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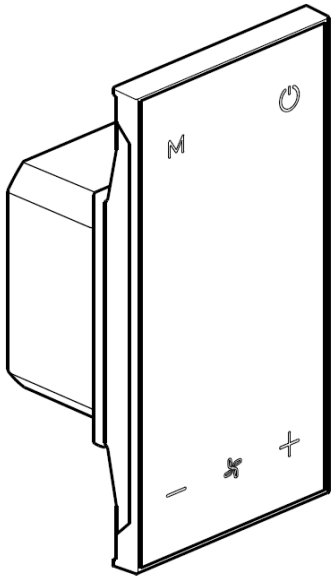
LIVING NOW - KNX 3 in 1 flat thermostat black

Cat.No(s):KG4691F3KNX



1. SUMMARY

LIVING NOW - KNX 3 in 1 flat thermostat black is used to display status and control a variety of KNX devices. Use the touch buttons on the panel to implement the preset functions. For example, send air conditioning control commands, scene control commands, and so on to control other devices on the KNX bus system.

LIVING NOW - KNX 3 in 1 flat thermostat black is mainly used in the smart home control system, using a wall-mounted installation.

The user manual describes detailed technical information of LIVING NOW - KNX 3 in 1 flat thermostat blac, including installation and programming as well it shows usage integrating with application examples。

LIVING NOW - KNX 3 in 1 flat thermostat black can be connected to other EIB/KNX devices to make up the system via EIB/KNX BUS.

Engineering Tools Software (ETS) can be used to use and operate the system.

The main functions of the temperature control panel are summarized as follows:

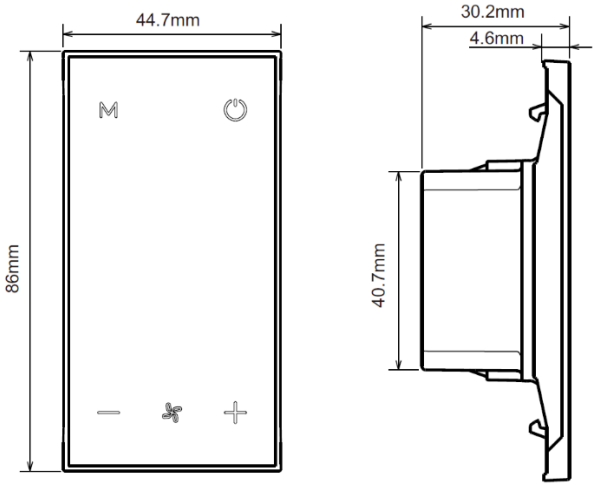
- HVAC control
- Air Conditioning control and FCU function control
- Fresh air control
- Heating control
- Built-in temperature sensor
- Timing function
- Scene function

2. TECHNICAL SPECIFICATIONS

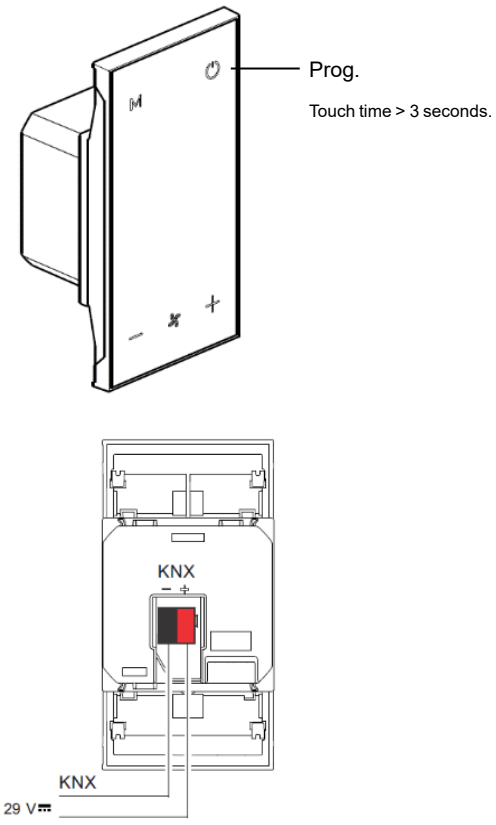
Power Supply	Operating Voltage	21-30V DC, via the KNX bus
	Current consumption, bus	<20mA/24V DC, <22mA/30V DC
	Power consumption, bus	<Max.300mW
Connections	KNX	Via bus connection terminal(red/black)
Temperature	Operation	–5 °C ... + 45 °C
	Storage	–25 °C ... + 55 °C
	Transport	– 25 °C ... + 70 °C
Environment	Humidity	<93%, except for dewing
Installation	Wall-mounted installation	
Size	44.7 x 86 x 30.2mm	
Weight	0.050KG	

3. DIMENSION AND STRUCTURAL DIAGRAM

■ 3.1.Dimension Diagram

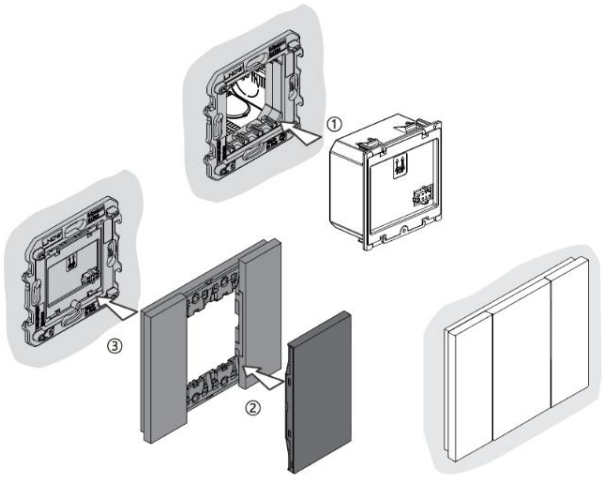


■ 3.2. Structural Diagram



3. DIMENSION AND STRUCTURAL DIAGRAM (continues)

■ 3.3. Installation and Disassembly instructions



4. PARAMETER SETTING DESCRIPTION IN THE ETS

■ 4.1. Summary

ETS configuration include backlight Settings for normal or standby working mode, touch volume Settings, Temperature calibration Settings, AC Settings, FCU Settings, Ventilation setting, Floor heating setting etc.

■ 4.2. General > General setting

The "General setting" parameter setting interface is shown in Figure 4.1，It can configure the brightness of the backlight and the volume of the button when it is touched.

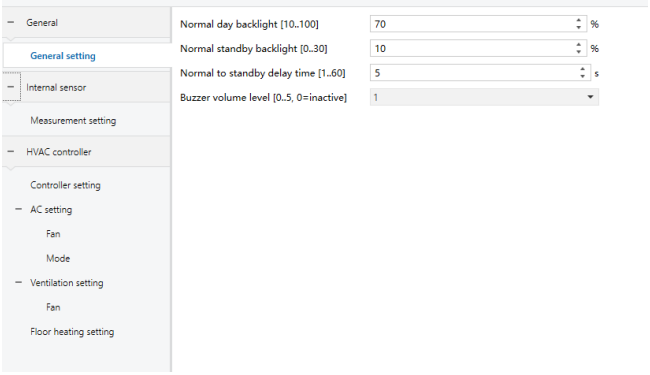


Figure 4.1 "General setting" parameter setting interface

Parameter "Normal day backlight [10..100]"

Set the backlight brightness level of the panel under normal day operation.

Optional: 10...100

Parameter "Normal standby backlight [0..30]"

Set the backlight brightness level of the panel under normal operation at night.

Optional: 0...30

Parameter "Normal to standby delay time [1..60]"

To set the delay time from normal mode to standby mode. The delay time starts from the last operation.

Optional: 1...60

Parameter "Buzzer volume level [0..5, 0=inactive]"

To set the volume for touch.

Optional: 0...5

■ 4.3. Internal sensor > Measurement setting.

The " Measurement setting " parameter setting interface is shown in Figure 4.2 This interface can be configured, including temperature calibration, temperature value transmission, etc.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

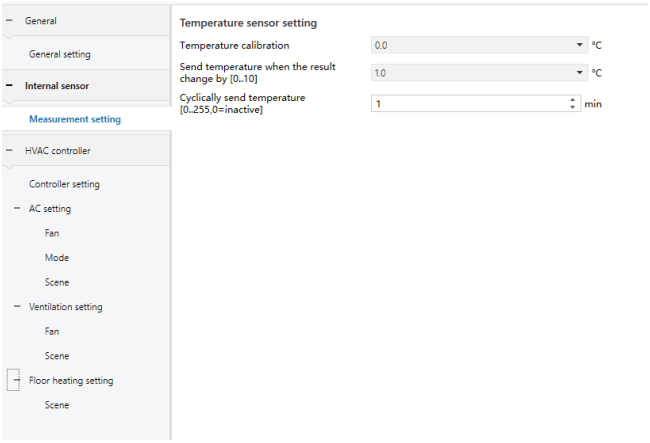


Figure 4.2" Measurement setting " parameter setting interface

Parameter "Temperature calibration"

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

Options:

-5℃

...

0℃

...

5℃

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

This parameter for setting when temperature turns to a certain value, send the actual temperature value to the bus.

Options: 0...10

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

Setting the time for cyclically sending the temperature detection value to the bus.

Options: 0...255，0=inactive

■ 4.4. HVAC controller > Controller setting

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

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

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

The setting temperature supports absolute and relative settings, as well as adjustable temperature range settings.
Supports 2-point and PI control.
The " Controller setting " parameter setting interface is shown in Figure 4.3

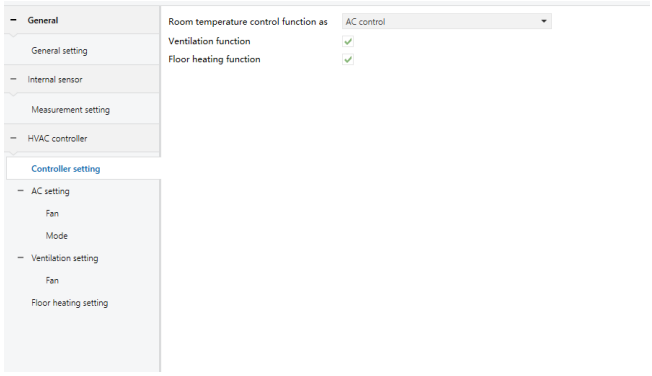


Figure 4.3 " Controller setting " parameter setting interface

Parameter "Room temperature control function as"

Temperature control function selection

Options:

Disable

FCU control

AC control

Parameter "Ventilation function"

Whether the Ventilation function is enabled.

