KNX Granite 4.3" L/P User Manual

(Applicable model: M/PTL4.1)

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Content

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Update History

The form below contains the information of every update. The latest version contains all the updates of all former versions.

No.	Version	Update Information	Date
1	V1.0.0	Initial release	October 22, 2019

1 Introduction

The manual offers the information on the configuration of Granite Display (KNX) (Model: M/PTL43.1, hereinafter referred to as Granite Display). The following tools might be included:

➢ Granite Display (KNX) (Model: M/PTL43.1) and corresponding power interface (Model: M/PCI2PU.2)

➢ A computer with ETS5 software

➢ KNX USB interface (Model: M/PCI2PE.1)

➢ KNX power supply and auxiliary power supply

➢ KNX project files

➢ Dedicated KNX cable(s)

1.1　Import Product File (.knxprod)

Click "Catalogs" in ETS5 → "Import…" → select local product files with the suffix of .knxprod, as shown in Figure 1-1.
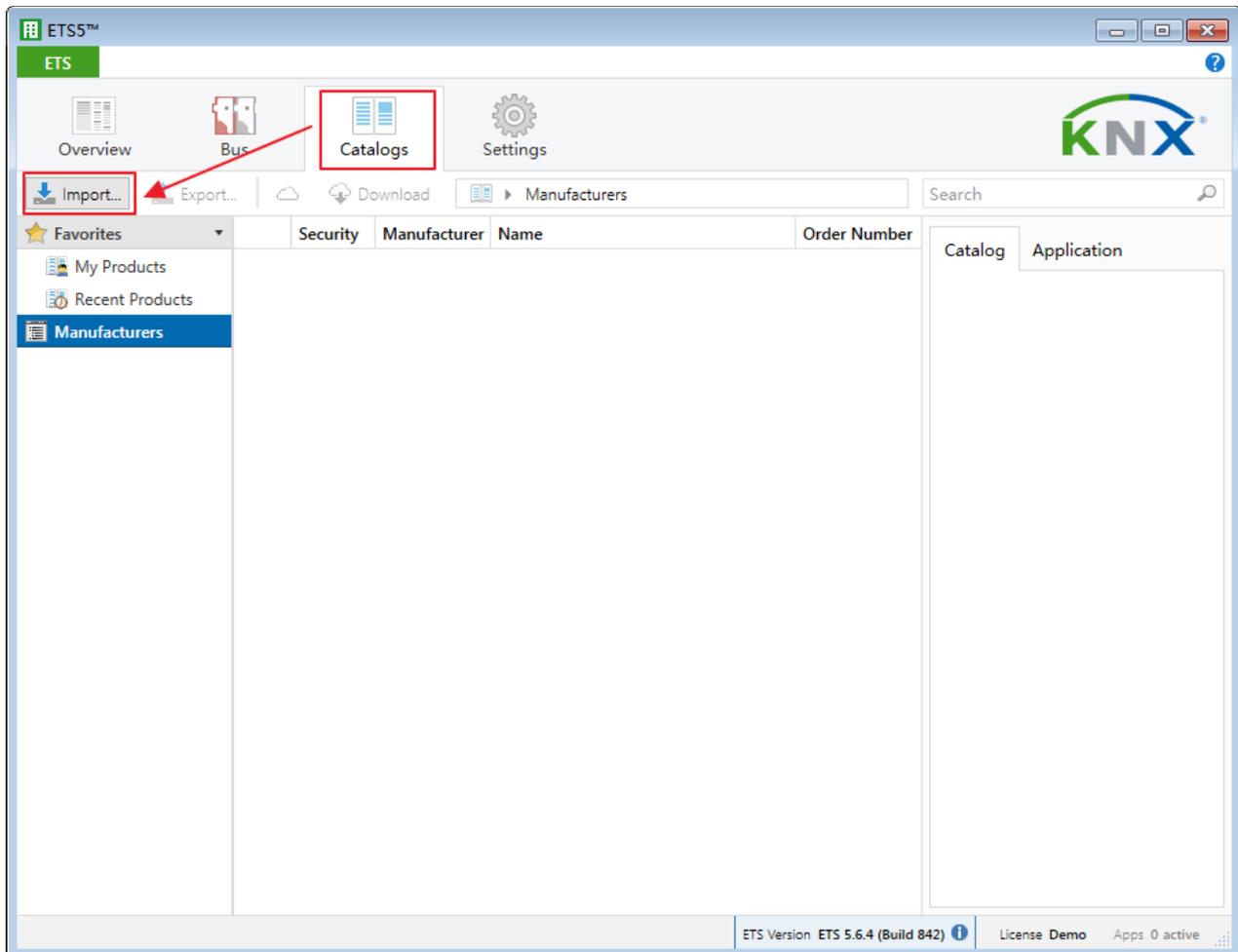
Figure 1-1 Import product file

