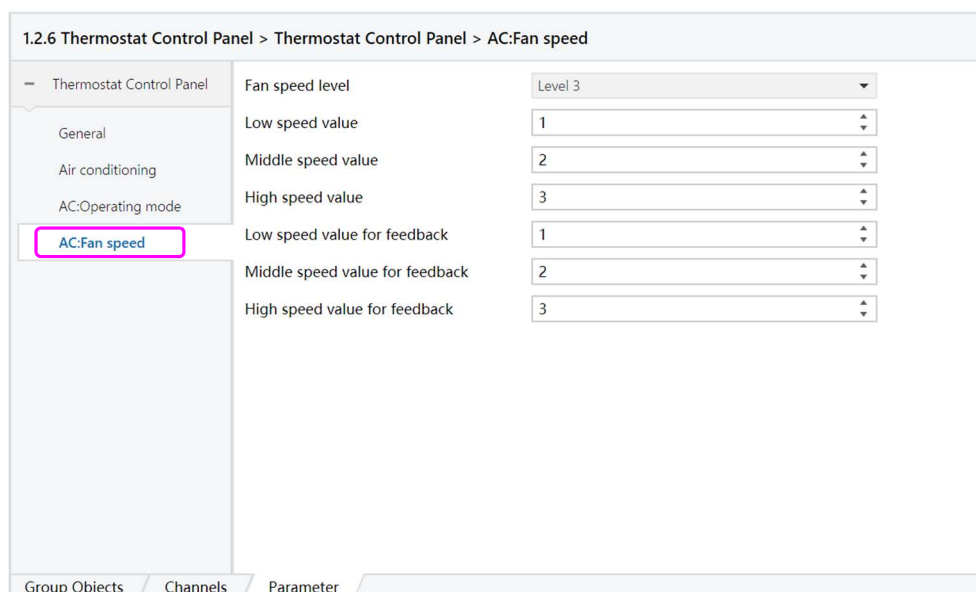


Figure 6.2.6

Parameter: Fan speed level

Options: Level 2; Level 3; Level 5

When **Level 2** is selected, the following parameters appear

Parameter	Description
Low speed value	Low speed value, range: 0-255;
High speed value	High speed value, range: 0-255;
Low speed value for feedback	Low speed value for feedback, range: 0-255;
High speed value for feedback	High speed value for feedback, range: 0-255;

When **Level 3** is selected, the following parameters appear

Parameter	Description
Low speed value	Low speed value, range: 0-255;
Middle speed value	Middle speed value, range: 0-255;
High speed value	High speed value, range: 0-255;
Low speed value for feedback	Low speed value for feedback, range: 0-255;
Middle speed value for feedback	Middle speed value for feedback, range:
High speed value for feedback	High speed value for feedback, range: 0-255;

When **Level 5** is selected, the following parameters appear

Parameter	Description
Value for speed level 1	Value for speed level 1, range: 0-255;
Value for speed level 2	Value for speed level 2, range: 0-255;
Value for speed level 3	Value for speed level 3, range: 0-255;
Value for speed level 4	Value for speed level 4, range: 0-255;
Value for speed level 5	Value for speed level 5, range: 0-255;
Value for speed level 1 for feedback	Value for speed level 1 for feedback, range: 0-255;
Value for speed level 2 for feedback	Value for speed level 2 for feedback, range: 0-255;
Value for speed level 3 for feedback	Value for speed level 3 for feedback, range: 0-255;
Value for speed level 4 for feedback	Value for speed level 4 for feedback, range: 0-255;
Value for speed level 5 for feedback	Value for speed level 5 for feedback, range: 0-255;

4) Setting temperature, options: Disabled, Enabled, Setting range 16°C-30°C

Source for actual temperature, options: internal value, external KNX bus

5) Read feedback object at voltage recovery, options: Yes, No

6.3 Fan coil

When **Fan coil** is selected for the parameter "Air conditioning func select" , the options in the red box appear are shown as in Figure 6.3.1.

