

INTELLIGENT ARLIGHT ОПИСАНИЕ АППЛИКАЦИОННОЙ ПРОГРАММЫ В ПО ETS

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Панель сенсорная KNX-113-51-MULTI-V5-IN Арт. 031738



Панель сенсорная KNX-113-40-MULTI-V4-IN Арт. 032386





CHAPTER 1 PARAMETER SETTING DESCRIPTION IN THE ETS

1.1 PARAMETER WINDOW "GENERAL"

1.1.1 PARAMETER WINDOW "GENERAL SETTING"

Parameter window "General setting" shown as Fig. 1.1.1, it is mainly for the general setting of the device, such as summer time setting, password setting, colorful strip indication setting, proximity setting, screen saver, panel lock and background, etc.

- General		Device name(max.40 characters)	V50
General setti	ng	Interface Language	English
Summer time	setting	Send cycle of "In operation"telegram [1240,0=inactive]	0 ‡ Seconds
Colorful strip	setting	Temperature display units	Celsius(°C) Fahrenheit(°F)
Proximity sett	ing	Date and Time can be changed via bus	No Ves
Password sett General senso	ing or	Send day/night status	No
+ Home page		Colorful strip function	O Disable O Enable
+ Function page		Proximity sensor response function	🔿 Disable 🔘 Enable
+ Time function		Screen brightness can be changed via bus	No O Yes
+ Event Group fu	inction	Screen backgroud setting	Default 👻
+ Logic function		UI style for Multifunction page	Windows Tile List Tile
		Status indication	Only Icon Both Icon and Tile
		Screen saver	Clock 👻
		Delay time for screen saver[5255]	10 ‡ Seconds
		Delay time for turn off backlight[0255]	10 ‡ Second
		Password function	🔿 Disable 🔘 Enable
		Delay time from function page back to home page when no operation[0255, 0=inactive]	5 [*] Seconds
		Status object read request after restart	Disable Disable
		Note: Page title up to 12 chars., or 5 CF	ninese chars. or 7 Russian, Greek chars.
		Note: Codepage of the project should	select the Unicode(UTF-8).
		 Note: The physical address of 15.15.254 allowed to use it in practical project. 	4 is reserved for production manufacture testing, it is no

Fig. 1.1.1 "General setting" parameter window

Device name (max.40 characters)

Set the device name, no more than 40 bytes, such as **V50**, **V40**. The name of the device can be viewed in the device settings interface. Please refer to the attachment document for details.

Interface Language

Setting the interface language of the touch panel, options:

Chinese	Russiar
English	Italian
German	Greek
French	Other
Spanish	

Language name

This parameter is visible to input language name when interface language is selected as "Other". The device will search for the corresponding language in the library according to the name and display it. When no corresponding language is searched, there will be displayed English by default.

Note: When select "Other" language, it is necessary to confirm with the manufacturer whether the language and the corresponding name is supported.

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

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

Options: 0...240s,0= inactive

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

Temperature display units

Setting temperature display units.

Options: Celsius (°C)

Fahrenheit (°C)

This parameter setting only apply to the temperature display of the homepage, temperature units of the function page are °C.

Date and Time can be changed via bus

Yes

Setting whether the display of date/time on the interface can be modified by the bus.

Options: No

If "Yes" is selected, the object "Date" and the object "Time" is visible, date and time can be modified through the two objects respectively.

Note: the accuracy of RTC real-time clock inside the equipment is ± 5ppm.

Send day/night status

Setting transform way of the day/night status. When status changes, status telegram will be sent through object "Day/Night".

Options: No

Depend to certain time Depend to sunrise&sunset

No: Do not send and objects is invisible.

longitude 160°20' and north latitude 39°56'.

Depend to certain time: switch the day/night status based on the specific time. Such as switch 18:30P.M. to the night status, 6:30A.M. to the day status. Depend to sunrise&sunset: switch the day/night status based on the sunrise and sunset. The coordinate position of the reference point of sunrise and sunset, such as Beijing, China, needs to be defined, with the center located at east

When "Depend to certain time" is selected, the following 4 parameters are visible, for setting the time to switch to the night or to the day.

Parameter "Time for switch to night at: Hours[0..23]"

Parameter "Time for switch to night at: Minutes[0..59]"

These two parameters for setting the time point to switch to the night status, accurate to minutes, such as 18h: 0min.

Parameter "Time for switch to day at: Hours[0..23]"

Parameter "Time for switch to day at: Minutes[0..59]"

These two parameters for setting the time point to switch to the day status, accurate to minutes, such as 18h: 0min.

When "Depend to sunrise&sunset" is selected, the following parameters are visible, for setting the coordinate position of the reference point of sunrise and sunset.

Latitude longitude location setting

Setting the reference point of sunrise and sunset, such as "Beijing, China".

Latitude

Setting whether the reference point of sunrise and sunset is located at south latitude or north latitude.

Options: South North

Parameter "Latitude in degrees[0°..90°]"

Parameter "Latitude in minutes[0'..59']"

These two parameters for setting latitude, such as Beijing located at north latitude $39^{\circ}56'$.

Longitude

Setting whether the base point of sunrise and sunset is located at east longitude or west longitude.

Options: East West

Parameter "Longitude in degrees[0°..180°]"

Parameter "Longitude in minutes[0'..59']"

These two parameters for setting longitude, such as Beijing located at east longitude116°20'.

Time difference from Universal Time[UTC+...]

This parameter for setting the time difference from Universal Time.

Options: (UTC -12: 00) International Date Line West





(UTC -11: 00) Samoa

(UTC +11: 00) Magadan, Salomon Islands, New Caledonia (UTC +12: 00) Aukland, Wellington, Fiji

TIME CALIBRATION

Switching time move to night[-128..127]min

This parameter for setting the delay time to switch to the night status after reaching to the time point of sunset.

Options: -128..127

For example, if setting -10min, it will switch to night status 10min earlier before the sunset; if setting 10min, it will switch to night status 10min later after the sunset.

Switching time move to day[-128..127]min

This parameter for setting the delay time to switch to the day status after reaching to the time point of sunrise.

Options: -128..127

For example, if setting -10min, it will switch to day status 10min earlier before the sunrise; if setting 10min, it will switch to day status 10min later after the sunrise.

(Note: if summer time is set, then sunrise and sunset time will automatically adjust according to time interval of summer time. Details refer to section 1.1.2.)

Colorful strip function

This parameter for setting whether to enable the indication function of colorful strip. Options: Disable

Enable

When enable, parameters setting interface shown as fig.5.1.3.

Note: the indication function of color light bar is applicable to database version 1.3 or above.

Proximity sensor response function

This parameter for setting whether to enable proximity sensor response function.

Options: Disable Enable

When enable, parameter setting interface shown as fig.5.1.4.

Note: proximity sensor response function is applicable to database version 1.3 or above.

Screen brightness can be changed via bus

This parameter for setting whether to adjust the screen brightness through the bus.

Options: No Yes

Screen background setting

This parameter for setting the screen background.

Options: Default

```
1-Church
```

2-Water droplets

Specific pictures of the corresponding option refer to the appendix.

Tip: Background picture can be replaced manually via device setting page interface. When 1-Default is selected, background picture can be replaced through TF card. Details refer to the appendix.

UI style for Multifunction page

Setting the UI style of the multifunction page(Multifunction(Lighting/Blind/ Scene/Value send)).

Options: Windows Tile List Tile

Display effects of the corresponding option refer to the appendix.

Status indication

This parameter is visible when option "Windows Tile" is selected in the previous parameter, for setting the indication effect of control status.

Options: Only Icon

Both Icon and Tile

Only Icon: Indicating control status through the on/off status of the icons in the block. For example, the icon on indicates the lamp to turn on and the icon off indicates the lamp to turn off.

Both Icon and Tile: Indicating control status through the on/off status of the icons and the blocks. For example, the block and icon on indicates the lamp to

turn on, the block and icon off indicates the lamp to turn off. Specific effects refer to the appendix.

Screen saver

Setting whether to enable screen saver.

Options: Disable

Clock Album

If "Clock" is selected, screen will display clock when the panel enters to screen saver mode.

If "Album" is selected, screen will display the three pictures of the program, switching in every 5 seconds.

If "Disable" is selected, the screen saver function is disabled.

Tip: When album is selected, screen-saver picture of the program can be replaced through TF card. Details refer to the appendix.

Delay time for screen saver [5..255]s

This parameter for setting the delay time to enter the screen saver, start counting from entering the screen saver. If screen saver is disable, it will start counting from the last operation of screen.

Options: 5..255

Delay time for turn off backlight[0..255]s

This parameter for setting the delay time to turn off the screen backlight, start counting when enter screen saver. If screen saver is disable, it will starting counting from the last operation of the screen.

Options: 0..255

When set to 0, screen keeps on.

Note: It is only recommend that this option is used for demonstration purpose, screen may be damaged when it is on continuously for long time.

Password function

Setting whether to enable password function, that is, when entering screen saver or screen off, whether to input password when re-enter screen operation. Options: Disable Enable

Enable: when enable, parameter window are visible as shown in fig. 1.1.5. Note: up to 3 passwords can be set.

Delay time from function page back to home page when no operation[0..255,0=inactive] Seconds

This parameter for setting the delay time from function page back to home page when no operation on the device.

Options: 0..255, 0=inactive

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

Status object read request after restart

Setting whether to send status request telegram when the device starts up.

Options: Disable Enable

This parameter is suitable for the switch status feedback, dimming status feedback, blind position feedback, air quality display, external temperature detection and energy metering display, etc.

After being enabled, when the device starts up or the bus is powered on again, it will send telegram to the bus to read brightness value status of switching or dimming. After being enabled, when the device starts up or the bus is powered on again, it will send telegram to the bus to read curtain position status.

After being enabled, when the device starts up or the bus is powered on again, it will send telegram to the bus to read the value of temperature, humidity, CO2, PM2.5 etc. detected by the sensor.

After being enabled, when the device starts up or the bus is powered on again, it will send telegram to the bus to read the value of current, voltage, power, energy, etc. detected by the operator

Note: Page title up to 12 chars., or 5 Chinese chars, or 7 Russian, Greek chars. Note: Codepage of the project should select the Unicode(UTF-8)

Note: The physical address of 15.15.254 is reserved for production manufacture testing, it is not allowed to use it in practical project.

THE CODEPAGE SETTING AS SHOWN IN FOLLOW:

Overview Bus Catalogs	Settings						KNX
Projects Archive ETS Inside		KNX Smart Touch	h V40_V50			Last Modified: 2019/11/18 10:11	Total size: 195.39 MB
+ 7 ± ±	Search	Details	Security	Project Log	Project Files		
Name	Last Modified . Status						
KNX Smart Touch V40_V50	2019/11/18 10:11 Unkn.	Name			Password		
Room Controller Smart	2019/11/18 9:40 Unknow	KNX Smart Touch	V40_V50			Set Passwo	ord
		Project Number			BCU Key		
Test Project KNX Smart Touch V40_V50	2019/11/15 14:43 Unknow					Set Key	
Switch Actuator with current detection,4/8/12-Fold	2019/11/14 17:44 Unknow	Contract Number			Codepage		
KNX Smart Touch V10	2019/11/13 11:26 Unknow				Unicode (UTF-8)		-





1.1.2 PARAMETER WINDOW "SUMMER TIME SETTING"

Parameter window "Summer time setting" shown as fig. 1.1.2, it is mainly for setting summer time adjustment and start/end time.

- General	Summer time adjustment	Customized setting	•
General setting	Start at month	March	•
Summer time setting	Start at week	The last week	•
General sensor	Start at day	Sunday	-
+ Home page	Start at hour	1 ‡ Hours	
+ Function page	Start at minute	0 ‡ Minutes	
+ Time function	End at month	October	•
+ Event Group function	End at week	The last week	•
	End at day	Sunday	•
+ Logic function	End at hour	1 [‡] Hours	
	End at minute	0 ‡ Minutes	

Fig. 1.1.2 "Summer time setting" parameter window

Summer time adjustment

This parameter for setting the summer time.

Options: No

Always Customized setting

No: disable summer time.

Always: always enable summer time.

Customized setting: for customized setting the start/end time of summer time.

When select "Customized setting", the following four parameters are visible, for setting the start and end time of summer time.

Start/End at month

This parameter for setting summer time start or end at month.

Options: January February

December

Start/End at week

This parameter for setting summer time start or end at week.

Options: The first week The second week

The last week

Start/End at day

This parameter for setting summer time start or end at day.

Options: Monday Tuesday

> ... Sunday

Parameter "Start/End at hour[0..23]" Parameter "Start/End at minute[0..59]"

This parameter for setting summer time start or end time, accurate to minutes, such as 18h: 00min.

Take American time for example, setting summer time start from 02h: 00min, the second Sunday of March to 02h: 00min, the first Sunday of November each year, so during this summer time, when it comes to the start time, system default time will be an hour faster, displayed time on the device will be 03h: 00min; when it comes to the end time, system default time will be an hour slower, displayed time on the device will be 01h: 00min.

1.1.3 PARAMETER WINDOW "COLORFUL STRIP SETTING"

Parameter window "Colorful strip setting" shown as fig. 1.1.3, it is mainly for setting the brightness of colorful strip and color indication.

-	General		 Always active 	
		Colorial indication strip	Active when the backlight off	
	General setting	Colorful indication strip work mode when active	Permanent on 🔘 5s on while 25s off	
	Summer time setting	Colorful indication strip object trigger	0=no trigger/1=trigger	
	Colorful strip setting	polarity	1=no trigger/0=trigger	
	General sensor	Initial after device startup	O No trigger O Trigger	
÷	Home page	Brightness level at day	Level 3	•
÷	Function page	Brightness level at night	Level 1	•
+	Time function	Color setting	Automatically adjust via seasons	•
		Color on Spring	Yellow	
+	Event Group function	Spring time start at: Month	March	•
+	Logic function	Day	lst	•
		Spring time end at: Month	May	•
		Day	30th	•
		Color on Summer	White	
		Summer time start at: Month	June	•
		Day	1st	•
		Summer time end at: Month	August	•
+	Event Group function	Color on Autumn	Green	
+	Logic function	Autumn time start at: Month	September	•
	Logic for Loon	Day	1st	*
		Autumn time end at: Month	November	*
		Day	30th	
		Color on Winter	Orange	
		Winter time start at: Month	December	*
		Day	1st	*
		Winter time end at: Month	February	
		Day	28th	-

Fig.1.1.3 "Colorful strip setting" parameter window

Colorful strip control type

This parameter for setting the colorful strip control type.

Options: Always active

Active when backlight is off

Always active: there is always indication of colorful strip.

Active when backlight is off: colorful strip only shows the indication effect after the screen is off. When the screen is on, colorful strip exits the indication state.

Colorful indication strip work mode when active

This parameter sets the working mode when the colorful strip indicates.

Options: Permanent on

5s on while 25s off

Permanent on: working mode of the colorful strip indication is permanent on; Note: In this case, it may affect the precision of internal temperature detection, and the average of μ total on time should be not more than 8 hours in per day, otherwise it may affect the normal life of RGB led.

5s on while 25s off: working mode of the colorful strip indication is 5 seconds on, 25 seconds off, to prevent the service life from being shortened due to the long-time lighting of the LED.

Colorful indication strip object trigger polarity

This parameter sets the trigger value of the communication object indicated by colorful strip.

Options: 0=no trigger/1=trigger

1=no trigger/0= trigger

0=no trigger/1=trigger: when the object "Colorful strip trigger" receives the telegram "1", it will trigger colorful strip indication. When telegram "0" is received, colorful strip has no indication. Vice versa.

Initial after device startup

This parameter sets the initial trigger status when the device is on.

Options: No trigger

Trigger

No trigger: colorful strip is not triggered and there is no indication; Trigger: after the device is started, colorful strip is triggered and can be indicated.





Brightness level at day

Optio

This parameter for setting brightness level at day.

ns:	Level 1	
	Level 2	•
	Level 3	;

Level 4 Level 5

Level 1 is the darkest level, Level 5 is the brightest level.

Brightness level at night

This parameter for setting brightness level at night.

Options: OFF Level 1 Level 2 Level 3 Level 4 Level 5

OFF is to turn off backlight, Level 1 is the darkest level, Level 5 is the brightest level.

Color setting

Options:

This parameter for setting the indication color of the strip.

Red Green Blue White Yellow Cyan Purple Orange Cyan blue Automatically adjust via seasons Receive a 3byte value

When "Automatically adjust via seasons" is selected, the following parameters are visible, for setting the starting/ending of the seasons and for setting the strip color of each season.

Color on Spring/Summer/Autumn/Winter

Indication color of the strip has been specified on every season: Springyellow,Summer-white, Autumn-green, Winter-orange.

Spring/Summer/Autumn/Winter time start at: Month/Day

Setting the starting time and ending time of 4 seasons at month and day. Note: If it is beyond the setting range, the strip will not indicate any color.

1.1.4 PARAMETER WINDOW "PROXIMITY SETTING"

Parameter window "Proximity setting" as shown in fig. 1.1.4. It is mainly setting proximity function, which can set the telegram when proximity approaching and leaving, and the delay time for sending telegram.

Note: if no proximity approaching is detected when there is touch operation, it will be dealt with proximity approaching.

- General	Object type of output value	1bit[On/Off]
General setting	Reaction for proximity approaching	No action 🔘 Send a value
Summer time setting	Output value[On/Off]	Off On
Proximity setting	Delay time for sending[0255]	0 ‡ Seconds
General sensor		
+ Home page	Reaction for proximity leaving	No action Send a value
	Output value[On/Off]	Off On
+ Function page	Delay time for sending[0255]	10 ‡ Seconds
de Time Granting		

Fig. 1.1.4 "Proximity setting" parameter window

Object type of output value

This parameter for setting the object type of output value to the bus when proximity approaching or leaving.

Options: 1bit[On/Off] 1byte scene control 1byte[0..255] 1byte[0..100%]

Reaction for approaching/leaving

This parameter setting whether to send telegram when proximity approaching or leaving.

Options: No send Send a value

Send a value: the following parameters are visible.

Parameter "Output value [On/Off]" Parameter "Output scene NO.[1..64]" Parameter "Output value [O..255]" Parameter "Output value [0..100%]"

This parameter for setting the output value sending to the bus when proximity approaching or leaving, the range of value is determined by the data type.

Delay time for sending[0..255]

This parameter setting the delay time for sending telegram.

Options: 0..255

Note: If telegram of proximity leaving need to be sent during the delay time of proximity approaching, then ignore the telegram of proximity approaching, telegram send once when status of proximity approaching has changed.

1.1.5 PARAMETER WINDOW "PASSWORD SETTING"

Parameter window "Password setting" as shown in fig.5.1.5. It is mainly setting password function and the object type of output value sent to the bus after device is activated through password.

-	General	Object type of output value	1bit[On/Off]	•
	General setting	Password 1 (only digit number allow)	1234	
	Summer time setting	Description for password 1	Password 1	
	Colorful strip setting	Reaction for password 1	No action 🔘 Send a value	
	Proximity setting	Output value[On/Off]	Off On	
	Password setting	Delay time for sending[0255]	0 ‡ Seconds	
	General sensor			
+	Home page	Password 2	Oisable Enable	
+	Function page			
+	Time function			



Object type of output value

This parameter setting the object type of output value sent to the bus after the device activated through password.

Options:	1bit[On/Off]
	1byte[scene control]
	1byte[0255]
	1byte[0100%]

Password 1 (only digit number allow)

This parameter setting the password, only 4 bytes digit number is allowed. Parameter "Description for password 1"

This parameter setting the description for password 1, only 40 bytes characters are allowed.

Reaction for password 1

This parameter setting whether to enable the trigger reaction for password 1.

Options: No action

Send a value

Send a value: when select this options, the following parameter are visible.

Parameter "Output value[On/Off]" Parameter "Output scene NO.[1..64]" Parameter "Output value[O..255]" Parameter "Output value[O..100%]"

These parameter for setting the output value sent to the bus when password triggered, the range of output value is determined by the selected data type.

Delay time for sending[0..255]

This parameter setting the delay time for sending.

Options: 0..255





Password2

This parameter setting whether to enable Password 2.

Options: Disable

Enable

Enable: enable Password 2, at the same time, parameters of Password 3 are visible.

Password 2 (only digit number allow)

This parameter setting the password, only 4 bytes digit number are allowed.

Password3

This parameter setting the password.

Options: Disable

Enable

Enable: enable password 3. Parameter settings are similar as above, hereinafter will no longer describe.

Note: up to 3 passwords can be set. If all passwords are set as the same, and send a value to the bus, then it will send the telegram of Password 1 to the bus when device is activated.

1.1.6 PARAMETER WINDOW "GENERAL SENSOR"

Parameter window "General sensor" shown as Fig. 1.1.6, it is mainly for setting related parameters of external and internal sensor detection, such as temperature and humidity.

— G	eneral	Internal sensor setting	
	General setting	Internal sensor calibration	0°C -
5	Summer time setting	Send actual Temp. when change by [120]	2 ‡ *0.5°C
	General sensor	Cyclically send actual room Temp.[0255]	10 ‡ Minutes
+ н	lome page	Reply error of sensor measurement	 Respond after read only Respond after change
+ F	unction page	Object value of error	0=no error/1=error 1=no error/0=error
+ T	ime function	Temperature displ <mark>ay</mark> by	External sensor 💌
+ E	vent Group function	When external sensor fault,Internal sensor display	No Ves
+ Lo	ogic function	Reply error of sensor measurement	 Respond after read only Respond after change
		Object value of error	0=no error/1=error 1=no error/0=error
		External sensor setting(only apply to t	temperature and humidity on home page)
		Monitoring period for external sensor [0255]	10 ‡ Minutes
		Read external sensor after monitor period expire	No Ves

Fig. 1.1.6 "General sensor" parameter window

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

Internal sensor calibration

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

Options: -5 °C

0°C

5°C

Note: after the device is powered on, the stability time of internal sensor detection will take 30 minutes, therefore, the detected temperature value in the early stage of device work may be inaccurate.

Send actual Temp. when change by [1..20]*0.5°C

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

Options: 1...20

Cyclically send actual room temp.[0...255]min

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

Options: 0..255min

This period is independent and starts time counting after programming completion or reset. Transmission change has no affect on this period.

Reply error of sensor measurement

This parameter for setting the condition of sending error status report when internal sensor error,

Options: Respond after read only

Respond after change

Respond after read only: only when the device receives a read error from other bus device or bus will the object "Internal sensor - Temp. Error report" send the error status to the bus;

Respond after change: the object "Internal sensor - Temp. Error report" will immediately send the telegram to the bus to report the error value when the error status has changed.

Object value of error

This parameter for defining object value of error.

Options: 0=no error/1=error

1=no error/0=error

0=no error/1=error: the object value for which internal sensor no error occurs is 0, and the object value for which internal sensor error occurs is 1;

1=no error/0=error: it has the opposite meaning.

Note: if the internal sensor connection is abnormal or the detected temperature is outside the range of -20 °C...60 °C, the device will consider the sensor as faulty or wrong .e stable time

Temperature display by

Setting the source of the temperature display on the home page.

Options: Disable Internal sensor External sensor

Internal sensor: The temperature value measured by internal sensor, and it is sent or read to the bus by the object "Internal sensor - Actual temperature"; External sensor: To measure the temperature value through other temperature control devices on the bus and receive the value from the object "External sensor - Temperature"; When the device does not receive the measured value from external sensor, the temperature will be displayed as 0 or the value measured by the internal sensor.

When external sensor fault, Internal sensor display

This parameter is visible when the external sensor is selected. For setting whether to enable internal sensor measurement when external sensor error occurs.

Options: No

Yes

No: When external sensor is in fault, internal sensor display is not enabled. 0 will be displayed by default.

Yes: When the external sensor is in fault, the internal sensor display is enabled.

Reply error of sensor measurement

This parameter is visible when external sensor is selected, setting the condition of sending error status report when external sensor error.

Options: Respond after read only

Respond after change

Respond after read only: only when the device receives a read error from other bus device or bus will the object "External sensor - Temp. Error report" send the error status to the bus;

Respond after change: the object "External sensor - Temp. Error report" will immediately send the telegram

to the bus to report the error value when the error status has changed.

Object value of error

This parameter for defining object value of error.

Options: 0=no error/1=error 1=no error/0=error

0=no error/1=error: the object value for which external sensor no error occurs is 0, and the object value for which external sensor error occurs is 1;

1=no error/0=error: it has the opposite meaning.

The following two parameters for setting the monitoring period for external sensor and humidity sensor. Only suitable for temperature and humidity display of home page on the device:

Monitoring period for external sensor [0..255]min

This parameter for setting the period of device monitoring external sensor. Monitoring period will restart counting when the device receives value. Options: 0...255







When the monitoring period arrives, if the detection value of the external sensor is not received, it will considered as external sensor fault and display 0, or through parameter "when external sensor fault, internal sensor display" to enable the display of the value measured by the internal sensor.

Note: To prevent missing detection values from bus busy, it is recommended that monitoring period should be at least twice longer the sensor's cyclic transmission period.

Read external sensor after monitor period expire

Setting whether to send read request telegram to external sensors after the monitoring period expires.

Options: No

Yes No: Do not send read request telegram.

Yes: After the monitoring period expires, if the screen does not receive the

detection value of the external sensor, a read request telegram will be sent to the external sensor.

Note: due to the large heating of LCD screen, if internal sensor is used to detect temperature, the setting time for turning off backlight is recommended to be $5{\sim}15s$.

1.2 PARAMETER WINDOW "HOME PAGE"

1.2.1 PARAMETER WINDOW "HOME PAGE X"

Parameter window "Home Page x" as shown in Fig. 1.2.1, for setting the layout and page navigation function of the home page, up to 2 home pages can be set, and up to 8 pages or icons navigation in the Multifunction page can be set. The parameters for each navigation are the same, and can be linked to the specified function page. The following is an example of a navigation function that describes their parameter settings.

Home page navigation function		
and the second	O Disable O Enable	
Page Layout	2	*
Navigation function 1	Oisable O Enable	
Associated function	Link to Page 1	•
Page icon	Default	•
Navigation function 2	🔵 Disable 🔘 Enable	
Associated function	Link to Page 2	•
Page icon	Default	•
	Page Layout Navigation function 1 Associated function Page icon Navigation function 2 Associated function Page icon	Page Layout 2 Navigation function 1 Disable © Enable Associated function Link to Page 1 Page icon Default Navigation function 2 Disable © Enable Associated function Link to Page 2 Page icon Default

Fig. 1.2.1 "Home Page x" parameter window

Description for Home page function

Setting the interface name of the home page, maximum 15 characters, the actual maximum display character is up to 5 Chinese characters.

Home page navigation function

Setting whether to enable homepage navigation function.

- Options: Disable
 - Enable

When "Disable", directly display the function page. Select the specific function page by sliding when there are multiple pages.

When "Enable", the following parameters are visible.

Page Layout

Setting page layout, that is, the displayed page number in homepage.

Options: 1/2/3/4/6/8

Up to 8 navigation function page can be set to display in one homepage. Directly click one of the icons to quickly jump to the selected function control interface. Note: Up to 6 navigation function page can be set to display in one homepage for V50 horizontal style.

Navigation function x, x=1...9

Setting whether to enable navigation function x.

Options: Disable

Enable

When "Enable" is selected, the following parameters are visible.

Associated function

Setting the function page or the icons of multifunction page that the navigation function x links to.

Options: Link to Page 1 Link to Page 2

> Link to Page 15 Link to icon in Page 1 *

... Link to icon in Page 15 *

The previous 15 options for linking to function page, the last 15 options for linking to one of the icons of the multifunction page.

Note: The linked function page needs to be configured. If it is not configured, the link is invalid. Similarly, the linked multifunction page needs to be configured, and the icons of the page also need to be configured, otherwise they are not valid.

Page icon

This parameter is visible when the previous parameter linked to the function page, for setting the icons in the function page.

- Options: Default
 - Lighting - Scenario
 - Scenario

- Reception

Default: Display an icon based on the linked function page. The default icons corresponding to the function page and the icons corresponding to the options are described in the appendix.

lcon number

This parameter is visible when parameter "Associated function" linked to the function page, for setting the icon number.

Options: 1/2/3/4/5/6/7/8

Note: For V50 horizontal style, the maximum icon number of multifunction pages that can be linked is 6.