1.2 Import Project File (.knxproj)

Click "Overview" in ETS5 → "Your Projects" → "Import project" → select local project files with the suffix of .knxproj, as shown in Figure 1-2.
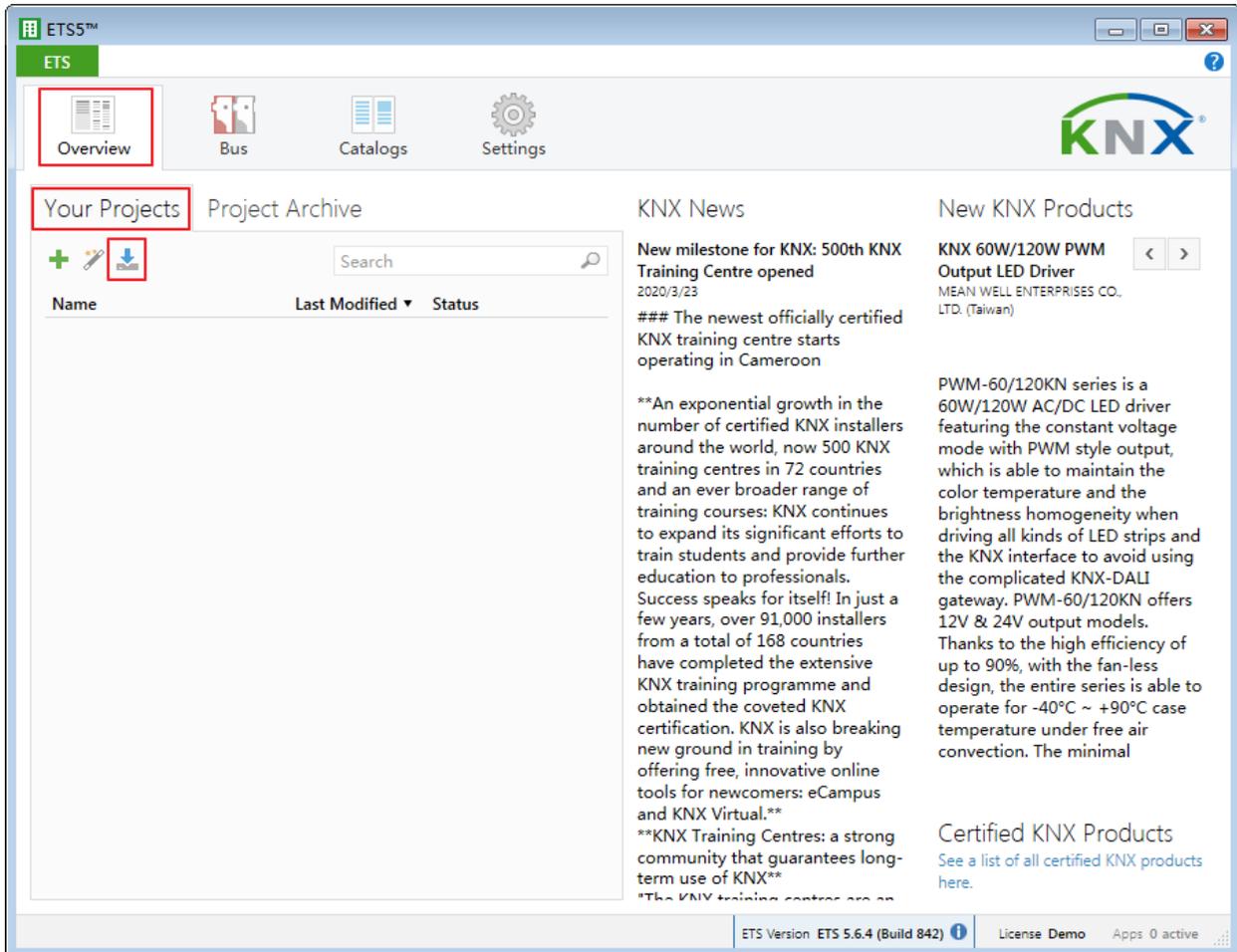
Figure 1-2 Import project file

1.3   Create Project File

Click "Overview" in ETS5 → "Your Projects" → "+" → edit project name (Please keep other settings by default) → "Create Project", as shown in Figure 1-3.
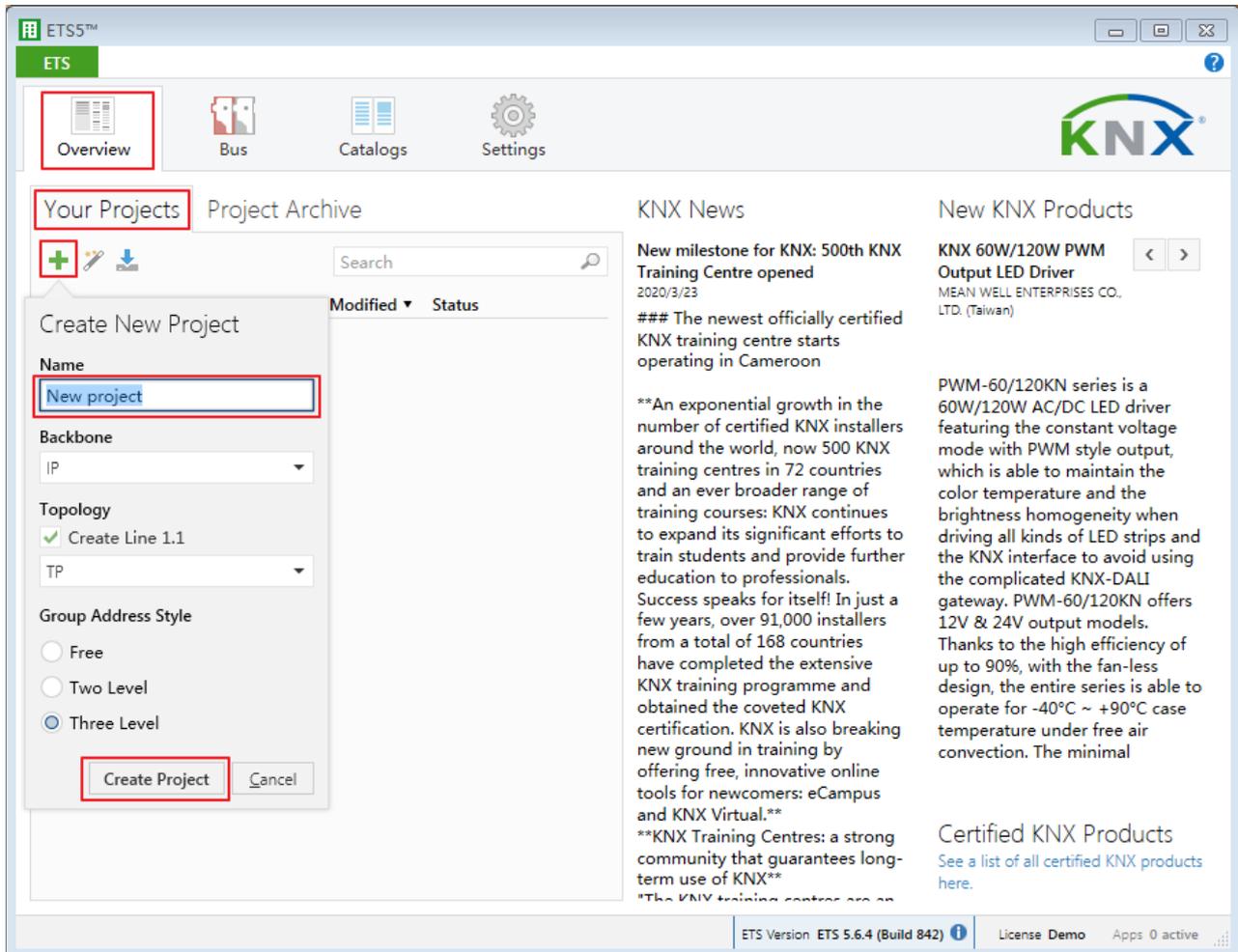
Figure 1-3 Create project file