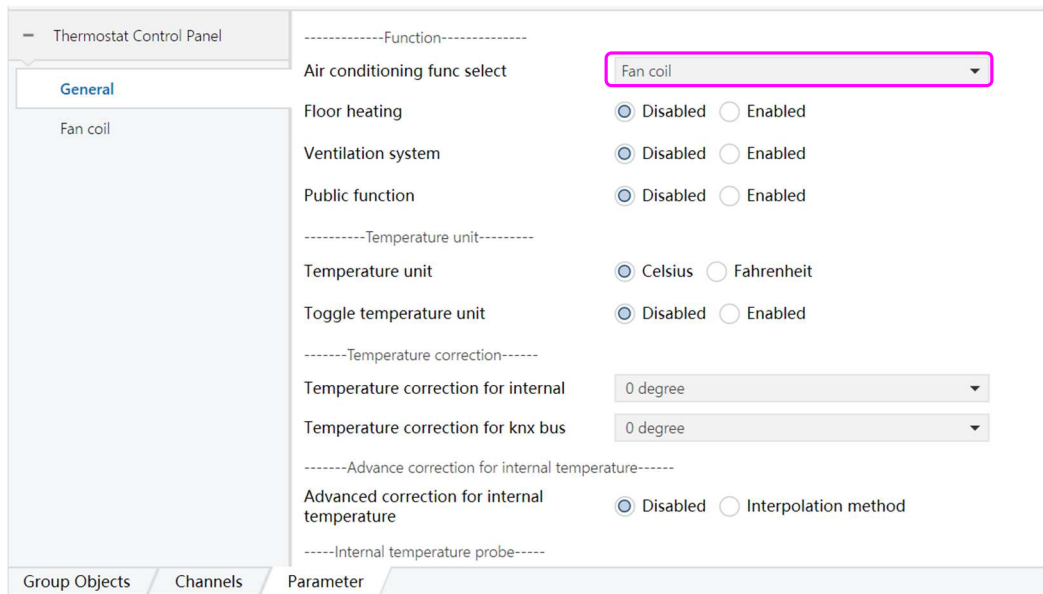


Figure 6.3.1

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.3.2

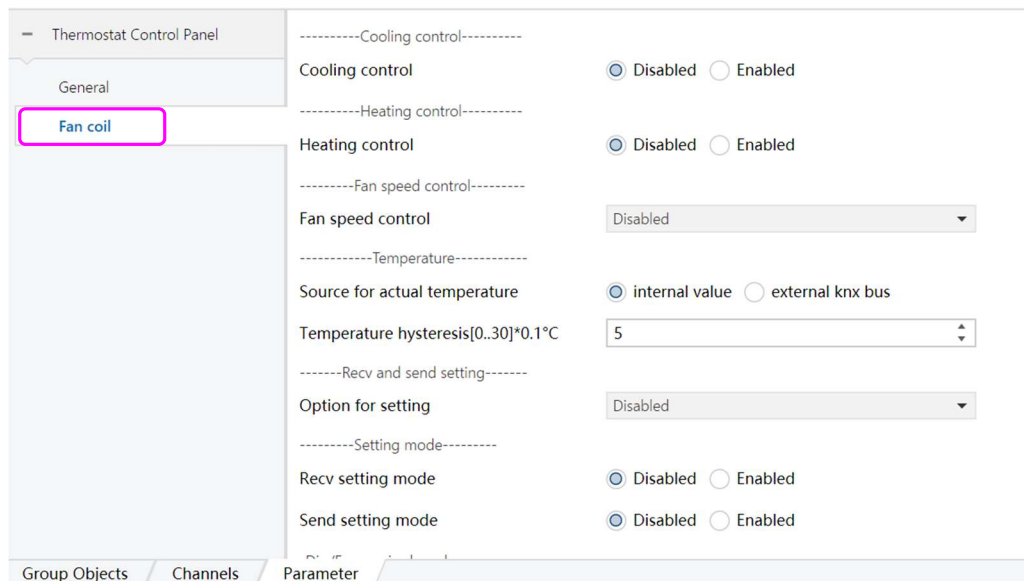


Figure 6.3.2

1) Cooling control

When **Enabled** is selected, the following parameters are shown:

Cooling object type, options: 1bit/byte

Cooling control feedback, options: Disabled, Enabled

2) Heating control

When **Enabled** is selected, the following parameters are shown:

Heating object type, options: 1bit/byte

Heating control feedback, options: Disabled, Enabled

3) Fan speed control

Fan speed control Options: Disabled, 1bit, 1byte;

When **1bit** is selected, the "parameter Fan speed feedback" is shown, options: Disabled, Enabled;

When **1byte** is selected, the following parameters appear: Value for fan speed 1, options: 0-255; Value for fan

speed 2, options: 0-255; Value for fan speed 3, options: 0-255; Value for fan speed off

4) Temperature

①Parameter "Source for actual temperature" has following options: internal value, External KNX bus.

②Temperature hysteresis[0..30]*0.1, options: 0, 1, 2.....30;

Parameter	Description
Option for setting	Option for setting, options: Disabled; Read setting object at voltage recovery; Send setting as feedback when receiving setting
Recv setting mode	Receive setting mode
Send setting mode	Send setting mode
Heating mode	Heating mode, Options: Disabled, Enabled; When Enabled is selected, the parameter "Value for setting heating" can be filled in 0, 1, 2.....255;
Cooling mode	Cooling mode, options: Disabled, Enabled; When Enabled is selected, the parameter "Value for setting cooling" can be filled in 0, 1, 2.....255;
Venting mode	Venting mode, options: Disabled, Enabled; When Enabled is selected, the parameter "Value for venting cooling" can be filled in 0, 1, 2.....255;
Recv setting fan speed	Receive setting fan speed
Send setting fan speed	Send setting fan speed
Value for setting fan speed low	Value for setting fan speed low, options: 0, 1, 2.....255;
Value for setting fan speed mid	Value for setting fan speed mid, options: 0, 1, 2.....255;
Value for setting fan speed high	Value for setting fan speed high, options: 0, 1, 2.....255;
Value for setting fan speed off	Value for setting fan speed off, options: 0, 1, 2.....255;
Value for setting fan speed auto	Value for setting fan speed auto, options: 0, 1, 2.....255;
Recv setting temperature	Receive setting temperature
Send setting temperature	Send setting temperature
Recv setting FCU switch	Receive FCU switch command
Send setting FCU switch	Send FCU switch command or switch status

6.4 Floor heating

The parameter Floor heating has the following options: Disabled, Enabled. When **Enabled** is selected for Floor heating, the options in the red box are shown as in Figure 6.4.1.

