

LIVING NOW - KNX 3 in 1 flat thermostat black

Cat.No(s):KG4691F3KNX



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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 wallmounted 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

	Operating Voltage	21-30V DC, via the	
		KNX bus	
Derver Gumby	Current consumption,	<20mA/24V DC,	
Power Supply	bus	<22mA/30V DC	
	Power consumption,	· Mary 200	
	bus	<max.300mvv< td=""></max.300mvv<>	
Connections		Via bus connection	
Connections	NINA	terminal(red/black)	
	Operation	−5 °C + 45 °C	
Temperature	Storage	–25 °C + 55 °C	
	Transport	– 25 °C + 70 °C	
Farringanant	L Louis della c	<93%, except for	
Environment Humality	Humidity	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.

- General	Normal day backlight [10100]	70	÷	%
General setting	Normal standby backlight [030]	10	.▲ ▼	96
- Internal sensor	Normal to standby delay time [160]	5	÷	s
Measurement setting	Buzzer volume level [05, 0=inactive]	1		Ŧ
- HVAC controller				
Controller setting				
 AC setting 				
Fan				
Mode				
 Ventilation setting Fan 				
Floor heating setting				

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)

- General	Temperature sensor setting		
General setting	Temperature calibration	0.0	• °C
 Internal sensor 	Send temperature when the result change by [010]	1.0	÷ °C
Measurement setting	Cyclically send temperature [0255,0=inactive]	1	‡ min
- HVAC controller			
Controller setting			
 AC setting 			
Fan			
Mode			
Scene			
 Ventilation setting 			
Fan			
Scene			
- Floor heating setting			
Scene			

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°C
 0°C
 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.

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

- General	Room temperature control function as	AC control	-
General setting	Ventilation function Floor heating function	✓ ✓	
 Internal sensor 	, i i i i i i i i i i i i i i i i i i i		
Measurement setting			
- HVAC controller			
Controller setting			
- AC setting			
Fan			
Mode			
 Ventilation setting 			
Fan			
Floor heating setting			

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)

- General	Room temperature reference from	O Internal sensor O External sensor	
General setting	Time period for request external sensor [0255]	10	‡ min
- Internal sensor	Object type of AC ON/OFF	1Bit 🔘 1Byte	
Measurement setting	Output value for AC ON	1	¢
- HVAC controller	Status value for AC ON	1	÷
	Output value for AC OFF	0	* *
Controller setting	Status value for AC OFF	0	*
- AC setting Fan	When voltage recovery, AC status is	Last Status 🔘 By setting	
Mode	ON/OFF status	OFF ON	
Scene	Mode	Cool	•
 Ventilation setting 	Fan speed	High	*
Fan	Temperature setpoint [1630]	26	‡ °C
Scene	AC Setting for Preset value='0'	OFF ON	
- ribor neating setting	Mode	Cool	•
Scene	Fan speed	High	•
	Temperature setpoint [1630]	26	≎ °C
	AC Setting for Preset value='1'	OFF ON	
	AC Setting for Breest value="1"		
	Ac setting for Preset value = 1		_
	Mode	Cool	
	Fan speed	High	•
	Temperature setpoint [1630]	26	÷.
	Min. setpoint temperature [1630]	16	* *
	Max. setpoint temperature [1630]	30	÷ a
	Scene		

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)	4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues)
Parameter "Status value for AC ON"	Parameter "Mode"
Setting the status feedback value for AC ON.	Setting "mode" OF AC after voltage recovery.
Options: 0255	Options:
Parameter "Output value for AC OFF"	Auto
Setting the telegram dent for AC OFF.	Cool
Options: 0255	Heat
Parameter "Status value for AC OFF"	Fan
Setting the status feedback value for AC OFF.	Parameter "Fan speed"
Options: 0255	Setting "Fan speed" of AC after voltage recovery.
Parameter "When voltage recovery, AC status is."	Options:
Setting AC status of HVAC interface after voltage recovery.	Auto
Options:	Low
Last Status	Medium
By setting	High
When "By setting" be chosen Set the following	Parameter "Temperature setpoint [1630]"
parameters :	Setting "Temperature setpoint" of AC after voltage recovery.
Parameter "ON/OFF status"	Options: 1630
Setting "ON/OFF status" of AC after voltage recovery.	Parameter "AC Setting for Preset value='1'"
Options:	Setting the preset output when the communication object
OFF	"Preset 1Bit" of AC receive "0".
ON	Parameter "Mode"
Parameter "Mode"	Setting "Mode" of AC after voltage recovery.
Setting "mode" of AC after voltage recovery.	Options:
Options:	Auto
Auto	Cool
Cool	Heat
Heat	Fan
Fan	Parameter "Fan speed"
Parameter "Fan speed"	Setting "Fan speed" of AC after voltage recovery.
Setting "Fan speed" of AC after voltage recovery.	Options:
Options:	Auto
Auto	Low
Low	Medium
Medium	High
High	Parameter "Temperature setpoint [1630]"
Parameter "Temperature setpoint [1630]"	Setting "Temperature setpoint" of AC after voltage recovery.
Setting "Temperature setpoint" of AC after voltage recovery.	Options: 1630
Options: 1630	Parameter "Min. setpoint temperature [1630]"
Parameter "AC Setting for Preset value='0'"	Setting to limit the adjustable range of the setting minimum
Setting the preset output, when the communication object	temperature.
"Preset 1Bit" of AC receive "0"	If the setting temperature beyond the limited range, then
	will output the limited temperature.
	Options: 1630