1.4　Add Product to Project File

Please import product file before adding product to project file. "Import Product File" can be for reference.

As shown in Figure 1-4:

①　Double click the project file to add products and click "Buildings" in the open page.

②　Click "Topology".
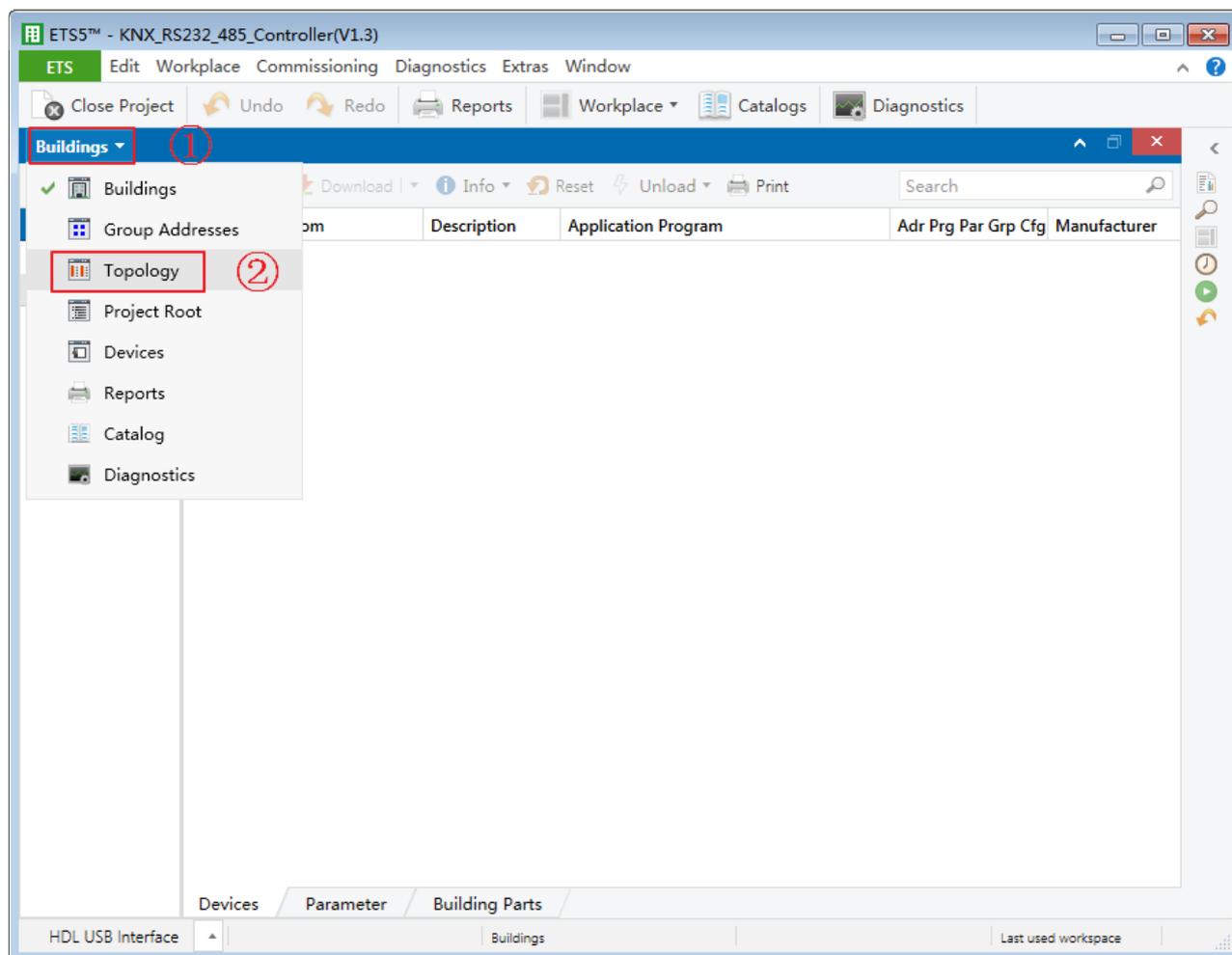
Figure 1-4 Open topology page

As shown in Figure 1-5:

③ Click the inverted triangle beside "Add areas" of topology page.

④ Select "Devices" and catalog page will show up below.

⑤ Click "HDL" in "Manufactures" column.