Parameter "Floor heating function"

Whether the Floor heating function is enabled.

■ 4.5. HVAC controller > AC setting

Parameter setting interface "AC setting" shown as Figure 4.4, it is mainly used for setting related parameters of AC setting. Before setting this interface "Room temperature control function as" set as "AC control" on the "Controller setting" setting interface.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

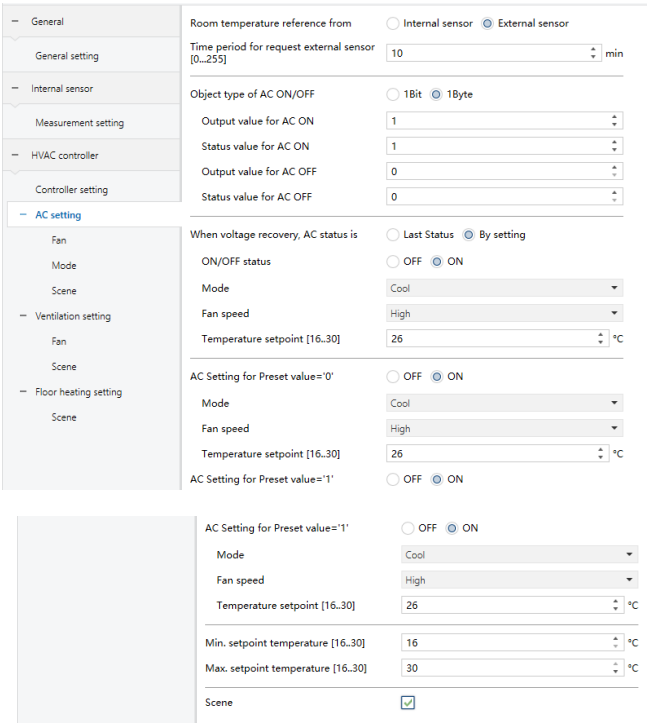


Figure 4.4 HVAC controller > AC setting Parameter setting interface

Parameter "Room temperature reference from"

Setting the source of room temperature

Options:

Internal sensor

External sensor

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

This parameter for setting the period for request external sensor.

Options: 0...255

Parameter "Object type of AC ON/OFF"

Used to set the type of value that will be sent to the bus after the AC controller is turned on.

Optional:

1 Bit

1Byte

When "1Byte" be chosen, Set the following four parameters :

Parameter "Output value for AC ON"

Setting the telegram dent for AC ON.

Options: 0...255

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Status value for AC ON"

Setting the status feedback value for AC ON.

Options: 0...255

Parameter "Output value for AC OFF"

Setting the telegram dent for AC OFF.

Options: 0...255

Parameter "Status value for AC OFF"

Setting the status feedback value for AC OFF.

Options: 0...255

Parameter "When voltage recovery, AC status is."

Setting AC status of HVAC interface after voltage recovery.

Options:

Last Status

By setting

When "By setting" be chosen Set the following parameters ：

Parameter "ON/OFF status"

Setting "ON/OFF status" of AC after voltage recovery.

Options:

OFF

ON

Parameter "Mode"

Setting "mode" of AC after voltage recovery.

Options:

Auto

Cool

Heat

Fan

Parameter "Fan speed"

Setting "Fan speed" of AC after voltage recovery.

Options:

Auto

Low

Medium

High

Parameter "Temperature setpoint [16..30]"

Setting "Temperature setpoint" of AC after voltage recovery.

Options: 16...30

Parameter "AC Setting for Preset value='0'"

Setting the preset output, when the communication object "Preset 1Bit" of AC receive "0"

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Mode"

Setting "mode" OF AC after voltage recovery.

Options:

Auto

Cool

Heat

Fan

Parameter "Fan speed"

Setting "Fan speed" of AC after voltage recovery.

Options:

Auto

Low

Medium

High

Parameter "Temperature setpoint [16..30]"

Setting "Temperature setpoint" of AC after voltage recovery.

Options: 16...30

Parameter "AC Setting for Preset value='1'"

Setting the preset output when the communication object "Preset 1Bit" of AC receive "0".

Parameter "Mode"

Setting "Mode" of AC after voltage recovery.

Options:

Auto

Cool

Heat

Fan

Parameter "Fan speed"

Setting "Fan speed" of AC after voltage recovery.

Options:

Auto

Low

Medium

High

Parameter "Temperature setpoint [16..30]"

Setting "Temperature setpoint" of AC after voltage recovery.

Options: 16...30

Parameter "Min. setpoint temperature [16..30]"

Setting to limit the adjustable range of the setting minimum temperature.

If the setting temperature beyond the limited range, then will output the limited temperature.

Options: 16...30

Parameter "Max. setpoint temperature [16..30]"

Setting to limit the adjustable range of the setting maximum temperature.

If the setting temperature beyond the limited range, then will output the limited temperature.

Options: 16...30

Parameter "Scene"

Setting for scene functions of AC, a total of 4 scenes are available for setting.

■ 4.5.1. HVAC controller > AC setting> Fan

Parameter setting interface "Fan" of "AC setting" shown as Figure 4.5, it is mainly for setting related parameters of Fan, such as "Output value for Fan speed". "Status feedback for Fan speed" and so on.

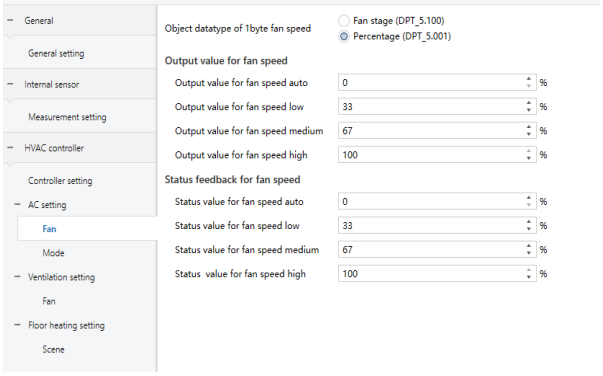


Figure 4.5 HVAC controller > AC setting>Fan Parameter setting interface.

Parameter "Object datatype of 1byte fan speed"

This parameter for setting the object type of fan speed control.

Options:

Fan stage (DPT5.100)

Percentage (DPT_5.001)

Output value for fan speed

Setting the switching value that sent by each fan speed.

Parameter "Output value for fan speed auto"

Setting the switching value that sent by fan speed auto.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Parameter "Output value for fan speed low"

Setting the switching value that sent by fan speed low.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Parameter "Output value for fan speed medium"

Setting the switching value that sent by fan speed medium.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Parameter "Output value for fan speed high"

Setting the switching value that sent by fan speed medium.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)"

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Status feedback for fan speed

For setting the status feedback value of each fan speed

Parameter "Status value for fan speed auto"

Setting the feedback value fan speed auto.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Parameter "Status value for fan speed low"

Setting the feedback value fan speed low.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Parameter "Status value for fan speed medium"

Setting the feedback value fan speed medium.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

Parameter "Status value for fan speed high"

Setting the feedback value fan speed high.

Options: 0...255(when "Object datatype" is "Fan stage (DPT5.100)")

Options: 0...100(when "Object datatype" is "Percentage (DPT_5.001)"

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

■ 4.5.2.HVAC controller > AC setting > Mode

Parameter setting interface " HVAC controller > AC setting > Mode" shown as Figure 4.5, it is mainly for setting related parameters of AC mode, such as Auto mode , Heat mode , Cool mode and so on.

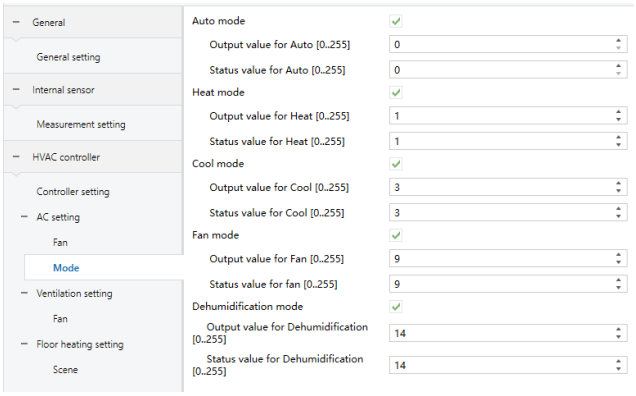


Figure 4.5 HVAC controller>AC setting>Mode

Auto mode

Parameter "Output value for Auto [0..255]"

Setting the switching value that sent by Auto mode.

Options: 0...255

Parameter "Status value for Auto [0..255]"

Setting the status feedback value of Auto mode.

Options: 0...255

Heat mode

Parameter "Output value for Heat [0..255]"

Setting the switching value that sent by Auto mode.

Options: 0...255

Parameter "Status value for Heat [0..255]"

Setting the status feedback value of Auto mode.

Options: 0...255

Cool mode

Parameter "Output value for Cool [0..255]"

Setting the switching value that sent by Auto mode.

Options: 0...255

Parameter "Status value for Cool [0..255]"

Setting the status feedback value of Auto mode.

Options: 0...255

Fan mode

Parameter "Output value for Fan [0..255]"

Setting the switching value that sent by Auto mode.

Options: 0...255

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Status value for Fan [0.255]"

Setting the status feedback value of Auto mode.

Options: 0...255

Dehumidification mode

Parameter "Output value for Dehumidification [0..255]"

Setting the switching value that sent by Auto mode.

Options: 0...255

Parameter "Status value for Dehumidification [0.255] "

Setting the status feedback value of Auto mode.

Options: 0...255

■ 4.5.3. HVAC controller > AC setting > Scene

Parameter setting interface "HVAC controller>AC setting>Scene" shown as Figure 4.6, it is mainly for setting related parameters of AC scene.