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

- General	Object datatype of 1byte fan speed	Fan stage (DPT_5.100) Percentage (DPT_5.001)	
General setting	Output value for fan speed		
- Internal sensor	Output value for fan speed auto	0	96
Measurement setting	Output value for fan speed low	33	96
,	Output value for fan speed medium	67	96
 HVAC controller 	Output value for fan speed high	100	96
Controller setting	Status feedback for fan speed		
- AC setting	Status value for fan speed auto	0	96
Fan	Status value for fan speed low	33	96
Mode	Status value for fan speed medium	67	96
 Ventilation setting 	Status value for fan speed high	100	96
Fan			
 Floor heating setting 			
Scene			

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.

- General	Auto mode	✓
General setting	Output value for Auto [0255]	0
General setting	Status value for Auto [0255]	0 *
 Internal sensor 	Heat mode	\checkmark
Measurement setting	Output value for Heat [0255]	1 ‡
	Status value for Heat [0255]	1 \$
 HVAC controller 	Cool mode	✓
Controller setting	Output value for Cool [0255]	3
 AC setting 	Status value for Cool [0255]	3 *
Fan	Fan mode	
Mode	Output value for Fan [0255]	9 ‡
 Ventilation setting 	Status value for fan [0255]	9 *
Enn	Dehumidification mode	v
- Floor heating setting	Output value for Dehumidification [0255]	14 🗘
Scene	Status value for Dehumidification [0255]	14 ‡

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.

- General	Work mode	O Master Slave
General setting	Room temperature reference from	Internal sensor External sensor
- Internal sensor	Control value after temp. error [0100] (if 2-point control, set value '0'=0, set value '>0'=1)	0 *
Measurement setting		Setpoint temperature
 HVAC controller 	Interface display temperature	 Actual temperature
	Setpoint temperature adjustment step	0.5К 1К
Controller setting	Min. setpoint temperature [537]	5 * °C
 FCU setting 	Max sational temperature [5, 37]	37
Cooling control		5
Fan	Power on/off status after download	OFF ON
Scene	Power on/off status after voltage recovery	As before voltage failure 💌
 Ventilation setting Fan 	Room temperature control mode	Cooling -
Scene	Initial setpoint temperature	20.0 💌 °C
 Floor heating setting 		
Scene	Fan	v
	Scene	✓

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.

Room temperature reference from	O Internal sensor	External sensor		
Time period for request external sensor [0255]	10		* *	min

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

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.

- General	Type of heating control	Switching on/off(use 2-point control)	-
General setting Proximity setting	Invert control value Lower Hysteresis [0200]	10	\$ *0.1H
+ Button	Upper Hysteresis [0200] Cyclically send control value[0255]	0	0.11
+ Internal sensor			

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:

Type of heating control	Switching on/off(use 2-point control)	•
Invert control value	\checkmark	
Lower Hysteresis [0200]	10	\$ *0.1K
Upper Hysteresis [0200]	10	‡ *0.1K

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 Pl control) "set below:

Type of heating control	Switching PWM(use PI control)	•
Invert control value	✓	
PWM cycle time [1255]	15	‡ min
Heating speed	Hot water heating(5K/150min)	•

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:

Type of heating control	Continuous control(use PI control)	•
Invert control value	✓	
Heating speed	Hot water heating(5K/150min)	•
Send control value on change by [0100,0=inactive]	4	\$%

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.