For example, "Link to icon in Page 2 *" in parameter "Associated function" is selected, this icon number is set to be 5, that is, link to the 5th icon of the multifunction page.

*mask that Only the Page function is set as Multifunction, the link icon is valid. For example, "Link to icon in Page 6" of the parameter "Associated Navigation", but if Page 6 is not set Multifunction, then the link is not valid.

1.3 PARAMETER WINDOW "FUNCTION PAGE"

1.3.1 PARAMETER WINDOW "PAGE SETTING"

+ General	Function page 1	O Disable O Enable
+ Home p <mark>ag</mark> e	Function page 2	O Disable O Enable
 Function page 	Function page 3	O Disable O Enable
	Function page 4	O Disable 🔵 Enable
Page setting	Function page 5	O Disable O Enable
Page 1	, anenon page s	
	Function page 6	O Disable O Enable
+ Time function	Function page 7	O Disable O Enable
+ Event Group function	Function page 8	🔘 Disable 🔵 Enable
+ Logic function	Function page 9	🔘 Disable 🔵 Enable
	Function page 10	O Disable O Enable
	Function page 11	O Disable O Enable
	Function page 12	O Disable O Enable
	Function page 13	O Disable O Enable
	Function page 14	O Disable O Enable
	Function page 15	O Disable 🔿 Enable

Fig. 1.3.1 "Function page setting" parameter window



Function page x(x=1..15)

Setting whether to enable function page x. Options: Disable

Enable

When select "Enable", parameter interface "Page x" is visible, as shown in Fig. 1.2.2 the function of Darage areas to active this interface.

Fig.1.3.2, the function of Page x can be set in this interface.

Up to 15 function page can be set.

Note: The previous 5 function pages can only be configured as Multifunction page control, and the last 10 function pages can be configured as all functions.

1.3.2 PARAMETER WINDOW "PAGE X-- MULTIFUNCTION"

General	Description for page function	Page 1
Home page	Page function	Multifunction (Lighting/Blind/Scene/Value send)
	Number of Function icon	4
Function page	Icon 1	O Disable O Enable
Page setting	Function icon	Default
Page 1	Description for Icon 1	Icon 1
Time function	Function of Icon 1	Switch
-	Icon 2	O Disable O Enable
Event Group function	Function icon	Default
Logic function	Description for Icon 2	lcon 2
	Function of Icon 2	Switch/Dimming
	Icon 3	O Disable O Enable
	Function icon	Default
	Description for Icon 3	Icon 3
	Function of Icon 3	Value send
	Datatype of object	1byte[0255]
	Output value when press	127
	Long operation function	O Disable C Enable
	Icon 4	Disable O Enable
	Function icon	Default
	Description for Icon 4	Icon 4
	Function of Icon 4	Scene control
	Output scene NO.	Scene No.1
	Storage scene via long operation	O Disable Enable

Fig. 1.3.2 "Page x -- Multifunction (Lighting/Blind/Scene/Value send)" parameter window

Description for page function

Setting the title name of function page interface, up to 15 characters can be input, the actual displayed characters are up to 5 Chinese characters.

Page function

Setting the function of the page. Options: Multifunction (Lighting/Blind/Scene/Value send) HVAC Air conditioner Background Music RGB dimming Air Quality display Floor heating Ventilation System Energy Metering display

The display of the interface depends on the function selected, page1-5 only for multifunction setting, while page 6-15 for all the functions setting. The following sections describe the parameter settings for each function.

In this section, the functions of page are mainly about settings for lighting, curtains, scene and value send, as follows:

Number of Function icon

Setting the number of function icon in the multifunction page. Options: 1/2/3/4/6/8

Note: Up to 6 icons can be set in each multifunction page for V50 horizontal style.

lcon x, x=1...8

Setting whether to enable the function of Icon X. Options: Disable Enable

When "Enable" is selected, the following parameters are visible.

Function icon

Setting icon for using.

Options: Default No icon, only text - Ceiling light

- General

Default: Displays the icon based on the selected function. The default icons corresponding to the function page and the icons corresponding to the options are described in the appendix.

Description for Icon x

Setting the description displayed on the screen for $\mathsf{Icon}\,\mathsf{X},$ up to 12 characters can be input.

The actual display is up to 9 characters (or 4 Chinese characters).

Function of Icon x

Setting the func	tion of Icon X.
Options:	Switch Switch/Dimming Value send Open/close Blind Roller Blind(without slat) Venetian Blinds(with slat) Blind(open/close/stop) Blind(up/down/stop) Scene control

Switch: the function of icon is for switch controlling. The object "Switch" and the object "Switch status" are visible, in general, the two objects are used in conjunction. For example, "Switch" corresponding to the switch object of the switch actuator, "Switch Status" corresponding to the switch status object, if the object "Switch Status" receives the status feedback of switch actuator, the icon status will also update as well.

Switch/Dimming: the function of icon is for switch and dimming.

Object "Switch", "Brightness dimming", "Brightness status" and "Relative dimming" are visible, short press operation will trigger a command of switch. Long press operation will enable a slider for dimming, which can be slid to dimming. Support three buttons for relative dimming: dimming up, dimming down, stop dimming.

Generally, object "Brightness dimming" and object "Brightness status" are used in conjunction. For instance, "Brightness dimming" corresponding to the brightness dimming object of the dimming actuator, "Brightness Status" corresponding to the brightness status object of the dimming actuator.

Value send: the function of icon is for value sending, to specify sending different types of value.

Open/close Blind: the function of icon is for Open/Close Blind controlling, supports to adjust the curtain position by sliding the slider in percentage, as well as controlling through the three buttons: opening, closing, stop running.

Roller Blind (without slat): the function of icon is for Roller Blind(without slat) controlling, supports to adjust the curtain position by sliding the slider in percentage, as well as controlling through the three buttons:running up, running down, stop running.

Venetian Blinds (with slat): the function of icon is for Venetian Blinds(with slat) controlling, supports to adjust the curtain position by sliding the slider in percentage, as well as controlling through the three buttons: running up, running down, stop running.

Blind (open/close/stop): the function of icon is for Open/Close Blind controlling, supports controlling through the three buttons: opening, closing, stop running. Blind(up/down/stop): the function of icon is for Roller Blind controlling, supports controlling through the three buttons: running up, running down, stop running.

Scene control: for scene controlling, it will recall scene when touching the scene recall icon, it can also enable long operation for scene storage. The following parameters are visible when "Value send" is selected.

Datatype of object

Setting data type of object for value sending. Options: 1 bit [On/Off]

1 bit [On/Off] 2 bit [0...3] 4 bit [0...15] 1 byte [0...255] 1 byte [0...100%] 1 byte [scene control] 2 byte [-32768...32767] 2 byte [0...65535]



Output value when press

Setting the output value sent from object when press, the range of value depends on the selected data type.

Long operation function

Setting whether to enable long operation function.

Options: Disable Enable

When select "Enable", the following parameters are visible.

Output value when long operation

Setting the output value sent from object when long operation, the range of value depends on the selected data type. The following two parameters are visible when "Scene control" is selected.

Output scene NO

Setting the output scene number when operation. Options: 1..64 Scene NO.1..64 corresponding to telegram value 0..63.

Storage scene via long operation

Setting whether to enable storage scene via long operation. Options: Disable Fnable

1.3.3 PARAMETER WINDOW "PAGE X-- HVAC"

Parameter window "Page x-- HVAC" as shown in Fig.5.3.3, it is mainly about fan and HVAC parameter setting.

+ General	Description for page function	Page 6
+ Home page	Page function	HVAC 👻
- 5	Temperature reference from	External sensor 🔻
- Function page	Time period for request external sensor	5 ‡ Minutes
Page setting	Read external sensor after restart	No Ves
Page 1	Control value after temp. error(0, 100%)/(14
+ Page 6	2-point control, set value '0'=0, set value '*0'=1)	0
+ Time function	Power on/off status after download	Off On
+ Event Group function	Power on/off status after bus recovery	Before power off 🔹
+ Logic function	Control type of fan speed	1byte 👻
	HVAC control mode	Heating and Cooling -
	Heating/Cooling status after restart	as before reset 💌
	HVAC control system	2 pipes system 0 4 pipes system
	HVAC operation mode	Disable Disable
	Operating mode switchover	◯ 4x1Bit
	Operating mode status	◯ 4x1Bit ◎ 1Byte
	Controller status after restart	Comfort mode 🔹
	Extended comfort mode [0255,0=inactive]	0 🌲 Minutes
	Min. set temperature [540]	5 * *
	Max. set temperature [540]	40 ÷ °C

Fig. 1.3.3 (1) "Page x -- HVAC General" parameter window

+	General	Output value for fan speed		
+	Home page	Output value for Fan speed off	0	÷
1		Output value for Fan speed low	1	* *
	Function page	Output value for Fan speed medium	2	\$
	Page setting	Output value for Fan speed high	3	\$
	Page 1	Status feedback for fan speed		
÷	Page 6	Status value for Fan speed off	0	* *
	P6: HVAC Fan	Status value for Fan speed low	1	\$
	P6: Temp. setpoint	Status value for Fan speed medium	2	\$
	P6: Heat&Cool control	Status value for Fan speed high	3	\$
+	Time function	Fan speed auto	O Disable O Enable	
+	Event Group function			
+	Logic function			

+ General Setpoint method for operating mode Relative Absolute Base setpoint temperature 20.0 + °C + Home page Heating - Function page Reduced heating in standby mode[0..10] 2 ‡ °C Page setting Reduced heating in economy mode [0..10] 4 ‡ °C Page 1 Actual Temp. threshold in frost protection[5..10] 7 ‡ °C - Page 6 Cooling P6: HVAC Fan Increased cooling in standby mode [0..10] ‡ °C 2 P6: Temp. setpoint Increased cooling in economy mode [0..10] 4 ‡ °C P6: Heat&Cool control Actual Temp. threshold in heat protection[30..40] ‡ °C + Time function 35

+ Event Group function

+ Logic function

Fig. 1.3.3 (3) "P x : Temp. Setpoint_Relative" parameter window

+ General	Setpoint method for operating mode	Relative O Absolute	
+ Home page	Heating		
- Function page	Setpoint temperature in comfort mode [540]	21	‡ °C
Page setting	Setpoint temperature in standby mode [540]	19	≎ °C
Page 1	Setpoint temperature in economy mode [540]	17	≎ ¢
— Page 6	Setpoint temperature in frost protection [540]	7	‡ °C
P6: Temp. setpoint	Cooling		
P6: Heat&Cool control	Setpoint temperature in comfort mode [540]	23	‡ °C
+ Time function	Setpoint temperature in standby mode [540]	25	‡ °C
+ Event Group function	Setpoint temperature in economy mode [540]	27	≎ °C
+ Logic function	Setpoint temperature in heat protection [540]	35	‡ °C

Fig. 1.3.3 [4] "P x: Temp. Setpoint_Absolute" parameter window

+ General	Type of Heat control	Switching on/off(use 2-point control)		•
+ Home page	Invert control value	No Yes		
- Function page	Lower Hysteresis[0200]	20	¢	*0.1°0
~	Upper Hysteresis[0200]	20	¢	*0.1°C
Page setting	T (C)	CILL DURAL DI LLE		
Page 6	Type of Cool control	Switching PWW(use Pi control)		
P6: HVAC Fan	Invert control value	No Yes		
P6: Temp. setpoint	PWM cycle time[1255]	15 ‡ Minutes		
P6: Heat&Cool control	Cooling speed	Split unit(4K/90min)		•
+ Time function	Cyclically send control value[0255]	0 ‡ Minutes		
Page setting				
Page 1	Type of Cool control	Continuous control(use PI control)		•
— Page 6	Invert control value	No Ves		
P6: HVAC Fan	Cooling speed	Split unit(4K/90min)		•
P6: Temp. setpoint	Send control value on change by [0100%,0=inactive]	4		\$
P6: Heat&Cool control				
+ Time function	Cyclically send control value[0255]	0 7 Minutes		

Fig. 1.3.3 (5) "P x: Heat&Cool control" parameter window

Temperature reference from

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

Options: Internal sensor External sensor Internal and External sensor combination

When selecting the reference internal sensor, the temperature is determined by the setting of the internal sensor in the parameter interface general sensor.

The following two parameters are visible when External sensor is selected.

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Fig. 1.3.3 (2) "P x: HVAC Fan_1byte" parameter window





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

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

Read external sensor after restart

Options: No Yes

No: When the bus reset or programming is completed, the read request will not occur immediately, but wait until the cycle time to send.

Yes: After the bus is reset or programmed, a read request is sent to the external temperature sensor.

Combination ratio

This parameter can be seen when the HVAC temperature is acquired by the internal and external sensor combination. Set the internal sensor and the external sensor to measure the specific gravity of the temperature.

Options: 10% Internal to 90% External 20% Internal to 80% External

> 80% Internal to 20% External 90% Internal to 10% External

For example, if the option is "40% internal to 60% external", then the internal sensor accounts for 40%, the external sensor accounts for 60%, and the control temperature = (internal sensor's temperature \times 40%) + (external sensor's temperature \times 60%), the HVAC function of the device will control and display the temperature according to the calculated temperature.

When two sensors are combined for detection, when one sensor is in error, the temperature value detected by the other sensor is used.

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

This parameter setting for the control value when temperature error occur. Options: 0..100

If under 2-Point control, then the parameter value is 0, as well as the control value; if the parameter value is more than 0, then the control value will be 1.

Power on/off status after download

Setting power on/off status of HVAC interface after download.

Options: Off On

Power on/off status after bus recovery

Setting power on/off status of HVAC interface after bus recovery.

Options: On

Off Before power off

On: HVAC interface is on when device is powered on, this interface is operational, HVAC will calculate internally according to the control type to determine the current controlling status;

Off: HVAC interface is off when device is powered off, this interface is not operational, and HVAC is not going to calculate;

Before power off: HVAC interface will recover to the status before bus power off, if it is on, then HVAC will calculate internally according to the control type to determine the current controlling status.

Control type of fan speed

Ontions.

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

Disable

1bit 1byte

Disable: fan speed control is disable;

1bit: the object type of fan speed control is 1bit;

1byte: the object type of fan speed control is 1byte, at the same time, parameter window as shown in Fig. 1.3.3(2).

Fan speed auto

This parameter is visible when the previous parameter is set to be 1bit or 1byte, for setting whether to enable automatically operation of fan speed.

Options: Disable

Enable

Enable: when enable, there will be auto level added in fan speed controlling.

HVAC control mode

This parameter for setting HVAC control mode.

Options: Heating Cooling



Heating and Cooling

Heating and Cooling: heating and cooling are available. At the same time, the following parameters are visible.

Heating/Cooling status after restart

This parameter for setting the heating/cooling status after restart.

Options: Heating Cooling

As before reset

As before reset: when the bus is reset after power on, the control mode will recover as before reset. If the control mode after the device powered on is uncertain after the application is downloaded, it is necessary to select the control mode artificially.

HVAC control system

Setting for the type of HVAC control system, that is, pipe types of fan coil water inlet/outlet.

Options: 2 pipes system

4 pipes system

2 pipes system: shares an inlet and outlet pipe for heating and cooling, that is, both hot and cold water are controlled by a valve.

4 pipes system: has its own inlet and outlet pipes for heating and cooling, and two valves are needed to control the entry and exit of hot water and cold water respectively.

HVAC operation mode

This parameter setting whether to enable HVAC operation mode.

Options: Disable Enable

Enable: when enable, the following 4 parameters are visible.

Operating mode switchover

This parameter setting for the object type of operation mode switchover.

Options: 4x1bit 1byte

When 1bit is selected, the objects of 4x1bit are visible. The four objects are: HVAC Output--Comfort mode, HVAC Output--Economy mode, HVAC Output--standby mode, and HVAC Output--Frost/Heat protection mode. When one of the modes is active, the corresponding object will send the telegram "1", otherwise the "0". When 1byte is selected, the object "HVAC Output-- HVAC mode" is visible. The telegrams sent are: "1" for comfort mode, "2" for standby mode, "3" for economy mode, "4" for protection mode.

Operating mode status

This parameter setting for the object type of room operating mode status feedback.

Options: 4x1bit 1byte

When 1bit is selected, the objects of 4x1bit are visible. The device will update to different mode according to the ON or OFF telegram received from the objects. The four objects are: HVAC Input--Comfort mode, HVAC Input--Economy mode, HVAC Input--Frost/Heat protection mode, HVAC Input--standby mode.

The value of the current 3 objects are 0, operation mode is standby mode. When 1byte is selected: "1" for comfort mode, "2" for standby mode, "3" for economy mode, "4" for protection mode. The device will update to the corresponding mode according to telegram received.

Controller status after restart

This parameter setting for the operation mode when device starts up.

Options:	Standby mode
	Comfort mode
	Economy mode
	Frost/heat protection

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

This parameter setting the delay time for comfort mode automatically returning to the economy mode .

Options: 0..255

When the setting value is "0", the function of comfort mode delay time is disable, that is, comfort mode will not return to the economy mode automatically; When the setting value is 1-255, when economy modes switches to comfort mode, this function is enable:

Comfort mode will return to economy mode automatically after reaching to the setting delay time;

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This parameter only for the switching of economy mode and comfort mode.



Basic setpoint temperature [°C]

This parameter is visible when HVAC mode is disable, for setting the basic setpoint temperature.

Options: 10 10.5

> ... 35

The setting value will be modified through object "Setpoint adjustment", then the new value will be stored after the bus power off.

Min. /Max. set temperature [5..40] °C

Setting to limit the adjustable range of the setting temperature, the setting minimum should be less than the setting maximum. If the setting temperature beyond the limited range, the will output the limited

temperature.

The following parameters are visible when fan speed control type is selected to be 1byte, as shown in Fig. 1.3.3(2).

OUTPUT VALUE FOR FAN SPEED

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

These four parameters are visible when fan speed object type is selected to be 1byte, setting the switching value that sent by each fan speed.

Options: 0..255

STATUS FEEDBACK FOR FAN SPEED

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

These four parameters are visible when fan speed object type is selected to be 1byte, for setting the status feedback value of each fan speed. The device will update and display the fan speed according to the feedback value.

Options: 0..255

Setpoint method for operating mode

This parameter is visible when enable HVAC operation mode, for setting the adjust method of the setting temperature.

Options: Relative

Absolute

Relative: relative adjustment, the setting temperature of economy mode and standby mode will refer to the defined temperature set point. Absolute: absolute adjustment, each mode has its independent temperature set

point.

The following parameters are visible when enable HVAC operation mode , as shown in Fig. 1.3.3(3).

Basic setpoint temperature [°C]

Setting the reference value of the setting temperature, which provide the setting temperature of comfort mode.

Options: 10 10.5

> .. 35

The setting temperature can be modified through object "Setpoint adjustment", then the new value will be stored after the bus power off.

Reduced heating in standby mode [0..10]°C"

Increased cooling in standby mode [0..10]°C"

For setting the setpoint of standby mode.

Options: 0...10 [°C]

Heating: the setpoint of standby mode is the temperature set point minus the reference value;

Cooling: the setpoint of standby mode is the temperature set point plus the reference value.

Reduced heating during economy mode [0..10]°C

Increased cooling during economy mode [0..10]°C

For setting the setpoint of economy mode.

Options: 0...10 [°C]

Heating: the setpoint of economy mode is the temperature set point minus the reference value;

Cooling: the setpoint of economy mode is the temperature set point plus the reference value.

Actual Temp. threshold in frost protection[5..10]°C

(for heating) For setting the setpoint of frost/heat protection mode of heating function.

Options: 5..10 [°C]

Under the frost/heat protection mode, when ambient temperature reduce to the setpoint, the controller will trigger a control telegram so that related heating controller will output heating control to prevent the temperature from being too low.

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

Setting the actual temperature threshold in heat protection for cooling function. Options: 30...40 [°C]

Under the heat protection, when the ambient temperature rises to the temperature set point, then the controller will trigger a control telegram so that related cooling controller will output cooling control to prevent the temperature from being to high.

The following parameters are visible when enable HVAC operation mode and using absolute set point method of operating mode, as shown in Fig. 1.3.3[4].

Setpoint Temp. in comfort mode [5..40]°C

Setpoint Temp. in standby mode [5..40]°C Setpoint Temp. in economy mode [5..40]°C Setpoint Temp. in frost protection mode [5..40]°C (for heating) Setpoint Temp. in heat protection mode [5..40]°C (for cooling) These parameters for setting the set point temperature in each mode.

Options: 5..40°C

Type of Heat/Cool control

Setting the type of Heat/Cool control, as shown in Fig. 1.3.3(5). Different control types are suitable for controlling different temperature controllers.

Options: Switching on/off (use 2-point control) Switching PWM (use PI control) Continuous control (use PI control)

Invert control value

Setting whether to invert control value or normal sending control value, so that the control value will be suitable for the valve type.

Options: No Yes

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

The following two parameters are suitable for 2 point control:

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

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

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

Options: 0..200

Under heating control,

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

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

For example, the lower hysteresis temperature is 1°C, the upper hysteresis temperature is 2°C, the setting temperature is 22°C, if T is higher than 24°C, then it will stop heating; if T is lower than 24°C, then it will startheating; if T is between 21-24°C, then it will maintain the previous status.

Under the cooling control,

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

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

For example, the lower hysteresis temperature is 1°C, the upper hysteresis temperature is 2°C, the setting temperature is 26°C, if T is lower than 25°C, then it will stop cooling; if T is lower than 28°C, then it will start cooling; if T is between 28~25°C, then it will maintain the previous status.

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2-point control mode is a very simple control mode. When adopting this control mode, it is necessary to set the upper hysteresis temperature and the lower hysteresis temperature through parameters. When setting the hysteresis temperature, the following effects need to be considered:

 When hysteresis interval is small, the temperature range will be small, however, frequent sending of control value will bring large load to the bus;
 When hysteresis interval is large, the switch switching frequency will be low, but it is easy to cause uncomfortable temperature change.



Fig. 1.3.3(6) Effects of hysteresis on control value switch action(heating) under2-point control mode

The following two parameters are suitable for PI control:

- Parameter "Heating speed"
- Parameter "Cooling speed"

Setting the responding speed of heating or cooling controller. Different responding speeds are suitable for different environments.

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

Parameter "Proportional range[10..100]*0.1°C"(P value) Parameter "Reset time[0..255]min"(I value)

These two parameters are visible when option "User defined" of parameter "Heating/Cooling speed"is selected, for setting the PI value of PI controller.

PWM cycle time [1..255] min

This parameter is only visible when the control type is "Switching PWM(use PI control)". 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. For example, if the set period is 10 min and the control value is 80%, then the object will send an open telegram for 8 min. If the control value is changed, the time duty ratio of the on/ off telegram of the object will also change, but the period is still the time of parameter setting.

Options: 1...255

The PI values of "Switching PWM (use PI control)" and "Continuous control (use PI control)" are the same, only different in control objects, the control object of "Continuous control" output PI value(1byte) directly, while the control value of "Switching PWM" output a "on/off" telegram according to the duty cycle of the control value.

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

Cyclically send control value [0..255]min

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

Options: 0..255

In PI control mode, the predefined control parameters of each PI controller in heating or cooling system are recommended as follows: (1) Heating

Heating type	P value	l value (integration time)	Recommended PI control type	Recommended PWM period
Hot water Heating	5K	150min	Continuous/PWM	15min
Underfloor heating	5K	240min	PWM	15-20min
Electrical heating	4K	100min	PWM	10-15min
Split unit	4K	90min	PWM	10-15min
Fan coil unit	4K	90min	Continuous	

(2) Cooling

Cooling type	P value	l value (integration time)	Recommended PI control type	Recommended PWM period
Cooling ceiling	5K	240min	PWM	15-20mIn
Split unit	4K	90min	PWM	10-15min
Fan coil unit	4K	90min	Continuous	

(3) User defined

When the parameter "Heating/Cooling speed" is set to "User defined", the parameter value of P (scale factor) and I (integration time) can be set through the parameter. When adjusting the parameters, refer to the fixed PI value mentioned in the above table. Even if the control parameters are adjusted slightly, the control behavior will be significantly different.

In addition, the integration time should be set properly. If the integration time is too long, the adjustment will be slow, and the oscillation will not be obvious; if the integration time is too small, the adjustment will be fast, but the oscillation will occur. O means the integral term is not used.



Fig. 1.3.3 (7) control value of PI control mode

Y: control value

Y1: last control value

X1: temperature deviation = set temperature - actual temperature

X2: last temperature deviation = set temperature - actual temperature $T_{\rm N}$: integration time

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

PI control algorithm: Y = K * (X1-X2) + X1 * K * t / TN + Y1When the integration time is set to zero,

the PI control algorithm is: Y = K (X1-X2) + Y2

Setting and influence of user-defined parameters:

Parameter setting	Effect
K: If the scale range is too small	Quick adjustment, and overshoot will occur
K: If the scale range is too small	Slow adjustment, but no overshoot
$\mathrm{T_{\tiny N}}$: If the integration time is too short	Quick adjustment, but there will be oscillation
$\mathrm{T_{N}}$: If the integration time is too long	Slow adjustment, no obvious oscillation





1.3.4 PARAMETER WINDOW "PAGE X-- AIR CONDITIONER"

Parameter window "Page x-- Air conditioner" shown as in Fig. 1.3.4, for setting Air-Conditioner control, is suitable for the two Air-Conditioner control type: IR Split Unit and Gateway Integrate.

There are two object types of the Gateway Integrate: 1bit and 1byte.

IR Split Unit is controlled by 1byte object type.