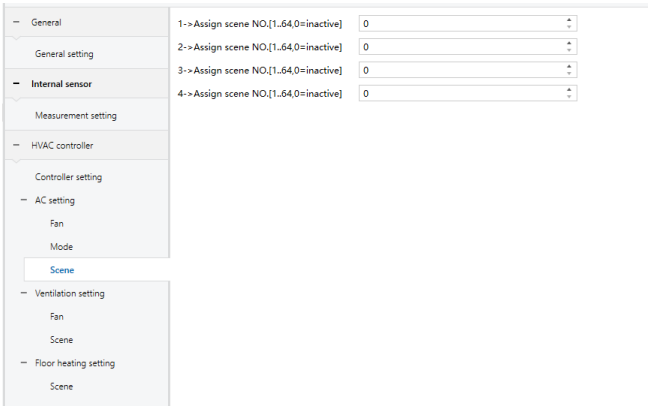


Figure 4.6 HVAC controller>AC setting>Scene

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

Setting scene number.

Options: 0...64, 0＝inactive

Parameter "2->Assign scene NO. [1..64,0=inactive]"

Setting scene number.

Options: 0...64, 0＝inactive

Parameter "3->Assign scene NO. [1..64,0=inactive] "

Setting scene number.

Options: 0...64, 0＝inactive"

Parameter "4->Assign scene NO. [1..64,0=inactive]

Setting scene number.

Options: 0...64, 0＝inactive"

■ 4.6. HVAC controller > FCU setting

Parameter setting interface "HVAC controller >FCU setting" shown as Figure 4.7, it is mainly for setting related

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

parameters of FCU, such as Work mode . Room temperature control mode and so on. Before setting this interface"Room temperature control function as" set as " FCU control "on the "Controller setting" setting interface.

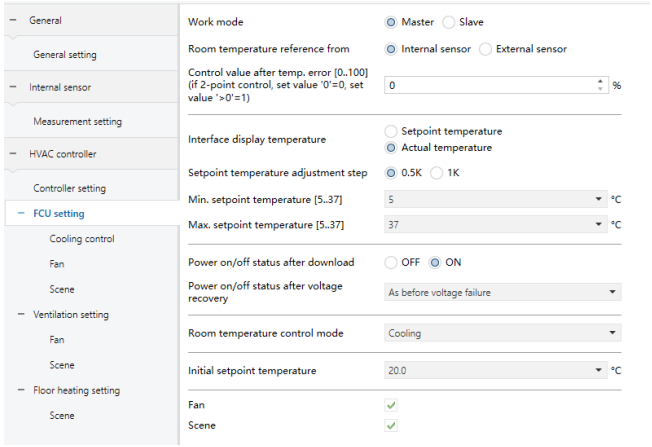


Figure 4.7 HVAC controller >FCU setting

Parameter "Work mode"

Choice the FCU Work mode.

Options:

Master

Slave

Parameter "Room temperature reference from"

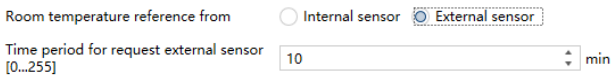
Setting room temperature of FCU from external or internal sensor detection.

Options:

Internal sensor

External sensor

When parameter "Room temperature reference from" set as "External sensor " ,set parameters shown as below.



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

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

Options: 0...255

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

Setting Control value of FCU when temperature detection wrong.

Options: 0...100

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

After the temperature is powered on, an error message is returned. If the device is a two-pipe device, the switch is ON/OFF, and the PI algorithm controls "set value."

Parameter "Interface display temperature"

Setting which show on the device.

Options:

Setpoint temperature

Actual temperature

Parameter "Setpoint temperature adjustment step"

Setting the temperature step value

Options:

0.5K

1K

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

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

These two parameters setting the adjustment range for limiting the setting temperature. The setting minimum value should be less than the maximum value.

If the setting temperature beyond the range, then output the limited value.

Options: 0...37

Parameter "Power on/off status after download"

Setting for the power on/off status of FCU interface after application downloaded.

Options

Off

On

Parameter "Power on/off status after voltage recovery"

Setting for the power on/off status of floor heating interface after the bus recovery.

Options:

Off

On

Parameter "Room temperature control mode"

This parameter for setting HVAC control mode.

Options:

Heating

Cooling

Heating and Cooling

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Initial setpoint temperature"

Setting for the initial setpoint temperature displayed on the screen for FCU power on.

Options:10...35

Parameter "Fan"

Setting for enable fan function.

Parameter "Scene"

Setting for enable Scene function.

■ **4.6.1. HVAC controller >FCU setting> Heating control**

Parameter setting interface "HVAC controller >FCU setting> Heating control" shown as Fig.3.20, it is mainly for setting related parameters of heating control, Before setting this interface "Room temperature control mode" set as "Heating "on the "FCU setting" setting interface.

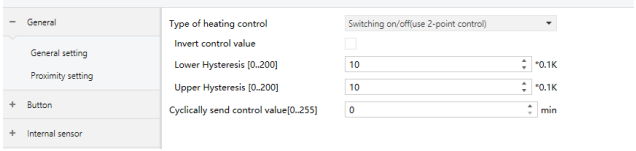


Figure 4.8 HVAC controller >FCU setting> Heating control

Parameter "Type of heating control"

Setting for heating mode use which type to control.

Options:

Switching on/off (use 2-point control)

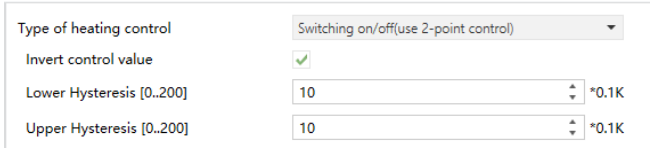
Switching PWM (use PI control)

Continuous control (use PI control)

Parameter "Invert control value"

Set to enable Invert control value.

Parameter "Type of heating control" choose "Switching on/off (use 2-point control)" set below:



Parameter "Lower Hysteresis [0..200] "

Parameter "Upper Hysteresis [0..200] "

These two parameters for setting the lower/upper hysteresis temperature in HVAC Heating

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

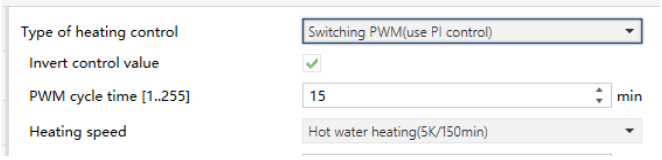
When the actual temperature(T) < the setting temperature - the lower hysteresis temperature, then will start heating.

Options: 0...200

Parameter "Type of heating control" choose "Switching

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

PWM (use PI control) "set below:



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

For setting the period of the control object cycle to send the switch value, the object sends the switch value according to the duty cycle of the control value.

Options：1...255

Parameter "Heating speed"

Setting the response speed of the heating PI controller. Different response speeds apply to different environments.

Options：

Hot water heating(5K/150min)

Underfloor heating(5K/240min)

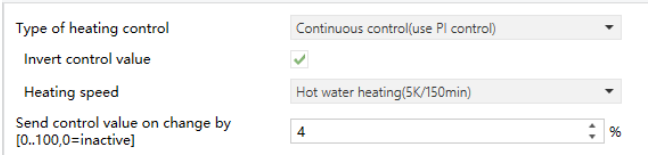
Electrical heating(4K/100min)

Split unit(4K/90min)

Fan coil unit(4K/90min)

User defined

Parameter "Type of heating control" choose "Continuous control(use PI control)"set below：



Parameter "Heating speed"

Setting the response speed of the heating PI controller. Different response speeds apply to different environments.

Options:

Hot water heating(5K/150min)

Underfloor heating(5K/240min)

Electrical heating(4K/100min)

Split unit(4K/90min)

Fan coil unit(4K/90min)

User defined.

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

This parameter is visible when control type is "Continuous control (use PI control)", for setting the changing value of the control value to be sent to the bus.

Options: 0...100, 0＝inactive

4. PARAMETER SETTING DESCRIPTION IN THE ETS *(continues)*

■ 4.6.2. HVAC controller >FCU setting>Cooling control

Parameter setting interface “HVAC controller >FCU setting>Cooling control” shown as Figure 4.9, it is mainly for setting related parameters of cooling control, Before setting this interface “Room temperature control mode” set as “Cooling” on the “FCU setting” setting interface.

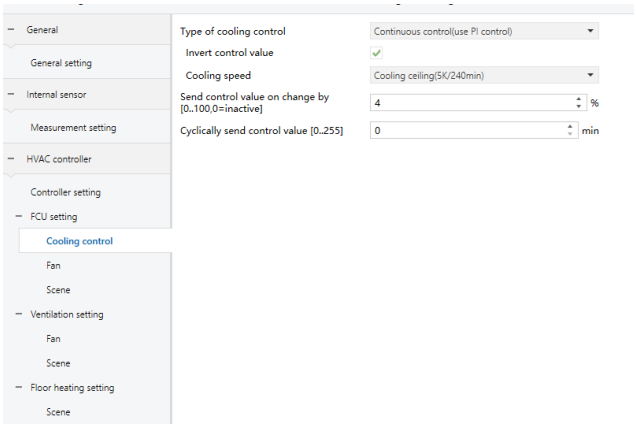


Figure 4.9 HVAC controller >FCU setting>Cooling control

Parameter “Type of cooling control”

Setting for cooling mode use which type to control.

Options:

Switching on/off (use 2-point control)

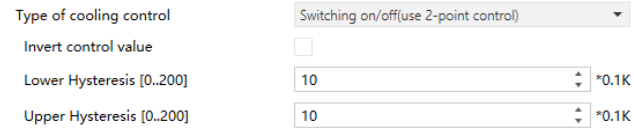
Switching PWM (use PI control)

Continuous control (use PI control)

Parameter “Invert control value”

Set to enable Invert control value.

Parameter “Type of heating control” choose “Switching on/off (use 2-point control) ”set below:



Parameter “Lower Hysteresis [0..200] ”

Parameter “Upper Hysteresis [0..200] ”

These two parameters for setting the lower/upper hysteresis temperature in HVAC Cooling

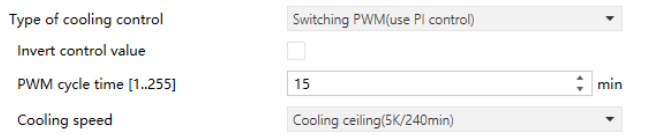
When the actual temperature (T) < the setting temperature - the lower hysteresis temperature, then will stop cooling.