General	Type of cooling control	Continuous control(use PI control)	•
General setting	Invert control value	✓	
,	Cooling speed	Cooling ceiling(5K/240min)	*
Internal sensor	Send control value on change by [0100,0=inactive]	4	\$ 9
Measurement setting	Cyclically send control value [0255]	0	‡ mir
HVAC controller			
Controller setting			
- FCU setting			
Cooling control			
Fan			
Scene			
Ventilation setting			
Fan			
Scene			
Floor heating setting			
Scene			

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:

Type of cooling control	Switching on/off(use 2-point control)	•
Invert control value		
Lower Hysteresis [0200]	10	‡ *0.1K
Upper Hysteresis [0200]	10	‡ *0.1K

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 Pl control)" set below:

Type of cooling control	Switching PWM(use PI control)	•
Invert control value		
PWM cycle time [1255]	15	‡ min
Cooling speed	Cooling ceiling(5K/240min)	•

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:

Type of cooling control	Continuous control(use PI control)	•
Invert control value		
Cooling speed	Cooling ceiling(5K/240min)	•
Send control value on change by [0100,0=inactive]	4	÷ %

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 4.6.1and 4.6.2

- General	Type of heating control	Continuous control(use PI control)	•
General retting	Invert control value	✓	
General setting	Heating speed	Hot water heating(5K/150min)	*
+ Internal sensor	Send control value on change by [0100,0=inactive]	4	\$ %
 HVAC controller 			
	Type of cooling control	Continuous control(use Pl control)	•
Controller setting	Invert control value		
 FCU setting 	Cooling speed	Cooling ceiling(5K/240min)	•
Heating/Cooling control	Send control value on change by	4	\$ %
Fan	[0.100,0-mactive]		
Scene	Cyclically send control value[0255]	0	‡ min
+ Ventilation setting			
Floor heating setting			

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.

General	Object datatype of 1byte fan speed	Percentage (DPT_5.001) Fan stage (DPT_5.100)	
General setting	Output value for Fan speed		
Internal sensor	Output value for Fan speed low	33	÷
Measurement cetting	Output value for Fan speed medium	67	* *
inclusion control sectoring	Output value for Fan speed high	100	÷
HVAC controller	Status feedback for Fan speed		
Controller setting	Status value for Fan speed low	33	÷
 FCU setting 	Status value for Fan speed medium	67	÷
Cooling control	Status value for Fan speed high	100	÷
Fan	Automatic operation function	Disable	
Scene			
 Ventilation setting 			
Fan			
Scene			
 Floor heating setting 			

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:

Scene

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

Automatic operation function	Local controller		•
Fan speed auto control setting			
Condition setting for using PI control			
Threshold value speed OFF<->low [1255]	80		÷
Threshold value speed low<->medium [1255]	150		÷
Threshold value speed medium<->high [1255]	200		¢
Hysteresis threshold value in +/-[050]	10		÷
Condition setting for using 2-point control			
Temperature difference speed OFF<- >low [1200]	20	* *	*0.1°C
Temperature difference speed low<- >medium [1200]	30	÷	*0.1°C
Temperature difference speed medium<- >high [1200]	40	* *	*0.1°C
Hysteresis temperature difference in [050]	10	Å T	*0.1°C
Minimum time in fan speed [065535]	60		÷ s

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 $_{\circ}$

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.



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.

1->Assign scene NO.[164,0=inactive]	1	* *
ON/OFF status	Unchange	-
Temperature	Unchange	

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.

- General	Room temperature reference from	Internal sensor External sensor
General setting	Object type of AC ON/OFF	◎ 1Bit ○ 1Byte
+ Internal sensor	When voltage recovery, AC status is	Last Status By setting
 HVAC controller 		
Controllor setting	AC Setting for Preset value='0'	OFF ON
Controller setting	AC Setting for Preset value='1'	OFF ON
 AC setting 	-	National Control Contr
Fan	Min. setpoint temperature [1630]	16 * °C
Mode	Max. setpoint temperature [1630]	30 ÷ °C
Scene		
	Scene	✓
+ Ventilation setting		
Floor heating setting		

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 para	meters shown as below.	
Room temperature reference from	🔵 Internal sensor 🔘 External sensor	

Time period for request external sensor 10 ‡ min

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.

Object type of AC ON/OFF	🗌 1Bit 🔘 1Byte	
Output value for AC ON	1	*
Status value for AC ON	1	*
Output value for AC OFF	0	*
Status value for AC OFF	0	*

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.