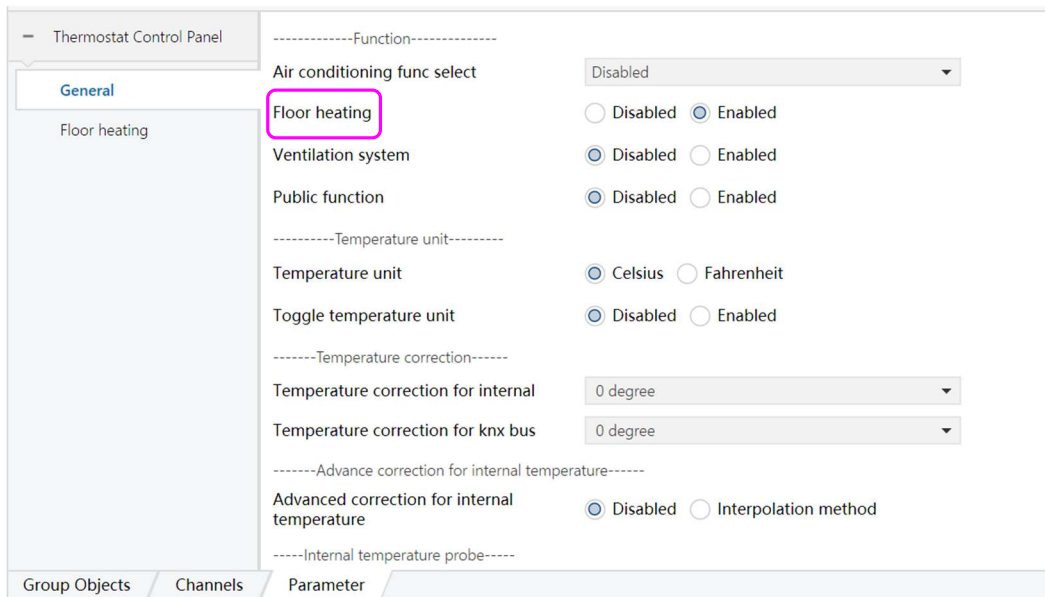


Figure 6.4.1

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.4.2

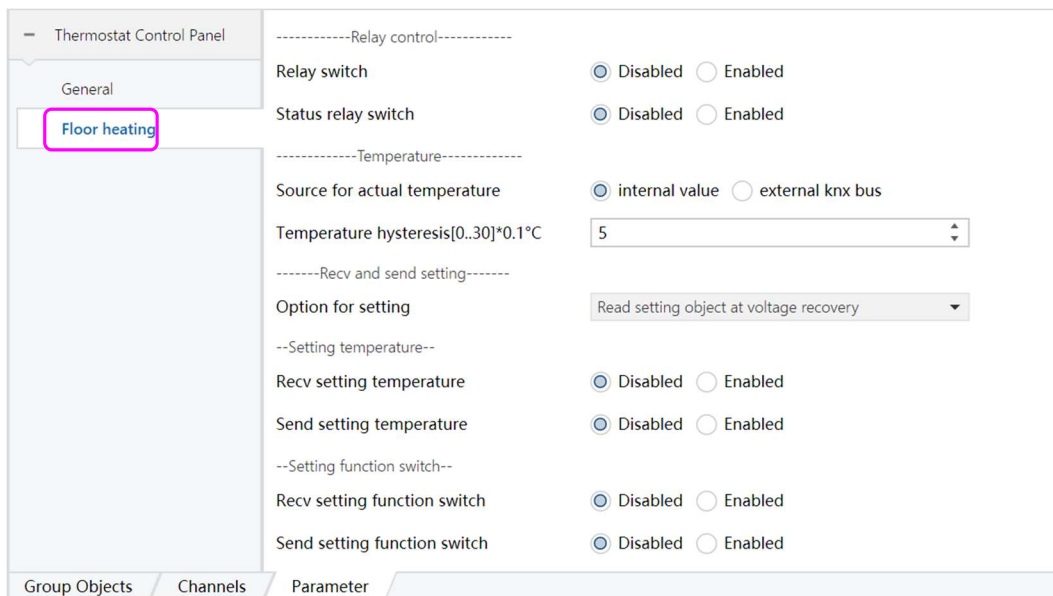


Figure 6.4.2

1) Relay control

Relay switch, options: Disabled, Enabled;

Status relay switch, options: Disabled, Enabled;

2) Temperature

Source for actual temperature

Options: internal value, external KNX bus

3) Recv and send setting

Parameter	Description
Option for setting	Option for setting, options: Disabled; Read setting object at voltage recovery;

	Send setting as feedback when receiving setting.
Recv setting temperature	Receive setting temperature, options: Disabled, Enabled;
Send setting temperature	Send setting temperature, options: Disabled, Enabled;
Recv setting function switch	Receive setting switch command, options: Disabled, Enabled;
Send setting function switch	Send floor heating switch command or switch status, options: Disabled, Enabled;

4) High temperature alarm

Status high temperature alarm, when **Enabled** is selected, the following parameters are shown:

Parameter	Description
Trigger temperature (degree)	Trigger temperature (degree) , range: 5-45;
Send value for triggering alarm	Send value for triggering alarm, options: Off, On;
Cycle time for high temperature alarm	Cycle time for high temperature alarm, options: 1second, 2seconds..... 120minutes.

6.5 Ventilation system

Ventilation system has the following options: Disabled, Enabled. When **Enabled** is selected for Ventilation system, the options in the red box are shown as in Figure 6.5.1.

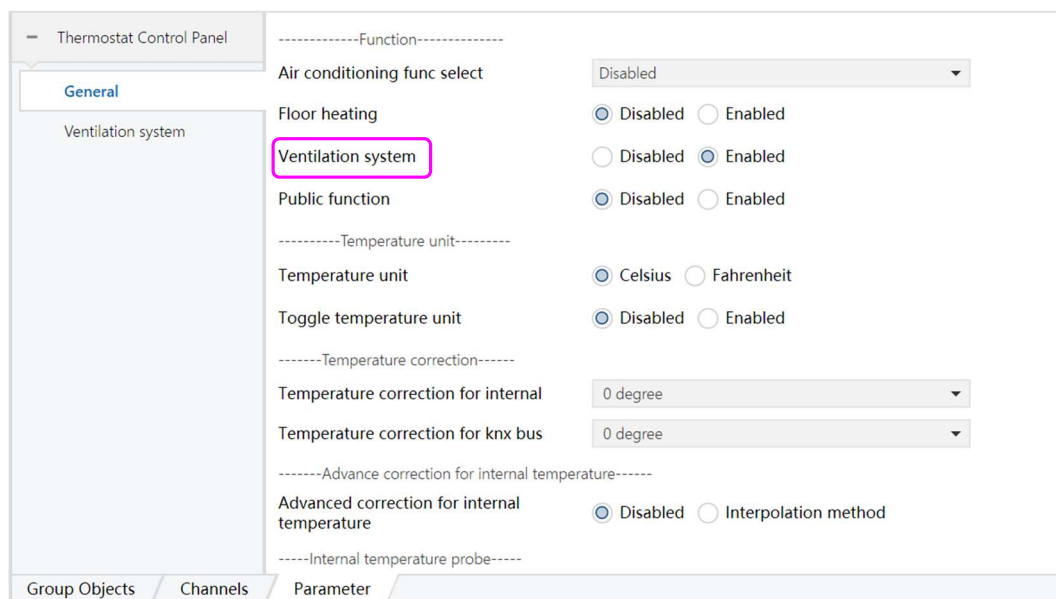


Figure 6.5.1

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.5.2

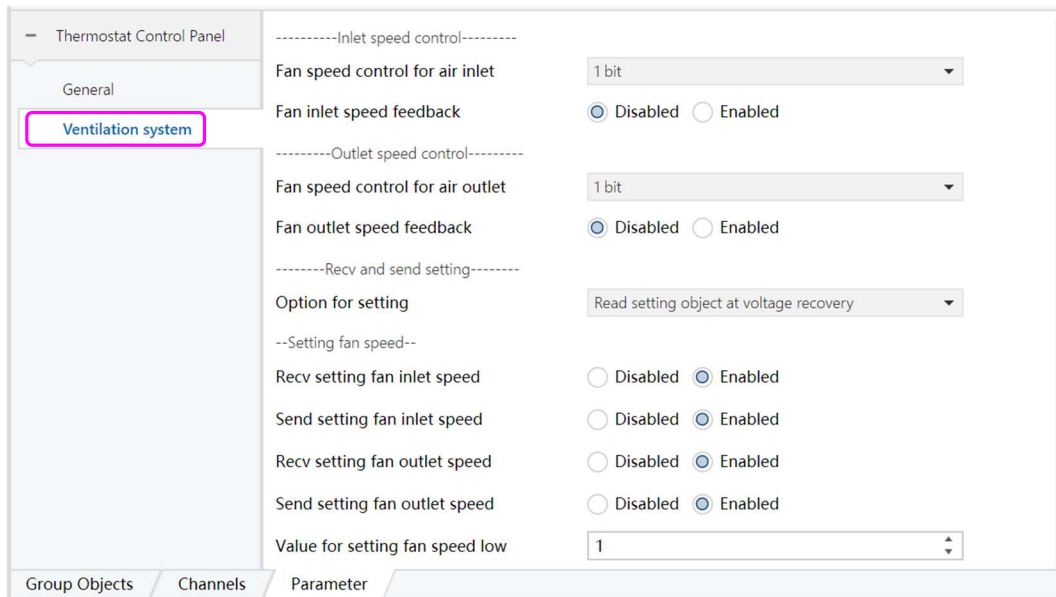


Figure 6.5.2

1) Inlet speed control

Fan speed control for air inlet, options: Disabled, 1bit, 1byte; ①When**1bit** is selected, the parameter “fan inlet speed feedback” has following options: Disabled, Enabled;