+ Home page Page function Air conditioner • - Function page Temperature display from Internal sensor External sensor Page setting Page 1 Control type Disable Enable Page 6 Data type of mode 1 bit 1 byte + Time function Output value for Cool 0 1 + Logic function Output value for Fan 0 1 Output value for Fan 0 1 0 Output value for Auto 0 1 0 Output value for Auto 0 1 0 Output value for Auto 0 1 0 Output value for Fan 0 0 1 Output value for Speed 1 bit 1 byte Wind direction position output setting Command value for position 1 1 2 Command value for position 2 2 2 2 2 Command value for position 3 3 2 2 2 2 Command value for position 1 1 2 2 2 2 2 2 2	+	General	Description for page function	Page 6		
Function page Temperature display from Internal sensor External sensor Page setting Page 1 Output value in below will be ignored Disable © Enable Page 6 Data type of mode 1bt 1byte * Time function 0 1 Output value for Cool 0 1 * Logic function Output value for Cool 0 1 Output value for Day 0 1 Output value for Auto 0 0 1 Output value for Auto 0 1 Output value for Auto 0 0 1 Output value for Auto 0 1 Output value for Auto 0 0 1 Output value for Auto 0 1 Output value for Auto 0 0 1 Output value for Auto 0 1 Output value for Auto 0 0 1 Output value for Auto 0 1 Output value for Auto 0 0 1 Command value for position 1 1 Command value for position 2 Command value for position 1 1 Command value for position 2 Command value for position 3 Command value for	+	Home page	Page function	Air conditioner		•
Page setting Auto control mode (if disable,the command value in below will be ignored) Disable @ Enable Page 1 Control type IR Split Unit @ Gateway Integrate Page 6 Data type of mode 1 bit	_	Function page	Temperature display from	O Internal sensor O External sensor		
Page 1 Control type IR Split Unit @ Gateway Integrate Page 5 Data type of mode 1 bit _ 1byte • Time function Output value for Cool 0 1 • Logic function Output value for Cool 0 1 • Logic function Output value for Cool 0 1 Output value for Dry 0 0 1 Output value for Fan 0 0 1 Output value for Auto 0 0 1 Data type of fan speed 1 bit 1 byte Wind direction adjustment Disable Enable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 1 Command value for position 3 3 2 Command value for position 4 4 2 Command value for position 3 3 2 Status value for position 3 3 2 Command value for position 3 3 2 Command value for position 1 1 1 Status value for position 3 3 2		Page setting	Auto control mode (If disable,the command value in below will be igno	red) Disable O Enable		
Page 6 Data type of mode Ibit 1byte + Time function Output value for Heat 0 1 + Event Group function Output value for Cool 0 1 Output value for Dry 0 0 1 Output value for Fan 0 0 1 Output value for Auto 0 0 1 Data type of fan speed 1 bit 1 byte Wind direction adjustment Disable Enable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 1 Command value for position 3 3 2 Command value for position 4 4 2 Command value for position 5 5 2 Wind direction position 3 3 2 Status value for position 3 3 2 Command value for position 4 4 2 Command value for position 5 5 2 Wind direction position 3 3 2 Status value for position 5 5 2 Usin *C(DPT_5.010)		Page 1	Control type	🔵 IR Split Unit 🔘 Gateway Integrate		
+ Time function Output value for Heat 0 0 1 + Event Group function Output value for Cool 0 0 1 + Logic function Output value for Dry 0 0 1 Output value for Fan 0 0 1 Output value for Auto 0 0 1 Data type of fan speed 1 bit 1 byte Wind direction adjustment Disable © Enable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 Command value for position 3 3 Command value for position 4 4 Command value for position 1 1 Command value for position 3 3 Command value for position 4 4 Command value for position 3 3 Status value for position 3 3 Status value for position 4 4 Status value for position 5 5 Object datatype of setpoint Float value in "C(DPT_5.010) Object datatype of setpoint Float value in "C(DPT_9.001) Min. set temperature [1632] 12 *C		Page 6	Data type of mode	1 1bit 1 1byte		
• Event Group function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function • Logic function <td>+</td> <td>Time function</td> <td>Output value for Heat</td> <td>0 0 1</td> <td></td> <td></td>	+	Time function	Output value for Heat	0 0 1		
* Logic function Output value for Dry 0 0 1 Output value for Fan 0 0 1 Output value for Auto 0 0 1 Data type of fan speed 1 bit 1 byte Wind direction adjustment Disable Enable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 1 Command value for position 3 3 0 Command value for position 5 5 0 Wind direction position status feedback setting Status value for position 1 1 Status value for position 3 3 0 0 Status value for position 3 3 0 0 Object datatype of setpoint Value in *C(DPT 5.010) 0 0 Object datatype of setpoint Value in *C(DPT 5.010) 0 0 1 Win, set temperature [1632] 16 1 *C *C Max. set temperature [1632] 32 *C *C	+	Event Group function	Output value for Cool	◎ 0 ○ 1		
* Logic function Output value for Fan 0 1 Output value for Auto 0 1 Data type of fan speed 1 bit 1 byte Wind direction adjustment Disable Enable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 1 Command value for position 3 3 0 Command value for position 5 5 0 Wind direction position status feedback setting Status value for position 1 1 Status value for position 3 3 0 Status value for position 4 4 0 Status value for position 5 5 0 Object datatype of setpoint Value in *C(DPT_5.010) 0 Object datatype of setpoint Value in *C(DPT_5.010) 0 Object datatype of setpoint Value in *C(DPT_5.010) 1 Win, set temperature [1632] 16 1 *C Max. set temperature [1632] 32 * C			Output value for Dry	0 0 1		
Output value for Auto 0 0 1 Data type of fan speed 1 bit Wind direction adjustment Disable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 Command value for position 3 3 Command value for position 4 4 Command value for position 5 5 Wind direction position status feedback setting Status value for position 1 1 Status value for position 3 3 Status value for position 4 4 Command value for position 5 5 Vind direction position 4 4 Status value for position 5 5 Object datatype of setpoint Value in *C(DPT_5.010) Object datatype of setpoint Value in *C(DPT_5.010) Wins et temperature [1632] 16 * C Max. set temperature [1632] 32 * C	+	Logic function	Output value for Fan	0 0 1		
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Wind direction adjustment Disable © Enable Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 1 Command value for position 2 2 2 Command value for position 3 3 2 Command value for position 4 4 2 Command value for position 5 5 2 Command value for position 5 5 2 Wind direction position status feedback setting 5 2 Status value for position 1 1 1 Status value for position 3 3 2 Status value for position 4 4 2 Status value for position 5 5 2 Object datatype of setpoint © Value in *C(DPT_5.010) 0 Object datatype of setpoint © Value in *C(DPT_5.010) *C(DPT_9.001) Min. set temperature [1632] 16 * *C Max. set temperature [1632] 32 * *C			Data type of fan speed	0 1bit 1byte		_
Object value for Wind direction Fixed=0 / Swing=1 Wind direction position output setting Command value for position 1 1 Command value for position 2 2 Command value for position 3 3 Command value for position 4 4 Command value for position 5 5 Command value for position 5 5 Command value for position 5 5 Wind direction position status feedback setting Status value for position 1 1 Status value for position 3 3 Status value for position 4 4 Status value for position 5 5 Object datatype of setpoint Value in *C(DPT_5.010) Object datatype of setpoint © Value in *C(DPT_5.010) Min. set temperature [1632] 16 * Max. set temperature [1632] 32 *			Wind direction adjustment	Disable Disable		
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Command value for position 1 1 ‡ Command value for position 2 2 ‡ Command value for position 3 3 ‡ Command value for position 4 4 ‡ Command value for position 5 5 ‡ Wind direction position status feedback setting 5 ‡ Wind direction position 1 1 ‡ Status value for position 2 2 ‡ Status value for position 3 3 ‡ Status value for position 4 4 ‡ Status value for position 5 5 ‡ Object datatype of setpoint © Value in *C(DPT_5.010) © Object datatype of setpoint © Value in *C(DPT_5.010) * Min. set temperature [1632] 16 ‡ *C Max. set temperature [1632] 32 ‡ *C			Wind direction position output se	tting		
Command value for position 2 2 ‡ Command value for position 3 3 ‡ Command value for position 4 4 ‡ Command value for position 5 5 ‡ Wind direction position status feedback setting 5 ‡ Status value for position 1 1 ‡ Status value for position 2 2 ‡ Status value for position 3 3 ‡ Status value for position 4 4 ‡ Status value for position 5 5 ‡ Object datatype of setpoint © Value in *C(DPT_5.010) © Object datatype of setpoint. © Value in *C(DPT_9.001) * Min. set temperature [1632] 16 ‡ *C Max. set temperature [1632] 32 ‡ *C			Command value for position 1	1		-
Command value for position 3 3 ‡ Command value for position 4 4 ‡ Command value for position 5 5 ‡ Wind direction position status feedback setting 5 ‡ Status value for position 1 1 ‡ Status value for position 2 2 ‡ Status value for position 3 3 ‡ Status value for position 4 4 ‡ Status value for position 5 5 ‡ Object datatype of setpoint © Value in *C(DPT_5.010) © Object datatype of setpoint © Value in *C(DPT_9.001) * Min. set temperature [1632] 16 ‡ *C Max. set temperature [1632] 32 ‡ *C			Command value for position 2	2		÷
Command value for position 4 4 ‡ Command value for position 5 5 ‡ Wind direction position status feedback setting Status value for position 1 1 ‡ Status value for position 2 2 ‡ Status value for position 3 3 ‡ Status value for position 4 4 ‡ Status value for position 5 5 ‡ Object datatype of setpoint Value in *C(DPT_5.010) © Min. set temperature [1632] 16 ‡ *C Max. set temperature [1632] 32 ‡ *C			Command value for position 3	3		+
Command value for position 5 5 1 Wind direction position status feedback setting Status value for position 1 1 1 Status value for position 2 2 1 Status value for position 3 3 1 Status value for position 4 4 1 Status value for position 5 5 1 Object datatype of setpoint © Value in *C(DPT_5.010) 16 *C Min. set temperature [1632] 16 *C *C Max. set temperature [1632] 32 *C *C			Command value for position 4	4		\$
Wind direction position status feedback setting Status value for position 1 1 Status value for position 2 2 Status value for position 3 3 Status value for position 4 4 Status value for position 5 5 Object datatype of setpoint Øbject datatype of setpoint Walue in *C(DPT_5.010) © Float value in *C(DPT_9.001) Min. set temperature [1632] 16 * *C Max. set temperature [1632] 32 * *C			Command value for position 5	5		\$
Status value for position 1 1 Status value for position 2 2 Status value for position 3 3 Status value for position 4 4 Status value for position 5 5 Object datatype of setpoint Value in *C(DPT_5.010) Object datatype of setpoint 0 Min. set temperature [1632] 16 * c Max. set temperature [1632] 32 * c			Wind direction position status fee	dback setting		
Status value for position 2 2 1 Status value for position 3 3 1 Status value for position 4 4 1 Status value for position 5 5 1 Object datatype of setpoint Value in *C(DPT_5.010) 6 Min. set temperature [1632] 16 1 *C Max. set temperature [1632] 32 1 *C			Status value for position 1	1		+
Status value for position 3 3 * Status value for position 4 4 * Status value for position 5 5 * Object datatype of setpoint Value in *C(DPT_5.010) * Object datatype of setpoint * * Min. set temperature [1632] 16 * Max. set temperature [1632] 32 *			Status value for position 2	2		÷
Status value for position 4 4 + Status value for position 5 5 + Object datatype of setpoint Value in *C(DPT_5.010) • Object datatype of setpoint • Float value in *C(DPT_9.001) Min. set temperature [1632] 16 + °C Max. set temperature [1632] 32 + °C			Status value for position 3	3		\$
Status value for position 5 5 Object datatype of setpoint Value in *C(DPT_5.010) Min. set temperature [1632] 16 Max. set temperature [1632] 32			Status value for position 4	4		\$
Object datatype of setpoint Value in *C(DPT_5.010) Object datatype of setpoint © Float value in *C(DPT_9.001) Min. set temperature [1632] 16 *C Max. set temperature [1632] 32 *C			Status value for position 5	5		\$
Min. set temperature [1632] 16 *C Max. set temperature [1632] 32 *C			Object datatype of setpoint	Value in °C(DPT_5.010) Float value in °C(DPT_9.001)		
Max. set temperature [1632] 32 ÷ °C			Min. set temperature [1632]	16	* *	°C
			Max. set temperature [1632]	32	÷	°C

Fig. 1.3.4 (1) "Page x -- Air conditioner" Parameter window (Gateway Integrate _ 1bit)

Temperature display from

Setting the reference resource of the ambient temperature displayed in the AC interface.

Options: Internal sensor

External sensor

Note: The temperature setting parameters of AC are similar to those of the HVAC function (except for the temperature measurement option without combined sensor), details refer to the section 1.3.3.

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

This parameter for setting whether to enable Auto control mode of Airconditioner.

Options:	Disable		
	Enable		

Disable: when select this option, there will be no Auto mode in the Airconditioner interface, the following command value in below will be ignored. Enable: when enable, there will be Auto mode in the Air-condition interface. Specific effects please refer to the appendix.

Control type

This parameter setting for the control mode of AC.

Options: IR Split Unit

+	General	Description for page function	Page 6		
+	Home page	Page function	Air conditioner		•
_	Function page	Temperature display from	O Internal sensor C External sensor		
	Page setting	Auto control mode (If disable,the command value in below will be ignored) Disable 🔘 Enable		
	Page 1	Control type	🔵 IR Split Unit 🔘 Gateway Integrate		
	Page 6	Data type of mode	🔵 1bit 🔘 1byte		
+	Time function	Output value for Heat	1	4	i.
2		Output value for Cool	3	4	;
+	Event Group function	Output value for Dry	14	;	;
+	Logic function	Output value for Fan	9	4	
		Output value for Auto	0	2	:
		Status feedback for mode			
		Status value for Heat	1	1	:
		Status value for Cool	3	1	;
		Status value for Dry	14	4	;
		Status value for Fan	9	1	;
		Status value for Auto	0	2	;
	Page setting	Data type of fan speed	🔿 1bit 🔘 1byte		
	Page 1	Output value for Fan speed auto	4		*
	Page 6	Output value for Fan speed low	1		*
+	Time function	Output value for Fan speed medium	2		*
		Output value for Fan speed high	3		*
+	Event Group function	Status feedback for fan speed			-
+	Logic function	Status value for Fan speed auto	4		4
		Status value for Fan speed low	1		1
		Status value for Fan speed medium	2		
		Status value for Fan speed high	3		*
		Wind direction adjustment	Disable Enable		•
		and the second s	Value in SCIDET 5 010)		_
		Object datatype of setpoint	Float value in °C(DPT_9.001)		
		Min. set temperature [1632]	16	÷	°(
		Max. set temperature [1632]	32	÷	۰0

Fig. 1.3.4 (2) "Page x -- Air conditioner" Parameter window (Gateway Integrate _1byte)

GATEWAY INTEGRATE

The following parameters are visible when AC control mode is Gateway Integrate. Its parameter interface as shown in Fig. 1.3.4.

Data type of mode

To define the data type of control mode.

Options: 1bit 1byte

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

These parameters are visible when data type is "1byte" or "1bit", to define to switch to the value sent by each mode.

Options: 0..255 Options: 0/1

STATUS FEEDBACK FOR MODE

The following parameters are visible when data type is "1byte", for setting the status feedback value of each mode.

Parameter "Status value for Heat/Cool/Dry/Fan/Auto" Setting the status feedback value of each mode, the device will update the icon status according to the feedback value received. Options: 0..255

Data type of fan speed

This parameter for setting the data type of fan speed.

Options: 1bit 1byte





Parameter "Output value for fan speed auto/low/medium/high" These parameters are visible when data type of fan speed is "1byte", to define to switch to the value sent by each fan speed.

Options: 0..255

STATUS FEEDBACK FOR FAN SPEED

The following parameters are visible when data type is "1byte", for setting the status feedback value of each fan speed.

Parameter "Status value for fan speed auto/low/medium/high" These parameters for setting the status feedback value of each fan speed, the device will update fan speed icon status according to the feedback value received.

Options: 0..255

Wind direction adjustment

This parameter for setting whether to enable the wind direction adjustment function.

Options: Disable Enable

Enable: when enable, the following parameters are visible.

Parameter "Object value for wind direction"

This parameter comments on the object value of the wind direction adjustment. Fixed wind direction, object "wind direction fixed/swing, In/Out" sends telegram "0"; Swing wind direction, object sends telegram "1".

There are 5 options for wind direction positions when select fixed wind direction, as follows:

Wind direction position output setting

The following parameters for setting the value sent by object "wind direction position, Out" when switch wind direction position.

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

These parameters define the corresponding command value of the $5\,\rm wind$ direction positions. Options: 0..255

Wind direction position status feedback setting

The following parameters setting for the status feedback value of all wind direction.

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

These parameters setting for the status feedback value of each wind direction, the device will update the icon status of wind direction position according to the feedback value received. Options: 0..255

Object datatype of setpoint

This parameter setting for the object datatype of the setpoint.

Options: Value in °C (DPT_5.010)

Float value in °C (DPT_9.001)

Min. /Max. set temperature [16..32]°C

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.

IR SPLIT UNIT

The following parameters are visible when air conditioner control mode is IR Split Unit, for setting the value that each function command need to send, the actual telegram is the input value to minus 1. Its parameter interface as shown in Fig. 1.3.4[3].

Command No. for power on (1~64, 0=inactive)

Setting for the telegram sent by object "IR Split unit command, $\mbox{Out"}$ when air-conditioner is set to be open.

Options: 0..64, 0=inactive

Parameters similar to this parameter setting will no longer be described herein. When the default mode of air-conditioner is heating or cooling, the telegram that be sent is the telegram corresponding to the default temperature (at this time, this temperature also be limited to the min./max. setting value).

- General		Description for page function	Page 6	
Creat		Page function	Air conditioner	•
Summer	time setting	Temperature display from	O Internal sensor O External sensor	
General	sensor	Auto control mode (If disable,the command value in below will be ignored) Disable O Enable	
+ Home pag	ge	Control type	O IR Split Unit O Gateway Integrate	
- Function	page	Command No. for Power off [164,0=inactive]	1	\$
Page set	ting	Command No. for Power on [164,0=inactive]	2	\$
Page 1		Default mode for power on	Fan	•
Page 6		Default setpoint for power on	25°C	•
+ Time fund	tion	Default fan speed for power on	Auto	•
0.020.21		Default setpoint for Heat	22°C	•
+ Event Gro	up function	Default setpoint for Cool	25*C	-
+ Logic fun	ction	Command No. for Dry mode [164,0=inactive]	3	\$
		Command No. for Fan mode [164,0=inactive]	4	\$
		Command No. for Auto mode [164,0=inactive]	5	\$
		Command No. for Fan speed-auto [164,0=inactive]	6	¢
		Command No. for Fan speed-low [164,0=inactive]	7	÷
		Command No. for Fan speed-medium [164,0=inactive]	8	÷
		Command No. for Fan speed-high [164,0=inactive]	9	\$
		Temperature setpoint on Heat		
		Command No. for setpoint 16°C	16	

Fig. 1.3.4 (3) "Air conditioner" parameter window (IR Split Unit)

The following three parameters for setting the initiate icon status displayed on the screen when air-conditioner is on.

Parameter "Default mode for power on"

Setting the initial mode displayed on the screen when air-conditioner is on. Options: Heat

Heat
Cool
Dry
Fan
Auto

Parameter "Default setpoint for power on"

Setting for the initial setpoint temperature displayed on the screen for air conditioner power on.

Options: 16°C

32°C

Parameter "Default fan speed for power on"

Setting the initial fan speed displayed on the screen.

Options:	Auto
	Low
	Medium
	High

Parameter "Default setpoint for heat/cool" Setting the initial setpoint temperature when switch to the heating/cooling.

Options: 16°C

32°C

The sending telegram is the telegram corresponding to the default temperature (at this time, this temperature also be limited to the min./max. setting value).

1.3.5 PARAMETER WINDOW "PAGE X-- BACKGROUND MUSIC"

Parameter window "Background Music" as shown in Fig. 1.3.5, for setting background music control.

When Background Music function is enable, objects for background music control are visible, such as power on/off, Play/Pause, volume+/volume-, Next song/Previous song, play mode, music source, etc. Through these objects can control background music module.

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+ General	Description for page function	Page 6	
+ Home page	Page function	Background Music	*
	Power object telegram define	Off=0 / On=1	
 Function page 	Play/pause object telegram define	Pause=0 / Play=1	
Page setting	Song select object telegram define	Previous=0 / Next=1	
- age second	Volume object telegram define	Volume-=0 / Volume+=1	
Page 1	Play mode output setting		
Page 6	Output value for single cycle	0	* *
+ Time function	Output value for random play	1	\$
+ Event Group function	Output value for playlist cycle	2	\$
- event broup reliction	Output value for play in order	3	\$
+ Logic function	Status value for single cycle	0	÷
	Status value for random play	1	\$
	Status value for playlist cycle	2	\$
	Status value for play in order	3	÷
	Music source setting		
	Output value for USB	0	*
	Output value for SD	1	\$
	Output value for AUX	2	\$
	Output value for FM	3	¢
	Output value for BT	4	÷
	Status value for USB	0	*
	Status value for SD	1	\$
	Status value for AUX	2	\$
	Status value for FM	3	\$
	Status value for BT	4	÷

Fig. 1.3.5 "Page x -- Background Music" parameter window

Power object telegram define

Parameter "Play/pause object telegram define" Parameter "Song select object telegram define"

Parameter "Volume object telegram define"

These parameters for define the corresponding objects of background music command.

PLAY MODE OUTPUT SETTING

The following parameters setting to define the telegram and feedback value sent when switch to each play mode.

Parameter "Output value for single cycle/random play/playlist cycle/play in order"

Setting enable the output value for single cycle play mode. Options: 0..255

Parameter "Status value for single cycle/random play/playlist cycle/play in order"

Setting the status value for single cycle play mode, the device will update the icon status according to the received status feedback value. Options: 0.255

MUSIC SOURCE SETTING

The following parameters define the telegram and feedback value sent when switch to each music source.

Parameter "Output value for USB/SD/AUX/FM/BT" Setting the telegram dent by each music source. Options: 0..255

Parameter "Status value for USB/SD/AUX/FM/BT"

Setting the status feedback value of each music source, the device will update the icon status according to the received feedback value. Options: 0..255

1.3.6 PARAMETER WINDOW "PAGE X-- RGB DIMMING"

Parameter window "Page x -- RGB dimming" as shown in Fig. 1.3.6.

+ General	Description for page function	Page 6	
+ Home page	Page function	RGB dimming	•
 Function page 	RGB strip type Object type	RGB 1x3byte 3x1byte	*
+ General	Description for page function	Page 6	
+ Home page	Page function	RGB dimming	•
- Function page	RGB strip type	RGBW	•
+ General	Description for page function	Page 6	
+ Home page	Page function	RGB dimming	•
 Function page 	RGB strip type RGBW object type	RGBW+Color Temperature 1x6byte © 4x1byte	•
+ General	Description for page function	Page 6	
+ Home page	Page function	RGB dimming	•
- Function page	RGB strip type	Brightness+Color Temperature	٠

Fig. 1.3.6 "Page x -- RGB dimming" parameter window

RGB strip type

Setting for the RGB strip type. Options: RGB RGBW RGBW+Color Temperature Brightness+Color Temperature RGB: suitable for adjusting RGB tricolor lamp; RGBW: suitable for adjusting RGBW four color lamp; RGBW+Color Temperature: suitable for RGBW four color lamp, color temperature control; Brightness+Color Temperature: suitable for brightness, color temperature control.

Object type

Setting for the object type of RGB or RGBW.

Options: Suitable for RGB type: 1x3byte 3x1byte

> Suitable for RGBW type: 1x6byte 4x1byte

Suitable for RGBW+Color Temperature type: 1x6byte 4x1byte

1.3.7 PARAMETER WINDOW "PAGE X-- AIR QUALITY DISPLAY"

Parameter window "Page x--Air Quality display" as shown in Fig. 1.3.7, for setting the function of air quality display, AQI, temperature, humidity, PM2.5, PM10, VOC, CO2, brightness and wind speed can be set to display. Up to 4 items can be displayed in one interface.

+ General	Description for page function	Page 6	
+ Home page	Page function	Air Quality display	•
- Function page	Items 1 function in List display	Temperature	•
~	Items 2 function in List display	Humidity	•
Page setting	Items 3 function in List display	PM2.5	•
Page 1	Items 4 function in List display	VOC	•
Page 6	Time period for request external sensor [5255]	10 ‡ Minutes	
+ Time function			
	Object datatype of VOC	Float value in ppm(DPT_9.008)	•
+ Event Group function	Object determine of DM2.5	Value in ug/m3(DPT_7.001)	
+ Logic function	Object datatype of PM2.5	Float value in ug/m3(DPT_9.030)	
	Object datature of RM10	Value in ug/m3(DPT_7.001)	
	Object datatype of PM10	Float value in ug/m3(DPT_9.030)	
	Ohine data and Diskham	Value in lux(DPT_7.013)	
	Object datatype of Brightness	Float value in lux (DPT 9.004)	

Fig. 1.3.7 "Page x -- Air Quality display" parameter window





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

Setting to display in the list, up to 4 items can be displayed.

Options: Disable Temperature Humidity PM2.5 PM10 CO2 VOC AQI Brightness Wind speed

These values are detected by an external sensor and passed to the screen for display. To enable the display, the screen will appear empty if the detected values are not received.

Display range:

Temperature: -40~40 °C Humidity: 0~100 % PM2.5: 0-999 ug/m3 PM10: 0-999 ug/m3 CO2: 0-4000 ppm VOC: 0-9.99 mg/m3 or 0~4000 ppm AQI: 0-500 Brightness: 0-5000 lux Wind speed: 0-50 m/s

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

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

Options: 5...255

Object datatype of VOC

This parameter for setting the data type of VOC. Options: Value in ug/m3(DPT_7.001)

Float value in ug/m3(DPT_9.030) Float value in ppm(DPT_9.008)

Object datatype of PM2.5

This parameter for setting the data type of PM2.5.

Options: Value in ug/m3(DPT_7.001) Float value in ug/m3(DPT_9.030)

Object datatype of PM10

This parameter for setting the data type of PM10. Options: Value in ug/m3(DPT_7.001) Float value in ug/m3(DPT_9.030)

Object datatype of Brightness

This parameter for setting the data type of Brightness.

Options: Value in lux(DPT_7.013) Float value in lux(DPT_9.004)

1.3.8 PARAMETER WINDOW "PAGE X-- FLOOR HEATING"

Parameter window "Page x--Floor heating" as shown in Fig. 1.3.8, it is mainly for floor heating parameter setting.

Temperature reference from

This parameter for setting the reference of the temperature of floor heating.

Options: Internal sensor

External sensor

Internal and External sensor combination

Note: Temperature setting of floor heating is similar to that of HVAC, details refer to the section 1.3.3.

Power on/off status after download

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

Options: Off On

+	General	Description for page function	Page 6			
+	Home page	Page function	Floor heating			•
	-	Temperature reference from	Internal sensor			•
_	Function page	Control value after temp. error[0100%](f			
	Page setting	<pre>>>0'=1)</pre>	0			¥
	Page 6	Power on/off status after download	O Off On			
_	Time function	Power on/off status after bus recovery	Off			*
	Time function setting	Default set temperature[3264]	40		÷ *0	.5°C
	Time function 1	Min. set temperature [1632]	16		÷	•(
	Time function 2	Max. set temperature [1632]	32		÷	•(
	Event Group function	Temperature control method	Heating on/off (2 point control)			•
	Logic function	Object value of Heating on/off	 Heat on=1, Heat off=0 Heat on=0, Heat off=1 			
		Lower Hysteresis[0200]	20		\$ *0	.1°(
		Upper Hysteresis[0200]	20		\$ *0	.1°C
		Cyclically send control value[0255]	0 ⁺ Minutes			
		Scene function	🔵 Disable 🔘 Enable			
		1->Assign scene NO.[164,0=inactive]	0			*
		Power on/off status	Off On			
		Set temperature[3264]	40		÷ *0	.5°
		2->Assign scene NO.[164,0=inactive]	0			÷
		Power on/off status	Off On			
_	Function page	Set temperature[3264]	40	\$	*0.5°C	
		3->Assign scene NO.[164,0=inactive]	0		+	
	Page setting	Power on/off status) Off 🔘 On			
	Page 6	Set temperature[3264]	40	\$	*0.5°C	
	1090.0	4->Assign scene NO.[164,0=inactive]	0		\$	
+	Time function	Power on/off status	Off On			
÷	Event Group function	Set temperature[3264]	40	*	*0.5°C	
+	Logic function	5->Assign scene NO.[164,0=inactive]	0		* *	
		Power on/off status	Off On			
		Set temperature[3264]	40	\$	*0.5°C	
		Heating timer function control via object	Disable		•	
		Timer 1	Disable 🔘 Enable			
		Power on/off status	Off 🔘 On			
		Set temperature[3264]	40	\$	*0.5°C	
		Execute in weekday	Monday-Friday		•	
		Execute at hours	0 ‡ Hours			
		Execute at minutes	0 ‡ Minutes			
		Timer 2				

Fig. 1.3.8 "Page x -- Floor heating" parameter window

Power on/off status after bus recovery

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

ions:	On
	Off

Opt

Before power off

On: floor heating interface is on when device is powered on, this interface is operational, floor heating will calculate internally according to the control type to determine the current controlling status;

Off: floor heating interface is off when device is powered off, other icons in the interface are not operational except for timing and on/off icon;

Before power off: floor heating interface will recover to the status before bus power off, if it is on, then the device will output the heating control status according to the internal calculation.

Default set temperature[32..64]*0.5°C

Setting for the default temperature when floor heating is on.

Options: 32..64

Min./Max. set temperature[16..32]°C

Setting to limit the adjustable range of the setting temperature, the setting minimum should be less than the setting maximum.

If the setting temperature beyond the limited range, is output according to the limit value.

Options: 16..32





Temperature control method

Setting for the temperature control method, different control types are suitable for different temperature controller.

Options: Heating on/off (use 2-point control) Heating PWM (use PI control) Heating continuous control (use PI control)

When option "Heating on/off [use 2-point control]" of parameter "Temperature control method" is selected, the following parameters are visible. Under 2-point control, when the temperature is higher than a certain setting temperature, heating off, below a certain setting temperature, heating on.

Parameter "Object value of Heating on/off" Define the triggered value of floor heating on/off.

Options: Heat on=1, Heat off=0 Heat on=0, Heat off=1

Parameter "Lower Hysteresis [0..200]*0.1°C" Parameter "Upper Hysteresis [0..200]*0.1°C" These two parameters for setting the lower/upper hysteresis setting temperature of floor heating.