When voltage recovery, AC status is ON/OFF status Last Status
 By setting
 OFF
 ON

Parameter "ON/OFF status"

When voltage recovery, AC status is	🔵 Last Status 🔘 By setting	
ON/OFF status	OFF ON	
Mode	Cool	•
Fan speed	High	•
Temperature setpoint [1630]	26	‡ ℃

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:

AC Setting for Preset value='0'	OFF ON	
Mode	Cool	•
Fan speed	High	•
Temperature setpoint [1630]	26	¢ °C
AC Setting for Preset value='1'	OFF O ON	
Mode	Cool	•
Fan speed	High	-
Temperature setpoint [1630]	26	¢ °C

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:

ŀ	\u1	to
I	٥v	v

2011

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

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.

- General	Auto mode	v
General cotting	Output value for Auto [0255]	0 ‡
General setting	Status value for Auto [0255]	0 *
+ Internal sensor	Heat mode	v
- HVAC controller	Output value for Heat [0255]	1 ‡
	Status value for Heat [0255]	1 \$
Controller setting	Cool mode	v
 AC setting 	Output value for Cool [0255]	3 ‡
Fan	Status value for Cool [0255]	3 *
Mode	Fan mode	 Image: A start of the start of
Scene	Output value for Fan [0255]	9
+ Ventilation setting	Status value for fan [0255]	9 ‡
Floor heating setting	Dehumidification mode	~
	Output value for Dehumidification [0255]	14 *
	Status value for Dehumidification [0255]	14 *

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.

- General	1->Assign scene NO.[164,0=inactive]	0	* *
General setting	2->Assign scene NO.[164,0=inactive]	0	Ť
+ Internal sensor	3->Assign scene NO.[164,0=inactive]	0	Ť
- HVAC controller	4->Assign scene NO.[164,0=inactive]	0	Ŧ
Controller setting			
- AC setting			
Fan			
Mode			
Scene			
+ Ventilation setting			
Floor heating setting			

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.

1->Assign scene NO.[164,0=inactive]	1	÷
ON/OFF status	OFF ON	

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.

1->Assign scene NO.[164,0=inactive]	1	* *
ON/OFF status	OFF ON	
Mode	Cool	•
Fan speed	High	•
Temperature setpoint [1630]	26	‡°C

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 Airconditioner 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.

- General	Room temperature reference from	Internal sensor External sensor	
General setting	When voltage recovery, Ventilation status is	O Last Status O By setting	
+ Internal sensor	1Bit Preset Speed for value='0'	Low	•
	1Bit Preset Speed for value='1'	Medium	٠
- HVAC controller	Scene	×	
Controller setting			
+ AC setting			
- Ventilation setting			
Fan			
Scene			
Floor heating setting			

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.

Room temperature reference from Internal sensor
External sensor
Time period for request external sensor

‡ min

Parameter "Time period for request external

sensor[0..255] "

[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.

OFF

When voltage recovery, Ventilation status Last Status 💿 By setting

Fan Status

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.

-	General	Object value for fan speed off	No.1=0, No.2=0, No.3=0		•
	General setting	Object value for fan speed low	No.1=1, No.2=0, No.3=0		Ŧ
	lateral error	Object value for fan speed medium	No.1=1, No.2=1, No.3=0		Ŧ
	internal sensor	Object value for fan speed high	No.1=1, No.2=1, No.3=1		Ŧ
	Measurement setting		Fan stage (DPT_5.100)		
-	HVAC controller	Object datatype of Tbyte fan speed	Percentage (DPT_5.001)		
	Controller contine	Output value for fan speed			
	Controller setting	Output value for fan speed off	0	*	%
	- AC setting	Output value for fan speed low	33	÷	%
	Fan	Output value for fan speed medium	67	* *	%
	Mode	Output value for fan speed high	100	÷	%
	 Ventilation setting 				
	Fan	Status feedback for fan speed			
	The second second	Status value for fan speed off	0	÷	%
	 Floor heating setting 	Status value for fan speed low	33	÷	%
	Scene	Status value for fan speed medium	67	÷	%
		Status value for fan speed high	100	÷	%

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.

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=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.

— General	1->Assign scene NO.[164,0=inactive]	0
General setting	2->Assign scene NO.[164,0=inactive]	0
- Internal sensor	3->Assign scene NO.[164,0=inactive]	0 *
Measurement setting	a - Assign scene rest no to a macarej	v
- HVAC controller		
Controller setting		
 AC setting 		
Fan		
Mode		
Scene		
 Ventilation setting 		
Fan		
Scene		
 Floor heating setting 		
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.