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

Options: 0...200

4. PARAMETER SETTING DESCRIPTION IN THE ETS *(continues)*

Parameter “Type of heating control” choose “Switching PWM (use PI control)” set below:



Parameter “PWM cycle time [1..255] ”

For setting the period of the control object cycle to send the switch value, the object sends the switch value according to the duty cycle of the control value.

Options：1...255

Parameter “Cooling speed”

Setting the response speed of the cooling PI controller. Different response speeds apply to different environments.

Options：

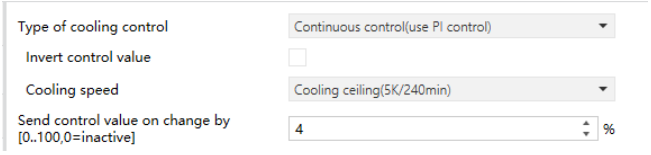
Cooling ceiling(5K/240min)

Split unit(4K/90min)

User defined.

Fan coil unit(4K/90min)

Parameter “Type of heating control” choose “Continuous control (use PI control)” set below:



Parameter “Cooling speed”

Setting the response speed of the cooling PI controller. Different response speeds apply to different environments.

Options：

Cooling ceiling(5K/240min)

Split unit(4K/90min)

User defined.

Fan coil unit(4K/90min)

Parameter “Send control value on change by [0..100,0=inactive] ”

This parameter is visible when control type is “Continuous control (use PI control)”, for setting the changing value of the control value to be sent to the bus.

Options: 0...100, 0＝inactive

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

Setting the period of cyclically sending control value to the bus.

Options: 0...255

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

■ 4.6.3. HVAC controller >FCU setting> Heating /Cooling control

Parameter setting interface “HVAC controller >FCU setting> Heating /Cooling control” shown as Figure 4.10, it is mainly for setting related parameters of heating and cooling control, Before setting this interface“Room temperature control mode” set as “Heating /Cooling control ”on the “FCU setting” setting interface.

The parameter settings are the same as 4.6.1and4.6.2

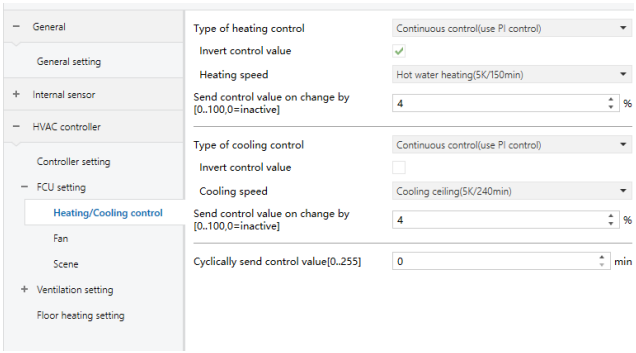


Figure 4.10 HVAC controller >FCU setting> Heating /Cooling control

■ 4.6.4. HVAC controller>FCU setting> Fan

Parameter setting interface “HVAC controller>FCU setting>Fan” shown as Figure 4.11, it is mainly for setting related parameters of Fan, such as “Output value for Fan speed”. “Status feedback for Fan speed” and so on.

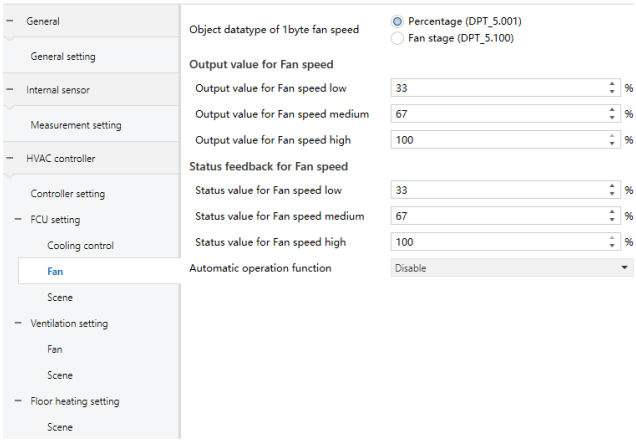


Figure 4.11 HVAC controller>FCU setting>Fan

Parameter “Object datatype of 1byte fan speed”

This parameter setting for the object datatype of 1byte fan speed.

Options:

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Percentage (DPT 5.001)

Fan stage (DPT_5.100)

Output value for Fan speed

Parameter “Output value for Fan speed low”

Parameter “Output value for Fan speed medium”

Parameter “Output value for Fan speed high”

These parameters setting the switching value that sent by each fan speed.

Options:

1...100(“Object datatype of 1byte fan speed “set as” Percentage (DPT 5.001)”)

1...255(“Object datatype of 1byte fan speed “set as” Fan stage (DPT_5.100)”)

Status feedback for Fan speed”

Parameter “Status value for Fan speed low”

Parameter “Status value for Fan speed medium”

Parameter “Status value for Fan speed high”

These parameters are setting for the status feedback value of each fan speed. The device will update and display the fan speed according to the feedback value.

Options:

1...100(“Object datatype of 1byte fan speed “set as” Percentage (DPT 5.001)”)

1...255(“Object datatype of 1byte fan speed “set as” Fan stage (DPT_5.100)”)

Parameter “Automatic operation function”

Setting for Automatic operation function

Options:

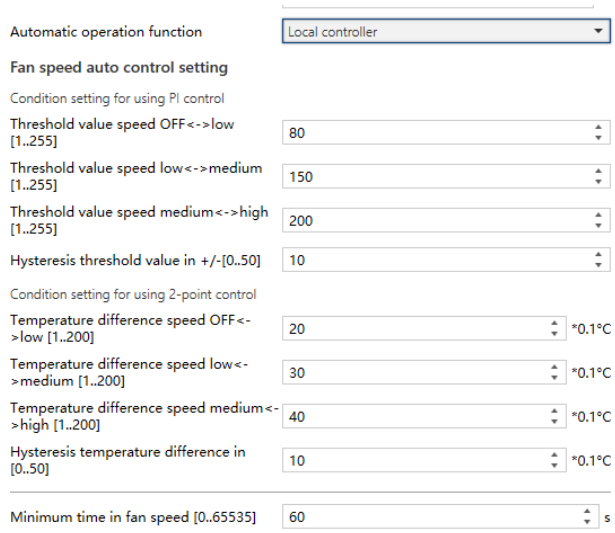
Disable

Local controller

External controller

Parameter “Automatic operation function” set as “Local controller”, set below

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)



Fan speed auto control setting

Condition setting for using PI control.

Parameter "Threshold value speed OFF<->low [1..255]"

Define threshold value for off-fan and low-level fan speeds.

If the control value is greater than this setting threshold value, low-level fan speed will start running.

Options: 1...255

Parameter "Threshold value speed low<->medium [1..255]"

Define the threshold value for switching the fan speed to medium fan speed.

If the control value is greater than this setting threshold, the medium fan speed will start running.

Options: 1...255

Parameter "Threshold value speed medium<->high [1..255]"

Define the threshold for switching the fan speed to high fan speed。

If the control value is greater than this setting threshold, the high fan speed will start running.

Options: 1...255

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

Setting the hysteresis value of the threshold value, which can avoid the unnecessary action of the fan when the control value fluctuates near the threshold.

Options: 0...50

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Condition setting for using 2-point control. [1..200]"

Define the Temperature for off-fan and low-level fan speeds.

If the control value is greater than this setting temperature value, low-level fan speed will start running.

Options: 1...200

Parameter "Temperature difference speed low<>medium [1..200]"

Define the Temperature for off-fan and low-level fan speeds.

If the control value is greater than this setting temperature value, medium fan speed will start running.

Options: 1...200

Parameter "Temperature difference speed medium<>high [1..200]"

Define the Temperature for off-fan and low-level fan speeds.

If the control value is greater than this setting temperature value, high fan speed will start running.

Options: 1...200

Parameter "Hysteresis temperature difference in [0..50]"

Setting the hysteresis value of the temperature value, which can avoid the unnecessary action of the fan when the control value fluctuates near the temperature.

Options: 0...50

Parameter "Minimum time in fan speed [0..65535] "

Defines the residence time of the fan from the current fan speed to a higher fan speed or lower fan speed, that is, the minimum time for a fan speed operation.

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

If the current fan speed has been running long enough, the fan speed can be changed quickly.

Options: 0...65535

0: there is no minimum running time, but the delay switching time of fan speed still needs to be considered.

■ 4.6.5. HVAC controller>FCU setting> Scene

Parameter setting interface "HVAC controller>FCU setting>Scene" shown as Figure 4.12, it is mainly for setting related parameters of scene control.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

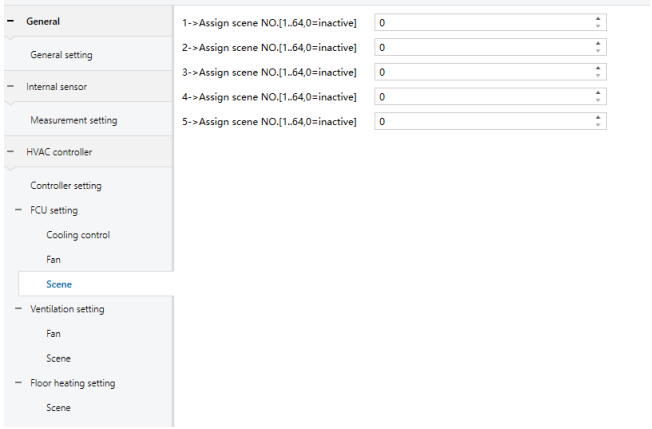


Figure 4.12 HVAC controller>FCU setting>Scene

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

Parameter "2->Assign scene NO. [1..64,0=inactive]"

Parameter "3->Assign scene NO. [1..64,0=inactive]"

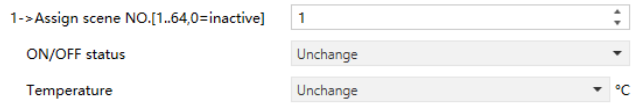
Parameter "4->Assign scene NO. [1..64,0=inactive]"

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

These parameters setting for the scene number.