②When**1byte** is selected, the following parameters are shown:

Parameter	Description
Value for fan inlet speed 1	Value for fan inlet speed 1, range: 0-255
Value for fan inlet speed 2	Value for fan inlet speed 2, range: 0-255
Value for fan inlet speed 3	Value for fan inlet speed 3, range: 0-255
Value for fan inlet speed off	Value for fan inlet speed off, range: 0-255

When **Enabled** is selected for “fan inlet speed feedback” , the following parameters are shown:

Parameter	Description
Value feedback for fan inlet speed 1	Value feedback for fan inlet speed 1, range: 0-255
Value feedback for fan inlet speed 2	Value feedback for fan inlet speed 2, range: 0-255
Value feedback for fan inlet speed 3	Value feedback for fan inlet speed 3, range: 0-255
Value feedback for fan inlet speed off	Value feedback for fan inlet speed off, range: 0-255

2) Outlet speed control;

Fan speed control for air outlet, options: Disabled, 1bit, 1byte; ①When**1bit** is selected, the parameter “fan outlet speed feedback” has following options: Disabled, Enabled;

②When**1byte** is selected, the following parameters are shown:

Parameter	Description
Value for fan outlet speed 1	Value for fan outlet speed 1, range: 0-255
Value for fan outlet speed 2	Value for fan outlet speed 2, range: 0-255
Value for fan outlet speed 3	Value for fan outlet speed 3, range: 0-255
Value for fan outlet speed off	Value for fan outlet speed off, range: 0-255

When **Enabled** is selected for “fan outlet speed feedback” , the following parameters are shown:

Parameter	Description
Value feedback for fan outlet speed 1	Value feedback for fan outlet speed 1, range: 0-255

Value feedback for fan outlet speed 2	Value feedback for fan outlet speed 2, range: 0-255
Value feedback for fan outlet speed 3	Value feedback for fan outlet speed 3, range: 0-255
Value feedback for fan outlet speed off	Value feedback for fan outlet speed off, range: 0-255

3) Recv and send setting;

Option for setting, Options: Disabled, Read setting object at voltage recovery, Send setting as feedback when receiving setting.

4) Setting fan speed

Parameter	Description
Recv setting fan inlet speed	Receive setting fan inlet speed, options: Disabled, Enabled;
Send setting fan inlet speed	Send setting fan inlet speed, options: Disabled, Enabled;
Recv setting fan outlet speed	Receive setting fan outlet speed, options: Disabled, Enabled;
Send setting fan outlet speed	Send setting fan outlet speed, options: Disabled, Enabled;

Parameter	Description
Value for setting fan speed low	Value for setting fan speed low, range: 0-255;
Value for setting fan speed mid	Value for setting fan speed mid, range: 0-255;
Value for setting fan speed high	Value for setting fan speed high, range: 0-255;
Value for setting fan speed off	Value for setting fan speed off, range: 0-255;
Value for setting fan speed auto	Value for setting fan speed auto, range: 0-255;

5) Setting function switch

- ① "Recv setting function switch" indicates receiving the switch command of Ventilation system, options: Disabled, Enabled;
- ② "Send setting function switch" indicates that the switch command or switch status of Ventilation system sent, options: Disabled, Enabled;

6.6 Public function

The "Public function" means the public function of air conditioning, floor heating, ventilation. Options: Disabled, Enabled. When **Enabled** is selected for Public Function, the options in the red box are shown as in Figure 6.6.1.

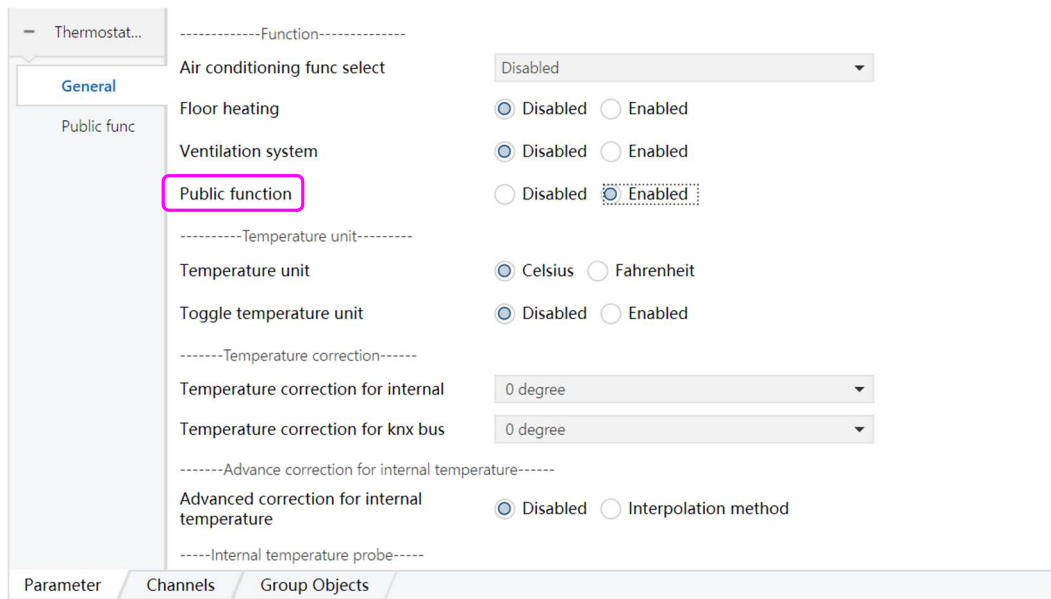


Figure6.6.1

Click on the option in the red box below to set the relevant parameters, as shown in Figure 6.6.2