1->Assign scene NO.[164,0=inactive]	1	÷	
Fan Status	OFF	•	

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.

- General	Room temperature reference from	Internal sensor External sensor
General setting	Object type of Floor heating ON/OFF	◎ 1Bit ○ 1Byte
Internal sensor	Temperature setpoint for Floor heating ON	26 ÷ °C
HVAC controller	When voltage recovery, Floor heating status is	Last status 💌
Controller setting	1Bit Preset Speed for value='0'	OFF ON
+ AC setting	1Bit Preset Speed for value='1'	OFF ON
 Ventilation setting 	Temperature control method	2 point control
 Floor heating setting 	Lower Hysteresis[0200]	10 ‡ *0.1°C
Scene	Upper Hysteresis[0200]	10 *0.1°C
	Min. setpoint temperature [1030]	10 * °C
	Max. setpoint temperature [1030]	30 ÷ °C
	Scene	V

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.

Room temperature reference from	O Internal sensor	External sensor		
Time period for request external sensor [0255]	10		* *	min

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.

Object type of Floor heating ON/OFF	🗌 1Bit 🔘 1Byte	
Temperature setpoint for Floor heating ON	26	÷ °C
Output value for Floor heating ON	1	
Status value for Floor heating ON	1	.▲ ▼
Output value for Floor heating OFF	0	▲ ⊤
Status value for Floor heating OFF	0	▲ ▽

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.

When voltage recovery, Floor heating status is	ON	•
Temperature setpoint [1030]	26	‡ °C

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

1Bit Preset Speed for value='0'	OFF ON		
Temperature setpoint [1030]	26	* *	°C
1Bit Preset Speed for value='1'	OFF ON		
Temperature setpoint [1030]	26	* *	°C

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

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*

4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues) 4. PARAMETER SETTING DESCRIPTION IN THE ETS (continues) Options: 10... 30 When these parameters not zero, set the parameters shown Parameter "Temperature control method" as below. Parameter "Lower Hysteresis[0.200] " 1->Assign scene NO.[1..64,0=inactive] 1 O OFF O ON Parameter "Upper Hysteresis[0200] " ON/OFF status These two parameters for setting the lower/upper hysteresis Parameter "ON/OFF status" temperature in Floor heating. This parameter for setting ON/OFF status of Floor heating When the actual temperature(T) > the setting temperature + when scene recall. the upper hysteresis temperature, then will stop heating. **Options:** When the actual temperature(T) < the setting temperature – OFF ON

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

1	* *
OFF ON	
26	‡ °C
	1 OFF O ON 26

Parameter "Temperature setpoint [10..30]"

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

Options: 10...30

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. [164,0=inactive]"
Parameter "2->Assign scene NO. [164,0=inactive]"
Parameter "3->Assign scene NO. [164,0=inactive]"
Parameter "4->Assign scene NO. [164,0=inactive]"

These parameters for setting the scene number.