⑥ Select corresponding products and drag selected ones to the above area (Method 1), or select specified location below and click "Add" button to add products.
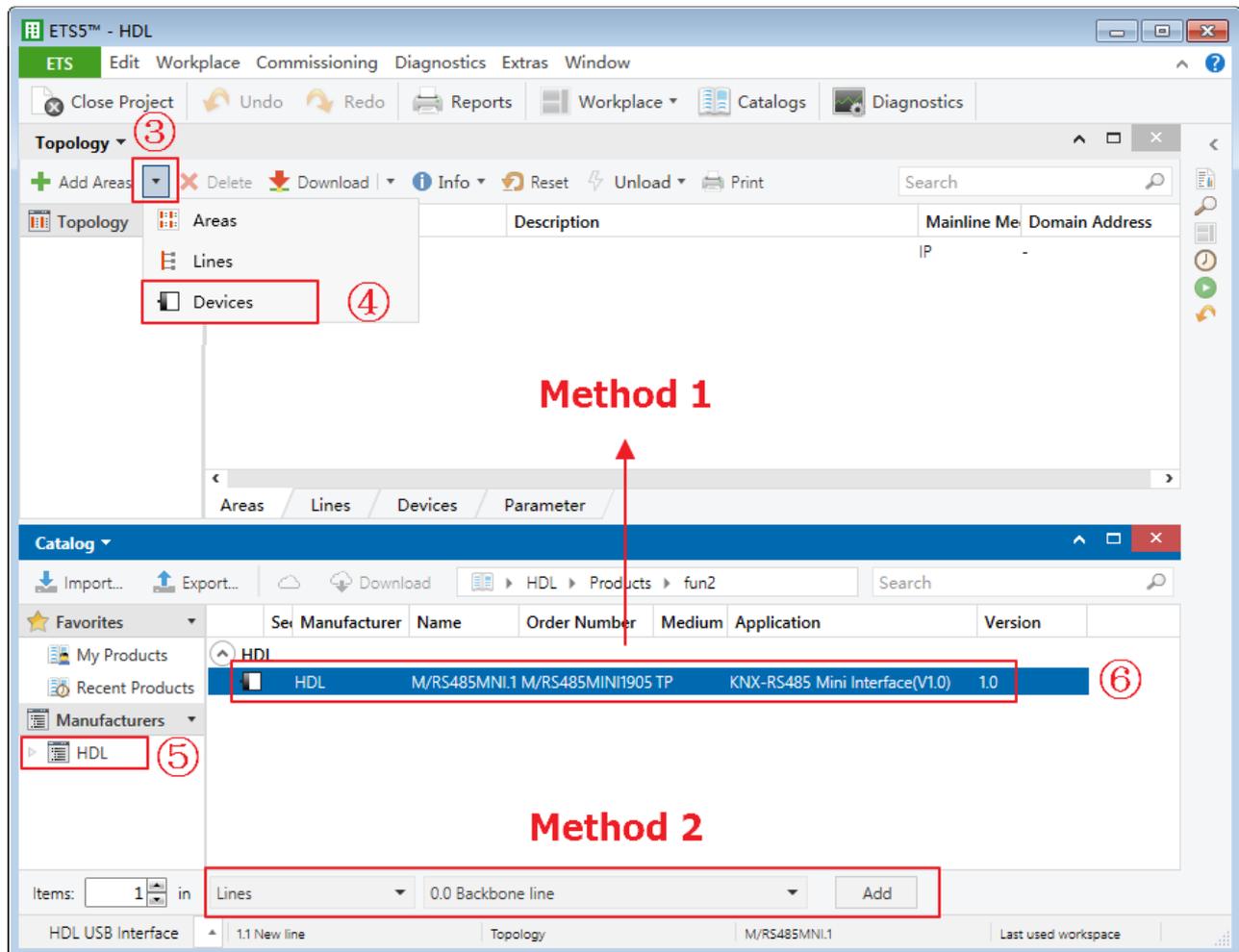
Figure 1-5 Add product to project file

1.5 Open Configuration Window

As shown in Figure 1-6:

① Double click project file with products ("Add Product to Project File" can be for reference) or the imported project file ("Import Project File" can be for reference), click "Buildings" in the project window.

② Click "Topology".
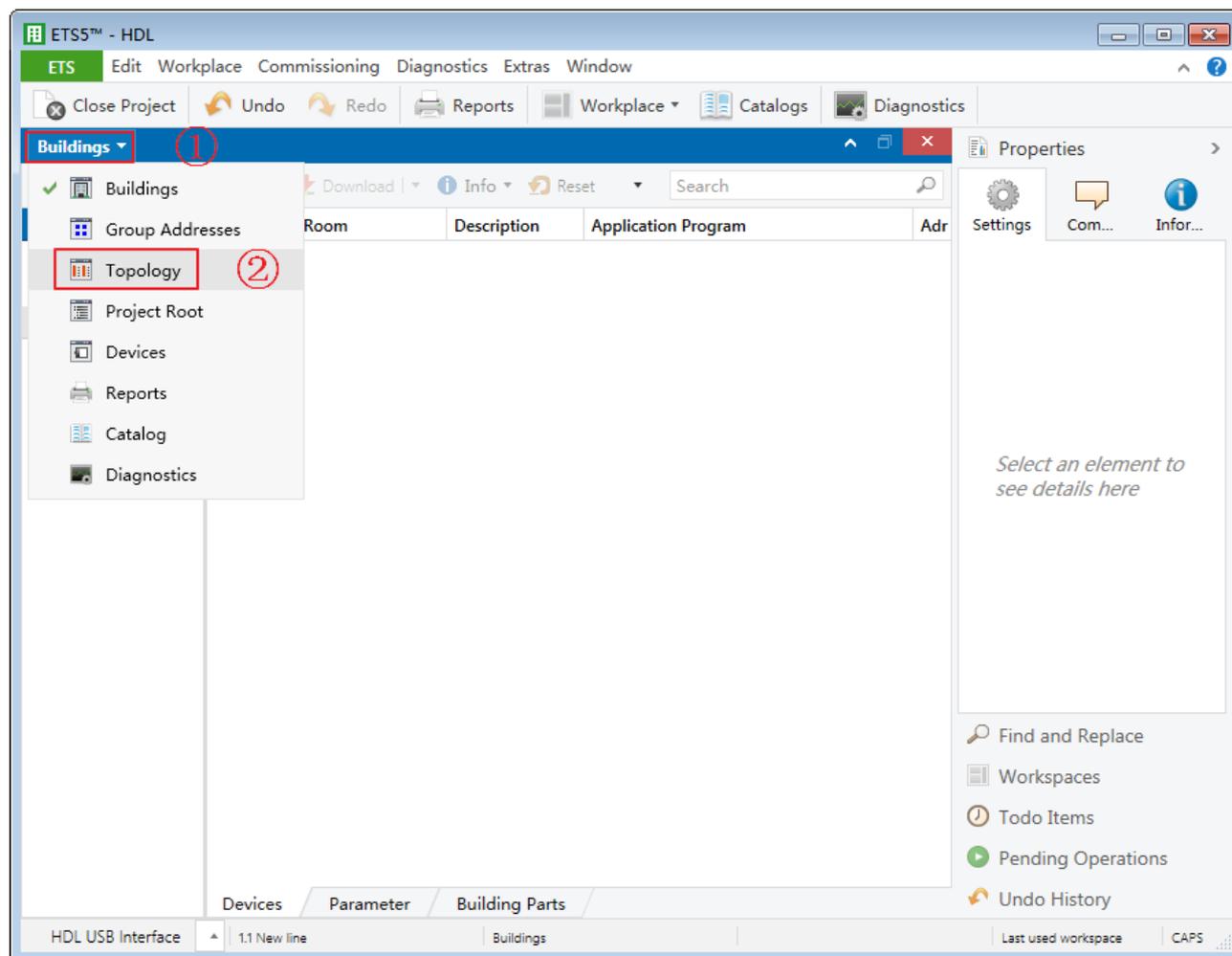
Figure 1-6 Open topology page