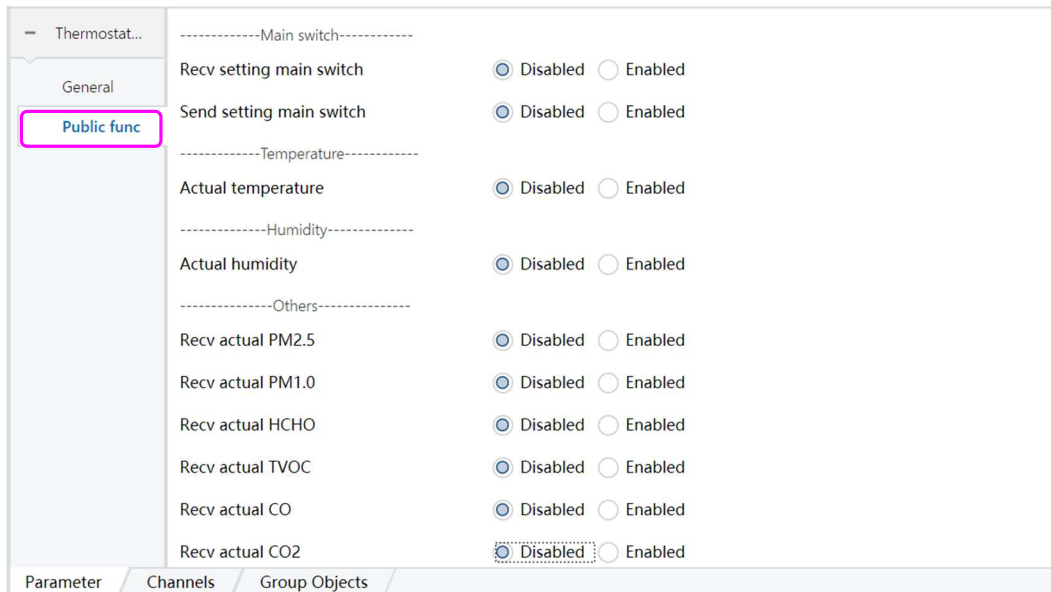


Figure6.6.2

1) Main switch

①Recv setting main switch, options: Disabled, Enabled.

②Send setting main switch, options: Disabled, Enabled

2) Temperature

Actual temperature, when **Enabled** is selected, the parameter "Source for actual temperature" is shown and has the following options: internal value, external KNX bus;

When **internal value** is selected, the parameter "send actual temperature" is shown and has following options: Disabled, Enabled. When **Enabled** is selected, the parameter "the mode for sending value" has the following options: transmit value in cycle, transmit value in the event of changes; When **transmit value in cycle** is selected, the parameter "the time in cycles" can be set to: 1second, 2 seconds.....120 minutes;

When **transmit value in the event of changes** is selected, the parameter "send actual temperature on change" can be set to: 1degree, 2degree 10degree.

3) Humidity

Actual humidity, when **Enabled** is selected, the parameter "Source for actual humidity" is shown and has the following options: internal value, external KNX bus;

When **internal value** is selected, the parameter "send actual humidity" is shown and has following options: Disabled, Enabled. When **Enabled** is selected, the parameter "the mode for sending value" has the following options: transmit value in cycle, transmit value in the event of changes; When **transmit value in cycle** is selected, the parameter "the time in cycles" can be set to: 1second, 2 seconds.....120 minutes;

When **transmit value in the event of changes** is selected, the parameter "send actual humidity on change" can be set to: 1%, 2%.....10%.

4) Others

Recv actual PM2.5, receive actual PM2.5 data, options: Disabled, Enabled;

Recv actual PM1.0, receive actual PM1.0 data, options: Disabled, Enabled;

Recv actual HCHO, receive actual HCHO data, options: Disabled, Enabled;

Recv actual TVOC, receive actual TVOC data, options: Disabled, Enabled;

Recv actual CO, receive actual CO data, options: Disabled, Enabled;

Recv actual CO2, receive actual CO2 data, options: Disabled, Enabled;

7. Communication Objects

The communication object is the medium for the device to communicate with other devices on the bus, that means only the communication object can communicate on the bus. The function of each communication object is described in detail below.

There are 98 objects on the knob thermostat panel, as shown in Figure 7.1.1, and the specific functions are shown in Table 1.1

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

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
0	AC, Switch	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
1	AC, Feedback, switch	On/Off-Input			1 bit	C	R	W	T	U	switch	Low
2	AC, Operating mode	8-bit Value-Output			1 byte	C	R	-	T	U	HVAC control mode	Low
3	AC, Feedback, Operating mode	8-bit Value-Input			1 byte	C	R	W	T	U	HVAC control mode	Low
4	AC, Fan speed	8-bit Value-Output			1 byte	C	R	-	T	U	percentage (0..100%)	Low
5	AC, Feedback, Status fan speed	8-bit Value-Input			1 byte	C	R	W	T	U	counter pulses (0..2...)	Low
6	AC, Setting temperature	16-bit Value-Outp...			2 bytes	C	R	-	T	U	temperature (°C)	Low
7	AC, Feedback, Setting temperature	16-bit Value-Input			2 bytes	C	R	W	T	U	temperature (°C)	Low
8	AC, Actual temperature	16-bit Value-Input			2 bytes	C	R	W	T	U	temperature (°C)	Low
36	FH, Relay switch	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
37	FH, Status relay switch	On/Off-Input			1 bit	C	R	W	T	U	switch	Low
38	FH, Actual temperature	16-bit Value-Input			2 bytes	C	R	W	T	U	temperature (°C)	Low
41	FH, Recv setting temperature	16-bit Value-Input			2 bytes	C	R	W	T	U	temperature (°C)	Low
42	FH, Send setting temperature	16-bit Value-Outp...			2 bytes	C	R	-	T	U	temperature (°C)	Low
43	FH, Recv setting switch	On/Off-Input			1 bit	C	R	W	T	U	switch	Low
44	FH, Send setting switch	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
51	FH, High temperature alarm	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
52	FA, Air inlet speed 1	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
53	FA, Air inlet speed 2	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
54	FA, Air inlet speed 3	On/Off-Output			1 bit	C	R	-	T	U	switch	Low
55	FA, Status air inlet speed 1	On/Off-Input			1 bit	C	R	W	T	U	switch	Low
56	FA, Status air inlet speed 2	On/Off-Input			1 bit	C	R	W	T	U	switch	Low