Options: 1...64, 0 is unavailable

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	С	R	W	тι	J Data Type	Priority
■₹	General	37	Screen locking		1 bit	С	-	w .		enable	Low
.	Internal sensor	38	Temperature value		2 bytes	С	R	- 1	г -	temperature (°C)	Low
■₹	AC	39	External temperature, In		2 bytes	С	-	w .	τU	temperature (°C)	Low
	AC	40	ON/OFF, Out		1 byte	С	-	- 1	г -	counter pulses (0255)	Low
■₹	AC	41	ON/OFF Status, In		1 byte	С	-	w ·		counter pulses (0255)	Low
	AC	42	Preset 1Bit, In		1 bit	С	-	w ·		scene	Low
∎₹	AC	43	Mode, Out		1 byte	C	-	- 1	Г-	HVAC control mode	Low
■2	AC	44	Mode status, In		1 byte	C	-	w -		HVAC control mode	Low
∎₹	AC	45	Fan speed, Out		1 byte	C	-	- 1	г -	percentage (0100%)	Low
■₹	AC	46	Fan speed status, In		1 byte	C	-	W ·		percentage (0100%)	Low
∎₹	AC	47	Setpoint temperature, Out		2 bytes	C	-	- 1	Γ-	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	С	-	- 1	г -	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	-	- 1	Г -	switch	Low
∎₹	Ventilation	58	Fan speed No.2 1Bit, Out		1 bit	C	-	- 1	г -	switch	Low
■₹	Ventilation	59	Fan speed No.3 1Bit, Out		1 bit	C	-	- 1	Г -	switch	Low
∎₹	Ventilation	60	Fan speed, Out		1 byte	C	-	- 1	Г-	percentage (0100%)	Low
‡	Ventilation	61	Fan speed status, In		1 byte	C	-	W ·		percentage (0100%)	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	С	-	- 1	г -	switch	Low
∎₹	Floor Heating	71	ON/OFF status, In		1 bit	С	-	W ·		switch	Low
₽ ₽	Floor Heating	72	Preset 1Bit, In		1 bit	C	-	W ·		scene	Low
■₹	Floor Heating	73	Setpoint temperature, Out		2 bytes	C	-	- 1	Γ-	temperature (°C)	Low
-₹	Floor Heating	74	Setpoint temperature, In		2 bytes	С	-	W ·		temperature (°C)	Low
.	Floor Heating	75	Scene, In		1 byte	С	-	W ·		scene number	Low
- 2	Floor Heating	76	Heating ON/OFF, Out		1 bit	С	-	- '	г -	switch	Low
∎₹	FCU	78	ON/OFF status, In		1 bit	С	-	w -	· U	switch	Low
.	FCU	80	Current temperature setpoint, In		2 bytes	С	-	w -	· U	temperature (°C)	Low
=≠	FCU	90	ON/OFF, Out		1 bit	С	R	- 1	г -	switch	Low
	FCU	93	Current setpoint adjustment, Out		2 bytes	С	R	- 1	г -	temperature (°C)	Low
■‡	FCU	97	Cooling control value, Out		1 bit	С	R	- 1	r -	switch	Low

■ 5.1 "General" Communication Object

	Name	Number *	Object Function	Group Address	Length	С	R	w	Т	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							
Tł Te	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	Object Function		Group Address Length C				WΤ	U	Data	Туре		Priority
■ Internal sensor 38			38	Temper	ature value			2 bytes	C R	- 1	Т	-	tempe	erature (°C)	l	Low
Ν	NO.	Obje	ect Function		Name		Lengtl	ı				Flag		DI	т	
	38	Temp	perature value	9	Internal sensor		2 byte	5			C	, R, T		tempera	ture	(°C)

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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
7	AC	41	ON/OFF Status, In			1 bit	C - W	switch	Low
+ →	AC	42	Preset 1Bit, In Mode Out			1 bit	C - W	scene	Low
+ z	AC	45	Mode, Out Mode status In			1 byte	C - W	HVAC control mode	Low
	AC	45	Fan speed, Out			1 byte	с. т.	percentage (0100%)	Low
■2	AC	46	Fan speed status, In			1 byte	C - W	percentage (0100%)	Low
₽₹	AC	47	Setpoint temperature,	Out		2 bytes	С Т -	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 Fu	nction	Name	Length		Flag	DPT	
	39	External temp	erature, In	AC	2 bytes		C, W, T, U	temperature (°	°C)
Thi	s commun	ication object is used	to receive the tem	perature value	from bus, and t	he tempe	rature value on t	he device will be upda	ated.
	40	ON/OFF,	Out	AC	1 byte		С, Т	counter pulses (0	.255)
Thi	s commun	ication object is used	to send control tel	legram value of	AC on/off statu	JS.			
	Telegram	n value:		-					
	g								
		ON							
		OFF							
	41	ON/OFF St	atus, In	AC	1 byte		C, W	counter pulses (0	.255)
The	e communi	ication object is used t	o receive the statu	us feedback valu	ue of AC on/off	status.			
	Telegram	n value:							
	-								
		ON							
		OFF							
	42	Preset 1E	Bit, In	AC	1 bit		С, Т	scene	
The	communi	ication object is used t	o receive returnin	a to the preset	state command	from bus			
	T-1			g to the preset					
	Telegram	i value:							
		0							
		1							
	12	Mada	Qu.+	٨٢	2 hutos			HV/AC control m	odo
	45	widde, v	Jui	AC	2 Dytes		C, W, I, U	HVAC CONTOLIN	oue
Thi	s commun	ication object is used	to send the contro	ol telegram of A	C each mode to	o bus.			
	Telegram	n value:							
	0	Cool							
		COOI							
		Heat							
		Fan only							
		Auto							
		Auto							
	44	Mode stat	tus, In	AC	1 byte		C, W	HVAC control m	ode
Thi	s commun	ication object is used	to receive status fe	eedback of AC e	each mode.				
	Telegram	n value:							
		Cool							
		Heat							
		Fan only							
		Auto							