As shown in Figure 1-7:

③ Select devices to be configured in the left skeleton of topology page.

④ Click "Parameter" to open configuration window.
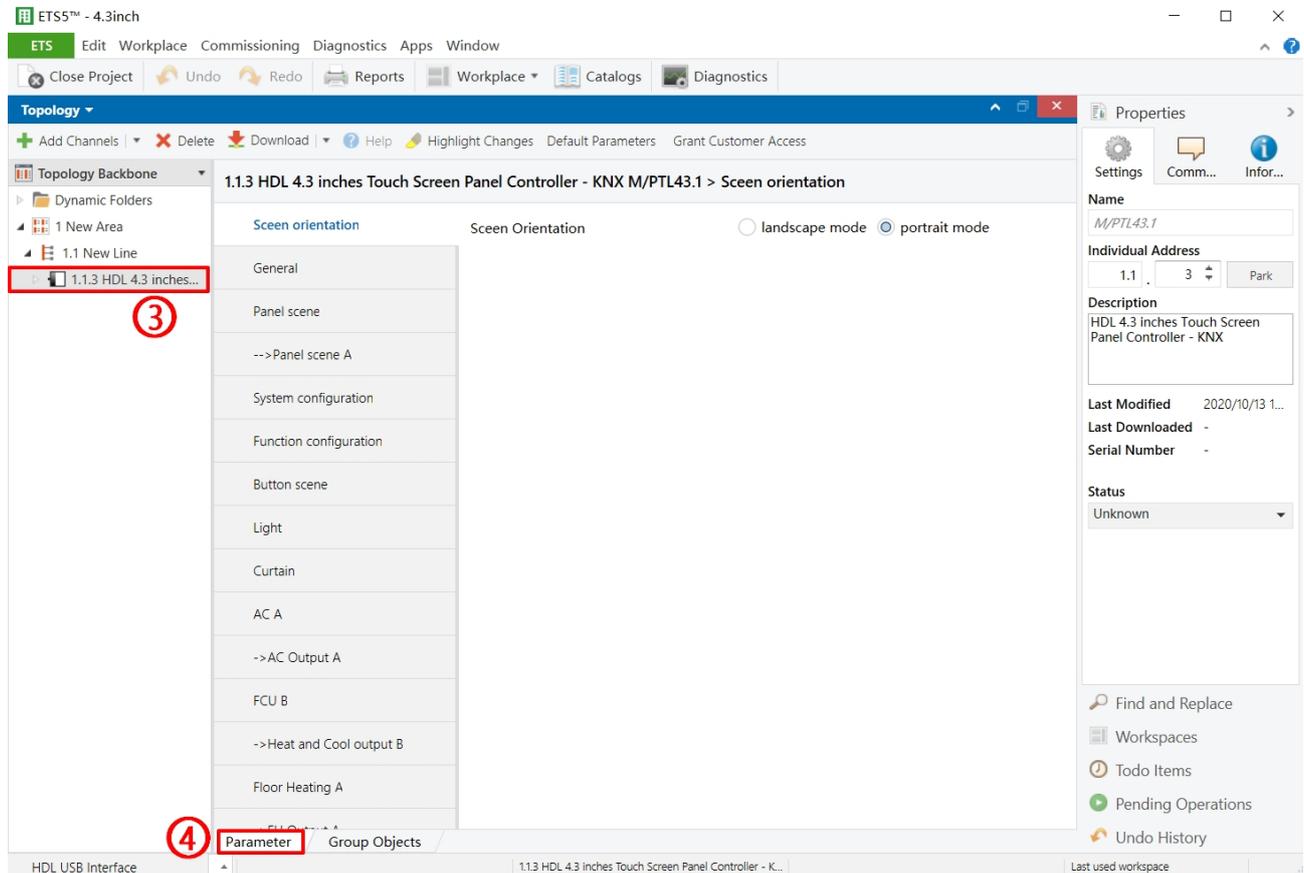
Figure 1-7 Open configuration window