Figure 7.1.1

Number	Name	Communication object function	Data type	Property
0	AC, Switch	On/Off-Output	1 bit	C, R, T, U
<p>This communication object is enabled when Enabled is selected for the parameter "Switching func" . This communication object is used to control the switching of the air conditioning gateway. When the communication object sends the value 1/0, the air conditioning gateway will perform the pre-set on/off operation.</p>				
1	AC, Feedback, switch	On/Off-Input	1 bit	C, R, W, T, U
<p>This communication object is active when Enabled is selected for the parameter "Switching func" . This communication object is used to feedback the switching status of the air conditioning gateway, bind the feedback object, and use the received feedback status to control the indication status of the thermostat panel. When the communication object receives the value 0/1, the thermostat panel displays ON/OFF.</p>				
2	AC, Operating mode	8-bit Value-Output	1byte	C, R, T, U
<p>This communication object is active when Enabled is selected for the parameter "Operating mode" . This communication object is used to switch the operation mode. The communication object sends a preset value to switch the operation mode of the air conditioning gateway (heating mode, cooling mode, venting mode, dry mode, automatic mode).</p>				
3	AC, Feedback, Operating mode	8-bit Value-Input	1byte	C, R, W, T, U
<p>This communication object is active when Enabled is selected for the parameter "Operating mode" . This communication object is used to feedback the operation mode, bind the feedback object, and use the received feedback value to change the operation mode indication of the thermostat panel. When the corresponding value is received by the communication object, the thermostat panel indicates the corresponding operation mode.</p>				
4	AC, Fan speed	8-bit Value-Output	1byte	C, R, T, U
<p>This communication object is active when Enabled is selected for the parameter "Fan speed" . This communication object is used to control the wind speed of the air conditioning. The communication object sends a preset value to</p>				

control the wind speed of the air conditioning.				
5	AC, Feedback, Status fan speed	8-bit Value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Fan speed" . This communication object is used to feedback the air conditioning wind speed, bind the feedback object, and use the received feedback value to change the air conditioning speed indication of the thermostat panel, and when the communication object receives the corresponding value, the thermostat panel indicates the corresponding air conditioning wind speed.				
6	AC, Setting temperature	16-bit Value-Output	2 bytes	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Setting temperature" . This communication object is used to control the temperature of the air conditioning. The communication object sends the temperature value to control the temperature of the air conditioning gateway, and the temperature can be set in the range of 16°C~30°C.				
7	AC, Feedback, Setting temperature	16-bit Value-Input	2 bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Setting temperature" . This communication object is used to feedback the current air conditioning temperature value, binding the feedback object, using the received feedback value to change the air conditioning temperature indication of the thermostat panel, when the communication object receives the corresponding value, the thermostat panel indicates the corresponding temperature value				
8	AC, Actual temperature	16-bit Value-Input	2 bytes	C, R, W, T, U
This communication object is active when external KNX bus is selected for the parameter "Source for actual temperature" . This communication object is used for the actual temperature value of the external sensor.				
11	FCU, Cooling control	On/Off-Output	1 bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Cooling control" and 1 bit for the parameter "cooling object type" . This communication object is used for cooling control of fan coils (data length 1 bit).				
12	FCU, Cooling feedback	On/Off-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Cooling control feedback" and 1 bit for the parameter "Cooling object type" . This object is used for feedback of fan coil cooling control (data length 1 bit).				
13	FCU, Cooling control	Valve position-Output	1 byte	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Cooling control" and 1 byte for the parameter "cooling object type" . This communication object is used to send the cooling valve value of the fan coil (data length 1 byte).				
14	FCU, Cooling feedback	Valve position-Input	1 byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Cooling control feedback" and 1 byte for the parameter "Cooling object type" . This object is used to receive feedback on fan coil cooling valve values (data length 1 byte).				
15	FCU, Heating control	On/Off-Output	1bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Heating control" and 1 bit for the parameter "Heating object type" . This communication object is used for heating control of fan coils (data length 1 bit).				
16	FCU, Heating feedback	On/Off-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Heating control feedback" and 1				

bit for the parameter "Heating object type" . This object is used for feedback of fan coil heating control (data length 1 bit).				
17	FCU, Heating control	Valve position- Output	1byte	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Heating control" and 1 byte for the parameter "Heating object type" . This communication object is used to send the heating valve value of the fan coil (data length 1 byte).				
18	FCU, Heating feedback	Valve position- Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Heating control feedback" and 1 byte for the parameter "Heating object type" . This object is used to receive feedback on fan coil heating valve values (data length 1 byte).				
19, 20, 21	FCU, Fan speed1/2/3	On/Off-Output	1bit	C, R, T, U
This communication object is active when 1 bit is selected for the parameter "Fan speed control" . This communication object is used for fan coil wind speed control (data length 1 bit). When the fan coil is in low wind speed, FCU, Fan speed 1 object sends the value 01, FCU, Fan speed 2 and FCU, Fan speed 3 objects send the value 00; When the fan coil is in mid wind speed, FCU, Fan speed 2 object sends the value 01, FCU, Fan speed 1 and FCU, Fan speed 3 objects send the value 00; When the fan coil is in high wind speed, FCU, Fan speed 3 object sends the value 01, FCU, Fan speed 1 and FCU, Fan speed 2 objects send the value 00;				
22, 23, 24	FCU, statu fan speed1/2/3	On/Off-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Fan speed feedback" and 1 bit for the parameter "Fan speed control" . This communication is used for fan coil wind speed status feedback (data length 1 bit).				
25	FCU, Fan speed	8-bit Value- Output	1byte	C, R, T, U
This communication object is active when 1 byte is selected for the parameter "Fan speed control" . This communication object is used to send fan coil wind speed valve values (data length 1byte)				
26	FCU, Status fan speed	8-bit value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Fan speed feedback" and 1byte for the parameter "Fan speed control" . This communication is used for fan coil wind speed status feedback (data length 1 bit). This communication is used for fan coil wind speed valve value status feedback (data length 1byte).				
27	FCU, Actual temperature	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when external KNX bus is selected for the parameter "Source for actual temperature" . This communication object is used to transmit the actual temperature value of the fan coil.				
28	FCU, Recv setting mode	8-bit Value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting mode" . This communication object is used to receive the fan coil setting mode.				
29	FCU, Send setting mode	8-bit Value- Output	1byte	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting mode" . This communication object is used to send the fan coil setting mode.				
30	FCU, Recv setting speed	8-bit Value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting fan speed" . This communication object is used to receive the value of the set wind speed.				
31	FCU, Send setting speed	8-bit Value-	1byte	C, R, T, U