Options: 0...64, 0＝inactive

When these parameters not zero, set the parameters shown as below.



Parameter "ON/OFF status"

This parameter for setting on/off status of FCU, when scene recall.

Options:

OFF

ON

Unchange

Parameter "Operation mode"

This parameter for setting operation mode of FCU, when scene recall.

Options:

Standby mode

Comfort mode

Economy mode

Frost/heat protection

Unchange

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

■ 4.7. HVAC controller>AC setting

Parameter setting interface "HVAC controller>AC setting" shown as Figure 4.13, it is mainly used for setting related parameters of AC setting. Before setting this interface "Room temperature control function as" set as "AC control" on the "Controller setting" setting interface.

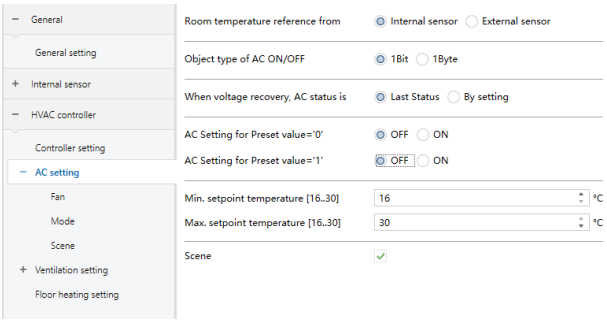


Figure 4.13 HVAC controller>AC setting

Parameter "Room temperature reference from"

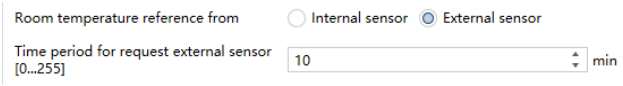
This parameter for setting the resource of the AC function temperature reference.

Options:

Internal sensor

External sensor

Parameter "Room temperature reference from" set as "External sensor", set parameters shown as below.



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

This parameter for setting the period for request that the device sends to the external sensor.

Options: 0...255

Parameter "Object type of AC ON/OFF"

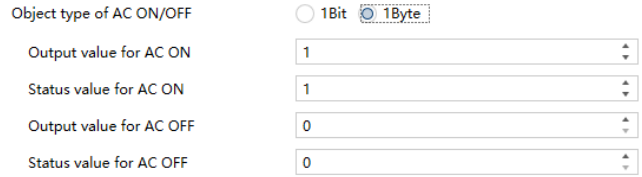
Setting the object type of AC ON/OFF.

Options:

1 Bit

1Byte

Parameter "Object type of AC ON/OFF" set as 1Byte", set parameters shown as below.



4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Output value for AC ON"

Parameter "Status value for AC ON"

Parameter "Output value for AC OFF"

Parameter "Status value for AC OFF"

These parameter for setting the output and status value of AC on/off sent to the bus.

Options:0...255

Parameter "When voltage recovery, AC status is"

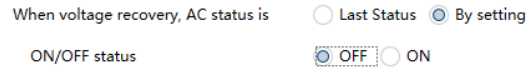
Setting AC status after bus recovery.

Options:

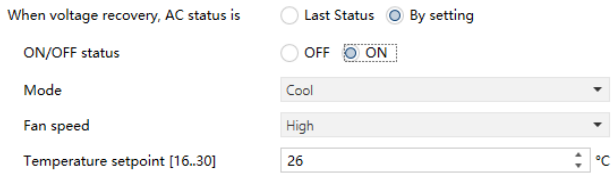
Last Status

By setting.

Parameter "When bus recovery status is" set as "By setting", set parameters shown as below.



Parameter "ON/OFF status"



Parameter "Mode"

Setting for mode of the AC function after the bus recovery.

Options:

Auto

Cool

Heat

Dry

Fan

Parameter "Fan speed"

Setting for fan speed of the AC function after the bus recovery.

Options:

Auto

Low

Mediu

High

Parameter "Temperature setpoint [16...30]"

Setting for temperature setpoint of the AC function after the bus recovery.

Options: 16...30

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "AC Setting for Preset value='0'"

Parameter "AC Setting for Preset value='1'"

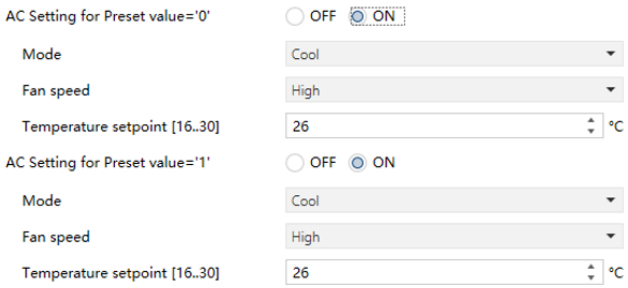
When receiving the value '0' or '1' from the bus through the object "Preset 1Bit, in", call the preset state of the air conditioner controller.

Options:：

OFF

ON

These two parameters set as "ON", set below:



Parameter "Mode"

Setting for mode of the AC function.

Options:

Auto

Cool

Heat

Dry

Fan

Parameter "Fan speed"

Setting for fan speed of the AC function

Options:

Auto

Low

Mediu

High

Parameter "Temperature setpoint [16..30]"

Setting for temperature setpoint of the AC function.

Options: 16...30

Parameter "Min. setpoint temperature [16...30]"

Parameter "Max. setpoint temperature [16...30]"

These two parameters setting the adjustment range for limiting the setting temperature. The setting minimum value should be less than the maximum value.

If the setting temperature beyond the range, then output the limited value.

Options: 16...30

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Scene"

This parameter setting whether to enable scene.

■ 4.7.1. HVAC controller> AC setting>Fan

Parameter setting interface "HVAC controller> AC setting>Fan" shown as Figure 4.14, it is mainly for setting related parameters of Fan, such as "Output value for Fan speed". "Status feedback for Fan speed" and so on.

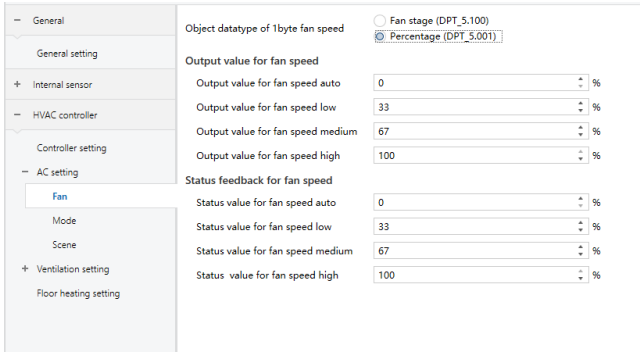


Figure 4.14 HVAC controller> AC setting>Fan

Parameter "Object datatype of 1 byte fan speed"

This parameter setting for the object datatype of fan speed.

Options:

Fan stage (DPT_5.100)

Percentage (DPT 5.001)

Output value for fan speed

Parameter "Output value for fan speed auto"

Parameter "Output value for fan speed low"

Parameter "Output value for fan speed medium"

Parameter "Output value for fan speed high"

These parameters setting the switching value that sent by each fan speed.

Options:

1...100("Object datatype of 1byte fan speed" set as" Percentage (DPT 5.001)")

1...255("Object datatype of 1byte fan speed "set as" Fan stage (DPT_5.100)")

Status feedback for fan speed

Parameter "Status value for fan speed auto"

Parameter "Status value for fan speed low"

Parameter "Status value for fan speed medium"

Parameter "Status value for fan speed high"

These parameters are setting for the status feedback value of each fan speed. The device will update and display the fan speed according to the feedback value.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Options:

1...100("Object datatype of 1byte fan speed" set as" Percentage (DPT 5.001)")

1...255("Object datatype of 1byte fan speed "set as" Fan stage (DPT_5.100)")

■ 4.7.2. HVAC controller>AC setting> Mode

Parameter setting interface "HVAC controller > AC setting > Mode" shown as Figure 4.15, it is mainly for setting related parameters of each Mode, such as Auto mode output value, Auto mode status value and so on.

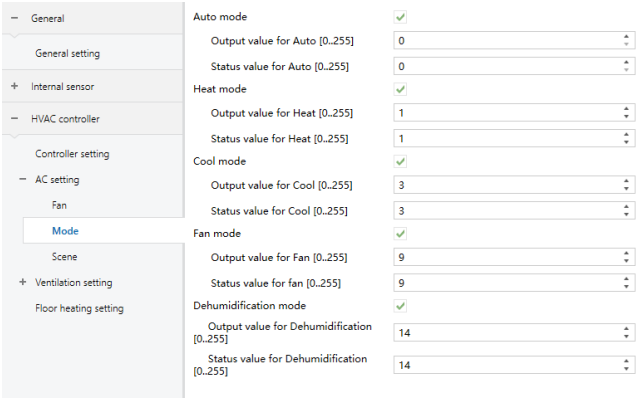


Figure 4.15 HVAC controller>AC setting>Mode

Parameter "Auto mode"

Parameter "Output value for Auto [0..255]"

Options: 0...255

Parameter "Status value for Auto [0..255]"

Options: 0...255

These three parameters for setting whether to enable Auto control mode of Air-conditioner and setting the output and status feedback value for auto mode of Air-conditioner.

Parameter "Heat mode"

Parameter "Output value for Heat [0..255]"

Options: 0...255

Parameter "Status value for Heat [0..255]"

Options: 0...255

These three parameters for setting whether to enable Heat mode of Air-conditioner and setting the output and status feedback value for Heat mode of Air-conditioner.

Parameter "Cool mode"

Parameter "Output value for Cool [0..255]"

Options: 0...255

Parameter "Status value for Cool [0..255]"

Options: 0...255

These three parameters for setting whether to enable Cool

mode of Air-conditioner and setting the output and status feedback value for Cool mode of Air-conditioner.

Parameter "Fan mode"

Parameter "Output value for Fan [0..255]"

Options: 0...255

Parameter "Status value for fan [0..255]"

Options: 0...255

These three parameters for whether to enable Fan mode of Air-conditioner and setting the output and status feedback value for Fan mode of Air-conditioner.

Parameter "Dehumidification mode"

Parameter "Output value for Dehumidification [0..255]"

Options: 0...255

Parameter "Status value for Dehumidification [0..255]"

Options: 0...255

These three parameters for setting whether to enable Dehumidification mode of Air-conditioner and setting the output and status feedback value for Dehumidification mode of Air-conditioner.