1.6　Panel Page Instruction

As shown in Figure 1-8
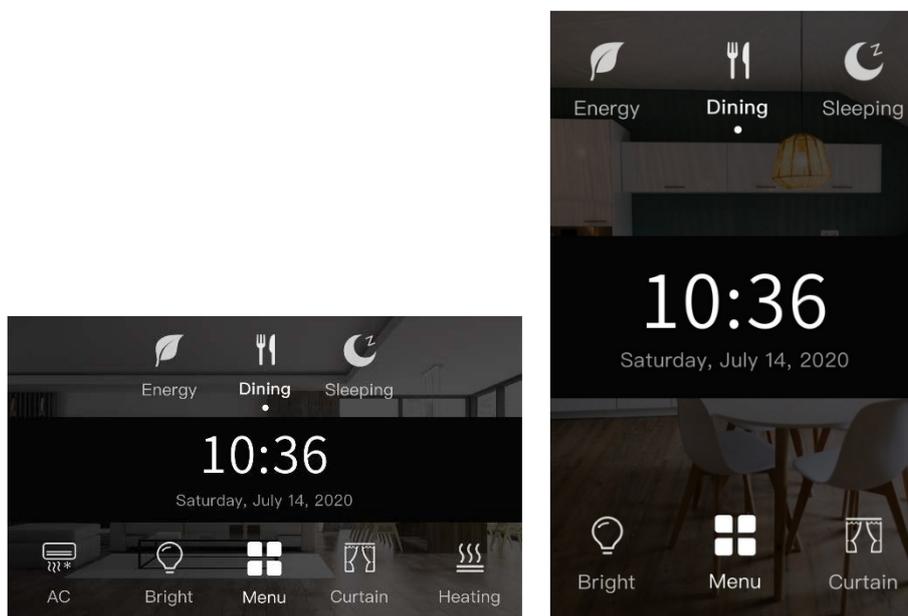
Main page (landscape mode / portrait mode)
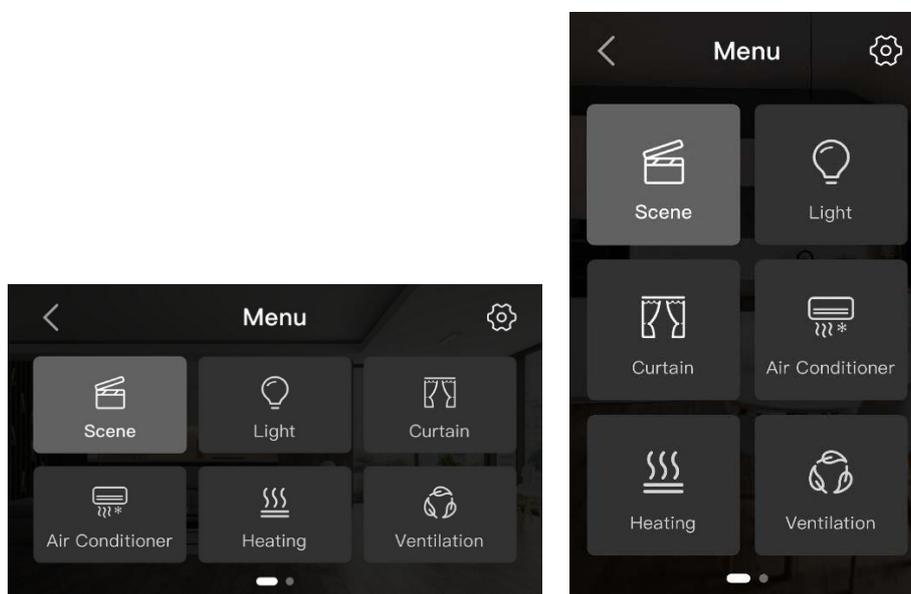
Main menu (landscape mode / portrait mode)

Figure 1-8 Panel page instruction

2 General Setting

2.1 General

In topology skeleton on the left side of the topology page, firstly click devices to be set, secondly select "General" tab page in "Parameter" option, as shown in.
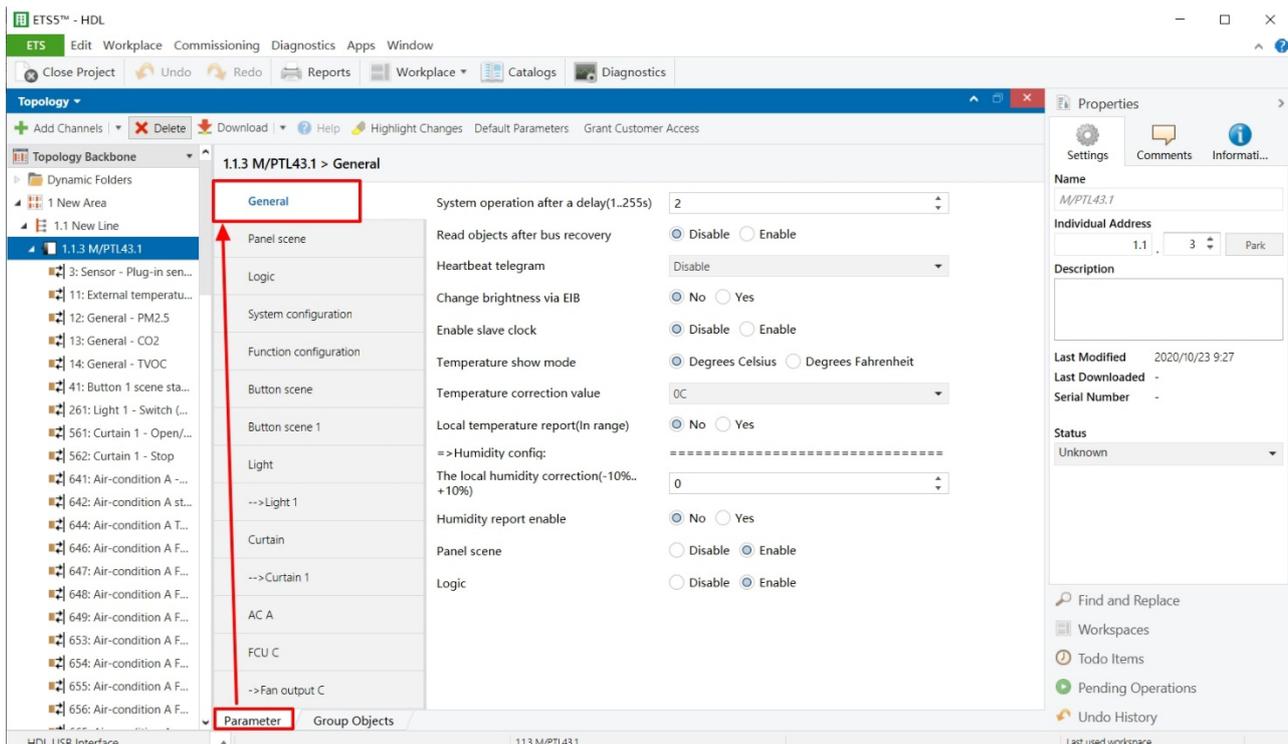
Figure 2-1 General setting

The setting items are explained below:

1. System operation after a delay: the time-delay function, namely a delay time between powering on the device and activating the system, range from 1 to 255s.