		Output		
This communication object is active when Enabled is selected for the parameter "Send setting fan speed" . This communication object is used to send the value of the set wind speed.				
32	FCU, Recv setting temperature	16-bit Value-Input	2 bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting temperature" . This communication object is used to receive values for setting the fan coil temperature, the thermostat panel indicates the current fan coil temperature value according to the received value.				
33	FCU, Send setting temperature	16-bit Value-Output	2 bytes	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting temperature" . This communication object is used to send the value of the set temperature, and the communication object controls the temperature of the fan coil by the corresponding sent value				
34	FCU, Recv setting switch	On/Off-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting FCU switch" . This communication object is used to receive the fan coil switch command, when the value 00 is received, it means the fan coil is off; when the value 01 is received, it means the fan coil is on; the thermostat panel indicates the current fan coil switching status according to the received value				
35	FCU, Send setting switch	On/Off-Output	1bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting FCU switch" . This communication object is used to send fan coil switch command, when the value 00 is sent, the control fan coil is off; when the value 01 is sent, the control fan coil is on; The communication object controls the fan coil switching status by sending the corresponding values				
36	FH, Relay switch	On/Off-Output	1bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Relay switch" under function Floor heating. This communication object is used for floor heating relay control output, when the value 00 is sent, the floor heating is off; when the value 01 is sent, the floor heating is on				
37	FH, Status relay switch	On/Off-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Status relay switch" under function Floor heating. This communication object is used to feedback the control output status of the floor heating relay. When the communication object receives the value 00, it means the floor heating relay is off; when it receives the value 01, it means the floor heating relay is on				
38	FH, Atual temperature	16-bit Value Input	2bytes	C, R, W, T, U
This communication object is active when External KNX bus is selected for the parameter "Source for actual temperature" under function Floor heating. This communication object is used to transmit the actual temperature value of the floor heating transmission.				
41	FH, Recv setting temperature	16-bit Value-Input	2 bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting temperature" under function Floor heating. This communication object is used to receive the set floor heating temperature value, and the thermostat panel indicates the current floor heating temperature value according to the received value.				
42	FH, Send setting temperature	16-bit Value-Output	2 bytes	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting temperature" under function Floor heating. This communication object is used to send the set floor heating temperature value, and the communication object controls the floor heating temperature by the corresponding sent value				
43	FH, Recv setting switch	On/Off-Input	1 bit	C, R, W, T, U

<p>This communication object is active when Enabled is selected for the parameter "Recv setting function switch" under function Floor heating. This communication object is used to receive the floor heating switch command, when the value 00 is received, it means the floor heating is off; when the value 01 is received, it means the floor heating is on. The thermostat panel indicates the current on/off status of the floor heating according to the received value.</p>				
44	FH, Send setting switch	On/Off-Output	1bit	C, R, T, U
<p>This communication object is active when Enabled is selected for the parameter "Send setting function switch" under function Floor heating. This communication object is used to send the floor heating switch command, when the value 00 is sent, the floor heating is off; when the value 01 is sent, the floor heating is on. The communication object controls the switching status of the floor heating by sending the corresponding values.</p>				
51	FH, High temperature alarm	On/off-output	1bit	C, R, T, U
<p>This communication object is active when Enabled is selected for the parameter "Status high temperature alarm" under function Floor heating. This communication object is used to send feedback on the high temperature alarm status. The communication object sends an alarm value 01/00 when the floor heating exceeds the preset temperature alert value</p>				
52, 53, 54	FA, Air inlet speed1/2/3	On/off-output	1bit	C, R, T, U
<p>This communication object is active when Enabled is selected for the parameter "Ventilation system" and 1 bit for the parameter "Fan speed control for air inlet" . This communication object is used for inlet fan speed control (data length 1 bit). When the Ventilation system is at low speed, the FA, Air inlet speed 1 object sends the value 01 and the FA, Air inlet speed 2 and FA, Air inlet speed 3 objects send the value 00; When the Ventilation system is at mid speed, the FA, Air inlet speed 2 object sends the value 01 and the FA, Air inlet speed 1 and FA, Air inlet speed3 objects send the value 00; When the Ventilation system is at high speed, the FA, Air inlet speed 3 object sends the value 01 and the FA, Air inlet speed 1 and FA, Air inlet speed 2 objects send the value 00.</p>				
55, 56, 57	FA, Status air inlet speed 1/2/3	On/off-Input	1bit	C, R, W, T, U
<p>This communication object is active when Enabled is selected for the parameter "Fan inlet speed feedback" . This communication is used for ventilation inlet wind speed status feedback (data length 1bit).</p>				
58	FA, Air inlet speed	8-bit Value-Output	1byte	C, R, T, U
<p>This communication object is active when Enabled is selected for the parameter "Fan speed control for air inlet" . This communication object is used for inlet fan speed value control (data length 1byte).</p>				
59	FA, Status air inlet speed	8-bit Value-Input	1byte	C, R, W, T, U
<p>This communication object is active when Enabled is selected for the parameter "Fan inlet speed feedback" . This communication object is used for ventilation inlet wind speed value status feedback (data length 1byte).</p>				
60, 61, 62	FA, Air outlet speed1/2/3	On/Off-Output	1bit	C, R, T, U
<p>This communication object is active when 1 bit is selected for the parameter "Fan speed control for air outlet" . This communication object is used for outlet fan speed control (data length 1 bit). When the Ventilation system is at low speed, the FA, Air outlet speed 1 object sends the value 01 and the FA, Air outlet speed 2 and FA, Air outlet speed 3 objects send the value 00; When the Ventilation system is at mid speed, the FA, Air outlet speed 2 object sends the value 01 and the FA, Air outlet speed 1 and FA, Air outlet speed3 objects send the value 00; When the Ventilation system is at high speed, the FA, Air outlet speed 3 object sends the value 01 and the FA, Air outlet speed 1 and FA, Air outlet speed 2 objects send the value 00.</p>				
63, 64, 65	FA, Status air outlet speed1/2/3	On/Off-Input	1bit	C, R, W, T, U
<p>This communication object is active when Enabled is selected for the parameter "Fan outlet speed feedback" . This communication is used for ventilation outlet wind speed status feedback (data length 1bit).</p>				
66	FA, Air outlet speed	8-bit Value-	1byte	C, R, T, U