■ 4.7.3. HVAC controller>AC setting> Scene

Parameter setting interface "HVAC controller>AC setting>Scene" shown as Figure 4.16, it is mainly for setting related parameters of AC scene.

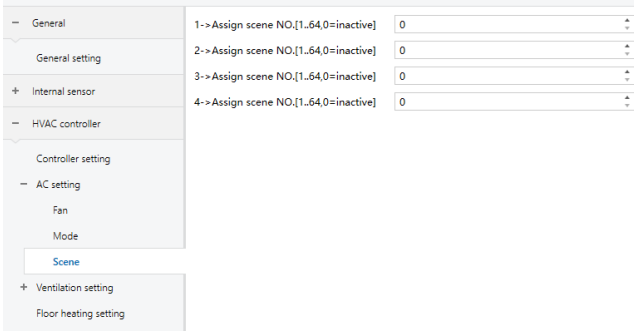


Figure 4.16 HVAC controller>AC setting>Scene

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

Parameter "2->Assign scene NO. [1..64,0=inactive]"

Parameter "3->Assign scene NO. [1..64,0=inactive]"

Parameter "4->Assign scene NO. [1..64,0=inactive]"

These parameters setting for the scene number.

Options: 1...64, 0 is unavailable

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

When these parameters not zero, set the parameters shown as below.

Parameter "ON/OFF status"

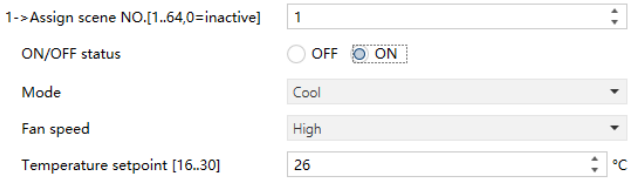
This parameter for setting on/off status of Air-conditioner when scene recall.

Options:

OFF

ON

When set as "ON", set the parameters shown as below.



Parameter "Mode"

This parameter for setting the mode of Air-conditioner when scene recall.

Options:

Auto

Cool

Heat

Dry

Fan

Parameter "Fan speed"

This parameter for setting fan speed of Air-conditioner when scene recall.

Options:

Auto

Low

Mediu

High

Parameter "Temperature setpoint [16..30]"

This parameter for setting temperature setpoint of Air-conditioner when scene recall.

Options: 16...30

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

■ 4.8. HVAC controller > Ventilation setting

Parameter setting interface "HVAC controller > Ventilation setting "shown as Figure 4.17, it is mainly for setting related parameters of Ventilation.

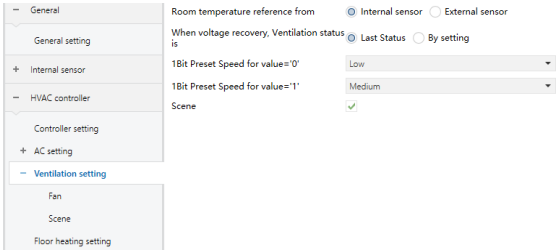


Figure 4.17 HVAC controller > Ventilation setting

Parameter "Room temperature reference from"

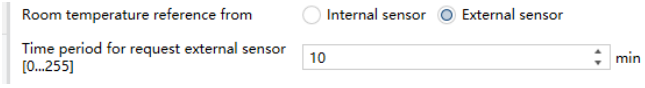
This parameter for setting the resource of the Ventilation function temperature reference.

Options:

Internal sensor

External sensor

When parameter"Room temperature reference from" set as "External sensor " ,set parameters shown as below.



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

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

Options: 0...255

Parameter "When voltage recovery, Ventilation status is"

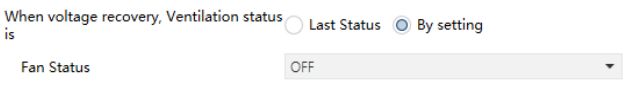
Setting ventilation status after bus recovery

Options:

Last Status

By setting

When parameter "When bus recovery, Ventilation status is " set as "By setting " ,set parameters shown as below.



4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Fan Status"

Setting fan status of ventilation after bus recovery

Options:

OFF

Low

Mediu

High

Parameter "1Bit Preset Speed for value='0"

Parameter "1Bit Preset Speed for value='1'"

These two parameters setting preset value of fan speed, when receive telegram '0' or '1' from bus.

Options:

OFF

Low

Mediu

High

Parameter "Scene"

This parameter for setting whether to enable Scene control of ventilation.

■ 4.8.1. HVAC controller > Ventilation setting > Fan

Parameter setting interface"HVAC controller > Ventilation setting > Fan "shown as Figure 4.18, it is mainly for setting related parameters of Fan. such as "Output value for Fan speed". "Status feedback for Fan speed" and so on.

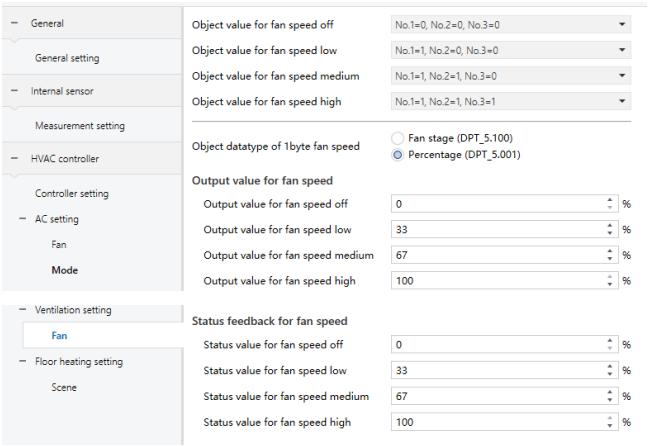


Figure 4.18 HVAC controller > Ventilation setting > Fan

Parameter "Object value for fan speed off"

Parameter "Object value for fan speed low"

Parameter "Object value for fan speed medium "

Parameter "Object value for fan speed high"

These parameters defining the switching value sent by each fan speed, the value is sent by three 1bit objects at the same time.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Options:

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 "Object datatype of 1byte fan speed

This parameter setting for the object datatype of the setpoint:

Options:

Fan stage (DPT_5.100)
Percentage (DPT5.001)

Output value for fan speed

Parameter "Output value for fan speed off"
Parameter "Output value for fan speed low"
Parameter "Output value for fan speed medium"
Parameter "Output value for fan speed high"

The following parameters setting the output value of each fan speed

Options:

0~255("Object datatype of 1byte fan speed" set as "Fan stage (DPT_5.100)")
0~100("Object datatype of 1byte fan speed" set as "Percentage (DPT5.001)")

Status feedback for fan speed

Parameter "Status value for fan speed off"
Parameter "Status value for fan speed low"
Parameter "Status value for fan speed medium"
Parameter "Status value for fan speed high"

The following parameters setting the status value of each fan speed.

Options:

0...255("Object datatype of 1byte fan speed" set as "Fan stage (DPT_5.100)")
0...100("Object datatype of 1byte fan speed" set as "Percentage (DPT5.001)")

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

■ 4.8.2. HVAC controller > Ventilation setting > Scene

Parameter setting interface "HVAC controller > Ventilation setting > Scene" of Ventilation shown as Figure 4.19, it is mainly for setting related parameters of Ventilation scene.

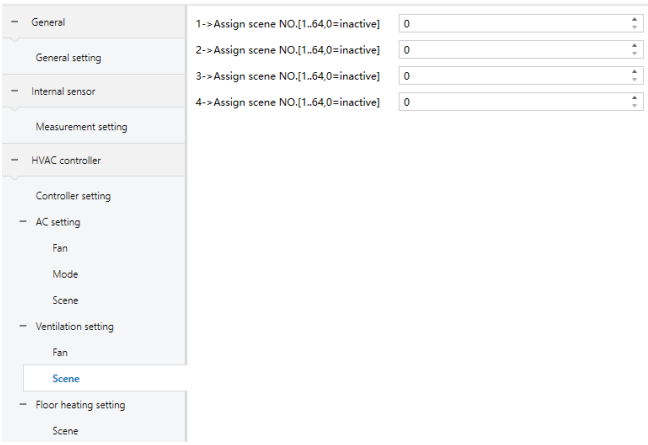


Figure 4.19 HVAC controller > Ventilation setting > Scene

Parameter "1->Assign scene NO. [1..64,0=inactive]"
Parameter "2->Assign scene NO. [1..64,0=inactive]"
Parameter "3->Assign scene NO. [1..64,0=inactive]"
Parameter "4->Assign scene NO. [1..64,0=inactive]"

These parameters for setting the scene number.

Options:1...64，0 is unavailable

When these parameters not zero, set the parameters shown as below.

Parameter "Fan Status"

This parameter for setting fan speed of Air-conditioner when scene recall.

Options:

OFF
Low
Medium
High

■ 4.9. HVAC controller > Floor heating setting

Parameter setting interface "HVAC controller > Floor heating setting" shown as Figure 4.20, it is mainly for setting related parameters of Floor heating.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

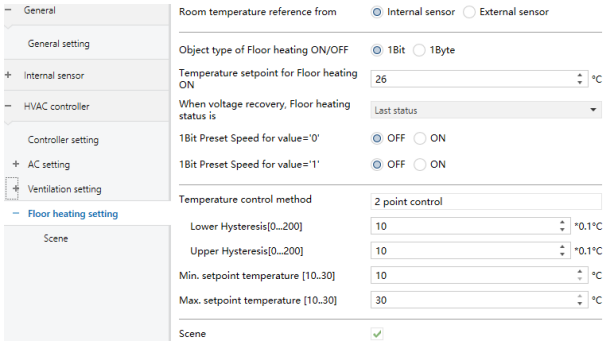


Figure 4.20 HVAC controller > Floor heating setting

Parameter "Room temperature reference from"

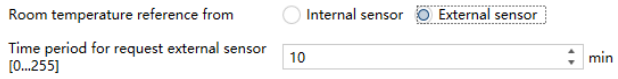
Setting room temperature of FCU from external or internal sensor detection.

Options:

Internal sensor

External sensor

When parameter "Room temperature reference from" set as "External sensor", set parameter shown as below.