2. Read objects after bus recovery: to enable reading objects after bus recovery.

    ➢ Read objects delay time: if enabled, set the delay time between bus recovery and reading objects.

3. Heartbeat telegram: to choose to send "1", "0", or "1, 0" cyclically.

    ➢ Telegram is sent interval: to set the interval of sending heartbeat telegrams. The default value is 5s and the range is 1-65535s.

4. Change brightness via EIB.

5. Enable slave clock**.**

6. Temperature show mode: to select the unit of displayed temperature, including "Degrees Celsius" or "Degrees Fahrenheit".

7. Temperature correction value: to select temperature correction value, range from -5℃ to +5℃

8. Local temperature report (In range): to choose whether to send local temperature report.

    ➢ Temperature>=Threshold1 (-30℃..+99℃): users may choose to send temperature report when the temperature is higher than or equal to the value set in Threadhold1.

    ➢ Temperature<=Threshold2 (-30℃..+99℃): users may choose to send temperature report when the temperature is lower than or equal to the value set in Threadhold2.

    ➢ Temperature report mode: to select modes of sending temperature signals, including "Report when changed" and "Report cyclic". When the former is selected, users may change the period of temperature check, range from 1 to 65535s. While the latter is selected, users may change the period of sending temperature signals, range from 1 to 65535s.

9. The local humidity correction: to correct local humidity data, range from -10% to +10%.

10. Humidity report enable: to enable sending humidity report.

    ➢ Send humidity to bus: to select the period of sending or source of humidity data, including "Report cyclic", "Report when changed" and "Read from bus".

11. Panel scenes: to enable panel scenes.

12. Logic: to enable or disable the logic function.

3 Panel Scene Setting

The chapter takes panel scene A as an example to introduce the way of configuring panel scenes.

3.1 Enable Panel Scenes

Click "Panel scene" in the parameter list to enable/disable panel scene A and B, as shown in Figure 3-1.
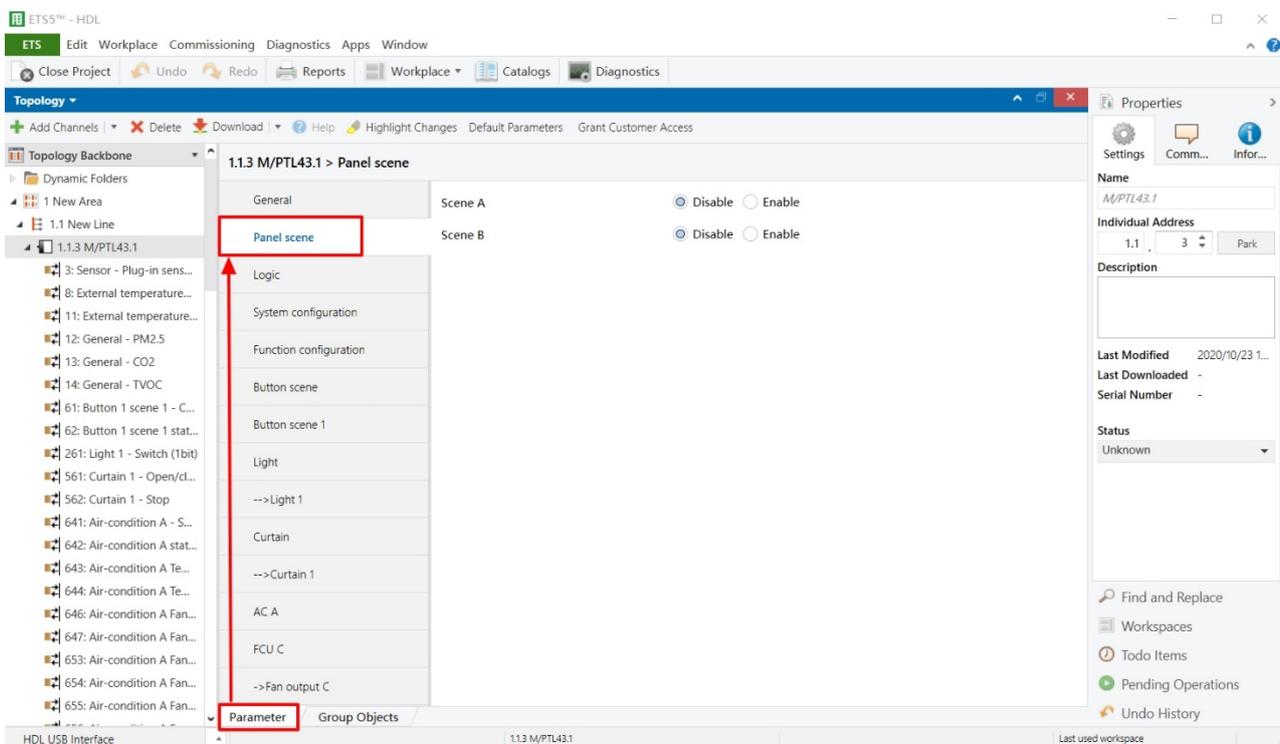
Figure 3-1 Enable panel scenes