5. COMMUNICATION OBJECT (continues)

5.4. "Ventilation" Communication Object

	Name	Number *	Object Function	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■ ₽	Ventilation	54	External temperature, In		2 bytes	С	-	W	Т	U	temperature (°C)	Low
∎ ₹	Ventilation	55	ON/OFF, Out		1 bit	С	-	-	Т	-	switch	Low
■ ₹	Ventilation	56	ON/OFF Status, In		1 bit	С	-	W	-	-	switch	Low
∎₽	Ventilation	57	Fan speed No.1 1Bit, Out		1 bit	С	-	-	Т	-	switch	Low
■ ₽	Ventilation	58	Fan speed No.2 1Bit, Out		1 bit	С	-	-	Т	-	switch	Low
■₹	Ventilation	59	Fan speed No.3 1Bit, Out		1 bit	С	-	-	Т	-	switch	Low
■ ₽	Ventilation	60	Fan speed, Out		1 byte	С	-	-	Т	-	percentage (0100%)	Low
∎₽	Ventilation	61	Fan speed status, In		1 byte	С	-	W	-	-	percentage (0100%)	Low
-	Ventilation	62	Preset 1Bit, In		1 bit	С	-	W	-	-	scene	Low
∎₽	Ventilation	68	Scene, In		1 byte	С	-	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 com	nmunication object is used to receive the	temperature value fro	om bus, and the te	mperature value on	the device will be updated.
55	ON/OFF, Out	Ventilation	1 bit	С, Т	switch
The com	nmunication object is used to send contro	ol command of Ventila	ition on/off status	to bus.	
Tele	egram value:				
	ON				
	OFF				
56	ON/OFF Status, In	Ventilation	1 bit	C, W	switch
The com	nmunication object is used to receive the	status feedback value	of Ventilation on/	off status.	
Tele	egram value:				
	ON				
	OFF				
57	Fan speed No.1 1Bit, Out	Ventilation	1 bit	С, Т	switch
58	Fan speed No.2 1Bit, Out	Ventilation	1 bit	С, Т	switch
59	Fan speed No.3 1Bit, Out	Ventilation	1 bit	С, Т	switch
These th	nree communication objects are used to s	send telegram value to	bus at same time	<u>.</u>	
These va	alues are used to control fan speed toget	her that set by the par	ameters shown as	s below.	
"Ob	ject value for fan speed off."				
"Ob	ject value for fan speed low"				
"Ob	ject value for fan speed medium"				
"Ob	ject value for fan speed high"				
Tele	egram value:				
	ON				
	OFF				
60	Fan speed, Out	Ventilation	1 byte	С, Т	percentage (0.100%)
This com	nmunication object is used to send the co	ontrol telegram of Ven	itilation fan speed	to bus.	
Tele	egram value:	5	·		
	0%100%				
	Or 0255				
61	Fan speed status, In	Ventilation	1 byte	C, W	percentage (0.100%)

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5. COMMUNICATION OBJECT (continues) This communication object is used to receive status feedback of Ventilation fan speed. Telegram value: 0%...100% Or 0...255 Preset 1Bit, In Ventilation 62 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 Ventilation C, W Scene. In 1 byte 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 CRWTU Name Number * **Object Function** Priority Group Address Lenath Data Type **₽**₽ 69 2 bytes С - W T U Floor Heating External temperature, In temperature (°C) Low Floor Heating ∎**‡** 70 ON/OFF, Out 1 byte C т counter pulses (0.,255) Low **₽** ON/OFF status, In -W - -Floor Heating 71 1 byte С counter pulses (0..255) Low ₽ Floor Heating 72 Preset 1Bit, In 1 bit c W - -scene Low **‡** 73 Floor Heating С temperature (°C) Setpoint temperature, Out 2 bytes -- T -Low **₽** Floor Heating 74 -W -Setpoint temperature, Ir 2 bytes С temperature (°C) Low ∎**‡** Floor Heating C _ W - -75 Scene, In 1 byte scene number Low ∎‡ Floor Heating Heating ON/OFF, Out 76 1 bit - 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 switch 1bit С, Т 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 2 bytes С, Т Setpoint temperature, Out Floor Heating 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