Options: 0..200

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

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

For example, the lower hysteresis temperature is 1°C, the upper hysteresis temperature is 2°C, the setting temperature is 16°C, if T is higher than 18°C, then it will stop heating; if T is lower than 15°C, then it will start heating; if T is between 15–18°C, then it will maintain the previous status.

When option "Heating PWM (use PI control)" or "Heating continuous control (use PI control)" of parameter "Temperature control method" is selected, the following parameters are visible.

When in Heating PWM (use PI control), floor heating will in cyclically switch control to the valve according to the controlling value.

When in Heating continuous control (use PI control), floor heating will control the opening/closing status of the valve according to the controlling value.

Parameter "Invert control value"

Setting the control object to send the control value normally, or send the inverted control value, so that the control value can adapt to the type of valve.

Options: No Yes

Yes: After the control value is reversed, it is sent to the bus through the object.

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

This parameter is visible only when the control type is "Heating PWM (use PI control)" and is used to set the cycle of the control object cycle to send the switch value, and the object sends the switch value according to the duty cycle of the control value.

For example, assuming the set period is 10 min and the control value is 80%, the object sends an open telegram to the 8min and the 2min sends a closed telegram. If the control value changes, The duty cycle of the object to send the on/off telegram also changes, but the period is still the time of the parameter setting.

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) User defined

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

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

When the parameter "Heating speed" is visible when the "User defined" option is visible and is used to set the PI value of the PI controller.

More descriptions of two-point control mode and PI control mode refer to section 1.3.3.

Parameter "Cyclically send control value [0..255]min" Setting the time period of cyclically sending control value to the bus. Options: 0..255

Scene function

Setting for scene functions of the floor heating, a total of 5 scenes are available for setting.

Options: Disable Enable

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

Setting scene number.

Options: 0..64, 0=inactive

Parameter "Power on/off status"

Setting the power on/off status of the floor heating interface of scene x.

Options: Off

On

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

This parameter is visible when the previous parameter select "On", for setting the setting temperature of scene $\boldsymbol{x}.$

Options: 32..64

Heating timer function control via object

Setting whether to enable the timing function of floor heating through the object, up to 8 timers can be configured.

Options: Disable Disable=0/Enable=1 Disable=1/Enable=0

Select the last two options, the object of disable/enable timing function are visible.

At the same time, when the timing function which can be disabled/enabled by the object is selected, the default state is not enabled after the programming or reset is completed.

It will exist the timing state when shut down or recall the scene function configured by floor heating.

Timer x, x=1~8

This parameter setting whether to enable timer x.

Options: Disable Enable

Parameter "Power on/off status"

Setting the power on/off status of the floor heating interface of timer x.

Options: Off On

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

This parameter is visible when the previous parameter select "On", for setting the setting temperature of scene x. Options: 32..64

Parameter "Execute in weekday/at hours(h)/at minutes(min)" Setting the time of timer x, when it reaches the time, will perform timer x. Options: Weekday:

Weekday: Monday Tuesday Wednesday Thursday Friday Saturday Sunday Monday-Friday Saturday-Sunday Monday-Sunday Hours: 0..23

Minutes: 0..59



1.3.9 PARAMETER WINDOW "PAGE X-- VENTILATION SYSTEM"

Parameter window "Page x--Ventilation System" as shown in Fig. 1.3.9, for ventilation system parameter setting.

+ General	Description for page function	Page 6	
+ Home page	Page function	Ventilation System	•
	Power on/off status after download	O Off On	
 Function page 	Power on/off status after bus recovery	Off	•
Page setting	Default fan speed after power on	Medium	*
Page 1		Necrolation Consideration	
- Page 6	Data type of fan speed	1bit 🔘 1byte	
P6: Auto.control	Output value for Fan speed off	0	* *
 Time function 	Output value for Fan speed low	1	\$
	Output value for Fan speed medium	2	÷
 Event Group function 	Output value for Fan speed high	3	\$
 Logic function 	Status feedback for fan speed		
	Status value for Fan speed off	0	* *
	Status value for Fan speed low	1	\$
	Status value for Fan speed medium	2	÷
	Status value for Fan speed high	3	\$
	Delay between fan speed switch[0100]	10	‡ *50m
	Heat Recovery function	Disable=0/Enable=1	•
	Filter timer counter	🔿 Disable 🔘 Enable	
	Evaluation time[100.10000]	1000 ‡ Hours	
	Auto. operation function	🔿 Disable 🔘 Enable	
- Function page	Scene function	O Disable O Enable	
Page cetting	1->Assign scene NO.[164,0=inactive]	0	*
Page 1	Fan level	Off	•
Page 1	Heat Recovery	Off On	
Page 0	2->Assign scene NO.[164,0=inactive]	0	\$
Fo: Auto.control	Fan level	Low	•
 Time function 	Heat Recovery	Off O On	
Event Group function	3-> Assign scene NO [1 64 0=inactive]	0	
Logic function	Fan Javal	Medium	•
Logic function	Hast Parovany		
	4->Assign scene NO.[1b4,0=inactive]	0	*
	Fan level	High	•
	Heat Recovery	Off On	
	5->Assign scene NO.[164,0=inactive]	0	ţ
	Fan level	Off	•
	Heat Recovery	0 Off 0 0n	

Fig. 1.3.9 [1] "Page x -- Ventilation system" parameter window

Power on/off status after download

Setting the power on/off status of the Ventilation system interface after the application is downloaded.

Options: Off Οn

Power on/off status after bus recovery

Setting the power on/off status of the ventilation system interface after the application is downloaded.

Options: On

Off

Before power off

On: when device is powered on, this interface is operational;

Off: when device is powered off, other icons in the interface are not operational

except for the filter reset and on/off icon; Before power off: the device will recover to the status of ventilation before bus power off.

Default fan speed after power on

Setting the initial fan speed after power on.

Options: Low Medium High

Data type of Fan speed

Setting the data type of fan speed. 1bit Options: 1byte



Parameter "Output value for fan speed off/low/medium/high" When the data type of the fan speed is visible in "1byte", the value sent to each fan speed is defined.

Options: 0..255

STATUS FEEDBACK FOR FAN SPEED

The following parameters are visible when the fan speed type is "1byte", for setting the status feedback of each fan speed.

Parameter "Status value for fan speed off/low/medium/high" Setting the status feedback of each fan speed, the device will update the icon status of fan speed according to the feedback value received. 0..255

Options:

Parameter "Object value for fan speed off/low/medium/high" This parameter is visible when object type of fan speed is "1bit", 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=1, No.2=0, No.3=1
	No.1=0, No.2=1, No.3=1
	No.1=1, No.2=1, No.3=1

Parameter "Delay between fan speed switch [0..100]*50ms" Define the conversion delay time, and it can be considered according to the technical characteristics of the fan.

0...100 Options:

When switch fan speed, first should turn off fan speed, then turn on fan speed after delay time before the telegram can be sent to the bus. When the delay time is set to 0, it will not be turned off first, but will switch directly to the next fan speed.

Heat Recovery function

Setting whether to enable heat recovery function.

Options: Disable

Disable=0/Enable=1 Disable=1/Enable=0

If the latter two options are selected, heat recovery of ventilation system is default to be enable, i.e., the function is enable when device power on. When disable, heat recovery is uncontrollable.

Filter timer counter

Οr

Setting whether to enable filter timer counter function.

tions:	Disable
	Enable

When enable, the following parameter is visible.

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

Setting the service life of the filter. Options:100..10000

If the filter takes longer than the setting time, the filter will send an alarm and prompt to clean the filter.

The life length of the filter can be reset through the object "Filter timer reset, ln"

The life length of the filter can be counted by the object "Filter timer counter, In/Out". The counting duration is in hours. The counting value will be sent to the bus when it has changed, and the counting duration of filter can be modified through the bus.

Auto. operation function

Setting whether to enable the Auto. Operation function.

Options: Disable Fnable

Scene function

Setting whether to enable the scene function, there are 5 scenes can be set.

18

Options: Disable Enable



x->Assign scene N0.[1..64,0=inactive], x=1~5

Setting for the scene number. Options: 0..64, 0=inactive

Parameter "Fan level"

Setting for the fan speed status of scene x.

Options: Off Low Medium

High

Parameter "Heat Recovery" This parameter for setting heat recovery status of scene x. Options: Off On

When heat recovery is disable, this parameter is in valid.

1.3.9.1 PX: AUTO. CONTROL

After automatic operation is activated, ventilation system will automatically adjust fan speed according to the control value.

The following parameters are visible when the automatic control function of ventilation system is enable. The parameter interface for automatic control is shown in the following figures:

+	General	Auto.operation on object value	0=Auto/1=Cancel 0 1=Auto/0=Cancel
+	Home page	Control value reference from	O PM2.5 CO2
_	Function page	Period for request control value[0255]	2 ‡ Minutes
		The speed status after control value error	Off •
	Page setting Page 1	Object datatype of PM2.5	 Value in ug/m3(DPT_7.001) Float value in ug/m3(DPT_9.030)
-	Page 6	Threshold value OFF<->speed low [1999]	35
	P6: Auto.control	Threshold value speed low<->medium [1999]	75 ‡
+	Time function	Threshold value speed medium<->high [1999]	115 ‡
+	Event Group function	Hysteresis value is threshold value in +/- [1030]	10 ‡
+	Logic function	Minimum time in fan speed[065535]	10 ‡ Seconds

Fig. 1.3.9 (2) "Px: Auto. Control_PM2.5" parameter window

General	Auto.operation on object value	0=Auto/1=Cancel 0 1=Auto/0=Cancel	
Home page	Control value reference from	○ PM2.5 ○ CO2	
Function page	Period for request control value[0255]	2 🌲 Minutes	
	The speed status after control value error	Off	٠
Page setting Page 1	Object datatype of CO2	Value in ppm(DPT_7.001) Float value in ppm(DPT_9.008)	
- Page 6	Threshold value OFF<->speed low [14000]	450	÷
P6: Auto.control	Threshold value speed low<->medium [14000]	1000	\$
Time function	Threshold value speed medium<->high [14000]	2000	* *
Event Group function	Hysteresis value is threshold value in +/- [100400]	200	*
Logic function	Minimum time in fan speed[065535]	10 ‡ Seconds	
	General Home page Function page Page setting Page 1 Page 6 P6: Auto.control Time function Event Group function Logic function	General Auto.operation on object value Home page Control value reference from Function page Period for request control value[0,:255] Page setting Disject datatys after control value error Page 1 Object datatype of CO2 Page 6 Threshold value OFF>speed low P4: Auto.control Threshold value speed low ->medium Time function Threshold value speed low ->medium Event Group function Hysteresis value is threshold value in +/- [10:0.400] Logic function Minimum time in fan speed[0.65535]	General Auto.operation on object value 0=Auto/1=Cancel © 1=Auto/0=Cancel Home page Control value reference from PM2.5 © CO2 Function page Period for request control value[0.255] 2 ‡ Minutes Page setting Page 1 Object datatype of CO2 Value in ppm(DPT_7.001) Page 6 Threshold value OFF<>speed low 450 Pine function Threshold value speed low<->medium (1.4000] 1000 Time function Threshold value speed medium <>high (1.4000] 2000 Logic function Minimum time in fan speed[0.65535] 10 ‡ Seconds

Fig. 1.3.9 (3) "Px: Auto. Control_CO2" parameter window

Auto. operation on object value

This parameter for setting the telegram value to active automatic operation. Options: 0=Auto/1=Cancel

1=Auto/0=Cancel

 $0{=}Auto/1{=}Cancel:$ when the object "Automatic function, In/Out" receives the telegram value "0", activate the automatic operation, when receive "1", exit the automatic operation.

1=Auto/0=Cancel: when the object "Automatic function, In/Out" receives the telegram value "1", activate the automatic operation, when receive "0", exit the automatic operation.

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

Control value reference from

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

Options: PM2.5 CO2

Period for request control value [0..255] Min

Setting the time period for device to send a control value read request to external sensor.

Options: 0...255

The speed status when the control value error

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

Options: Off Low Medium High

Note: when reading the control value from external sensor, if there is no response, then it will beconsidered as external sensor failure and control value error by default.

Object datatype of PM2.5

Setting the data types of PM2.5. Data type determines object type, select it according to the docking PM2.5 sensor data type.

Options: Value in ug/m3(DPT_7.001) Float value in ug/m3(DPT_9.030)

DPT_7.001: suitable for integrated value.

DPT_9.008: suitable for float value.

Object datatype of CO2

Setting the data types of CO2. Data type determines object type, select it according to the docking CO2 sensor data type.

Options: Value in ppm(DPT_7.001)

Float value in ppm(DPT_9.008)

DPT_7.001: suitable for integrated value. DPT_9.008: suitable for float value.

Threshold value OFF<-->speed Low[1..999]/[1...4000]

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

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

Threshold value speed low<-->medium[1..999]/[1...4000]

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

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

Threshold value speed medium<-->high[1..999]/[1...4000]

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

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

Tip: The controller evaluates the threshold in ascending order.

First check \rightarrow OFF <->low fan speed threshold \rightarrow low fan speed <->medium fan speed \rightarrow medium fan speed <->high fan speed.

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

The threshold of OFF <-> low fan speed is lower than that of low fan speed <-> medium fan speed, and the threshold of low fan speed <-> medium fan speed is lower than that of medium fan speed <-> high fan speed.

Hysteresis value is threshold value in +/- [10...30]/[100..400]

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

Options: 10..30/100..400

For example, the control type is PM2.5, the Hysteresis value is 10 and the threshold is 35, then the upper limit threshold 45 (Threshold value+Hysteresis value) and the lower limit threshold 25 (Threshold value-Hysteresis value). When the control value is between 25 ~45, fan action will not be caused, and the previous status will still be maintained.



Only less than 25 or greater than or equal to 45 will change the running status of the fan. As shown in the following figure:



Note:

When hysteresis is enabled, if the threshold overlap occurs, fan action is specified as follows:

 Hysteresis determines the control point where Fan speed conversion occurs;
 If Fan speed conversion occurs, new fan speed is determined by control value and threshold value, irrespective of hysteresis.

in respective of hysteresis

For example (1):

Take PM2.5 as an example

OFF <-> Low fan speed threshold value is 35

Low fan speed <->Medium fan speed threshold value is 55

Medium fan speed <-> High fan speed threshold value is 75

Hysteresis value is 25

The fan speed of the fan turbine increases from OFF:

Fan OFF status will change at a control value of 60 (\geq 25+35), and new fan speed will be the mid-fan speed (because 60 is between 55 and 75, irrespective of hysteresis at this time), so the low fan speed is ignored;

The behavior of fan speed when descending from a high fan speed:

The high fan speed will change at a control value of 50 (<75-25), and new fan speed will be low fan speed (because 50 is between 35 and 55, irrespective of hysteresis), so the fan speed is ignored.

For example(2):

Take PM2.5 as an example

OFF <-> Low fan speed threshold value is 20

Low fan speed <->Medium fan speed threshold value is 40 Medium fan speed <-> High fan speed threshold value is 70 Hysteresis value is 10

When fan speed is increasing from OFF:

The OFF status will be turned when the control value is 30 (>20+10)

When the control value 41 is received, the new speed will be at medium (because the hysteresis is ignored when the value 41 is between 40 and 70), therefore the low speed is ignored.

When the control value 39 is received, the new speed will be at low (because the hysteresis is ignored when the value 39 is between 20 and 40)

When Fan Speed decreasing from high:

The high speed will be turned when the control value is 60 (<70-10)

When the control value 39 is received, the new speed will be at low (because the hysteresis is ignored when the value 39 is between 20 and 40), therefore the medium speed is ignored.

3) When the control value is 0, the fan will be off at any circumstances.

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

Defines the residence time of the fan from the current fan speed to a higher fan speed or lower fan speed, that is, the minimum time for a fan speed operation. If you need to switch to another fan speed, you need to wait for this period of time before switching.

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

Options: 0...65535

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

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

1.3.10 PARAMETER WINDOW "PAGE X-- ENERGY METERING DISPLAY"

Parameter window "Energy Metering display" as shown in Fig. 1.3.10, for setting the function of energy metering display, current, voltage, power and energy can be set to display. Up to 8 items can be set to display in the interface.

inction ir of Energy metering Meter 1	Energy Metering display 4 •
r of Energy metering Meter 1	4 🗸
Meter 1	
ption	Energy Meter 1
ype of display value	Value in mA (DPT 7.012)
Meter 2	
ption	Energy Meter 2
ype of display value Meter 3	Value in mA (DPT 7.012) •
ption	Energy Meter 3
ype of display value Meter 4	Value in mA (DPT 7.012)
ption	Energy Meter 4
ype of display value	Value in mA (DPT 7.012) -
eriod for request meter value	10 ‡ Minutes
	ype of display value vleter 2 ption ype of display value vleter 3 ption ype of display value vleter 4 ption ype of display value erriod for request meter value late Econom Mater decomption

Fig. 1.3.10 "Energy Metering display" parameter window

Number of Energy metering

Setting for the number of energy metering in the energy metering display interface.

Options: 1/2/3/4/5/6/7/8 Up to 8 items can be set to display.

ENERGY METER X[X=1..8]

Options:

Parameter "Description" Setting the description of energy display items. Up to 18 characters can be input and up to 6 Chinese characters can be displayed.

Parameter "Data type of display value"

Setting the data type of energy metering display items.

Value in mA[DPT 7.012] Float value in mA[DPT 9.021] Float value in A[DPT 14.019] Float value in mV[DPT 9.020] Float value in V[DPT 14.027] Float value in W[DPT 14.056] Float value in kW[DPT 9.024] Value in Wh[DPT 13.010] Value in kWh[DPT 13.013]

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

Setting the time period for the request meter value of the device sent to external metering actuator.

Options: 5...255

Note: Energy Meter description up to 12chars., or 6 Chinese chars., or 9 Russian, Greek chars.

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1.4 PARAMETER WINDOW "TIME FUNCTION SETTING"

Parameter window "Time function setting" as shown in Fig. 1.4.1, up to 16 time functions can be configured.

+ General	Time function setting	🔵 Disable 🔘 Enable
+ Home page	Time function 1	O Disable O Enable
+ Function page	Time function 2	🔵 Disable 🔘 Enable
- Time function	Time function 3	O Disable O Enable

Time function setting

Fig. 1.4.1 "Time function setting" parameter window

Time function setting

Setting whether to enable time function.

Options: Disable

Enable

Time function x (x:1~16)

Setting for enable time function x.

Options: Disable Enable

LIIdu

1.4.1 PARAMETER WINDOW "TIME FUNCTION X"

The parameter window "Time function x (x:1~16)" as shown in Fig. 1.4.2, for setting the value sent by each timing and timing time, parameters of each time function are the same. Take a timing setting for example to introduce their parameter settings.



Fig. 1.4.2 "Time function x" parameter window

Description for time function

Setting for the description of time function, up to 12 characters can be input (up to 6 Chinese characters are supported).

Data Type of time function

Setting the data type of the sending value when timing time of time x arrives.

Options: 1bit [On/Off]

1byte unsigned value 1byte [scene control] 2byte unsigned value

Parameter "Output value/ scene No.[...]"

Setting the telegram value to be sent when it reaches the time of time x. The range depends on the options of the previous parameter.

Time disable function

Setting whether to enable or disable time function through objects, or setting the trigger value of enable/disable timing.

Options: Disable

Disable=0/Enable=1 Disable=1/Enable=0

Weekly time configuration

The following parameters for setting the time of time $\boldsymbol{x},$ when time arrives, perform time $\boldsymbol{x}.$

Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday is

Configuring the day of a week to enable time x. Options: Disable Enable

Parameter "Hours at"/ "Minutes at" Configuring the specific time of time x. Options: Hours: 0..23 Minutes: 0..59

Note: the accuracy of internal RTC real-time clock is ± 5ppm.

1.5. PARAMETER WINDOW "EVENT GROUP FUNCTION"

Parameter window "Event Group function" as shown in Fig. 1.5.1, for enable event group setting, up to 8 event group functions can be configures, there are 8 outputs of each group, as shown in Fig. 1.5.2.

+ General	Event Group function set	ting	O Disable	O Enable
+ Home page	Event Group 1 Functio	n	O Disable	O Enable
+ Function page	Event Group 2 Functio	n	🔿 Disable	O Enable
+ Time function	Event Group 3 Functio	n	Disable	C Enable
- Event Group function				
Fig. 1.	5.1 "Event Group function" pa	irameter win	dow	
+ General	Object type of Output 1	1bit		•
+ Home page	1->Trigger scene NO.[164,0=inactive]	0		\$
+ Function page	Object value of Output 1[01]	0 0 1		
	Delay time for sending[0255]	0		÷ *0.1
+ Time function	2->Trigger scene NO.[164,0=inactive]	0		÷
- Event Group function	Object value of Output 1[01]	001		
Event Group setting	Delay time for sending[0255]	0		÷ *0.1
G1:Output 1 Function	3->Trigger scene NO.[164,0=inactive]	0		\$
G1:Output 2 Function	Object value of Output 1[01]	001		
G1:Output 3 Function	Delay time for sending[0255]	0		÷ *0.1
G1:Output 4 Function	4->Trigger scene NO.[164,0=inactive]	0		÷
G1:Output 5 Function	Object value of Output 1[01]	0 0 1		
G1:Output 6 Function	Delay time for sending[0255]	0		÷ *0.1

Fig. 1.5.2 "Gx: Output y Function" parameter window

Event Group x Function (x:1~8)

Setting to enable event group x function.

Options: Disable

Enable

When enable one of the group functions,8 outputs are visible. As 8 group functions are the same, and 8 output functions of each group as well, the following description only about one output of a group.

Object type of Output y (y:1~8)

Define the object type of output y of group x.

Options: 1bit 1byte 2byte

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

Define the triggered scene number of output y of group x. Up to 8 triggered scene of each output can be configured.

Options: 0..64, 0=inactive

Parameter "Object value of Output y [0..1/0..255/0..65535]" Setting the output value, the range depends on the data type of output y. 1bit 0..1/1byte 0..255/ 2byte 0..65535

Parameter" Delay time for sending [0...255]*0.1s " Setting the delay time for sending the output value to the bus. Options: 0..255





1.6 PARAMETER WINDOW "LOGIC FUNCTION SETTING"

Parameter window "Logic function setting" as shown in Fig. 1.6.1, for enable logic function, up to 8 logic functions can be configured.

+ General	1st logic function	🔵 Disable 🔘 Enable
+ Home page	2nd logic function	🔵 Disable 🔘 Enable
+ Function page	3rd logic function	🔵 Disable 🔘 Enable
+ Time function	4th logic function	O Disable O Enable

+ Event Group function

Fig. 1.6.1 "Logic function setting" parameter window

Function of channel

Options:

Setting for the logic function of channel, as shown in Fig. 1.6.2.

AND
OR
XOR
Gate forwarding
Threshold comparator
Format convert

AND/OR/XOR: as the parameter is similar to the communication object (only the logic algorithm is different), the following parameters taking one options for example.

1.6.1 PARAMETER WINDOW "AND/OR/XOR"

+ General	Function of channel	AND	•
+ Home page	Input a	Disconnected	•
1.5	Default value	0 0 1	
+ Function page	Input b	Disconnected	•
+ Time function	Default value	0 0 1	
+ Event Group function	Input c	Disconnected	•
- Logic function	Default value	0 0 1	
~	Input d	Disconnected	•
Logic function setting	Default value	0 0 1	
1st Logic function	Input e	Disconnected	•
	Default value	© 0 ◯ 1	
	Input f	Disconnected	•
	Default value	0 0 1	
	Input g	Disconnected	•
	Default value	0 0 1	
	Input h	Disconnected	•
	Default value	0 0 1	
	Result is inverted	O No O Yes	
	Read input object value after bus recovery	O No Ves	
	Output send when	 Receiving a new telegram Every change of output object 	
	Send delay time: Base	None	•
	Factor: 1255	1	

Fig. 1.6.2 "Logic function_AND/OR/XOR" parameter window

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

Setting whether input x to calculate, whether to normally calculate or inverted calculate.

Options: Disconnected Normal Inverted Disconnected: not to calculate; Normal: to directly calculate the input value; Inverted: invert the input value, then to calculate.

Note: not to invert the initiate value. Parameter"Default value" Setting the initial value of logic input x.

Setting the initial value of logic input > Options: 0 1

Result is inverted

Setting whether to invert the logic calculation result.

Options: No

Yes

No: output directly;

Yes: output after inverting.

Read input object value after bus voltage recovery

Setting whether to send the read request to the logic input object after bus voltage recovery or programming.

Options: No Yes

Te

Output send when

Setting the condition of sending logic result.

Options: Receiving a new telegram

Every change of output object

Receiving a new telegram: every time the object received a new input value will the logic result be sent to the bus;

Every change of output object: only when logic result has changed will it be sent to the bus.

Tip: when in the first time to logic calculate, the logic result will be sent even if it has no change.

Send delay time

Base: None 0.1s 1s ...

10s 25s

Factor: 1..255

Setting for the delay time for sending the logic calculation result to the bus. Delay time: Base x Factor, if option "None" of Base is selected, then there is no delay.

1.6.2 PARAMETER WINDOW "GATE FORWARDING"

+ General	Function of channel	Gate forwarding	•
+ Home page	Object type of Input/Output	1bit	•
+ Function page	Scene NO.of Gate after startup [164,0=inactive]	0	\$
+ Time function	1->Gate trigger scene NO. [164,0=inactive]	0	* *
	Input A send on	Output A	•
+ Event Group function	Input B send on	Output B	•
- Logic function	Input C send on	Output C	•
Logic function setting	Input D send on	Output D	•
1st Logic function	2->Gate trigger scene NO. [164,0=inactive]	0	\$
	Input A send on	Output A	•
	Input B send on	Output B	•
	Input C send on	Output C	•
	Input D send on	Output D	•

Fig. 1.6.3 "Logic function_Gate forwarding" parameter window

Object type of Input /Output

Setting the obje	ct type of input/output
Options:	1bit
	4bit
	1byte

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

Setting the initial scene where logical gate forwarding can be performed by default after device starts, which needs to be configured in the parameters.

Options: 1..64, 0=inactive

Note: gate scene is recommended to be selected before operating, or it will enable the initiate scene by default.

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

Setting scene number of logic gate forwarding. Up to 8 trigger scene number can be set for each logic.

Options: 1..64, 0=inactive





Format convert 1x1Byte-->8x1Bit

Receiving a new telegram

Every change of output object

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

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

- Output A
 - Output B

Output B,C,D

According to the options, one input can be forwarded into one or more outputs, the output value is the same as the input value.

1.6.3 PARAMETER WINDOW "THRESHOLD COMPARATOR"

+ General	Function of channel	Threshold comparator	•
+ Home page	Threshold value data type	1byte	•
+ Eunction page	Threshold value 0255	127	÷
· · · · · · · · · · · · · · · · · · ·	If Object value < Threshold value	Send value '0'	•
+ Time function	If Object value=Threshold value	Do not send telegram	•
+ Event Group function	If Object value!=Threshold value	Do not send telegram	•
 Logic function 	If Object value>Threshold value	Do not send telegram	•
~	If Object value <= Threshold value	Do not send telegram	*
Logic function setting	If Object value>=Threshold value	Do not send telegram	-
1st Logic function		Receiving a new telegram	
	Output send when	Every change of output object	
	Send delay time: Base	None	•
	Factor: 1255	1	÷

Fig. 1.6.4 "Logic function_Threshold comparator" parameter window

Threshold value data byte

Setting the threshold value data type.

- Options: 4bit 1byte 2byte 4byte
- Parameter"Threshold value 0..255" Setting threshold value, the range depends on the data type. 4bit 0..15/1byte 0..255/ 2byte 0..65535 /4byte 0..4294967295 Parameter "If Object value<Threshold value" Parameter "If Object value=Threshold value"

Parameter "If Object value!=Threshold value" Parameter "If Object value>Threshold value" Parameter "If Object value<=Threshold value"

Parameter "If Object value>=Threshold value"

Setting for setting the logic result value that should be sent when threshold value Less than, equal to, notequal to, greater than, less than or equal to the setting valve.

Ontions. Do not send telegram Send value "0"

Send value "1"

Do not send telegram: not consider to select this option;

Send value "0"/"1": when condition is satisfied, send telegram 0 or 1. If there is a conflict between the setting options between parameters, the base on the value that should be sent when reach the final parameter condition. For example: parameter "If Object value=Threshold value" is set to be "Send value "0""; parameter "If Object value<=Threshold value" is set to be "Send value "1""; when object value is equal to the threshold value, then the logic result will send "1".