		Output		
This communication object is active when Enabled is selected for the parameter "Fan speed control for air outlet" . This communication object is used for outlet fan speed value control (data length 1byte).				
67	FA, Status air outlet speed	8-bit Value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Fan outlet speed feedback" . This communication object is used for ventilation outlet wind speed value status feedback (data length 1byte).				
70	FA, Recv setting inlet speed	8-bit Value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting fan inlet speed" under function Ventilation system. This communication object is used to receive the inlet fan speed value.				
71	FA, Send setting inlet speed	8-bit Value-Output	1byte	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting fan inlet speed" under function Ventilation system. This communication object is used to send the feedback value for setting the inlet fan speed.				
72	FA, Recv setting outlet speed	8-bit Value-Input	1byte	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting fan outlet speed" under function Ventilation system. This communication object is used to receive the outlet fan speed.				
73	FA, Send setting outlet speed	8-bit Value-Output	1byte	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting fan outlet speed" under function Ventilation system. This communication object is used to receive the outlet fan speed. This communication object is used to send feedback for setting the speed setting of the fan outlet				
74	FA, Recv setting switch	On/OFF-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv setting function switch" under function Ventilation system. This communication object is used to receive the switch command of ventilation, when the value 00 is received, it means the ventilation is off; when the value 01 is received, it means the ventilation is on. The thermostat panel indicates the current on/off status of the ventilation according to the received value.				
75	FA, Send setting switch	On/OFF-Output	1bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send setting function switch" under function Ventilation system. This communication object is used to send the on/off command or the on/off status of the ventilation. When the value 00 is sent, the ventilation is turned off; when the value 01 is sent, the ventilation is turned on. The communication object controls the on/off status of the ventilation by sending the corresponding values.				
76	Pub, Recv main switch	On/OFF-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Public function" . This communication object is used to set the public function switch of air conditioner, floor heating and ventilation. When the value 00 is sent, all functions are turned off; when the value 01 is sent, all functions are turned on. The communication object controls the state of the master switch by sending the corresponding value.				
78	Pub, Switch temperature unit	1-bit Value-Input	1bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Toggle temperature unit" . This communication object is used to switch the units of temperature. The communication object switches between Celsius and Fahrenheit temperature units by sending the value 0/1.				
79	Pub, Status temperature unit	1-bit Value-Output	1bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send toggle temperature unit" .				

This communication object is used to transfer the switching feedback value in temperature units.				
80	Pub, Child lock	1-bit Value-Input	1 bit	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "child lock control" . This communication object is used to control the state of the child lock. The communication object turns the child lock on/off by sending the value 0/1.				
81	Pub, Status child lock	1-bit Value-Output	1bit	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Send child lock control" . This communication object is used for status feedback of child locks				
82	Pub, Recv actual temperature	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when external KNX bus is selected for the parameter "Source for actual temperature" under function Public func. This communication object is used to transfer the actual temperature value of the total function via the KNX bus.				
83	Pub, Send actual temperature	16-bit Value-Output	2bytes	C, R, T, U
This communication object is active when internal value is selected for the parameter "Source for actual temperature" under function Public func. This communication object is used to internally detect the actual temperature value of the total function.				
84	Pub, Recv actual humidity	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Actual humidity" under function Public func and external KNX bus for parameter "Source for actual humidity" . This communication object is used to transfer the actual humidity value of the total function via the KNX bus.				
85	Pub, Send actual humidity	16-bit Value-Output	2bytes	C, R, T, U
This communication object is active when Enabled is selected for the parameter "Actual humidity" under function Public func and internal value for parameter "Source for actual humidity" . This communication object is used to internally detect the actual humidity value of the total function				
86	Pub, Recv actual PM2.5	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv actual PM2.5" under function Public func. This communication object is used to receive the actual PM2.5 data.				
87	Pub, Recv actual PM1.0	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv actual PM1.0" under function Public func. This communication object is used to receive the actual PM1.0 data.				
88	Pub, Recv actual HCHO	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv actual HCHO" under function Public func. This communication object is used to receive the actual HCHO data.				
89	Pub, Recv actual TVOC	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv actual TVOC" under function Public func. This communication object is used to receive the actual TVOC data.				
90	Pub, Recv actual CO	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv actual CO" under function Public func. This communication object is used to receive the actual CO data.				
91	Pub, Recv actual CO2	16-bit Value-Input	2bytes	C, R, W, T, U
This communication object is active when Enabled is selected for the parameter "Recv actual CO2" under function				

Public func. This communication object is used to receive the actual CO2 data.				
92	Overwrite brightness, Backlight	8-bit Value	1byte	C, R, W, T, U
This communication object is active when Always is selected for the parameter "Backlight mode" and Yes for parameter "Overwrite backlight brightness via object" . This communication object is used to overwrite the backlight brightness.				
93	Overwrite brightness, Waking backlight	8-bit Value	1byte	C, R, W, T, U
This communication object is active when Delay is selected for the parameter "Backlight mode" and Yes for parameter "Overwrite waking backlight via object" . This communication object is used to overwrite the brightness value when waking up the backlight.				
94	Overwrite brightness, Sleeping backlight 8-bit Value	8-bit Value	1byte	C, R, W, T, U
This communication object is active when Delay is selected for the parameter "Backlight mode" and Yes for parameter "Overwrite sleeping backlight via object" . This communication object is used to overwrite the backlight brightness during sleeping.				
95	Input from master, Control own backlight	On/Off	1bit	C, R, W, T, U
This communication object is active when Delay is selected for the parameter "Backlight mode" and delay according to master device for parameter "Delay time after waking backlight" . This communication object is used to delay the closing time according to the switch signal from the master device.				
96	Master output, Control other's backlight	On/Off	1bit	C, R, W, T, U
This communication object is active when Delay is selected for the parameter "Backlight settings" and Yes for parameter "Master output for controlling other's backlight" . This communication object is used for the main output to control other backlights				
97	Input-triggering, Waking backlight	On/Off	1bit	C, R, W, T, U
This communication object is active when Delay is selected for the parameter "Backlight settings" and Yes for parameter "Wake up backlight via object" . This communication object is used to wake up the backlight by object.				
98	Triggering output, Waking backlight	On/Off	1bit	C, R, W, T, U
This communication object is active when Delay is selected for the parameter "Backlight settings" and Yes for parameter "Output triggering signal for waking backlight" . This communication object is used to wake up the backlight output trigger signal.				

8. Safety Information and Maintenance

- (1) Read all instructions in detail before using.
- (2) Create a good ventilation environment.
- (3) In using process, pay attention to moisture-proof, shock-proof, dust-proof.
- (4) Strictly forbid to rain, contact with other liquids or corrosive gases.
- (5) If it is wet or attacked by liquid, it should be dried in time.
- (6) When the machine fails, please contact professional maintenance personnel or our company.

9. Contact

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