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

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

Options: 0...255

Parameter "Object type of Floor heating ON/OFF"

This parameter for setting the object type of Floor heating to the bus when Floor heating ON/OFF

Options:

1 Bit

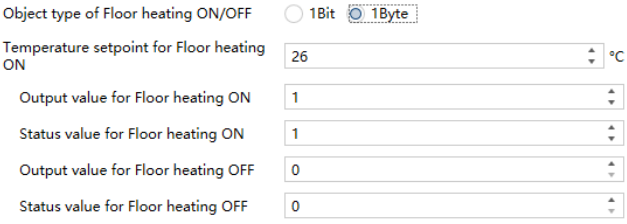
1Byte

Parameter "Temperature setpoint for Floor heating ON"

This parameter for setting the setpoint temperature after Floor heating ON

Options: 10...30

When parameter "Object type of Floor heating ON/OFF" set as "1Byte", set parameters shown as below.



4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Parameter "Output value for Floor heating ON"

Parameter "Status value for Floor heating ON"

Parameter "Output value for Floor heating OFF"

Parameter "Status value for Floor heating OFF"

These parameters for setting the output and feedback value of Floor heating ON/OFF.

Options: 0...255

Parameter "When voltage recovery, Floor heating status is"

This parameter for setting heating status of floor heating after bus recovery.

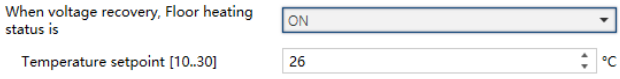
Options:

OFF

ON

Last status

Parameter "When bus recovery, heating status is" set as "ON", set parameters shown as below.



Parameter "Temperature setpoint [10..30]"

Setting temperature setpoint for after bus recovery.

Parameter "1Bit Preset Speed for value='0'"

Options:

OFF

ON

Parameter "Temperature setpoint [10..30] "

Options: 10...30

Parameter "1Bit Preset Speed for value='1'"

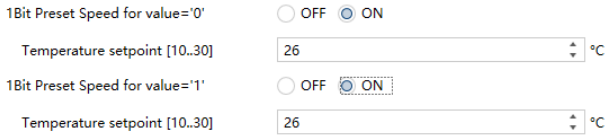
Options:

OFF

ON

Parameter "Temperature setpoint [10..30] "

Options: 10...30



These four parameters setting preset value of temperature setpoint,when receive telegram '0' or '1' from bus.

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

Options: 10... 30

Parameter "Temperature control method"

Parameter "Lower Hysteresis[0.200] "

Parameter "Upper Hysteresis[0200] "

These two parameters for setting the lower/upper hysteresis temperature in Floor heating.

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

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

Options: 0...200

Parameter "Min. setpoint temperature [10...30]"

Parameter "Max. setpoint temperature [10...30]"

These two parameters setting the adjustment range for limiting the setting temperature. The setting minimum value should be less than the maximum value.

If the setting temperature beyond the range, then output the limited value.

Options: 10...30

Parameter "Scene"

This parameter for setting whether to enable Scene control of Floor heating.

■ 4.9.1. HVAC controller > Floor heating setting> Scene

Parameter setting interface "HVAC controller > Floor heating setting> Scene" of Floor heating shown as Figure 4.21, it is mainly for setting related parameters of Floor heating scene.

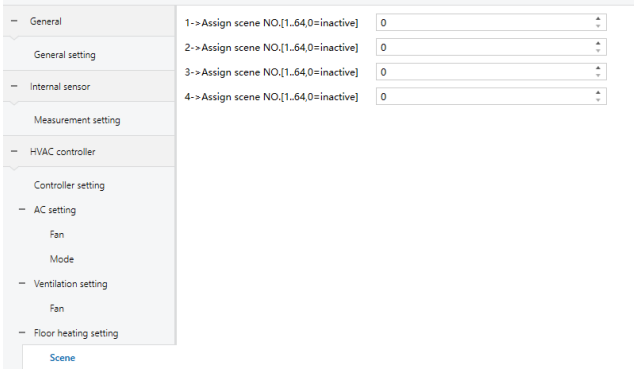


Figure 4.21 HVAC controller > Floor heating setting> Scene

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

Parameter "2->Assign scene NO. [1..64,0=inactive]"

Parameter "3->Assign scene NO. [1..64,0=inactive]"

Parameter "4->Assign scene NO. [1..64,0=inactive]"

These parameters for setting the scene number.

Options: 1...64, 0 is unavailable

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)

When these parameters not zero, set the parameters shown as below.

Parameter "ON/OFF status"

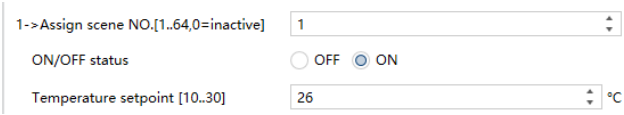
This parameter for setting ON/OFF status of Floor heating when scene recall.

Options:

OFF

ON

When these parameters set as "ON", set the parameters shown as below.



Parameter "Temperature setpoint [10..30]"

This parameter for setting Temperature setpoint of Floor heating when scene recall.

Options: 10...30

5. COMMUNICATION OBJECT

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

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

Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
General	37	Screen locking		1 bit	C	-	W	-	-	enable	Low
Internal sensor	38	Temperature value		2 bytes	C	R	-	T	-	temperature (°C)	Low
AC	39	External temperature, In		2 bytes	C	-	W	T	U	temperature (°C)	Low
AC	40	ON/OFF, Out		1 byte	C	-	-	T	-	counter pulses (0..255)	Low
AC	41	ON/OFF Status, In		1 byte	C	-	W	-	-	counter pulses (0..255)	Low
AC	42	Preset 1Bit, In		1 bit	C	-	W	-	-	scene	Low
AC	43	Mode, Out		1 byte	C	-	-	T	-	HVAC control mode	Low
AC	44	Mode status, In		1 byte	C	-	W	-	-	HVAC control mode	Low
AC	45	Fan speed, Out		1 byte	C	-	-	T	-	percentage (0..100%)	Low
AC	46	Fan speed status, In		1 byte	C	-	W	-	-	percentage (0..100%)	Low
AC	47	Setpoint temperature, Out		2 bytes	C	-	-	T	-	temperature (°C)	Low
AC	48	Setpoint temperature, In		2 bytes	C	-	W	-	-	temperature (°C)	Low
AC	53	Scene, In		1 byte	C	-	W	-	-	scene number	Low
Ventilation	55	ON/OFF, Out		1 bit	C	-	-	T	-	switch	Low
Ventilation	56	ON/OFF Status, In		1 bit	C	-	W	-	-	switch	Low
Ventilation	57	Fan speed No.1 1Bit, Out		1 bit	C	-	-	T	-	switch	Low
Ventilation	58	Fan speed No.2 1Bit, Out		1 bit	C	-	-	T	-	switch	Low
Ventilation	59	Fan speed No.3 1Bit, Out		1 bit	C	-	-	T	-	switch	Low
Ventilation	60	Fan speed, Out		1 byte	C	-	-	T	-	percentage (0..100%)	Low
Ventilation	61	Fan speed status, In		1 byte	C	-	W	-	-	percentage (0..100%)	Low
Ventilation	62	Preset 1Bit, In		1 bit	C	-	W	-	-	scene	Low
Ventilation	68	Scene, In		1 byte	C	-	W	-	-	scene number	Low
Floor Heating	70	ON/OFF, Out		1 bit	C	-	-	T	-	switch	Low
Floor Heating	71	ON/OFF status, In		1 bit	C	-	W	-	-	switch	Low
Floor Heating	72	Preset 1Bit, In		1 bit	C	-	W	-	-	scene	Low
Floor Heating	73	Setpoint temperature, Out		2 bytes	C	-	-	T	-	temperature (°C)	Low
Floor Heating	74	Setpoint temperature, In		2 bytes	C	-	W	-	-	temperature (°C)	Low
Floor Heating	75	Scene, In		1 byte	C	-	W	-	-	scene number	Low
Floor Heating	76	Heating ON/OFF, Out		1 bit	C	-	-	T	-	switch	Low
FCU	78	ON/OFF status, In		1 bit	C	-	W	-	U	switch	Low
FCU	80	Current temperature setpoint, In		2 bytes	C	-	W	-	U	temperature (°C)	Low
FCU	90	ON/OFF, Out		1 bit	C	R	-	T	-	switch	Low
FCU	93	Current setpoint adjustment, Out		2 bytes	C	R	-	T	-	temperature (°C)	Low
FCU	97	Cooling control value, Out		1 bit	C	R	-	T	-	switch	Low

■ 5.1 "General" Communication Object

Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
General	37	Screen locking		1 bit	C	-	W	-	-	enable	Low

NO.	Object Function	Name	Length	Flag	DPT
37	Screen locking	General	1bit	C, W	enable

This communication object is used to receive telegram value from bus to lock the screen of device.

Telegram value:

Disable

Enable

■ 5.2. " Internal sensor" Communication Object

Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
Internal sensor	38	Temperature value		2 bytes	C	R	-	T	-	temperature (°C)	Low

NO.	Object Function	Name	Length	Flag	DPT
38	Temperature value	Internal sensor	2 bytes	C, R, T	temperature (°C)

5. COMMUNICATION OBJECT (continues)

The communication object is used to send telegram value of temperature detected by the built-in temperature sensor of the device to the bus.