Output send when

Setting the condition of sending logic result.

Options: Receiving a new telegram

Every change of output object

Receiving a new telegram: every time the object received a new input value will the logic result be sent to the bus;

Every change of output object: only when logic result has changed will it be sent to the bus.

Tip: when in the first time to logic algorithm, the logic result will be sent even if it has no change.

Send delay time: Base

- Base:
 - None 0.1s
 - 1s
 - 255

Factor: 1..255

Setting for the delay time for sending the logic algorithm result to the bus. Delay time=Base x Factor, if option "None" of Base is selected, then there is no delay.

1.6.4 PARAMETER WINDOW "FORMAT CONVERT"

General Function of channel Format convert type Home page Output send when Time function Event Group function Logic function Logic function setting 1st Logic function

Fig. 1.6.5 "Logic function _Format convert" parameter window

Format convert type

Setting the format convert type.

Options: 2x1bit-->1x2bit 8x1bit-->1x1bvte 1x1byte-->1x2byte 2x1byte-->1x2byte 2x2byte-->1x4byte 1x1byte-->8x1bit 1x2byte-->2x1byte 1x4byte-->2x2byte 1x3byte-->3x1byte 3x1byte-->1x3byte

Output send when

Setting the condition of sending logic result.

Options: Receiving a new telegram

Every change of output object

Receiving a new telegram: every time the object received a new input value will the logic result be sent to the bus;

Every change of output object: only when logic result has changed will it be sent to the bus.

Tip: when in the first time to logic algorithm, the logic result will be sent even if it has no change.

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CHAPTER 2 DESCRIPTION OF COMMUNICATION OBJECT

The communication object is the medium to communicate other device on the bus, namely only the communication object can communicate with the bus. NOTE: "C" in "Flag" column in the below table means enable the communication function of the object; "W" means value of object can be written from the bus; "R" means the value of the object can be read by the other devices; "T" means the object has the transmission function; "U" means the value of the object can be updated.

2.1 "GENERAL" COMMUNICATION OBJECT

Number	* Name	Object Function	Description	Group Address	Length	C	F	2	W	Т	U	Data Type	Priority
₹678	General	Panel block			1 bit	С	-	١	N	-	-	enable	Low
₹ 679	General	In operation			1 bit	С	73	- 23		Т	7	switch	Low
■2 680	General	Date			3 bytes	С	-	١	N	-	-	date	Low
₹681	General	Time			3 bytes	С	5	١	N	2	7	time of day	Low
₹682	General	Day/Night			1 bit	С	-	١	N	Т	-	day/night	Low
₹683	General	Screen backlight brightness			1 byte	С	53	١	N	58	7	percentage (0100%)	Low
€684	General	Colorful strip trigger			1 bit	(2	•	W	1 -	1	trigger	Low
2 685	General	Colorful strip setting			3 byte	es (2	-	W	1 -	10	RGB value 3x(0255)	Low
€86	General	Proximity sense, scene NO.			1 byte	: (2	20	W	/ Т	- 57	scene number	Low
₹ 686	General	Proximity sense, 1bit value			1 bit	С			W	Т	ie.	switch	Low
\$ 686	General	Proximity sense, 1byte value	e		1 byte	С	-	2	W	т	14	counter pulses (0255)	Low
₹ 686	General	Proximity sense, 1byte value			1 byte	С	4	1	w	Т	-	percentage (0100%)	Low

Fig. 2.1 "General" communication object

	j	Indiffe	Data Type	Flag	5
678	Panel block	General	1bit	C, W	1.003 enable
The comr	nunication object is used to lock the panel. Afte	r panel locked, the operation on $0-1$ 1-0	the panel will not be responded, bu .ock nlock	t can still receive the bus teleg	gram. Telegram value:
679	In operation	General	1bit	С, Т	1.001 switch
	This communication object is us	ed to periodically send a telegra	ım "1" to the bus to indicate that the	device is working properly.	
680	Date	General	3bytes	C, W	11.001 date
	The communic	ation object is used to modify th	e display date on the screen through	h the bus.	
681	Time	General	3bytes	C, W	10.001 time of day
	The communic	ation object is used to modify th	e display time on the screen throug	h the bus.	
682	Day/Night	General	1bit	C, W, T	1.024 day/night
			Ibyte	C, W	5.001percentage(010
	The communication ob 10~100%,	ect is used to modify the backlig when the telegram value is less	ht brightness of the screen. Brightr than 10%, directly output 10% bright	ness output range:	5.001percentage(010
	The communication obj 10-100%, v Object is visible v	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri	ht brightness of the screen. Bright than 10%, directly output 10% bright ghtness can be changed via bus" se	ness output range: Iness. Iects "Yes".	5.001percentage(010
684	The communication ob, 10-100%, Object is visible Colorful strip trigger	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri General	ht brightness of the screen. Bright than 10%, directly output 10% bright ghtness can be changed via bus" se 1bit	ess output range: tness. lects "Yes". C, W	5.001percentage(010
684	The communication obj 10-100%, v Object is visible v Colorful strip trigger The communication object is visible when th	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri General e colorful strip is enable, and is	ht brightness of the screen. Bright than 10%, directly output 10% bright ghtness can be changed via bus" se 1bit used to trigger the indication function	c, w ness output range: tness. lects "Yes". C, W on of the colorful strip through	5.001percentage(010 1.017 trigger the bus.
684 685	The communication obj 10-100%, v Object is visible v Colorful strip trigger The communication object is visible when th Colorful strip setting	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri General e colorful strip is enable, and is General	ht brightness of the screen. Brightr than 10%, directly output 10% bright ghtness can be changed via bus" se 1bit used to trigger the indication function 1bit	c, w ness output range: iness. lects "Yes". C, W on of the colorful strip through C, W	5.001percentage(010 1.017 trigger n the bus. 232.600 RGB value 3x(0.
684 685	The communication ob 10-100%, v Object is visible v Colorful strip trigger The communication object is visible when th Colorful strip setting The communication object is visible w	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri General e colorful strip is enable, and is General hen option "Receive a 3byte valu	Ibyte pht brightness of the screen. Brightr than 10%, directly output 10% bright ghtness can be changed via bus" se 1bit used to trigger the indication function 1bit user of parameter "Color setting" is se	c, w ness output range: iness. lects "Yes". C, W on of the colorful strip through C, W elected, for receiving 3byte val	5.001percentage(010 1.017 trigger the bus. 232.600 RGB value 3x(0. ue.
684 685 686	The communication obj 10-100%, v Object is visible v Colorful strip trigger The communication object is visible when the Colorful strip setting The communication object is visible when the Colorful strip setting The communication object is visible when the Proximity sense, 1 bit value Proximity sense, 1 bit value Proximity sense, 1 bit value Proximity sense, 1 byte value	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri General e colorful strip is enable, and is General hen option "Receive a 3byte valu General	Ibyte ht brightness of the screen. Brightr than 10%, directly output 10% bright ghtness can be changed via bus" se 1bit used to trigger the indication function 1bit ue" of parameter "Color setting" is se 1bit	C, W hess output range: tiness. lects "Yes". C, W on of the colorful strip through C, W elected, for receiving 3byte val C, W, T	5.001percentage(0100 1.017 trigger n the bus. 232.600 RGB value 3x(0. ue. 1.001 switch 17.001 scene numbe 5.010 counter pulses(0 5.001 percentage(0101)
684 685 686 The communica	The communication ob 10-100%, Object is visible v Colorful strip trigger The communication object is visible when th Colorful strip setting The communication object is visible w Proximity sense, 1bit value Proximity sense, 1bit value Proximity sense, 1byte value ation object is visible when status feedback of pr	ect is used to modify the backlig when the telegram value is less when the parameter "Screen bri General e colorful strip is enable, and is General hen option "Receive a 3byte valu General oximity sensor is enable and ou The range of value is determin	Ibyte Ibyt Ibyt Ibyt Ibyt Ibyt Ibyt Ibyt Ibyt	c, w hess output range: tness. lects "Yes". C, W on of the colorful strip through C, W elected, for receiving 3byte val C, W, T ty approaching or leaving, it w	5.001percentage(010) 1.017 trigger n the bus. 232.600 RGB value 3x(0. ue. 1.001 switch 17.001 scene numbe 5.010 counter pulses(0 5.001 percentage(010) vill send telegram to the bus.

The communication object is visible when password function is enable and output value is selected. The range of value is determined by the selected data type.





688	Summer time status	General	1bit	C, R, T	1.003enable
NO.	Object Function	Name	Data Type	Flag	DPT

1 — Summer time enable 0 — Summer time disable

Table 2.1 "General "communication object table

2.2 "GENERAL" COMMUNICATION OBJECT

Number *	Name	Object Function	Description Group Addre	Length	С	R	W	Т	U	Data Type	Priority
■2 672	Internal sensor	Actual temperature		2 bytes	С	R	-	т	æ	temperature (°C)	Low
■2 673	Internal sensor	Temp.correction(-1010)°C		2 bytes	C	22	W	2	12	temperature (°C)	Low
■2 674	Internal sensor	Temp.error report		1 bit	С	R	-	Т	-	alarm	Low
■2 675	External sensor	Temperature		2 bytes	C	28	W	Т	U	temperature (°C)	Low
■2 676	External sensor	Temp.error report		1 bit	C	R	-	Т	-	alarm	Low
■2 677	External sensor	Humidity		2 bytes	C	- 28	W	Т	U	humidity (%)	Low

Fig. 2.2 "General sensor" communication object

N0.	Object Function	Name	Data Type	Flag	DPT
672	Actual temperature	Internal sensor	2Bytes	C, R, T	9.001 temperature(C°)
The c	communication object is used for transmi	tting the temperature value detected	by the built-in temperature sensor	of the device to the bus. Range	-50~99.8 °C
673	Temp.correction (-10_10) C°	Internal sensor	2Bytes	C, W	9.001 temperature(C°)
Tł	ne communication object is used for corre	ecting the temperature measuremer	nt value of the built-in temperature	sensor through the bus correction	on device.
674	Temp.error report	Internal sensor	1bit	C, R, T	1.005 alarm
Т	he communication object is used to send	the error report of the built-in temp	erature sensor, and the object value	e is defined according to the para	ameters.
675	Temperature	External sensor	2bytes	C, W, T, U	9.001 temperature(C°
	The communication object is used for	receiving a temperature measureme	ent value sent from a temperature s	ensor on the bus. Range:-50~99	.9°8.
676	Temp.error report	External sensor	1bit	C, R, T	1.005 alarm
676	Temp.error report The communication object is used to see	External sensor nd reports of external temperature s	1bit ensor errors, and the object value i	C, R, T s defined according to the paran	1.005 alarm

Table 2.2 "General sensor" communication object table

2.3 COMMUNICATION OBJECT OF FUNCTION PAGE

Number *	Name	Object Function	Description Group Addre	Length	C	R	W	Т	U	Data Type	Priority
■‡ 657	Page function	Dis./En. Page 1		1 bit	С	-	W	-	-	enable	Low
■≵ 658	Page function	Dis./En. Page 2		1 bit	С	- 40	W	2	2	enable	Low
■≵ 659	Page function	Dis./En. Page 3		1 bit	С	-	W	-	-	enable	Low
■≵ 660	Page function	Dis./En. Page 4		1 bit	С	- 20	W	2	2	enable	Low
■2 661	Page function	Dis./En. Page 5		1 bit	С	-	W	-	-	enable	Low
■2 662	Page function	Dis./En. Page 6		1 bit	С	- 44	W	2	2	enable	Low
■2 663	Page function	Dis./En. Page 7		1 bit	С	-	W	-		enable	Low
■2 664	Page function	Dis./En. Page 8		1 bit	С	- 23	W	2	2	enable	Low
■2 665	Page function	Dis./En. Page 9		1 bit	С	-	W	-	-	enable	Low
■2 666	Page function	Dis./En. Page 10		1 bit	С	- 42	W	<u>.</u>	2	enable	Low
■2 667	Page function	Dis./En. Page 11		1 bit	С	-	W	-	-	enable	Low
■2 668	Page function	Dis./En. Page 12		1 bit	С	12	W	<u>د</u>	2	enable	Low
■2 669	Page function	Dis./En. Page 13		1 bit	С	-	W	-	-	enable	Low
■2 670	Page function	Dis./En. Page 14		1 bit	С	12	W	<u>د</u>	2	enable	Low
■2 671	Page function	Dis./En. Page 15		1 bit	С	-	W	-		enable	Low
			Fig. 2.3. Function page co	mmunication	n object						

 NO.
 Object Function
 Name
 Data Type
 Flag
 DPT

 657..671
 Dis./En. Page 1..15
 Page function
 1bit
 C, W
 1.003 enable

The communication object is used to disable/enable the operation of the corresponding function page. After disable, the function page is locked and can no longer be operated, but the bus telegram can still be received

Table 2.3 Function page communication object table





2.3.1 "MULTIFUNCTION (LIGHTING/BLIND/SCENE/VALUE SEND)" COMMUNICATION OBJECT

SWITCH

Number	* Name	Object Function	Description	Group Address	Length	С	R	W	т	U	Data Type	Priority
∎‡ 1	Page 1-Icon 1	Switch			1 bit	С	÷	-	Т	- 1	switch	Low
∎‡ 3	Page 1-Icon 1	Switch status			1 bit	С	-	W	Т	U	switch	Low

SWITCH/DIMMING

Nun	nber * Name	Object Function	Description	Group Address	Length	С	R	W	T	U	Data Type	Priority
∎‡ 1	Page 1-Icon 1	Switch			1 bit	С	-	-	т	-	switch	Low
■‡ 2	Page 1-Icon 1	Brightness dimming			1 byte	С	ų.	-	Т	÷.	percentage (0100%)	Low
∎ ‡ 3	Page 1-Icon 1	Brightness status			1 byte	С	-	W	Т	U	percentage (0100%)	Low
∎‡ 4	Page 1-Icon 1	Relative dimming			4 bit	С	92	W	Т	ų.	dimming control	Low

VALUE SEND

1	Number *	Name	Object Function	Description	Group Address	Length	с	R	W	т	U	Data Type	Priority
∎7 1		Page 1-Icon 1	Send 1bit value			1 bit	С	÷	-	Т	4	switch	Low
∎‡ 2		Page 1-Icon 1	Send 1bit value, long			1 bit	С	50	5	Т	15	switch	Low

OPEN/CLOSE BLIND

Number	* Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
■‡ 1	Page 1-Icon 1	Open/Close			1 bit	С	-	W	Т	-	open/close	Low
∎≵ 2	Page 1-Icon 1	Stop			1 bit	С	-	9 4 3	Т	$\boldsymbol{\omega}_{i}$	step	Low
∎ ‡ 3	Page 1-Icon 1	Blind position/status			1 byte	С	•	W	Т	U	percentage (0100%)	Low

ROLLER BLIND (WITHOUT SLAT)

Number	* Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
∎‡ 1	Page 1-Icon 1	Up/Down			1 bit	С	-	W	Т	÷	up/down	Low
∎‡ 2	Page 1-Icon 1	Stop			1 bit	С	3	20	Т	21	step	Low
∎‡ 3	Page 1-Icon 1	Blind position/status			1 byte	С	-	W	Т	U	percentage (0100%)	Low

VENETIAN BLINDS (WITH SLAT)

Number	* Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
∎‡ 1	Page 1-Icon 1	Up/Down			1 bit	С	-	W	Т	-	up/down	Low
∎‡ 2	Page 1-Icon 1	Stop/Slat adj.			1 bit	С	32	40	Т	S.	step	Low
∎‡ 3	Page 1-Icon 1	Blind position/status			1 byte	С	-	W	Т	U	percentage (0100%)	Low
∎‡ 4	Page 1-Icon 1	Slat position/status			1 byte	С	1	W	Т	U	percentage (0100%)	Low

BLIND(OPEN/CLOSE/STOP)

	Number	Name	Object Function	De Gr	Length	С	R	W	т	U	Data Type	Priority
	1	Page 1-lcon 1	Open/Close		1 bit	С	-	W	Т	2	open/close	Low
∎‡	2	Page 1-lcon 1	Stop		1 bit	C	-		т	-	step	Low

BLIND(UP/DOWN/STOP)

	Number *	Name	Object Function	De Gr	Length	С	R	W	т	U	Data Type	Priority
1		Page 1-Icon 1	Up/Down		1 bit	C	<u></u>	W	Т	:: - :::	up/down	Low
■2 2	2	Page 1-lcon 1	Stop		1 bit	С	<i>:</i> 7	-	Т		step	Low

SCENE CONTROL

Ν	Number 4	Name	Object Function	Description	Group Address	Length	С	R	w	т	U	Data Type	Priority
∎‡ 1		Page 1-Icon 1	Recall/storage scene No.			1 byte	С	æ	W	Т		scene control	Low

Fig. 2.3.1 "Multifunction (Lighting/Blind/Scene/Value send)" communication object





NO.	Object Function	Name	Data Type	Flag	DPT
1	Switch	Page x-Icon y	1bit	C, T	1.001 switch
	The communication object	is used to send the on / off telegran 1 – 0 –	n to the bus and control the on /off o - On - Off	f the lamp. Telegram value:	
3	Switch Status	Page x-Icon y	1bit	C, W, T, U	1.001 switch
	The communication object	is used to receive the on / off status	s from other bus devices, such as Dir	mmer and Switch actuator.	
2	Brightness dimming	Page x-Icon y	1byte	С, Т	5.001 percentage(0100%)
	The communication object	is used to send dimming telegram t	o the bus, that is, to send brightness	values. Telegram: 0100%	
3	Brightness Status	Page x-lcon y	1byte	C, W, T, U	5.001 percentage(0100%)
	The communication object	is used to receive the brightness st	atus of the light in response to the d	immer. Telegram: 0100%	
4	Relative dimming	Page x-Icon y	4 bit	C, W, T	3.007 dimming control
	The communication object is used	for sending the relative dimming te	legram to the bus, such as brighter,	darker, or stop-dimming telegram	l.
1	Send 1bit/2bit/4bit/ 1byte/2byte value	Page x-lcon y	1 bit on/off 2 bit 03 4 bit 015 1 byte 0255 1 byte 0100% 2 byte -3276832767 2 byte 065535	C, T	1.001 switch 2.001 switch control 3.007 dimming control 5.010 counter pulses(0255) 5.001 percentage(0100%) 8.001 pulses difference 7.001 pulses
The communication object is us	sed to send the preset output value of the preset output value of the sent. The	ne parameter, and if the long press o e object type and value range are de	operation is distinguished from the s termined by the data type set by the	hort press operation, only the outp parameter.	out value of the short press operation
2	Send 1bit/2bit/4bit/ 1byte/2byte value, long	Page x-lcon y	1 bit on/off 2 bit 03 4 bit 015 1 byte 0255 1 byte 0100% 2 byte -3276832767 2 byte 065535	C, T	1.001 switch 2.001 switch control 3.007 dimming control 5.010 counter pulses(0255) 5.001 percentage(0100%) 8.001 pulses difference 7.001 pulses

The communication object is used to send the preset output value of the parameter, and if the long press operation is distinguished from the short press operation, only the output value of the short press operation is sent. The object type and value range are determined by the data type set by the parameter.

1	Open/Close	Page x-Icon y	1bit	C, W, T	1.009 open/close
2	Stop	Page x-Icon y	1bit	C, T	1.007 step
3	Blind position/status	Page x-lcon y	1byte	C, W, T, U	5.001 percentage(0100%)

Open/Close Blind: is suitable for opening and closing curtains. The object description is as follows:

Obj.1: the communication object is used to send the open / close telegram to the bus. Telegram value:

1 - Close the curtain

0 — Open the curtain Obj.2: The communication object is used to send a telegram for stopping the curtain movement to the bus. Telegram value: 1 — Stop

Obj.3: The communication object is used to send a telegram to control the position of the curtain to the bus or to receive a curtain position status in response to the window curtain actuator on the bus. Telegram value: 0..100%

1	Up/Down	Page x-Icon y	1bit	C, W, T	1.008 up/down
2	Stop	Page x-Icon y	1bit	C, T	1.007 step
3	Blind position/status	Page x-lcon y	1byte	C, W, T, U	5.001 percentage(0100%)

Roller Bind: Applies to a roller blind without slat. The object description is as follows:

Obj.1: The communication object is used to send a telegram value to the bus to control the opening/closing of the Roller blind. Telegram value:

1 – Move down 0 — Move up

Obj.2 and Obj.3 are the same as above.

1	Up/Down	Page x-Icon y	1bit	C, T	1.008 up/down
2	Stop/Slat adj.	Page x-Icon y	1bit	C, T	1.007 step
3	Blind position/status	Page x-Icon y	1byte	C, W, T, U	5.001 percentage(0100%)
4	Slat position/status	Page x-Icon y	1byte	C, W, T, U	5.001 percentage(0100%)

Venetian Blinds: Applies to a blind, with a slat angle adjustment. The object description is as follows:

Obj.1 and Obj.3 are the same as above.

Obj.2: the communication object is used to send a telegram to the bus to stop the curtain movement or adjust the slat angle. Telegram value:

1 — Stop/Slat adj. Down 0 — Stop/Slat adj. Up

Obj.4: the communication object is used to send a telegram controlling the angle position of the shutter to or from the bus to receive the shutter actuator response to the slat angle position state. Telegram value: 0. 100%

1	Open/Close	Page x-lcon y	1bit	C, W, T	1.009 open/close
2	Stop	Page x-Icon y	1bit	C, T	1.007 step

Blind (open/close/stop): is suitable for opening and closing curtains. The object description is as follows: Obj.1: the communication object is used to send the open / close telegram to the bus. Telegram value: 1 -Close the curtain 0 -Open the curtain

Obj.2: The communication object is used to send a telegram for stopping the curtain movement to the bus.





N0.	Object Function	Name	Data Type	Flag	DPT
1	Up/Down	Page x-Icon y	1bit	C, T	1.008 up/down
2	Stop	Page x-Icon y	1bit	C, T	1.007 step
	Blindlu Obj.1: The communication o	µ/down/stop]: is suitable for roller bject is used to send a telegram va Telegra 1 — Μα 0 — Ν Obj.2 is the s	 blind. The object description is as for alue to the bus to control the opening my value: ave down fore up ame as above 	Illows: g/closing of the Roller blind.	
1	Recall/storage scene No.	Page x-lcon y	1byte	С, Т	18.001 scene control

The communication object is used to send a telegram of scene recall or scene storage. The highest bit 1 is the scene storage, and the highest bit 0 is the scene recall.

Table 2.3.1 "Multifunction (Lighting/Blind/Scene/Value send)" communication object table

2.3.2 "HVAC" COMMUNICATION OBJECT

Number *	Name	Object Function	De Gr	Length	C	R	w T		U	Data Type	Priority
■之 161	Page 6-HVAC Input	External temperature sensor		2 bytes	С	-	W T		U	temperature (°C)	Low
■2 162	Page 6-HVAC Input	Setpoint adjustment		2 bytes	С	2	W -		2	temperature (°C)	Low
■‡ 163	Page 6-HVAC Input	Switch Heating/Cooling mode		1 bit	С	-	W -		U	cooling/heating	Low
■之 164	Page 6-HVAC Input	Comfort mode		1 bit	С	1929	W -		2	enable	Low
■≵ 165	Page 6-HVAC Input	Standby mode		1 bit	С		W -		-	enable	Low
■之 166	Page 6-HVAC Input	Night mode		1 bit	С	828	W -		2	enable	Low
■↓ 167	Page 6-HVAC Input	Frost/Heat protection mode		1 bit	С	-	W -		-	enable	Low
■2 168	Page 6-HVAC Input	Fan speed low		1 bit	С	12	W -		U	switch	Low
■≵ 169	Page 6-HVAC Input	Fan speed medium		1 bit	С	-	W -		U	switch	Low
■之 170	Page 6-HVAC Input	Fan speed high		1 bit	С	2	W -		U	switch	Low
■↓171	Page 6-HVAC Input	Fan speed off		1 bit	С	-	W -		U	switch	Low
■2 172	Page 6-HVAC Input	Fan Automatic operation		1 bit	С	12	W -		U	enable	Low
■之 173	Page 6-HVAC Output	Instantaneous setpoint		2 bytes	С	R	- T		-	temperature (°C)	Low
■之 174	Page 6-HVAC Output	Heating/Cooling mode		1 bit	С	R	- T		2	cooling/heating	Low
■之 175	Page 6-HVAC Output	Comfort mode		1 bit	С	-	- T		-	enable	Low
■2 176	Page 6-HVAC Output	Standby mode		1 bit	С	2	- T		2	enable	Low
■之 177	Page 6-HVAC Output	Night mode		1 bit	С	-	- T		-	enable	Low
■之 178	Page 6-HVAC Output	Frost/Heat protection mode		1 bit	C	828	- T		2	enable	Low
■之 179	Page 6-HVAC Output	Heating control value		1 bit	С		- T		-	switch	Low
■之 180	Page 6-HVAC Output	Cooling control value		1 bit	С	8 <u>3</u> 8	- T		3	switch	Low
■之 181	Page 6-HVAC Output	Fan speed low		1 bit	С	•	- T		-	switch	Low
■≵ 182	Page 6-HVAC Output	Fan speed medium		1 bit	С	828	- T		2	switch	Low
■之 183	Page 6-HVAC Output	Fan speed high		1 bit	С	-	- T		-	switch	Low
■‡ 184	Page 6-HVAC Output	Fan speed off		1 bit	C	22 C	- T		2	switch	Low
■之 185	Page 6-HVAC Output	Fan Automatic operation		1 bit	С	-	- T		-	enable	Low
■之 186	Page 6-HVAC Output	HVAC on/off		1 bit	C	22	WΤ		U	switch	Low
■2 187	Page 6-HVAC Output	Base setpoint temperature		2 bytes	С	R	- T		-	temperature (°C)	Low
■2 179	Page 6-HVAC Output	Heating control value				1	byte	C -	- T	- percentage (010	00%) Low
■2 180	Page 6-HVAC Output	Cooling control value				1	byte	с-	- T	- percentage (010	00%) Low
■2 164	Page 6-HVAC Input	HVAC mode					1 byte	e C	- W	HVAC mode	Low
■2 168	Page 6-HVAC Input	Fan speed					1 byte	e C	- W	- U percentage (0100%) Low
■2 175	Page 6-HVAC Output	HVAC mode				1	byte	C R	- T	- HVAC mode	Low
∎‡ 179	Page 6-HVAC Output	Heating/cooling control value				1	. bit	С -	- T	- switch	Low
■2 181	Page 6-HVAC Output	Fan speed				1	. byte	с -	- T	- percentage (01	.00%) Low
∎‡ 179	Page 6-HVAC Output	Heating/cooling control value					1 byte	с -	- T	- percentage (0.	100%) Low

Fig. 2.3.2 "HVAC" communication object

161 External temperature sensor Page x- HVAC Input 21	ibyte CWTU 9001 temperatura(°C)
To The External temperature sensor Page X- HVAC input 2	
The communication object is used for receiving a temperature measurement value sent fr	rom a temperature sensor on the bus. Range:-50-99.8 °C
162 Setpoint adjustment Page x- HVAC Input 2	byte C, W 1.001 switch

When HVAC mode is not enabled, the communication object is used to modify the base value of the set temperature. When HVAC operation mode is enabled and the temperature is set to be relatively adjusted, the communication object is used to modify the base value of the set temperature setting value of the comfort mode, and the setting temperature of the standby mode and the economy mode changes according to the relative change. In the protection mode, only the temperature setting value of the protection mode is modified. When HVAC operation mode is enabled and the temperature is set to absolute adjustment, the communication object is used to modify the temperature setting value of the current room operation mode.