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5. COMMUN	ICATION OBJECT (co	ontinues)						
Telegra	m value: 16°C30°C							
74	Setpoint temperatu	ıre, In Flo	or Heating	2 bytes		C, W	temperature ((°C)
The commu	nication object is used	to receive the temp	erature setting v	alue from bu	s, and the	e temperature se	tting value on the dev	vice will
be updated	2		J			·	5	
Telegrar	m value: 16°C30°C							
75	Scono In	Flo	or Heating	1 buto			ccono numb	or
75	Scene, in	FIO	or Heating	Tbyte		C, W	scene numb	er
This commu	nication object is used	to recall the scene	control of floor H	leating. The p	paramete	r is set to the sce	ne No.1~64, and the	actual
correspondir	ng telegram value is 0 [,]	~63.						
76	Heating ON/OFF,	Out Flo	or Heating	1 bit		С, Т	switch	
This commu	nication object is used	to send the control	telegram of Floo	or Heating ON	N or OFF	to bus.		
Telegra	m value:							
l	ON							
	OFF							
■ 5.6. " FCU	" Communication (Object						
Name	Number *	Object Function		Group Address	Length	C R W T U	Data Type	Priority
■ 2 FCU	78	ON/OFF status, In			1 bit	C - W - U	switch	Low
■Z FCU	79	External temperature, In			2 bytes	C-WTU	temperature (°C)	Low
■4 FCU	80	Current temperature set	point, In		2 bytes 1 bit	C - W - U	temperature (°C)	Low
	83	Fan speed. In			1 byte	C - W T U	percentage (0.,100%)	Low
■Z FCU	84	Fan automatic operation	ı, İn		1 bit	C - W T U	enable	Low
■ 之 FCU	89	Scene, In			1 byte	C - W	scene control	Low
■Z FCU	90	ON/OFF, Out			1 bit	C R - T -	switch	Low
■Z FCU	93	Current setpoint adjustn	nent, Out		2 bytes	C R - T -	temperature (°C)	Low
	94	Heating/Cooling mode,	Out		1 bit 1 bit	CR-I-	cooling/heating	Low
t FCU	90	Cooling control value, O	ut		1 bit	C R - T -	percentage (0, 100%)	Low
■Z FCU	98	Fan speed, Out			1 byte	C R - T -	percentage (0100%)	Low
■¢ FCU	99	Fan Automatic operation	n, Out		1 bit	C R - T -	enable	Low
NO.	Object Fu	nction	Name	Ler	ngth	Flag	DPT	
78	ON/OFF st	atus, In	FCU	1	bit	C, W, U	switch	
The commur Telegrar	nication object is used m value: ON OFF	to receive the feed	oack telegram va	lue of FCU or	n/off stati	JS.		
79	External temp	erature, In	Floor Heatir	ng 2 b	oytes	C, W, T, U	temperature (°	°C)
This commu	nication object is used	to receive the temp	perature value fro	om bus, and t	he tempe	erature value on t	he device will be upc	lated.
80	Current temperatu	ure setpoint, In	FCU	1	bit	C, W, U	temperature (°	°C)
This commu	nication object is used	to receive telegram	value of FCU se	tpoint tempe	rature fro	om bus, and the s	etpoint temperature	on the
device displa	ayed will be updated.							
Telegra	m value:1035		I					
90	ON/OFF,	, Out	FCU	1	bit	C, R, T	switch	
The commun	nication object is used	to receive the feed	oack telegram va	lue of FCU or	n/off state	JS.		
Telegra	m value:							
	ON							
	UFF							

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5. CONTINIO	NICATION OBJECT (continues)											
93	Current setpoint adjustment, Out	FCU	2 bytes	C, R, T	temperature (°C)							
This commu	This communication object is used to send the telegram value of FCU current base setpoint temperature to bus.											
Telegram value: 10°C35°C												
94 Heating/Cooling mode, Out FCU 1bit C, R, T cooling/heating												
The commu	The communication object is used to send control telegram value of FCU Heating/Cooling mode to bus.											
Telegra	am value:											
	Heating											
	Cooling											
96	Heating control value, Out	FCU	1bit	C, R, T	switch							
These comr	munication objects are used send control teleg	gram value of FCU H	leating or Heati	ng/cooling to bus.								
Telegra	am value:											
	Heating											
	Cancel Heating											
97	Cooling control value, Out	FCU	2 bytes	C, R, T	percentage (0.100%)							
This commu	This communication object is used send control telegram value of FCU Heating Cooling to bus.											
Telegra	Telegram value:											
	Cooling											
	Cancel Cooling											