■ 5.3. "AC" Communication Object

	Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
	AC	39	External temperature, In		2 bytes	C	-	W	T	U	temperature (°C)	Low
	AC	40	ON/OFF, Out		1 bit	C	-	-	T	-	switch	Low
	AC	41	ON/OFF Status, In		1 bit	C	-	W	-	-	switch	Low
	AC	42	Preset 1Bit, In		1 bit	C	-	W	-	-	scene	Low
	AC	43	Mode, Out		1 byte	C	-	-	T	-	HVAC control mode	Low
	AC	44	Mode status, In		1 byte	C	-	W	-	-	HVAC control mode	Low
	AC	45	Fan speed, Out		1 byte	C	-	-	T	-	percentage (0..100%)	Low
	AC	46	Fan speed status, In		1 byte	C	-	W	-	-	percentage (0..100%)	Low
	AC	47	Setpoint temperature, Out		2 bytes	C	-	-	T	-	temperature (°C)	Low
	AC	48	Setpoint temperature, In		2 bytes	C	-	W	-	-	temperature (°C)	Low
	AC	53	Scene, In		1 byte	C	-	W	-	-	scene number	Low

NO.	Object Function	Name	Length	Flag	DPT
39	External temperature, In	AC	2 bytes	C, W, T, U	temperature (°C)
This communication object is used to receive the temperature value from bus, and the temperature value on the device will be updated.					
40	ON/OFF, Out	AC	1 byte	C, T	counter pulses (0.255)
This communication object is used to send control telegram value of AC on/off status. Telegram value: ON OFF					
41	ON/OFF Status, In	AC	1 byte	C, W	counter pulses (0.255)
The communication object is used to receive the status feedback value of AC on/off status. Telegram value: ON OFF					
42	Preset 1Bit, In	AC	1 bit	C, T	scene
The communication object is used to receive returning to the preset state command from bus. Telegram value: 0 1					
43	Mode, Out	AC	2 bytes	C, W, T, U	HVAC control mode
This communication object is used to send the control telegram of AC each mode to bus. Telegram value: Cool Heat Fan only Auto					
44	Mode status, In	AC	1 byte	C, W	HVAC control mode
This communication object is used to receive status feedback of AC each mode. Telegram value: Cool Heat Fan only Auto					

5. COMMUNICATION OBJECT (continues)

■ 5.4. " Ventilation" Communication Object

	Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
	Ventilation	54	External temperature, In		2 bytes	C	-	W	T	U	temperature (°C)	Low
	Ventilation	55	ON/OFF, Out		1 bit	C	-	-	T	-	switch	Low
	Ventilation	56	ON/OFF Status, In		1 bit	C	-	W	-	-	switch	Low
	Ventilation	57	Fan speed No.1 1Bit, Out		1 bit	C	-	-	T	-	switch	Low
	Ventilation	58	Fan speed No.2 1Bit, Out		1 bit	C	-	-	T	-	switch	Low
	Ventilation	59	Fan speed No.3 1Bit, Out		1 bit	C	-	-	T	-	switch	Low
	Ventilation	60	Fan speed, Out		1 byte	C	-	-	T	-	percentage (0..100%)	Low
	Ventilation	61	Fan speed status, In		1 byte	C	-	W	-	-	percentage (0..100%)	Low
	Ventilation	62	Preset 1Bit, In		1 bit	C	-	W	-	-	scene	Low
	Ventilation	68	Scene, In		1 byte	C	-	W	-	-	scene number	Low

NO.	Object Function	Name	Length	Flag	DPT
54	External temperature, In	Ventilation	2 bytes	C, W, T, U	temperature (°C)
This communication object is used to receive the temperature value from bus, and the temperature value on the device will be updated.					
55	ON/OFF, Out	Ventilation	1 bit	C, T	switch
The communication object is used to send control command of Ventilation on/off status to bus. Telegram value: ON OFF					
56	ON/OFF Status, In	Ventilation	1 bit	C, W	switch
The communication object is used to receive the status feedback value of Ventilation on/off status. Telegram value: ON OFF					
57	Fan speed No.1 1Bit, Out	Ventilation	1 bit	C, T	switch
58	Fan speed No.2 1Bit, Out	Ventilation	1 bit	C, T	switch
59	Fan speed No.3 1Bit, Out	Ventilation	1 bit	C, T	switch
These three communication objects are used to send telegram value to bus at same time. These values are used to control fan speed together that set by the parameters shown as below. "Object value for fan speed off." "Object value for fan speed low" "Object value for fan speed medium" "Object value for fan speed high" Telegram value: ON OFF					
60	Fan speed, Out	Ventilation	1 byte	C, T	percentage (0.100%)
This communication object is used to send the control telegram of Ventilation fan speed to bus. Telegram value: 0%...100% Or 0...255					
61	Fan speed status, In	Ventilation	1 byte	C, W	percentage (0.100%)

5. COMMUNICATION OBJECT (continues)

This communication object is used to receive status feedback of Ventilation fan speed. Telegram value: 0%...100% Or 0...255					
62	Preset 1Bit, In	Ventilation	1 bit	C, W	scene
The communication object is used to receive returning to the preset state command from bus. Telegram value: 0 1					
68	Scene. In	Ventilation	1 byte	C, W	scene number
This communication object is used to recall the scene control of ventilation. The parameter is set to the scene No.1~64, and the actual corresponding telegram value is 0~63.					

■ 5.5. " Floor Heating" Communication Object

	Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
	Floor Heating	69	External temperature, In		2 bytes	C	-	W	T	U	temperature (°C)	Low
	Floor Heating	70	ON/OFF, Out		1 byte	C	-	-	T	-	counter pulses (0..255)	Low
	Floor Heating	71	ON/OFF status, In		1 byte	C	-	W	-	-	counter pulses (0..255)	Low
	Floor Heating	72	Preset 1Bit, In		1 bit	C	-	W	-	-	scene	Low
	Floor Heating	73	Setpoint temperature, Out		2 bytes	C	-	-	T	-	temperature (°C)	Low
	Floor Heating	74	Setpoint temperature, In		2 bytes	C	-	W	-	-	temperature (°C)	Low
	Floor Heating	75	Scene, In		1 byte	C	-	W	-	-	scene number	Low
	Floor Heating	76	Heating ON/OFF, Out		1 bit	C	-	-	T	-	switch	Low

NO.	Object Function	Name	Length	Flag	DPT
69	External temperature, In	Floor Heating	2 bytes	C, W, T, U	temperature (°C)
This communication object is used to receive the temperature value from bus, and the temperature value on the device will be updated.					
70	ON/OFF, Out	Floor Heating	1bit	C, T	switch
This communication object is used to send control command of Floor Heating on/off status to bus. Telegram value: ON OFF					
71	ON/OFF status, In	Floor Heating	1bit	C, W	switch
The communication object is used to receive the status feedback value of Floor Heating on/off status. Telegram value: ON OFF					
72	Preset 1Bit, In	Floor Heating	1 bit	C, W	scene
The communication object is used to receive returning to the preset state command from bus. Telegram value: 0 1					
73	Setpoint temperature, Out	Floor Heating	2 bytes	C, T	temperature (°C)
This communication object is used to send the control telegram of Floor Heating setpoint temperature to bus. Telegram value: 16°C...30°C					

5. COMMUNICATION OBJECT (continues)

Telegram value: 16°C...30°C					
74	Setpoint temperature, In	Floor Heating	2 bytes	C, W	temperature (°C)
The communication object is used to receive the temperature setting value from bus, and the temperature setting value on the device will be updated. Telegram value: 16°C...30°C					
75	Scene, In	Floor Heating	1 byte	C, W	scene number
This communication object is used to recall the scene control of floor Heating. The parameter is set to the scene No.1~64, and the actual corresponding telegram value is 0~63.					
76	Heating ON/OFF, Out	Floor Heating	1 bit	C, T	switch
This communication object is used to send the control telegram of Floor Heating ON or OFF to bus. Telegram value: ON OFF					

■ 5.6. " FCU" Communication Object

	Name	Number	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
	FCU	78	ON/OFF status, In		1 bit	C	-	W	-	U	switch	Low
	FCU	79	External temperature, In		2 bytes	C	-	W	T	U	temperature (°C)	Low
	FCU	80	Current temperature setpoint, In		2 bytes	C	-	W	-	U	temperature (°C)	Low
	FCU	81	Heating/Cooling mode, In		1 bit	C	-	W	-	U	cooling/heating	Low
	FCU	83	Fan speed, In		1 byte	C	-	W	T	U	percentage (0..100%)	Low
	FCU	84	Fan automatic operation, In		1 bit	C	-	W	T	U	enable	Low
	FCU	89	Scene, In		1 byte	C	-	W	-	-	scene control	Low
	FCU	90	ON/OFF, Out		1 bit	C	R	-	T	-	switch	Low
	FCU	93	Current setpoint adjustment, Out		2 bytes	C	R	-	T	-	temperature (°C)	Low
	FCU	94	Heating/Cooling mode, Out		1 bit	C	R	-	T	-	cooling/heating	Low
	FCU	96	Heating control value, Out		1 bit	C	R	-	T	-	switch	Low
	FCU	97	Cooling control value, Out		1 byte	C	R	-	T	-	percentage (0..100%)	Low
	FCU	98	Fan speed, Out		1 byte	C	R	-	T	-	percentage (0..100%)	Low
	FCU	99	Fan Automatic operation, Out		1 bit	C	R	-	T	-	enable	Low

NO.	Object Function	Name	Length	Flag	DPT
78	ON/OFF status, In	FCU	1bit	C, W, U	switch
The communication object is used to receive the feedback telegram value of FCU on/off status. Telegram value: ON OFF					
79	External temperature, In	Floor Heating	2 bytes	C, W, T, U	temperature (°C)
This communication object is used to receive the temperature value from bus, and the temperature value on the device will be updated.					
80	Current temperature setpoint, In	FCU	1bit	C, W, U	temperature (°C)
This communication object is used to receive telegram value of FCU setpoint temperature from bus, and the setpoint temperature on the device displayed will be updated. Telegram value:10...35					
90	ON/OFF, Out	FCU	1 bit	C, R, T	switch
The communication object is used to receive the feedback telegram value of FCU on/off status. Telegram value: ON OFF					

5. COMMUNICATION OBJECT (continues)

93	Current setpoint adjustment, Out	FCU	2 bytes	C, R, T	temperature (°C)
This communication object is used to send the telegram value of FCU current base setpoint temperature to bus. Telegram value: 10°C...35°C					
94	Heating/Cooling mode, Out	FCU	1bit	C, R, T	cooling/heating
The communication object is used to send control telegram value of FCU Heating/Cooling mode to bus. Telegram value: Heating Cooling					
96	Heating control value, Out	FCU	1bit	C, R, T	switch
These communication objects are used send control telegram value of FCU Heating or Heating/cooling to bus. Telegram value: Heating Cancel Heating					
97	Cooling control value, Out	FCU	2 bytes	C, R, T	percentage (0.100%)
This communication object is used send control telegram value of FCU Heating Cooling to bus. Telegram value: Cooling Cancel Cooling					