NO.					
	Object Function	Name	Data Type	Flag	DPT
163	Switch Heating/Cooling mode	Page x- HVAC Input	1bit	C, W, U	1.100 cooling/heating
The communication object is	used for receiving the status feedback fro	om the heating and cooling on the b	ous, and the screen will update the ic	con display according to the recei	ved telegram value, and the telegram
		value is a 1 — H 0 — C	is follows: leating cooling		
164	HVAC mode	Page x- HVAC Input	1byte	C,W	20.102 HVAC mode
164	Comfort mode	Page x- HVAC Input	1bit	C,W	1.003 enable
165	Standby mode	Page x- HVAC Input	1bit	C,W	1.003 enable
166	Economy mode	Page x- HVAC Input	1bit	C,W	1.003 enable
167	Frost/heat protection mode	Page x- HVAC Input	1bit	C,W	1.003 enable
When the obj 168 168 169 170 171	Room operation mode can rece ect receives the telegram "1", the corres When 1 by Fan speed Fan speed low Fan speed high Fan speed off Fan speed can receive st	ive status feedback through four 1bi Wher Object 165 – 1 Object 165 – 1 Object 165 – 1 Object 165 – 9 Object 167 – P sponding mode is activated and the of the relationship between the inp 0: Res 1: Comf 2: Stand 3: Econor 4: Protect 5-255: Reser Page x- HVAC Input Page x- HVAC Input tate feedback through four 1bit object 0bject 168 – 0 Object 168 – 0	it objects (object 164,165,166,167) or n 1bit: Comfort mode Standby mode Economy mode Protection mode display status of the mode on the sc ut value and the operation mode is a served ort mode by mode my mode tion mode ved, unused. 1byte 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit	roen 1byte object (HVAC mode). reen will also be updated to the c as follows: C, W, U C, W, U C, W, U C, W, U C, W, U byte object "Fan speed".	orresponding mode. 5.001 percentage(0100%) 1.001 switch 1.001 switch 1.001 switch 1.001 switch
		Object 170—— Object 171——	High fan speed -Fan speed off		
When the object receives teleg	gram "1", the corresponding fan speed is	Object 170—— Object 171—— activated, and the display status of	High fan speed -Fan speed off the fan speed on the screen is also	updated to the corresponding far	speed. When the fan speed is turned
When the object receives teleg	gram "1", the corresponding fan speed is	Object 170 Object 171 activated, and the display status of off, the telegram value of When the object receives the specifi	High fan speed -Fan speed off the fan speed on the screen is also f all fan speed must be 0. ied value the display status of fan sr	updated to the corresponding far	speed. When the fan speed is turned
When the object receives telec 1byte: the fan speed s	gram "1", the corresponding fan speed is tatus value is defined by the parameter.	Object 170— Object 171— activated, and the display status of off, the telegram value of When the object receives the specifi	High fan speed Fan speed off the fan speed on the screen is also i f all fan speed must be 0. ied value, the display status of fan sp	updated to the corresponding far beed on the screen is updated to	speed. When the fan speed is turned the corresponding fan speed.
When the object receives telec 1byte: the fan speed s 172	gram "1", the corresponding fan speed is tatus value is defined by the parameter. Fan Automatic operation	Object 170— Object 171— activated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input	High fan speed -Fan speed off the fan speed on the screen is also i fall fan speed must be 0. ied value, the display status of fan sp 1bit	updated to the corresponding far beed on the screen is updated to C, W, U	speed. When the fan speed is turned the corresponding fan speed. 1.003 enable
When the object receives telec 1byte: the fan speed s 172	gram "1", the corresponding fan speed is tatus value is defined by the parameter. Fan Automatic operation The object is	Object 170— Object 171— activated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input s used to receive status feedback fro 1 — Au 0 — Cancel	High fan speed Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit om automatic fan speed control. Tele tomatic I automatic	updated to the corresponding far beed on the screen is updated to C, W, U Igram value:	speed. When the fan speed is turned the corresponding fan speed. 1.003 enable
When the object receives telec 1byte: the fan speed s 172 173	gram "1", the corresponding fan speed is tatus value is defined by the parameter: Fan Automatic operation The object is Instantaneous setpoint	Object 170— Object 171— Object 71— activated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input s used to receive status feedback fro 1 — Au 0 — Cancel Page x- HVAC output	High fan speed -Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit m automatic fan speed control. Tele tomatic Lautomatic 2bytes	updated to the corresponding far beed on the screen is updated to C, W, U Ingram value: C, R, T	speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C)
When the object receives telec 1byte: the fan speed s 172 173	gram "1", the corresponding fan speed is tatus value is defined by the parameter: Fan Automatic operation The object is Instantaneous setpoint The communication obj	Object 170— Object 171— activated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input s used to receive status feedback fro 1 — Au 0 — Cancel Page x- HVAC output ect is used for transmitting the temp	High fan speed -Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit ym automatic fan speed control. Tele tomatic L automatic 2bytes perature set value of the current ope	updated to the corresponding far beed on the screen is updated to C, W, U Ingram value: C, R, T eration mode to the bus.	speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C)
When the object receives telec 1byte: the fan speed s 172 173 174	gram "1", the corresponding fan speed is tatus value is defined by the parameter." Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode	Object 170 Object 171 Sectivated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input sused to receive status feedback fro 1 Au 0 Cancel Page x- HVAC output ect is used for transmitting the temp Page x- HVAC output	High fan speed Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit orn automatic fan speed control. Tele tomatic automatic 2bytes perature set value of the current ope 1bit	updated to the corresponding far beed on the screen is updated to C, W, U egram value: C, R, T eration mode to the bus. C, R, T	speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C)
When the object receives telec 1byte: the fan speed s 172 173 174	gram "1", the corresponding fan speed is tatus value is defined by the parameter. Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode The communicatior	Object 170 Object 171 Object 171 activated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input s used to receive status feedback fro 1 Au 0 Cancel Page x- HVAC output ect is used for transmitting the temp Page x- HVAC output n object is used to send telegrams fr Telegram 1 H 0 C	High fan speed -Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit m automatic fan speed control. Tele tomatic automatic 2bytes perature set value of the current ope 1bit rom switching cooling and heating for m value: leating cooling	updated to the corresponding far beed on the screen is updated to C, W, U gram value: C, R, T eration mode to the bus. C, R, T unctions to the bus.	a speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C) 1.100 cooling/heating
When the object receives teles 1byte: the fan speed s 172 173 174 174	gram "1", the corresponding fan speed is tatus value is defined by the parameter." Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode The communication HVAC mode Comfort mode	Object 170 Object 171 Object 171 activated, and the display status of off, the telegram value of When the object receives the specifi Page x- HVAC Input s used to receive status feedback fro 1 Au 0 - Cancel Page x- HVAC output ect is used for transmitting the temp Page x- HVAC output n object is used to send telegrams fr Telegrar 1 H 0 - C	High fan speed -Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit m automatic fan speed control. Tele tomatic automatic 2bytes perature set value of the current ope 1bit rom switching cooling and heating for m value: leating cooling 1byte 1bit	updated to the corresponding far beed on the screen is updated to C, W, U gram value: C, R, T eration mode to the bus. C, R, T unctions to the bus. C, R, TC, T	a speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C) 1.100 cooling/heating 20.102 DPT_HVAC Mode 1.003enable
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When the object receives teles 1byte: the fan speed s 172 173 174 175 176 177 178	gram "1", the corresponding fan speed is tatus value is defined by the parameter. Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode The communication HVAC mode Comfort mode Standby mode Economy mode Frost/Heat protection mode	Object 170 Object 171 Object 171 Object 171 Object 171 Object 171 Object 171 Object 171 Page x- HVAC laput Sused to receive status feedback fro 1 - Aut 0 - Cancel Page x- HVAC output ect is used for transmitting the temp Page x- HVAC output n object is used to send telegrams fr Telegrar 1 - H 0 - C Page x- HVAC output Page x- HVAC output	High fan speed Fan speed off the fan speed on the screen is also of f all fan speed must be 0. ied value, the display status of fan sp 1bit orn automatic fan speed control. Tele tomatic Lautomatic 2bytes perature set value of the current ope 1bit rom switching cooling and heating for m value: leating iooling 1byte 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 	updated to the corresponding far beed on the screen is updated to C, W, U ergram value: C, R, T eration mode to the bus. C, R, T unctions to the bus. C, R, T C, T C, T C, T C, T	a speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C) 1.100 cooling/heating 20.102 DPT_HVAC Mode 1.003enable 1.003enable 1.003enable 1.003enable
When the object receives teles 1byte: the fan speed s 172 173 174 175 176 177 178	gram "1", the corresponding fan speed is tatus value is defined by the parameter." Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode The communication HVAC mode Comfort mode Standby mode Economy mode Frost/Heat protection mode The commun When the object type is a "1bit", switt	Object 170— Object 171— Object 171— off, the telegram value of When the object receives the specifi Page x- HVAC Input sused to receive status feedback fro 1 — Au 0 — Cancel Page x- HVAC output rect is used for transmitting the temp Page x- HVAC output n object is used to send telegrams fr Telegram 1 — H 0 — C Page x- HVAC output Page x- HVAC output ication objects are used to send the ject type is a "1byte", different telegr 0: Res 1: Comf 2: Stand 3: Econor 4: Frost protection/U	High fan speed Fan speed off Fan speed off the fan speed on the screen is also of fall fan speed must be 0. ied value, the display status of fan sp ied value, the display status of fan sp ied value, the display status of fan sp ied untomatic fan speed control. Tele tomatic tautomatic 2bytes perature set value of the current ope 1bit rom switching cooling and heating for m value: leating iooling 1byte 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit	updated to the corresponding far beed on the screen is updated to C, W, U orgram value: C, R, T eration mode to the bus. C, R, T unctions to the bus. C, R, T C, T C, T C, T C, T C, T de to the bus. s, as follows:	a speed. When the fan speed is turned the corresponding fan speed. 1.003 enable 9.001 temperature(°C) 1.100 cooling/heating 20.102 DPT_HVAC Mode 1.003enable 1.003enable 1.003enable
When the object receives teles 1byte: the fan speed s 172 173 174 175 176 177 178 179	gram "1", the corresponding fan speed is tatus value is defined by the parameter." Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode The communication HVAC mode Comfort mode Standby mode Economy mode Frost/Heat protection mode The commun When the object type is a "1bit", swit Heating /cooling control value	Object 170— Object 171— Object 171— off, the telegram value of When the object receives the specifi Page x- HVAC Input sused to receive status feedback fro 1 — Au 0 — Cancel Page x- HVAC output rect is used for transmitting the temp Page x- HVAC output n object is used to send telegrams fr Telegram 1 — H 0 — C Page x- HVAC output Page x- HVAC output ication objects are used to send the ject type is a "1byte", different telegr 0: Res 1: Comfor 2: Stand 3: Econor 4: Frost protection/0 5-255: Reser sch to the corresponding mode, and Page x- HVAC output	High fan speed Fan speed off the fan speed on the screen is also of fall fan speed must be 0. ied value, the display status of fan sp 1bit or automatic fan speed control. Telef tomatic Lautomatic 2bytes perature set value of the current ope 1bit rom switching cooling and heating for m value: leating iooling 1byte 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1	updated to the corresponding far beed on the screen is updated to C , W , U sgram value: C , R , T eration mode to the bus. C , R , T unctions to the bus. C , R , T C , T C C , T	bus
When the object receives teles 1byte: the fan speed s 172 173 174 175 176 177 178 179 179	gram "1", the corresponding fan speed is tatus value is defined by the parameter." Fan Automatic operation The object is Instantaneous setpoint The communication obj Heating/Cooling mode The communication HVAC mode Comfort mode Standby mode Economy mode Frost/Heat protection mode The commun When the object type is a "1bit", swit Heating /cooling control value Heating control value	Object 170 Object 171 Object 171 Object 171 Object 171 Object 171 Object 171 Object 171 Object 171 Page x-HVAC Input sused to receive status feedback fro 1 - Au 0 - Cancel Page x- HVAC output ect is used for transmitting the temp Page x- HVAC output nobject is used to send telegrams fr Telegram 1 - H 0 - C Page x- HVAC output Page x- HVAC output ication objects are used to send the ject type is a "1byte", different telegr 0: Res 1: Comfc 2: Stand 3: Econo 4: Frost protection/0 5-255: Reser sch to the corresponding mode, and Page x- HVAC output Page x- HVAC output	High fan speed -Fan speed off the fan speed on the screen is also of fall fan speed must be 0. ied value, the display status of fan sp 1bit orn automatic fan speed control. Telef tomatic Lautomatic 2bytes perature set value of the current ope 1bit rom switching cooling and heating for m value: leating iooling 1byte 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit 1bit	updated to the corresponding far beed on the screen is updated to C, W, U Integram value: C, R, T eration mode to the bus. C, R, T unctions to the bus. C, R, T C, T C, T C, T de to the bus. s, as follows: de sends the telegram "1" to the loc, T C, T C, T	bus

Send telegram value[switch on/off use-2-point control]: on/off Send telegram value[switch on/off use-2-point control]: on/off Send telegram value (switch PWM-use PI control): 0...100%





N0.	Object Function	Name	Data Type	Flag	DPT
181	Fan speed Fan speed low	Page x- HVAC output	1byte 1bit	С, Т	5.001 percentage(0100%) 1.001 switch
182	Fan speed medium	Page x- HVAC output	1bit	С, Т	1.001 switch
183	Fan speed high	Page x- HVAC output	1bit	С, Т	1.001 switch
184	Fan speed off	Page x- HVAC output	1bit	С, Т	1.001 switch

The communication objects are used to send control telegrams of the fan speed to the bus. When 1bit: Object 181 — Low fan speed Object 182 — Medium fan speed Object 183 — High fan speed Object 184 — Fan speed off The corresponding fan speed is activated on the screen, and the corresponding object sends telegram "1" to the bus, except for the telegram sending 0 of the fan speed. 1byte: the corresponding telegram value of each fan speed is defined by the parameter. Activate the corresponding fan speed on the screen, and object 181 — Low fan speed on the screen, and object 181 = Low fan speed on the screen of the fan speed. 1byte: the corresponding telegram value of each fan speed is defined by the parameter. Activate the corresponding fan speed on the screen, and object 181 = Speed on the screen.

		to the bu	15.						
185	Fan Automatic operation	Page x- HVAC output	1bit	С, Т	1.003 enable				
The communication object is used for sending the automatic control telegram of the fan speed to the bus. Telegram value: 1 — Automatic 0 — Cancel automatic									
186	HVAC on/off	Page x- HVAC output	1bit	C, W, T, U	1.001 switch				
The co	ommunication object is used to switch and	control the HVAC function of the device	ce, and the corresponding cont	rol will be turned off when the HVAC	is turned off.				
187	Base setpoint temperature	Page x- HVAC output	2bytes	C, R, T	9.001 temperature(°C)				
This comm	nunication object is visible when enable HV	AC control mode, and setpoint method	I for operating mode is set as r	elative, is used to send the base setp	oint temperature.				

Table 2.3.2 "HVAC" communication object table

2.3.3 "AIR CONDITIONER" COMMUNICATION OBJECT

	Number *	Name	Object Function	De Gr	Length	С	R	W	т	U	Data Type	Priority
;	161	Page 6-AC	External temperature sensor, In		2 bytes	С	2	W	Т	U	temperature (°C)	Low
-2	162	Page 6-AC	Power on/off, Out		1 bit	C	-	-	Т	-	switch	Low
‡	163	Page 6-AC	Status of Power, In		1 bit	С	2	W	Т	U	switch	Low
-2	164	Page 6-AC	Control mode, Out		1 byte	C	~	-	Т	-	HVAC control mode	Low
#	165	Page 6-AC	Status of control mode, In		1 byte	С	2	W	Т	U	HVAC control mode	Low
-2	169	Page 6-AC	Fan speed, Out		1 byte	C	-	-	Т	-	percentage (0100%)	Low
‡	170	Page 6-AC	Stauts of Fan speed, In		1 byte	С	<u></u>	W	Т	U	percentage (0100%)	Low
-2	173	Page 6-AC	Wind direction fixed/swing, In/Out		1 bit	C	-	W	Т	U	trigger	Low
#	174	Page 6-AC	Wind direction position, Out		1 byte	С	2	1	Т	2	counter pulses (0255)	Low
-2	175	Page 6-AC	Status of Wind direction position, In		1 byte	C	~	W	Т	U	counter pulses (0255)	Low
-2	176	Page 6-AC	Temperature setpoint, In/Out		2 bytes	С	2	W	T	U	temperature (°C)	Low

Fig. 2.3.3 (1) "Air conditioner" communication object (Gateway Integrate_1byte)

Numbe	r * Name	Object Function	Description	Group Addres	Length	C	R	W	Т	U	Data Type	Priority
■‡ 161	Page 6-AC	External temperature sensor, In			2 bytes	с	-	W	Т	U	temperature (*C)	Low
■‡ 162	Page 6-AC	Power on/off, Out			1 bit	С	-		т		switch	Low
■‡ 163	Page 6-AC	Status of Power, In			1 bit	С		W	т	U	switch	Low
164	Page 6-AC	Heat mode, In/Out			1 bit	С	2	W	Т	U	enable	Low
1 65	Page 6-AC	Cool mode, In/Out			1 bit	С	-	W	т	U	enable	Low
166	Page 6-AC	Dry mode, In/Out			1 bit	С	-	W	Т	U	enable	Low
167	Page 6-AC	Fan mode, In/Out			1 bit	С	-	W	Т	U	enable	Low
■2 168	Page 6-AC	Auto mode, In/Out			1 bit	с	-	W	Т	U	enable	Low
■2 169	Page 6-AC	Fan speed low, In/Out			1 bit	С	-	W	Т	U	switch	Low
170	Page 6-AC	Fan speed medium, In/Out			1 bit	С	-	W	Т	U	switch	Low
171	Page 6-AC	Fan speed high, In/Out			1 bit	С	2	W	Т	U	switch	Low
172	Page 6-AC	Fan speed Auto, In/Out			1 bit	С		W	Т	U	switch	Low
∎‡ 173	Page 6-AC	Wind direction fixed/swing, In/Out			1 bit	с		W	Т	U	trigger	Low
■‡ 174	Page 6-AC	Wind direction position, Out			1 byte	С	-	4	т	÷.,	counter pulses (0255)	Low
■2 175	Page 6-AC	Status of Wind direction position, In			1 byte	С	-	W	Т	U	counter pulses (0255)	Low
176	Page 6-AC	Temperature setpoint, In/Out			2 bytes	С	-	w	т	U	temperature (°C)	Low

Fig.6.3.3 (2) "Air conditioner" communication object (Gateway Integrate_1bit)



Number '	Name	Object Function	Description	Group Address	Length	С	R	w	т	U	Data Type	Priority
∎‡ 161	Page 6-AC	External temperature sensor, In			2 bytes	С	20	W	т	U	temperature (°C)	Low
∎‡ 162	Page 6-AC	IR Split unit command, Out			1 byte	С	63	- 1	Т		scene number	Low

Fig. 2.3.3 (3) "Air conditioner" communication object (IR Split Unit)

NO.	Object Function Name Data Type Flag									
161	External temperature sensor, In Page x-AC 2byte C, W, T, U 9.001 temperature									
The communicatio	The communication object is used for receiving the temperature measurement value sent by the indoor temperature sensor on the bus and displaying the indoor temperature on the screen.									
162	162 Power on/off,Out Page x-AC 1bit C, T 1.001 switch									
162	IR Split unit command,Out	Page x-AC	1byte	С, Т	17.001 scene number					

Power on/off: this communication object is visible in Gateway Integrate mode and is used to send air conditioning switch telegrams. IR Split unit command: this communication object is visible in IR Split Unit mode and is used to send air conditioning control telegrams. The parameter can be set to control telegram 1 ~ 64, and the actual telegram value on the bus should be 0 ~ 63.

163	Status of Power,In	Status of Power, In Page x-AC 1bit C, W, T, U 1.001 switch									
	This communication object is visible in the Gateway Integrate mode and is used to receive feedback from the status of the air-conditioning switch.										
164	164 Control mode,Out Page x-AC 1byte C, T 20.105 HAVC control r										
164	Heat mode,In/Out	Page x-AC	1bit	C, W, T, U	1.003 enable						

Control mode, Out: this communication object is visible when the Gateway Integrate mode, and the mode type is 1byte and the mode type is 1byte, which is used to send the control telegram of each mode of air conditioning. Heat mode, In/Out: this communication object is visible in Gateway Integrate mode, and the mode type is 1bit. It is used to send air conditioning mode heating control telegram, and can also receive status

Heat mode, In/Out: this communication object is visible in Gateway Integrate mode, and the mode type is 1bit. It is used to send air conditioning mode heating control telegram, and can also receive status feedback.

165	Status of control mode,In	Page x-AC	1byte	C, W, T, U	20.105 HAVC control mode
165	Cool mode,In/Out	Page x-AC	1bit	C, W, T, U	1.003 enable

Status of control mode, In: this communication object is visible in Gateway Integrate mode and the mode type is 1byte, which is used to receive the status feedback telegram of each mode of air conditioning. Cool mode, In/Out: this communication object can be seen in Gateway Integrate mode, and the mode type is 1bit. It can be used to send the control telegram of air conditioning mode-Cool, and can also receive status feedback.

166	Dry mode,In/Out	Page x-AC	1bit	C, W, T, U	1.003 enable
This comm	unication object is visible in Gateway Integr	rate mode and the mode type is 1bit. It	is used to send air conditioning r	node -Dry control telegram and recei	ve status feedback.
167	Fan mode,In/Out	Page x-AC	1bit	C, W, T, U	1.003 enable
This commun	ication object is visible in Gateway Integrat	e mode and the fan speed type is 1bit.	It is used to send air conditioning	mode -Fan control telegram and rec	ceive status feedback.

	169	Fan speed,Out	Page x-AC	1byte	C, T	5.001 percentage(0100%)
169 Fan speed low,in/Uut Page x-AC 1bit C, W, I, U 1.UU1 switch	169	Fan speed low,In/Out	Page x-AC	1bit	C, W, T, U	1.001 switch

Fan speed Out: this communication object is visible when the Gateway Integrate mode and the fan speed type is 1byte, which is used to send the control telegram of each fan speed. Fan speed low, In/Out: this communication object is visible in Gateway Integrate mode and the fan speed type is 1bit. It is used to send Fan speed low control telegram and receive state feedback.

170	Status of Fan speed, In	Page x-AC	1byte	C, W, T, U	5.001 percentage(0100%)				
170	170 Fan speed medium Page x-AC 1bit C, W, T, U 1.001 switch								
Status of Fan speed. In: this communication object is visible when the Gateway Integrate mode and the fan speed type is 1byte, which is used to receive the status feedback telegram of each wind speed.									

Fan speed medium: this communication object is visible when the Gateway integrate mode and the fan speed type is Tbyte, which is used to receive the status record and the fan speed. Feedback.

171	Fan speed high	Page x-AC	1bit	C, W, T, U	1.001 switch
This comm	nunication object is visible in Gateway Integrate	mode and the fan speed type is 1bit	t. It is used to send Fan speed high	control telegram and can also rec	eive status feedback.
172	Fan speed Auto,In/Out	Page x-AC	1bit	C, W, T, U	1.001 switch
This comm	unication object is visible in Gateway Integrate	mode and the fan speed type is 1bit	. It is used to send Fan speed Auto	control telegram and can also rec	eive status feedback.
173	Wind direction fixed/swing,In/Out	Page x-AC	1bit	C, W, T, U	1.017 trigger
174	Wind direction position,Out	1 — Swing win 0 — Fixed wind Page x-AC	ad direction.	C, T	5.010 counter pulses(0255)
The communication	object is in the Gateway Integrate mode and is	visible when the wind direction adju	stment is enabled, and is used to s	end the control telegram of the fix	ed wind direction position 15.
175	Status of wind direction position,In	Page x-AC	1byte	C, W, T, U	5.010 counter pulses(0255)
The communication object	t is in the Gateway Integrate mode and is visible	e when the wind direction adjustme	nt is enabled, and is used to receive	e the status feedback telegram of t	he fixed wind direction position 15.
176	Temperature setpoint,In/Out	Page x-AC	1byte 2byte	C, W, T, U	5.010 counter pulses(0255) 9.001 temperature(°C)

This communication object is visible in Gateway Integrate mode and is used to send and receive the setting temperature of the air conditioner.

Note: the object type is set by parameters, 2byte is suitable for KNX standard, 1byte is KNX non-standard, usually suitable for some custom control classes, the telegram value is the actual temperature value, such as 17 °C telegram value is 17 (decimal number).

Table 2.3.3 "Air conditioner" communication object table





2.3.4 "BACKGROUND MUSIC" COMMUNICATION OBJECT

	Number *	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
	161	Page 6-BgMusic	Power on/off, In/Out			1 bit	С	14	W	Т	U	switch	Low
∎ ‡ :	L62	Page 6-BgMusic	Play/Pause, In/Out			1 bit	С	3 7	W	Т	U	start/stop	Low
-	.63	Page 6-BgMusic	Next song/Previous song, Out			1 bit	С	4	43	т	4	step	Low
1	L64	Page 6-BgMusic	Volume+/Volume-, Out			1 bit	С		51	Т	5	step	Low
===	.65	Page 6-BgMusic	Play mode, Out			1 byte	С	4	40	т	43	counter pulses (0255)	Low
1	L66	Page 6-BgMusic	Play mode status, In			1 byte	С		W	Т	U	counter pulses (0255)	Low
=======	.67	Page 6-BgMusic	Music source, Out			1 byte	С	-	-	т	4	counter pulses (0255)	Low
1	L68	Page 6-BgMusic	Music source status, In			1 byte	С	17	W	Т	U	counter pulses (0255)	Low

Fig. 2.3.4 "Background Music" communication object

N0.	Object Function	Name	Data Type	Flag	DPT
161	Power on/off,In/Out	Page x- BgMusic	1bit	C, W, T, U	1.001 switch
nmunication obje	ct is used to send the background music on/of	ff controlling telegram to the bus, to c background music on the 1 - 0 0 - 0	ontrol the power of the backgrour bus. Telegram value: In	nd music module, and to receive t	eedback from the switch status of
162	Play/Pause,In/Out	Page x- BgMusic	1bit	C, W, T, U	1.010 start/stop
	The communication object is used to	play/stop the music in the backgroun 1 — Play r 0 — Pause play	d music module and can also rec music ying music	eive status feedback. Telegram va	alue:
163	Next song/Previous song,Out	Page x- BgMusic	1bit	С, Т	1.007 step
		1 — Play the r 0 — Play the pre	evious song		
164	Volume+/Volume-,Out The communication	1 — Play the r 0 — Play the pre Page x- BgMusic on object is used to adjust the volume 1 — Increase 0 Docemore	the stand song song 1bit of the background music module volume volume	C, T e. Telegram value:	1.007 step
164	Volume+/Volume-,Out The communicati	1 — Play the r 0 — Play the pr Page x- BgMusic on object is used to adjust the volume 1 — Increase 0 — Decrease Page x- BgMusic	The stand of the sector of the background music module e volume e volume 1 byte	C, T e. Telegram value: C, T	1.007 step 5.010 counter pluses(02
164 165	Volume+/Volume-,Out The communication Play mode,Out he communication object is used to send the c	1 — Play the r 0 — Play the pre Page x- BgMusic on object is used to adjust the volume 1 — Increase 0 — Decrease Page x- BgMusic ontrol telegram of the background mu	Ibit of the background music module volume e volume Ibyte usic playing mode, and the telegra	C, T e. Telegram value: C, T am of different mode is preset by	1.007 step 5.010 counter pluses(025 the parameter.
164 165 Ti 166	Volume+/Volume-,Out The communication Play mode,Out he communication object is used to send the c Play mode status,In	1 — Play the r 0 — Play the pre Page x- BgMusic on object is used to adjust the volume 1 — Increase 0 — Decrease Page x- BgMusic ontrol telegram of the background mu Page x- BgMusic	1bit of the background music module e volume e volume 1byte usic playing mode, and the telegra 1byte	C, T e. Telegram value: C, T am of different mode is preset by C, W, T, U	1.007 step 5.010 counter pluses(02) the parameter. 5.010 counter pluses(02)
164 165 TH 166 mmunication obje	Volume+/Volume-,Out The communication Play mode,Out he communication object is used to send the c Play mode status,In ect is used for receiving the status feedback te	1 - Play the r 0 - Play the product of the second	the screen. the screen.	C, T e. Telegram value: C, T am of different mode is preset by C, W, T, U am needs to be the telegram spe	1.007 step 5.010 counter pluses[025 the parameter. 5.010 counter pluses[025 cified by the parameter to update
164 165 166 mmunication obje	Volume+/Volume-,Out The communication Play mode,Out he communication object is used to send the communication object is used to send the communication object is used for receiving the status feedback te Music source,Out	1 - Play the r 0 - Play the pr 0 - Play the pr Page x- BgMusic 0 - Decrease 0 - Decrease Page x- BgMusic ontrol telegram of the background music Page x- BgMusic legram of the background music play display status or Page x- BgMusic	1bit of the background music module of the background music module ovolume 1byte usic playing mode, and the telegra 1byte ing mode, and the received telegra the screen. 1byte	C, T 2. Telegram value: C, T am of different mode is preset by C, W, T, U am needs to be the telegram spec C, T	1.007 step 5.010 counter pluses(025 the parameter. 5.010 counter pluses(025 cified by the parameter to update 5.010 counter pluses(025
164 165 166 mmunication obje 167 The co	Volume+/Volume-,Out The communication Play mode,Out he communication object is used to send the communication object is used to send the communication object is used for receiving the status feedback te Music source,Out ommunication object is used to send the telegr	1 — Play the r 0 — Play the pr 0 — Play the pr Page x- BgMusic 0 — Decrease 0 — Decrease Page x- BgMusic ontrol telegram of the background music Page x- BgMusic legram of the background music play display status or Page x- BgMusic am selected by the background music	the screen. 1bit if the background music module volume volume 1byte usic playing mode, and the telegram the screen. 1byte cound source, and the telegram	C, T e. Telegram value: C, T am of different mode is preset by C, W, T, U am needs to be the telegram spe C, T of different sound source is pres	1.007 step 5.010 counter pluses[025 the parameter. 5.010 counter pluses[025 cified by the parameter to update 5.010 counter pluses[025 et by the parameter.

Table 2.3.4 "Background Music" communication object table

2.3.5 "RGB DIMMING" COMMUNICATION OBJECT

RGB

Number	* Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■2 161	Page 6-RGB Dimming	Red dimming value			1 byte	С	-	-	Т	-	percentage (0100%)	Low
■‡ 162	Page 6-RGB Dimming	Green dimming value			1 byte	С	e 6	-	т	23	percentage (0100%)	Low
■‡ 163	Page 6-RGB Dimming	Blue dimming value			1 byte	С		-	Т	-	percentage (0100%)	Low
■≵ 161	Page 6-RGB Dimming	RGB dimming value			3 bytes	С	-	-	Т	-	RGB value 3x(0255)	Low

RGBW+COLOR TEMPERATURE

N	lumber '	Name	Object Function	Description	Group Address	Length	С	R	w	т	U	Data Type	Priority
16	51	Page 6-RGB Dimming	Red dimming value			1 byte	С	-		Т	-	percentage (0100%)	Low
∎‡ 16	2	Page 6-RGB Dimming	Green dimming value			1 byte	С	-	4	т	-	percentage (0100%)	Low
16	i3	Page 6-RGB Dimming	Blue dimming value			1 byte	С	5		т		percentage (0100%)	Low
16	4	Page 6-RGB Dimming	White dimming value			1 byte	С	-	W	т	-	percentage (0100%)	Low
16	5	Page 6-RGB Dimming	Color Temperaturer setting & status			2 bytes	С	•	W	т		absolute colour temperature (K)	Low
1	51	Page 6-RGB Dimming	RGBW dimming value		6 b	ovtes C	-	-	Т	-	R	GB value 4x(0255)	Low





BRIGHTNESS+COLOR TEMPERATURE

RGB Dimming E RGB Dimming C Object Fund Red dimming Green dimming Blue dimming	Object Functio trightness settin Color Temperato tion value The communicat gvalue The communicat	n g & status urer setting & Fig. 2 N Page x-R ation object is use Page x-R	status .3.5 "RGB lame GB Dimmir ed to send I Tele GB Dimmir d to send th	dimming"co	Group Address mmunication obje Data Type 1byte s value of the contro	Length 1 byte 2 bytes ct	C R W : - W : - W F C	TU T- T-	Data Typ percentag absolute	pe ge (0100%) colour temperature (K DPT	Priori Low .) Low
RGB Dimming E RGB Dimming C Object Fund Red dimming Green dimmin Blue dimming	rightness settir Color Temperati tion value The communicat g value The communicat	ng & status urer setting & Fig. 2 N Page x-R ation object is use Page x-R ion object is use	status 3.5 "RGB lame GB Dimmir ed to send to Tele GB Dimmir d to send th	dimming"co Ig the brightnes agram value:	mmunication obje Data Type 1byte 5 value of the contro	1 byte C 2 bytes C ct	C - W : - W F C	T - T - lag	percenta <u>o</u> absolute	ge (0100%) colour temperature (K DPT	Low .) Low
RGB Dimming C Object Fund Red dimming Green dimmin Blue dimming	color Temperati tion value The communicat The communicat yalue	urer setting & Fig. 2 N Page x-R ation object is use Page x-R ion object is use	status 3.5 "RGB Jame GB Dimmir ed to send t GB Dimmir d to send th	dimming"co Ig the brightnes egram value:	mmunication obje Data Type 1byte s value of the contro	2 bytes C	C - W F C	T - lag	absolute	colour temperature (K DPT	() Low
Object Fund Red dimming Green dimmin Blue dimming	ition value The communica g value The communicat g value	Fig. 2 N Page x-R ation object is use Page x-R ion object is use	.3.5 "RGB lame GB Dimmir ed to send t Tele GB Dimmir d to send th	dimming"co Ig the brightnes egram value:	mmunication obje Data Type 1byte s value of the contro	ct	F	lag , T		DPT	
Object Fund Red dimming Green dimmin Blue dimming	tion value The communica g value The communicat	N Page x-R ation object is use Page x-R ion object is use	lame IGB Dimmir ed to send t Tele IGB Dimmir d to send th	ig the brightnes egram value:	Data Type 1byte s value of the contro		F	lag ., T		DPT	
Object Fund Red dimming Green dimmin Blue dimming	ition value The communica g value The communicat g value	N Page x-R ation object is use Page x-R ion object is use	lame GB Dimmir ed to send t Tele GB Dimmir	i g the brightnes egram value:	Data Type 1byte s value of the contro		F	lag , T		DPT	
Red dimming Green dimmin Blue dimming	value The communica g value The communicat g value	Page x-R ation object is use Page x-R ion object is use	GB Dimmir ed to send t Tele GB Dimmir	ng the brightnes egram value:	1byte		C	, т		E 001 mensente me(0, 1	
Green dimmin Blue dimming	The communica g value The communicat g value	ation object is use Page x-R ion object is use	ed to send t Tele GB Dimmir	he brightnes egram value:	s value of the contro					5.001 percentage(0)	00%)
Green dimmin Blue dimming	g value The communicat y value	Page x-R	GB Dimmir	-	010070	it K (red) char	nel to the b)us.			
Blue dimming	The communicat	ion object is use	d to send th	ig	1byte		C	;, Т		5.001 percentage(01	00%)
Blue dimming	y value		Tele	ie brightness egram value:	value of the control 0100%	G (green) cha	innel to the	bus.			
		Page x-R	GB Dimmir	g	1byte		C	;, Т		5.001 percentage(01	00%)
	The communica	tion object is use	ed to send t Tele	he brightness egram value:	value of the control 0100%	l B (blue) cha	nnel to the	bus.			
White dimmin	g value	Page x-R	GB Dimmir	g	1byte		C, 1	W, T		5.001 percentage(01	00%)
Brightne	ss	Page x-R	GB Dimmir	a	1bvte		C. '	w. т		5.001 percentage(01	00%)
The c	ommunication ob	ject is used to se	end color te	mperature co	ontrol telegram to bu	ıs. Telegram	value: 1000	K10000	ж		
RGB dimming	value	Page x-R	GB Dimmin	ig	3bytes		C	;, т		232.600 RGB value 3x(0255)
This communication obj	ect is visible wher	n you select 1x3b 3-Byte Code for	oyte for the l r RGB Dimr	RGB object ty ning Object D	pe, and is used to se lata Type: U8 U8 U8,	end the bright as follows:	iness value	of the RO	GB three-co	olor lamp.	
			Змѕв	2	1 _{LSB}						
			R	G	В						
		UU	υυυυυυ	UUUUUUU	00000000						
			R: G: g B:	red dimming reen dimmin blue dimmin	i value; ig value; g value.						
RGB dimming	value	Page x-R	GB Dimmir	g	6byte		C	, Т		251.600 RGB value 4x(0255)
The communication obje	ct is visible when Encoding of	you select 1x6byt the data type of t	te on the R(the 6-byte F	GBW object ty GBW dimmi	rpe, and is used to se ng object: U8 U8 U8	end the brigh U8 R8 R4 B4	tness value , as follows:	of the R	GBW four-c	olor lamp.	
Змѕв	5		4		3		2		1 _{LSB}		
R	G		В		W	Res	erve	rrrr	mR mG mB	3 mW	
υυυυυυυ	υυυυι	JUUU	UUUUUU	JU	υυυυυυυ	0000	0000	ſ	00008888		
	m mG mi	R: determines w b: determines wh B: determines wh	R: G: g B: W: v whether the hether the g hether the l	red dimming green dimmin blue dimming white dimming reen dimming blue dimming	ı value; ıg value; ıg value; ıg value; value is valid, 0 = in g value is valid, 0 = i value is valid, 0 = in	valid, 1 = valio nvalid, 1 = vali valid, 1 = vali	1; id;				
	b Color Temperatu The c RGB dimming This communication obj	Under the type brightness value of Under the type "E val Color Temperature setting The communication ob RGB dimming value This communication object is visible when Encoding of Змзв 5 R G UUUUUUUU UUUU	Under the type "RGBW" and "Rd brightness value of the control W {v Under the type "Brightness + Colo value to the bus or Color Temperature setting Page x-R The communication object is used to so RGB dimming value Page x-R This communication object is visible when you select 1x3t 3-Byte Code fo UUUUUUUU UU UU UU UU UU UU UU	Under the type "RGBW" and "RGBW Color brightness value of the control W (white) chan Tel Under the type "Brightness + Color Temperat value to the bus or to receive th Color Temperature setting Page x-RGB Dimmin The communication object is used to send color te RGB dimming value Page x-RGB Dimmin This communication object is visible when you select 1x3byte for the I 3-Byte Code for RGB Dimmin RGB dimming value R R B R UUUUUUUU R: B: R Communication object is visible when you select 1x6byte on the RG B: RGB dimming value Page x-RGB Dimmin The communication object is visible when you select 1x6byte on the RG Encoding of the data type of the 6-byte F R R UUUUUUUU UUUUUUUU UUUUUUUU C C C C C C C C C C C C C	Under the type "RGBW" and "RGBW Color Temperature brightness value of the control W (white) channel to the bus Telegram value: Under the type "Brightness + Color Temperature", the cor value to the bus or to receive the brightness Color Temperature setting Page x-RGB Dimming The communication object is used to send color temperature of RGB dimming value Page x-RGB Dimming This communication object is visible when you select 1x3byte for the RGB object ty 3-Byte Code for RGB Dimming Object D 3Ms8 2 R G UUUUUUUU UUUUUUUUUUUUUUUUUUUUUUUUUU	Under the type "RGBW" and "RGBW Color Temperature", the communication brightness value of the control W (white) channel to the bus, and the brightness Telegram value: 0.100%. Under the type "Brightness + Color Temperature", the communication object value to the bus or to receive the brightness feedback. Telegram Color Temperature setting Page x-RGB Dimming 2 bytes The communication object is used to send color temperature control telegram to but so the communication object is visible when you select 1x3byte for the RGB object type, and is used to se 3-Byte Code for RGB Dimming Object Data Type: U8 U8 U8, 3MSB This communication object is visible when you select 1x3byte for the RGB object type, and is used to se 3-Byte Code for RGB Dimming Object Data Type: U8 U8 U8, 3MSB 2 1LSB R G B UUUUUUUU UUUUUUUU UUUUUUUUU UUUUUUUUU RGB dimming value Page x-RGB Dimming 6byte RGB dimming value Page x-RGB Dimming value; 6: green dimming value; B: red dimming value 8: green dimming value; 8: green dimming value; MGB dimming value 5 4 3 R 6 B W WUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU	Under the type "RGBW" and "RGBW Color Temperature", the communication object is us brightness value of the control W (white) channel to the bus, and the brightness feedback car Telegram value 0100% Under the type "Brightness + Color Temperature", the communication object is used to ser value to the bus or to receive the brightness feedback. Telegram value: 0100 Color Temperature setting Page x-RGB Dimming 2 bytes The communication object is used to send color temperature control telegram to bus. Telegram RGB dimming value Page x-RGB Dimming 3bytes This communication object is visible when you select 1x3byte for the RGB object type, and is used to send the bright 3-Byte Code for RGB Dimming Object Data Type: U8 U8 U8, as follows: 3-Byte Code for RGB Dimming Object Data Type: U8 U8 U8, as follows: 3-Byte Code for RGB Dimming value; 6: green dimming value B: blue dimming value; 5: green dimming value; 6: green dimming value; 7: Green dimming value; 8: Green dimming value; 8: Green dimming value; 9: blue dimming	Under the type "RGBW" and "RGBW Color Temperature", the communication object is used to send brightness value of the control W (white) channel to the bus, and the brightness feedback can also be re Telegram value: 0.100% Under the type "Brightness + Color Temperature", the communication object is used to send the bright value to the bus or to receive the brightness feedback.Telegram value: 0.100% Color Temperature setting Page x-RGB Dimming 2 bytes C, The communication object is used to send color temperature control telegram to bus. Telegram value: 1000 3bytes C This communication object is visible when you select 1x3byte for the RGB object type, and is used to send the brightness value 3-Byte Code for RGB Dimming Value; B: blue dimming value; 1 uss C R G G B UUUUUUUU UUUUUUUU UUUUUUUU C R GB dimming value Page x-RGB Dimming 6 byte C R G B B UUUUUUUU UUUUUUUU C R G G B UUUUUUUU C C The communication object is visible when you select 1x6byte on the RGBW object type, and is used to send the brightness value Encoding of the data type of the 6-byte RGBW dimming object: U8 U8 U8 B8 R4 B4, as follows: S M G B B W Reserve W Reserve C M G B B W	Under the type "RGBW" and "RGBW Color Temperature", the communication object is used to send the brightness value of the control W (white) channel to the bus, and the brightness feedback can also be received. Telegram value: 0100% Under the type "Brightness + Color Temperature", the communication object is used to send the brightness value to the bus or to receive the brightness feedback. Telegram value: 0100% Color Temperature setting Page x-RGB Dimming 2 bytes C, W, T The communication object is used to send color temperature control telegram to bus. Telegram value: 1000K1000C RGB dimming value Page x-RGB Dimming 3 bytes C, T This communication object is visible when you select 1x3byte for the RGB object type, and is used to send the brightness value of the RGB Dimming value; G: green dimming value; G: green dimming value; B: blue dimming value; 3 wes 2 1 use R GB dimming value Page x-RGB Dimming 6 byte C, T This communication object is visible when you select 1x3byte for the RGB object type, and is used to send the brightness value of the RGB dimming value; 3 wes 2 1 use R G G B dimming value R red dimming value; B: blue dimming value; C, T This communication object is visible when you select 1x6byte on the RGBW object type, and is used to send the brightness value of the RGB dimming value; C, T R GB dimming value Page x-RGB Dimming 6 type	Under the type "RGBW" and "RGBW Color Temperature", the communication object is used to send the brightness value of the control W (while) channel to the bus, and the brightness feedback can also be received. Telegram value: 0100% Under the type "Brightness + Color Temperature", the communication object is used to send the brightness value to the bus or to receive the brightness feedback. Telegram value: 0100% Color Temperature setting Page x-RGB Dimming 2 bytes C, W, T 7.4 The communication object is used to send color temperature control telegram to bus. Telegram value: 1000K10000K Page x-RGB Dimming 3bytes C, T 7.4 This communication object is visible when you select 1x3byte for the RGB object type, and is used to send the brightness value of the RGB three-cc 3-Byte Code for RGB Dimming Value; 3wss 2 1uss 1uss	Under the type "RGBW" and "RGBW Color Temperature", the communication object is used to send the brightness value of the control W (white) channel to the bus, and the brightness feedback can also be received. Telegram value: 0.100% Totelgram value: 0.100% Color Temperature setting Page x-RGB Dimming 2 bytes C,W,T 7.600 absolute colour temperature is used to send the brightness RGB dimming value Page x-RGB Dimming 2 bytes C,W,T 7.600 absolute colour temperature is used to send the brightness RGB dimming value Page x-RGB Dimming 3 bytes C,T 232.600 RGB value 3(III) This communication object is visible when you select 1x3byte for the RGB object type, and is used to send the brightness value of the RGB value 3(III) 3 bytes C,T 232.600 RGB value 3(IIII) Mea 2 11sa 2 11sa

2.3.6 "AIR QUALITY DISPLAY" COMMUNICATION OBJECT

Nu	mber * Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■2 161	Page 6-Air Quality	AQI, In			2 bytes	С	-3	W	т	U	pulses	Low
■‡ 162	Page 6-Air Quality	PM2.5, In			2 bytes	С	22	W	Т	U	pulses	Low
■‡ 163	Page 6-Air Quality	PM10, In			2 bytes	С	-	W	Т	U	pulses	Low
■2 164	Page 6-Air Quality	Temperature, In			2 bytes	С	27	w	Т	U	temperature (°C)	Low
■2 165	Page 6-Air Quality	Humidity, In			2 bytes	С	-10	W	т	U	humidity (%)	Low
■‡ 166	Page 6-Air Quality	VOC, In			2 bytes	С	22	W	Т	U	parts/million (ppm)	Low
■2 167	Page 6-Air Quality	CO2, In			2 bytes	С	-	W	Т	U	parts/million (ppm)	Low
■‡ 168	Page 6-Air Quality	Brightness, In			2 bytes	С	22	w	Т	U	brightness (lux)	Low
1 69	Page 6-Air Quality	Windspeed, In			2 bytes	С	.	W	Т	U	speed (m/s)	Low
162	Page 6-Air Quality	PM2.5, In			2 bytes C	-	1	W T	Ľ	Jc	oncentration (µg/m³)	Low
163	Page 6-Air Quality	PM10, In			2 bytes C	1	1	T W	Ľ	Jc	oncentration (µg/m³)	Low





₹ 166	Page 6-Air Quality	VOC, In		2 bytes	C - W T U conce	entration (µg/m³) Low
₹ 168	Page 6-Air Quality	Brightness, I	n	2 bytes	C - W T U lux ((Lux) Low
			Fig. 2.3.6 "Air Quality display	y"communication object		
N	0. Objec	t Function	Name	Data Type	Flag	DPT
16	51	AQI,In	Page x-Air Quality	2bytes	C, W, T, U	7.001 pulses
	The comm	unication object is use	ed to receive the input of AQI value and up	pdate the corresponding value fr	om the bus to display. Range: 0~	500
16	52 PI	M2.5,In	Page x-Air Quality	2bytes	C, W, T, U	9.030 concentration(ug/m3) 7.001 pulses
The commu	unication object is used to receive	the input of PM2.5 val	lue and get the corresponding value from parame	n the bus to be updated to display ter	y in µg/m³. Range: 0~999ug/m³. tl	he data type of the object is set by the
16	53 P	M10,In	Page x-Air Quality	2bytes	C, W, T, U	9.030 concentration(ug/m3) 7.001 pulses
This con	nmunication object is used to rec	eive the input of pm10	value, get the corresponding value upda parame	te to display from bus, the unit is ter.	μg/m³. Range:0~999ug/m³, the	data type of the object is set by the
16	54 Temp	erature,In	Page x-Air Quality	2Bytes	C, W, T, U	9.001 temperature(°C)
	The com	munication object is u	sed to receive temperature measuremer	nts sent from the temperature se	ensor on the bus. Range:-40~40°	С
16	55 Hu	midity,In	Page x-Air Quality	2bytes	C, W, T, U	9.007 humidity(%)
	Th	e communication obje	ect is used to receive a humidity measure	ment sent from a humidity sens	or on a bus. Range: 0~100%	
16	56 V	/0C,In	Page x-Air Quality	2bytes	C, W, T, U	9.008 parts/million(ppm) 7.001 pulses 9.030 concentration(ug/m³)
The commun When the ob	ication object is used to receive th ject data type is selected for 7.00	he input of the VOC va 1 pulses, the percentil	lue and get the corresponding value from the param e ratio is reduced on the basis of the DPT	n the bus to be updated to the dis neter. 7.001 pulses, for example, the r	play in mg/m³.Range: 0-9.99mg eceiving value is 5000 ug/m³ and	/m³, the data type of the object is set the actual display value is 5.00mg/m
16	57 0	02,In	Page x-Air Quality	2bytes	C, W, T, U	9.008 parts/million(ppm)
	The communication object	t is used to receive the	input of the CO2 value and get the corre	sponding value from the bus to b	e updated to the display in ppm.	Range:0~4000ppm
16	58 Brig	htness,In	Page x-Air Quality	2bytes	C, W, T, U	7.013 brightness(lux) 9.004 lux(Lux)
This com	nmunication object is used to rec	eive the input of bright	ness value, get the corresponding value parame	update to display from bus, the u ter.	init is lux. Range:0~5000lux, the	data type of the object is set by the
16	59 Wir	ndspeed	Page x-Air Quality	2bytes	C, W, T, U	9.005 speed(m/s)

This communication object is used to receive the input of windspeed value, get the corresponding value update to display from bus, the unit is m/s. Range:0-50m/s.

Table 2.3.6 "Air Quality display" communication object table

2.3.7 "FLOOR HEATING" COMMUNICATION OBJECT

Nun	nb Name	Object Function	Des Group	Length	C	R	W	Т	U	Data Type	Priority
■之 161	Page 6-Floor heating	External temperature sensor, In		2 bytes	С	- 58	W	Т	U	temperature (°C)	Low
■2 162	Page 6-Floor heating	Power on/off, In/Out		1 bit	С		W	Т	U	switch	Low
■2 163	Page 6-Floor heating	Heating on/off, In/Out		1 bit	С	-	W	Т	U	switch	Low
∎‡ 164	Page 6-Floor heating	Setpoint, In/Out		2 bytes	С	12	W	т	U	temperature (°C)	Low
■2 165	Page 6-Floor heating	En./Dis. timer, In		1 bit	С	-	W	-	-	enable	Low
■2 166	Page 6-Floor heating	Scene, In		1 byte	С	-	W	2	0	scene control	Low
∎‡ 163	Page 6-Floor heating	Heating control value, Out	1	byte	С	-	W	Г	U	percentage (0100%)	Low

Fig. 2.3.7 "Floor heating" communication object

N0.	Object Function	Name	Data Type	Flag	DPT
161	External temperature sensor, In	Page x-Floor heating	2bytes	C, W, T, U	9.001 temperature(
communication	object is visible when the temperature refere	nce selects the external sensor and is	used to receive the temperature	measurement value sent from the te	emperature sensor on the b
communication	object is visible when the temperature refere	nce selects the external sensor and is Range: -50-	used to receive the temperature -99.8°C	measurement value sent from the te	emperature sensor on the b

1 -the control interface of floor heating is off and the interface is operable. 0 -the control interface of floor heating is off and the interface is not operable.





N0.	Object Function	Name	Data Type	Flag	DPT
163	Heating on/off, In/Out	Page x-Floor heating	1bit	C, W, T, U	1.001 switch
163	Heating control value, Out	Page x-Floor heating	1byte	C, W, T, U	5.001 percentage(0100
		Send telegram value (Heating PV	off - 2-point control): on/off) VM - use PI control): on/off		
	S	Send telegram value (Heating continuou	s control - use PI control): 0. 100%	•	0.001
164	Setpoint , In/Out	Send telegram value (Heating continuou Page x-Floor heating	s control - use PI control): 0. 100% 2bytes	C, W, T, U	9.001 temperature(°
164 The c	Setpoint , In/Out	Send telegram value (Heating continuou Page x-Floor heating mperature setting value to the bus, and	s control - use PI control): 0. 100% 2bytes the temperature setting value of th	c, W, T, U ne feedback can also be receiv	9.001 temperature(° ed. Range: 5~40°C
164 The o	Setpoint , In/Out	Send telegram value (Heating continuou Page x-Floor heating mperature setting value to the bus, and Page x-Floor heating	s control - use PI control): 0. 100% 2bytes the temperature setting value of th 1bit	C, W, T, U ne feedback can also be receiv C, W	9.001 temperature(°C ed. Range: 5-40°C 1.003 enable
164 The o 165	Setpoint , In/Out communication object is used to send the ter En./Dis. Timer, In e communication object is used to disable/ e	Send telegram value (Heating continuou Page x-Floor heating mperature setting value to the bus, and Page x-Floor heating enable the timing function of the floor he	s control - use PI control): 0. 100% 2bytes the temperature setting value of tH 1bit vating.The disable/enable telegram	c, W, T, U ne feedback can also be receiv C, W n value is specifically defined b	9.001 temperature(°C ad. Range: 5~40°C 1.003 enable y the parameter.

Table 2.3.7 "Floor heating" communication object table

2.3.8 "VENTILATION SYSTEM" COMMUNICATION OBJECT

Number *	Name	Object Function	Description (Group Address	Length	С	R	W	Т	U	Data Type	Priority
∎≵ 162	Page 6-Ventilation	Power on/off, In/Out			1 bit	С	-	W	Т	U	switch	Low
■≵ 163	Page 6-Ventilation	En./Dis. Heat Recovery, In			1 bit	С	<u>s</u> :	W	2	40	enable	Low
∎≵ 164	Page 6-Ventilation	Heat Recovery, In/Out			1 bit	С	-	W	Т	U	switch	Low
■≵165	Page 6-Ventilation	Filter timer reset, In			1 bit	С	<u>s</u> :	W	2	42	reset	Low
∎≵ 166	Page 6-Ventilation	Filter timer counter, In/Out			2 bytes	С	-	W	Т	U	time (h)	Low
■≵ 167	Page 6-Ventilation	Filter alarm, Out			1 bit	С	2	2	Т	4	alarm	Low
∎‡ 168	Page 6-Ventilation	Fan Speed No.1 1Bit, In/Out			1 bit	С	-	W	Т	U	switch	Low
■≵169	Page 6-Ventilation	Fan Speed No.2 1Bit, In/Out			1 bit	С	<u>1</u>	W	Т	U	switch	Low
■≵170	Page 6-Ventilation	Fan Speed No.3 1Bit, In/Out			1 bit	С	-	W	Т	U	switch	Low
■2 171	Page 6-Ventilation	Automatic function, In/Out			1 bit	С	2	W	Т	U	enable	Low
∎≵172	Page 6-Ventilation	CO2,In			2 bytes	С	-	W	Т	U	pulses	Low
■2 174	Page 6-Ventilation	Scene, In			1 byte	С	<u>s</u> :	W	2	42	scene control	Low
■≵ 172	Page 6-Ventilation	CO2,In			2 bytes	C	-	W	Т	U	parts/million (ppm)	Low
■≵ 168	Page 6-Ventilation	Fan speed, Out			1 byte	С	-	-	Т	-	percentage (0100%)	Low
■‡ 169	Page 6-Ventilation	Stauts of Fan speed, In			1 byte	С	-	W	Т	U	percentage (0100%)	Low
■2 173	Page 6-Ventilation	PM2.5, In		2 bytes	с -	W	Т	U	c	onc	entration (µg/m³)	Low
■‡ 173	Page 6-Ventilation	PM2.5, In			2 bytes	С	-	W	Т	U	pulses	Low

Fig. 2.3.8 "Ventilation system" communication object

Power on/off,In/Out ject is used for sending a ventilating 1 - the 0 - the ./Dis. Heat Recovery,In disable / enable the heat recovery	Page x-Ventilation on system control switch telegram, and he ventilation system control interface is eventilation system control interface is of Page x-Ventilation function of ventilation system. The disa is turned off and cannol	1bit d can also receive the feedback of s on and the interface is operation off and the interface is not operation 1bit 1bit bled/ enabled telegram value is specified.	C, W, T, U the ventilation system control status. I al C, W	1.001 switch Telegram value: 1.003 enable
ect is used for sending a ventilation 1 — th 0 — the ./Dis. Heat Recovery,In disable / enable the heat recovery	on system control switch telegram, and he ventilation system control interface is ventilation system control interface is of Page x-Ventilation function of ventilation system. The disa is turned off and cannol	d can also receive the feedback of s on and the interface is operation off and the interface is not operati 1bit bled/ enabled telegram value is sp	the ventilation system control status. Inal Onal C, W	Telegram value: 1.003 enable
./Dis. Heat Recovery,In	Page x-Ventilation function of ventilation system. The disa is turned off and cannot	1bit bled/ enabled telegram value is sp	C, W	1.003 enable
lisable / enable the heat recovery	function of ventilation system. The disa is turned off and cannot	bled/ enabled telegram value is s	10 H 1 C 11 H 1	
		t be controlled.	pecifically defined by the parameter. V	When disable, the heat recove
leat Recovery, In/Out	Page x-Ventilation	1bit	C, W, T, U	1.001 switch
n object is used to send the contro	ol command of on/off ventilation system 1 — On 0 — Off	heat recovery, and the status feed	dback value can also be received. Tele	egram value:
Filter time reset, In	Page x-Ventilation	1bit	C, W	1.015 reset
ommunication object is used to re	eset the filter time, and after the filter is $1-{ m Rese}$	s reset, the filter time is used to st t	art counting again. Telegram value:	
ter time counter, In/Out	Page x-Ventilation	2byte	C, W, T, U	7.001 pluses
count the length of the filter. Whe	en the count value changes, it can be se	nt to the bus, and the time can als	so be modified by the bus. The unit of	filter time counter is in hours
Filter alarm, Out	Page x-Ventilation	1bit	С, Т	1.005 alarm
1	object is used to send the control Filter time reset, In ommunication object is used to r er time counter, In/Out count the length of the filter. Whe Filter alarm, Out	object is used to send the control command of on/off ventilation system 1 - On 0 - Off Filter time reset, In Page x-Ventilation ommunication object is used to reset the filter time, and after the filter in 1 - Rese er time counter, In/Out Page x-Ventilation count the length of the filter. When the count value changes, it can be se Filter alarm, Out Page x-Ventilation	object is used to send the control command of on/off ventilation system heat recovery, and the status feed 1 - On 0 - Off Filter time reset, In Page x-Ventilation 1bit ommunication object is used to reset the filter time, and after the filter is reset, the filter time is used to station 1 - Reset 1 - Reset er time counter, In/Out Page x-Ventilation 2byte count the length of the filter. When the count value changes, it can be sent to the bus, and the time can als Filter alarm, Out	object is used to send the control command of on/off ventilation system heat recovery, and the status feedback value can also be received. Tele 1 - On 0 - Off Filter time reset, In Page x-Ventilation 1 bit C, W ommunication object is used to reset the filter time, and after the filter is reset, the filter time is used to start counting again. Telegram value: 1 - Reset er time counter, In/Out Page x-Ventilation 2byte C, W, T, U count the length of the filter. When the count value changes, it can be sent to the bus, and the time can also be modified by the bus. The unit of Filter alarm, Out Page x-Ventilation 1 bit C, T





110.		i vanie	Data Type	Flay	DFI
168	Fan speed, Out	Page x-Ventilation	1byte	C, T	5.010 percentage(0100%
e communication obj	ect is visible when the fan speed type is "1byte"	and is used to send a telegram to the t the parame	ous to control the fan speed. The ters.	specific telegram value corresp	oonding to each fan speed is defined
169	Status of Fan speed, In	Page x-Ventilation	1byte	C, W, T, U	5.010 percentage(0100%
he communication ol	bject is visible when the fan speed type is "1byt	e" and is used to receive the status feed paramete	lback of the fan speed. The speci er.	fic telegram value correspondir	ng to each fan speed is defined by th
168	Fan Speed No.1 1Bit, In/Out	Page x-Ventilation	1bit	C, W, T, U	1.001 switch
169	Fan Speed No.2 1Bit, In/Out	Page x-Ventilation	1bit	C, W, T, U	1.001 switch
170	Fan Speed No.3 1Bit, In/Out	Page x-Ventilation	1bit	C, W, T, U	1.001 switch
The communication	object is used to enable the automatic operatic m	on of ventilation system. After the bus is anually adjust the fan speed. The scene	reset or programmed, the autor can exit the automatic operation	matic operation is not enabled b n.	y default. Turn off the machine and
172	C02 In	anually adjust the fan speed. The scene	e can exit the automatic operation	n. CWTU	9.008 parts/million(ppm)
	·	J			7.001 pulses
The	communication object is used to receive the in If the control value of the automatic operation	out of the CO2 value and get the corresp is CO2, the ventilation system can be s The data type of the object is	ponding value from the bus to be et to automatically adjust the fan set by the parameter.	updated to the display in ppm. speed according to the concen	Range: 0~4000ppm tration of CO2.
173	PM2.5, In	Page x-Ventilation	2byte	C, W, T, U	9.030 concentration(ug/m ² 7.001 pulses
Th If	e communication object is used to receive the the control value of the automatic operation is	nput of PM2.5 value and get the corres PM2.5, the ventilation system can be s The data type of the object is	ponding value from the bus to be et to automatically adjust the fan set by the parameter.	e updated to display in ug/m³.Ra speed according to the concen	nge: 0–999ug/m³ tration of PM2.5.
174	Scene, In	Page x-Ventilation	1byte	C, W	18.001 scene control

Table 2.3.8 "Ventilation System" communication object table

2.3.9 "ENERGY METERING DISPLAY" COMMUNICATION OBJECT

Number	' Name	Object Function	Description	Group Address	Length	C	R	W	Т	U	Data Type	Priority
■‡ 161	Page 6-Energy Meter 1	Current in mA (DPT 7.012)			2 bytes	С	-	W	т	U	current (mA)	Low
■‡ 162	Page 6-Energy Meter 2	Current in mA (DPT 9.021)			2 bytes	С	-	W	Т	U	current (mA)	Low
■‡ 163	Page 6-Energy Meter 3	Current in A (DPT 14.019)			4 bytes	С	-	W	Т	U	electric current (A)	Low
■‡ 164	Page 6-Energy Meter 4	Voltage in mV (DPT 9.020)			2 bytes	С	-	W	Т	U	voltage (mV)	Low
■‡ 165	Page 6-Energy Meter 5	Voltage in V (DPT 14.027)			4 bytes	С	-	W	т	U	electric potential (V)	Low
■‡ 166	Page 6-Energy Meter 6	Power in W (DPT 14.056)			4 bytes	С	-	W	Т	U	power (W)	Low
■‡ 167	Page 6-Energy Meter 7	Power in kW (DPT 9.024)			2 bytes	С	-	W	т	U	power (kW)	Low
■2 168	Page 6-Energy Meter 8	Active energy in Wh (DPT 13.010)			4 bytes	С	-	W	Т	U	active energy (Wh)	Low
■‡ 193	Page 7-Energy Meter 1	Active energy in kWh (DPT 13.013)			4 bytes	С	-	W	Т	U	active energy (kWh)	Low

Fig. 2.3.9 "Energy Metering display" communication object

N0.	Object Function	Name	Data Type	Flag	DPT
161	Current in mA(DPT 7.012)	Page x-Energy Meter y	2bytes	C, W, T, U	7.012 current (mA)
	The communication	n object is used to receive the current va The display range is 0~ 65535 mA	alue from the bus and update it to , and the resolution is 1 mA.	the screen display.	
162	Current in mA(DPT 9.021)	Page x-Energy Meter y	2bytes	C, W, T, U	9.021 current (mA)
	The communication	n object is used to receive the current va The display range is -670760-670760n	alue from the bus and update it to nA, and the resolution is 0.01mA.	the screen display.	
163	Current in A(DPT 14.019)	Page x-Energy Meter y	4bytes	C, W, T, U	14.019 electric current (A)
	The communication	n object is used to receive the current v The display range is -999999999.9-99999	alue from the bus and update it to 999.9A, and the resolution is 0.1A	the screen display.	
64	Voltage in mV(DPT 9.020)	Page x-Energy Meter y	2bytes	C, W, T, U	9.020 voltage (mV)
164	Voltage in mV(DPT 9.020) The communicatio	Page x-Energy Meter y n object is used to receive voltage values The display range is-670760mV-670760	2bytes from the bus and update them to mV, and the resolution is 0.01mV.	C, W, T, U the screen display.	9.020 voltage (mV)





N0.	Object Function	Name	Data Type	Flag	DPT
166	Power in W(DPT 14.056)	Page x-Energy Meter y	4bytes	C, W, T, U	14.056 power (W)
	The communication o Th	bject is used to receive the power valu e display range is: -999999999.9 ~ 9999	ues from the bus and update them ??????.?W, and the resolution is 0.1	to the screen display. W.	
167	Power in kW(DPT 9.024)	Page x-Energy Meter y	2bytes	C, W, T, U	9.024 power (kW)
	The communication o	biect is used to receive the power valu	ues from the bus and update them	to the screen display.	
168	The communication of Active energy in Wh(DPT 13.010)	bject is used to receive the power valu The display range is: -670760-670760 Page x-Energy Meter y	ues from the bus and update them DkW, and the resolution is 0.01kW. 4bytes	to the screen display. C, W, T, U	13.010 active energy (Wh)
168	The communication o Active energy in Wh(DPT 13.010) The communication ob The	bject is used to receive the power valu The display range is: -670760-670760 Page x-Energy Meter y ject is used to receive the electrical va e display range is: -2147483648-21474	ues from the bus and update them DkW, and the resolution is 0.01kW. 4bytes Ilues from the bus and update ther 483647Wh, and the resolution is 1V	to the screen display. C, W, T, U m to the screen display. Wh.	13.010 active energy (Wh)

Table 2.3.9 "Energy Metering display" communication object table

2.4 "TIME FUNCTION" COMMUNICATION OBJECT

Numł	ber * Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■‡ 481	Time function 1	On/Off			1 bit	С	-	-	Т	-	switch	Low
■≵ 482	Time function 1	Disable/Enable			1 bit	С	-	W	-	0	enable	Low
■₹ 483	Time function 2	1byte unsigned value			1 byte	С	873	-	Т	-	counter pulses (0255)	Low
∎‡ 484	Time function 2	Disable/Enable			1 bit	С	-	W	-	0	enable	Low
■₹ 485	Time function 3	Scene control			1 byte	С		-	Т	-	scene number	Low
■≵ 486	Time function 3	Disable/Enable			1 bit	С	-	W	-	0	enable	Low
■₹ 487	Time function 4	2byte unsigned value			2 bytes	С		-	т	÷	pulses	Low
∎‡ 488	Time function 4	Disable/Enable			1 bit	С	-	W	-	9	enable	Low
■2 513	Time function	Dis./En. Monday Time			1 bit	С		W	-	-	enable	Low
■2 514	Time function	Dis./En. Tuesday Time			1 bit	С	-	W	-	0	enable	Low
■\$ 515	Time function	Dis./En. Wednesday Time			1 bit	С	873	W		-	enable	Low
■\$ 516	Time function	Dis./En. Thursday Time			1 bit	С	- 41	W	-	2	enable	Low
■2 517	Time function	Dis./En. Friday Time			1 bit	С	-	W	•	-	enable	Low
■‡ 518	Time function	Dis./En. Saturday Time			1 bit	С	-	W	-	0	enable	Low
■‡ 519	Time function	Dis./En. Sunday Time			1 bit	С	-	W		-	enable	Low

Fig. 2.4.1 "Time function" communication object

NO.	Object Function	Name	Data Type	Flag	DPT
481	On/Off	Time function x	1bit	C, T	1.001 switch
483	1byte unsigned value	Time function x	1byte	C, T	5.010 counter pulses(0255)
485	Scene control	Time function x	1byte	C, T	17.001 scene number
487	2byte unsigned value	Time function x	2byte	C, T	7.001 pulses

The communication object is used to send the preset telegram value of the time function to the bus, and the time function, default value and object type are set by the parameters. The time is up to send the default telegram value to the bus. A total of 16 timing(x= 16) can be set.

482	En./Dis. Timer	Time function x	1bit	C, W	1.003 enable
The communica	ation object is used to disable / enable time	function x. The disable/enable teleg	ram value is specifically defined by t	he parameter. When disable, time x	function will be disable.
513	Dis./En. Monday Time	Time function	1bit	C, W	1.003 enable
514	Dis./En. Tuesday Time	Time function	1bit	C, W	1.003 enable
515	Dis./En. Wednesday Time	Time function	1bit	C, W	1.003 enable
516	Dis./En. Thursday Time	Time function	1bit	C, W	1.003 enable
517	Dis./En. Friday Time	Time function	1bit	C, W	1.003 enable
518	Dis./En. Saturday Time	Time function	1bit	C, W	1.003 enable
519	Dis./En. Sunday Time	Time function	1bit	C, W	1.003 enable
Th	e communication object is used to enable o	or disable the cycle timer through th	ne bus, that is, to enable or disable th	e timing of a day of the week throug	h the bus.

Table 2.4.1"Time function"communication object table





2.5 "EVENT GROUP" COMMUNICATION OBJECT

Number	Name *	Object Function	Descriptio Group Add Length	C	R	V	NT	U	Data Type	Priority
■‡ 520	Event	Main scene recall	1 byte	С	-	W	1 -	-	scene number	Low
■2 521	1st Event Group	Sub event Output 1	1 bit	С	-	0	Т	9	switch	Low
■2 522	1st Event Group	Sub event Output 2	1 bit	С	-	~	Т	5	switch	Low
■‡ 523	1st Event Group	Sub event Output 3	1 bit	С	-	2	Т	2	switch	Low
■‡ 524	1st Event Group	Sub event Output 4	1 bit	С	-	-	Т	5	switch	Low
■≵ 525	1st Event Group	Sub event Output 5	1 bit	С	-	9	Т	2	switch	Low
■2 526	1st Event Group	Sub event Output 6	1 bit	С	-	-	Т	-	switch	Low
■≵ 527	1st Event Group	Sub event Output 7	1 bit	С	-	2	Т	2	switch	Low
■≵ 528	1st Event Group	Sub event Output 8	1 bit	С	-	-	Т	÷	switch	Low

Fig. 2.5.1"Event Group"communication object

N0.	Object Function	Name	Data Type	Flag	DPT
520	Main scene recall	Event	1byte	C, W	17.001 scene number
	This communication object triggers e	each output in the event group to sen	d a specific value to the bus by recal	ling the scene number. Telegram: 0.	. 63
521/	Sub event Output 18	1st //8th Event Group	1bit 1byte 2byte	С, Т	1.001 switch 5.010 counter pulses(0255) 7.001 pulses

When a scene is recalled, the communication object is used to send the corresponding output value of the scene to the bus. If the output is not set to this scene, it will not be sent. A total of 8 event groups can be set up, with 8 outputs per group.

Table 2.5.1 "Event Group" communication object table

2.6 "LOGIC FUNCTION" COMMUNICATION OBJECT

2.6.1 "AND/OR/XOR" COMMUNICATION OBJECT

Number	Name	Object Function *	Descriptio	Group Add	Length	С	R	W	Т	U	Data Type	Priority
■≵ 585	1st Logic	Input a			1 bit	C	-	W	Т	U	boolean	Low
■\$ 586	1st Logic	Input b			1 bit	С	<u> </u>	W	Т	U	boolean	Low
■2 587	1st Logic	Input c			1 bit	C	×.	W	Т	U	boolean	Low
■2 588	1st Logic	Input d			1 bit	С	<u>e</u>	W	Т	U	boolean	Low
■≵ 589	1st Logic	Input e			1 bit	C	æ	W	Т	U	boolean	Low
₹ 590	1st Logic	Input f			1 bit	С	<u> </u>	W	Т	U	boolean	Low
■2 591	1st Logic	Input g			1 bit	C	-	W	Т	U	boolean	Low
₹ 592	1st Logic	Input h			1 bit	С	Q	W	Т	U	boolean	Low
■\$ 593	1st Logic	Logic result			1 bit	C	-	-	Т	-	boolean	Low

Fig. 2.6.1 "Logic function_AND/OR/XOR" communication object

NO.	Object Function	Name	Data Type	Flag	DPT
585/	Input x	1st //8th Logic	1bit	C, W, T, U	1.002 boolean
	Th	ne communication object is used to n	eceive the value of logical input Inpu	t x.	
593	Logic result	1st //8th Logic	1bit	С, Т	1.002 boolean
	-	The communication object is used to	send the results of logical operation	٦.	

Table 2.6.1 "Logic function_AND/OR/XOR" communication object table





2.6.2 "GATE FORWARDING" COMMUNICATION OBJECT

Num	ber Name	Object Function *	Descriptio (Group Add Le	ength	С	R	W	Τ	U	Data Type	Priority
■2 585	1st Logic	Gate value select		1 b	yte	С	-	W	-	4	scene number	Low
■‡ 586	1st Logic	Input A		1 b	oit	С	5	W	5	-	switch	Low
■\$ 587	1st Logic	Input B		1 b	oit	С	-	W	-	8 4	switch	Low
∎‡ 588	1st Logic	Input C		1 b	oit	С	5	W	5		switch	Low
■‡ 589	1st Logic	Input D		1 b	oit	С	-	W	-	8 4	switch	Low
■‡ 590	1st Logic	Output A		1 b	oit	С	5	-	Т		switch	Low
■‡ 591	1st Logic	Output B		1 b	oit	С	-	-	Т	<u>.</u>	switch	Low
■‡ 592	1st Logic	Output C		1 b	oit	С	5	-	Т		switch	Low
■\$ 593	1st Logic	Output D		1 b	oit	С	-	-	Т	34 -	switch	Low

Fig. 2.6.2 "Logic function_Gate forwarding" communication object

N0.	Object Function	Name	Data Type	Flag	DPT
585	Gate value select	1st //8th Logic	1byte	C, W	17.001 scene number
	The	communication object is used to selec	t the scene of logical gate forwardi	ng.	
586//589	Input x	1st //8th Logic	1bit 4bit 1byte	C, W	1.001 switch 3.007 Dimming control 5.010 counter pulses(0255)
	The co	mmunication object is used to receive	the value of the logic gate input Inp	ut x.	
590//593	Output x	1st //8th Logic	1bit 4bit 1byte	С, Т	1.001 switch 3.007 Dimming control 5.010 counter pulses(0255)

The communication object is used to output the value forwarded by the logic gate. The output value is the same as the input value, but one input can be forwarded into one or more outputs, set by parameters.

Table 2.6.2 "Logic function_Gate forwarding" communication object table

2.6.3 "THRESHOLD COMPARATOR" COMMUNICATION OBJECT

Number *	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
■≵ 585	1st Logic	Threshold value input			1 byte	С	-	W	-	U	counter pulses (0255)	Low
■≵ 593	1st Logic	Logic result			1 bit	С	2	2	Т	2	boolean	Low
			· •									

Fig. 2.6.3"Logic function_Threshold comparator" communication object

NO.	Object Function	Name	Data Type	Flag	DPT
585	Threshold value input	1st //8th Logic	4bit 1byte 2byte 4byte	C, W, U	3.007 Dimming control 5.010 counter pulses(0255) 7.001 pulses 12.001 counter pulses
		The communication object is	used to input threshold value.		
593	Logic result	1st //8th Logic	1bit	С, Т	1.002 boolean
The commun	ication object is used to send the results of b	ogical operation. That is, the value t	nat should be sent after the object in	put threshold is compared with the	setting threshold value.

Table 2.6.3 "Logic function_Threshold comparator" communication object table

2.6.4 "FORMAT CONVERT" COMMUNICATION OBJECT

Number	Name	Object Function *	Descriptio Group Add Length	с	R	W	/ т	U	Data Type	Priority
■\$ 585	1st Logic	Input 1bit-bit0	1 bit	С	-	W	1	U	switch	Low
■≵ 586	1st Logic	Input 1bit-bit1	1 bit	С	-	W	-	U	switch	Low
■≵ 593	1st Logic	Output 2bit	2 bit	С	<u>.</u>	2	Т	2°	switch control	Low

"2x1bit --> 1x2bit" function: converts two 1bit values to a 2bit value, such as Input bit1=1, bit0=0--> Output 2bit=2





Number	Name	Object Function *	Descriptio Group Add Length	C	R	W	/ Т	U	Data Type	Priority
■≵ 585	1st Logic	Input 1bit-bit0	1 bit	C	æ	W	-	U	switch	Low
■≵ 586	1st Logic	Input 1bit-bit1	1 bit	С	Q	W	<u>د</u>	U	switch	Low
■2 587	1st Logic	Input 1bit-bit2	1 bit	C	×	W	-	U	switch	Low
■2 588	1st Logic	Input 1bit-bit3	1 bit	С	<u>_</u>	W	-	U	switch	Low
■‡ 589	1st Logic	Input 1bit-bit4	1 bit	C	×.	W	-	U	switch	Low
■2 590	1st Logic	Input 1bit-bit5	1 bit	С	2	W	-	U	switch	Low
■2 591	1st Logic	Input 1bit-bit6	1 bit	C	×	W	-	U	switch	Low
■2 592	1st Logic	Input 1bit-bit7	1 bit	C	<u>_</u>	W	-	U	switch	Low
■≵ 593	1st Logic	Output 1byte	1 byte	C	Ξ.	-	т	-	counter pulses (0255)	Low

"8x1bit --> 1x1byte" function: converts eight 1bit values to a 1byte value, such asInput bit2=1, bit1=1, bit0=1,other bits are 0--> Output 1byte=7

Number	Name	Object Function *	Descriptio Group Ade Length	C	R	W	Т	U	Data Type	Priority
■ ‡ 585	1st Logic	Input 1byte	1 byte	С	-	W	4	U	counter pulses (0255)	Low
■‡ 593	1st Logic	Output 2byte	2 bytes	С	57	5	Т	5	pulses	Low

"1x1byte --> 1x2byte" function: converts one 1byte values to a 2byte value, such as Input 1byte=125--> Output 2byte=125. Although the value remains the same, the data type of the value is different.

Number	* Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
■≵ 585	1st Logic	Input 1byte-low			1 byte	С	-	W	-	U	counter pulses (0255)	Low
■‡ 586	1st Logic	Input 1byte-high			1 byte	С		W		U	counter pulses (0255)	Low
■‡ 593	1st Logic	Output 2byte			2 bytes	С	-	-	т	-	pulses	Low

"2x1byte --> 1x2byte" function: converts two 1byte values to a 2byte value, such as Input 1byte-low = 255 (\$FF), Input 1byte-high = 100 (\$64) --> Output 2byte = 25855 (\$64 FF)

Nur	mber *	Name	Object Function	Description	Group Address	Length	С	R	W	Т	U	Data Type	Priority
∎≵ 585		1st Logic	Input 2byte-low			2 bytes	С	÷.	W	æ	U	pulses	Low
■\$ 586		1st Logic	Input 2byte-high			2 bytes	С	-	W	÷	U	pulses	Low
■‡ 593		1st Logic	Output 4byte			4 bytes	С	æ.		Т	-	counter pulses (unsigned)	Low

"2x2byte --> 1x4byte" function: converts two 2 byte values to a 4byte value, such as Input 2byte-low = 65530 (\$FF FA), Input 2byte-high = 32768 (\$80 00)--> Output 2byte = 2147549178 (\$80 00 FF FA)

Number	Name	Object Function *	Descriptio Group Add Length	С	R	W	т	U	Data Type	Priority
■2 585	1st Logic	Input 1byte	1 byte	C		W	•	U	counter pulses (0255)	Low
■2 586	1st Logic	Output 1bit-bit0	1 bit	С	120	2	Т	2	switch	Low
■2 587	1st Logic	Output 1bit-bit1	1 bit	С	•	-	Т	-	switch	Low
■‡ 588	1st Logic	Output 1bit-bit2	1 bit	С	-22	2	Т	2	switch	Low
■2 589	1st Logic	Output 1bit-bit3	1 bit	C		÷	Т	-	switch	Low
■‡ 590	1st Logic	Output 1bit-bit4	1 bit	С	120	2	Т	2	switch	Low
■2 591	1st Logic	Output 1bit-bit5	1 bit	C	•	-	Т	-	switch	Low
■‡ 592	1st Logic	Output 1bit-bit6	1 bit	С	328) S	2	Т	2	switch	Low
■\$ 593	1st Logic	Output 1bit-bit7	1 bit	C	•	-	Т	-	switch	Low

"1x1byte --> 8x1bit" function: converts one 1byte values to eight 1but value, such as Input 1byte=200 --> Output bit0=0, bit1=0, bit2=0, bit3=1, bit4=0, bit5=0, bit6=1, bit7=1

Number	Name	Object Function *	Descriptio Group Adc Length	0	R	1	wт	U	Data Type	Priority
■\$ 585	1st Logic	Input 2byte	2 bytes	C		W	1 -	U	pulses	Low
■‡ 593	1st Logic	Output 1byte-high	1 byte	С	-	2	Т	-	counter pulses (0255)	Low
■≵ 592	1st Logic	Output 1byte-low	1 byte	C		÷	Т	-	counter pulses (0255)	Low

"1x2byte --> 2x1byte" function: converts one 2byte values to two 2byte value, such as Input 2byte = 55500 (\$D8 CC) --> Output 1byte-low = 204 (\$CC), Output 1byte-high = 216 (\$D8)

Numb	er 📩 Name	Object Function	Description Group Address	Length	C	R	W	/ T	U	Data Type	Priority
₹ 585	1st Logic	Input 4byte		4 bytes	С	-	W	-	U	counter pulses (unsigned)	Low
₹ 592	1st Logic	Output 2byte-low		2 bytes	С	-	-	Т	-	pulses	Low
₹ 593	1st Logic	Output 2byte-high		2 bytes	С	-	0	т	2	pulses	Low

"1x4byte --> 2x2byte" function: converts one 4byte values to two 2byte value, such asInput 4byte =78009500 (\$04 A6 54 9C) --> Output 2byte-low = 21660 (\$54 9C), Output 2byte-high =1190 (\$04 A6]





Number *	Name	Object Function	Description Group Address	Length	С	R	W	Т	U	Data Type	Priority
■\$ 585	1st Logic	Input 3byte		3 bytes	С	5	W	5	U	RGB value 3x(0255)	Low
■≵ 591	1st Logic	Output 1byte-low		1 byte	С	÷	-	Т	14	counter pulses (0255)	Low
■₽ 592	1st Logic	Output 1byte-middle		1 byte	С	51	5	Т	5	counter pulses (0255)	Low
■≵ 593	1st Logic	Output 1byte-high		1 byte	С	÷	-	Т	-	counter pulses (0255)	Low

"1x3byte --> 3x1byte" function: converts one 3byte values to three 1byte value, such as Input 3byte = \$78 64 C8--> Output 1byte-low = 200 (\$C8), Output 1byte-middle = 100 (\$64), Output 1byte-high = 120 (\$78)

1	Number *	Name	Object Function	Description	Group Address	Length	C	R	W	Т	U	Data Type	Priority
∎‡ 5	85	1st Logic	Input 1byte-low			1 byte	С	÷	W	÷	U	counter pulses (0255)	Low
2 5	86	1st Logic	Input 1byte-middle			1 byte	С	3	W	3	U	counter pulses (0255)	Low
∎‡ 5	87	1st Logic	Input 1byte-high			1 byte	С	÷	W	÷	U	counter pulses (0255)	Low
■ ‡ 5	93	1st Logic	Output 3byte			3 bytes	С	2		Т		RGB value 3x(0255)	Low

"3x1byte --> 1x3byte"function: converts three 1byte values to a 3byte value, such as Input 1byte-low = 150 (\$96), Input 1byte-middle = 100 (\$64), Input 1byte-high = 50 (\$32)--> Output 3byte = \$32 64 96

NO.	Object Function	Name	Data Type	Flag	DPT						
585	Input	1st //8th Logic	1bit 1byte 2byte 3byte 4byte	C, W, U	1.001 switch 5.010 counter pulses(0255) 7.001 pulses 232.600 RGB value 3x(0255) 12.001 counter pulses						
The communication object is used to input a value that needs to be converted.											
593	Output	1st //8th Logic	1bit 2bit 1byte 2byte 3byte 4byte	С, Т	1.001 switch 2.001 switch control 5.010 counter pulses[0255] 7.001 pulses 232.600 RGB value 3x(0255) 12.001 counter pulses						
The communication object is used to output the converted value.											

Table 2.6.4 "Logic function_Format convert" communication object table