3.2 Panel Scene Setting

After the panel scene is enabled, click the panel scene to be configured on the left, as shown in Figure 3-2.
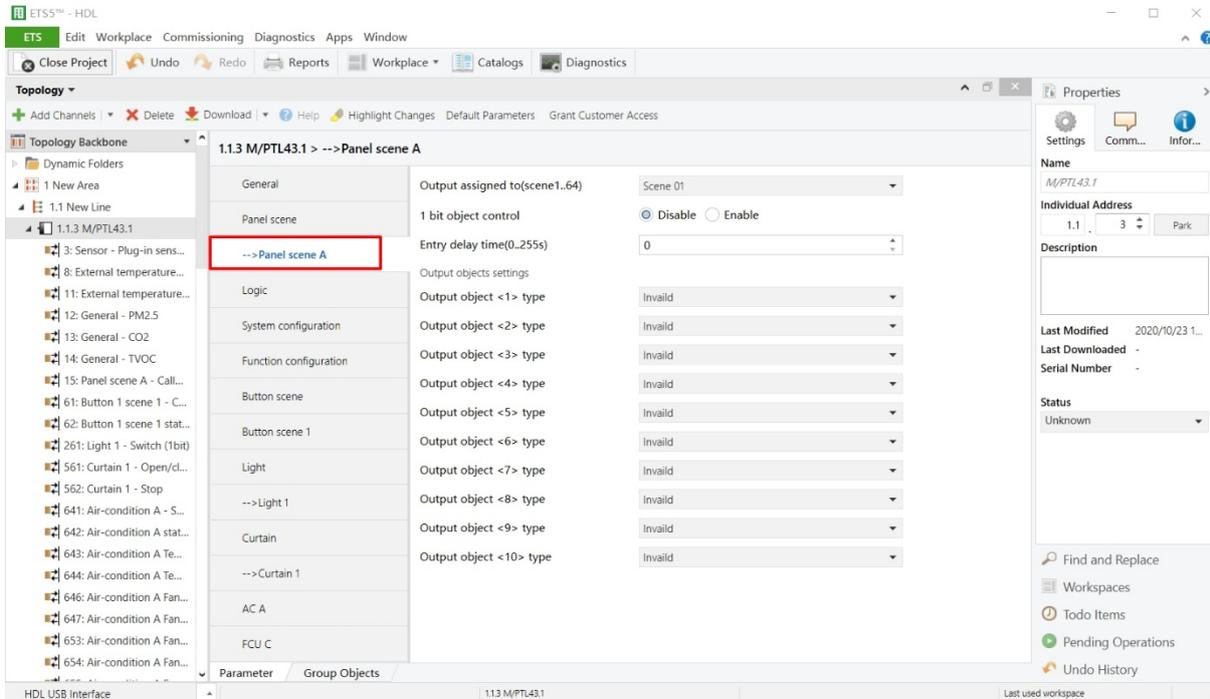
Figure 3-2 Panel Scene setting

The setting items are explained below:

1. Output assigned to: to choose to output corresponding scene numbers, a total of 64 scene numbers available.

2. 1-bit object control: if enabled, the details can be configured below.

    ➤ 1-bit object trigger: to enable turning on devices in scenes by selecting 0, 1 or 1/0.

    ➤ 1-bit object save: to choose whether to save current scene to overwrite scene setting when current scene changes.

3. Entry delay time: to set the delay time of triggering scenes.

4. Output object <n> type: to set object <n> status in the scene. A scene includes up to 10 object status. For example, 1-bit value manages to control the relay and 3-byte value manages to control RGB dimmer, etc.

4 Logic Configuration

4.1 Enable Logic

Click "General" in the parameter list to enable/disable Logic; After that, enable/disable Logic A or B in the logic panel, as shown in Figure 4-1.
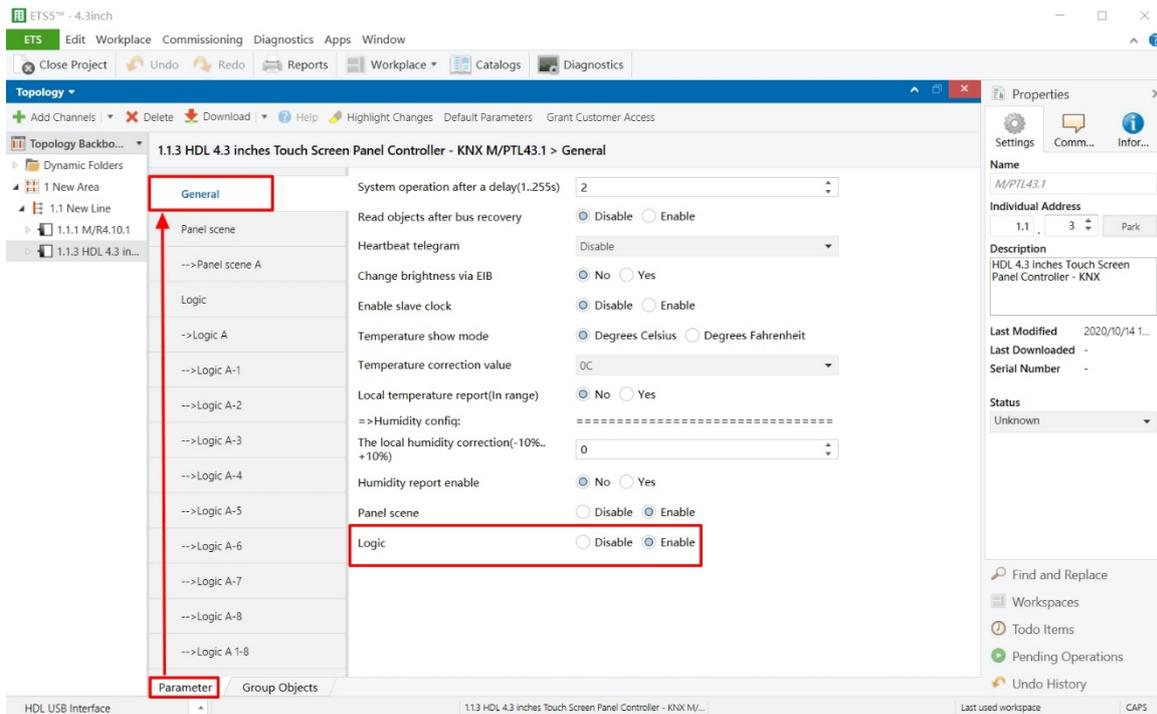
Figure 4-1 Enable logic

4.2 Logic Setting

Click "Logic" in the parameter menu, as shown in Figure 4-2.
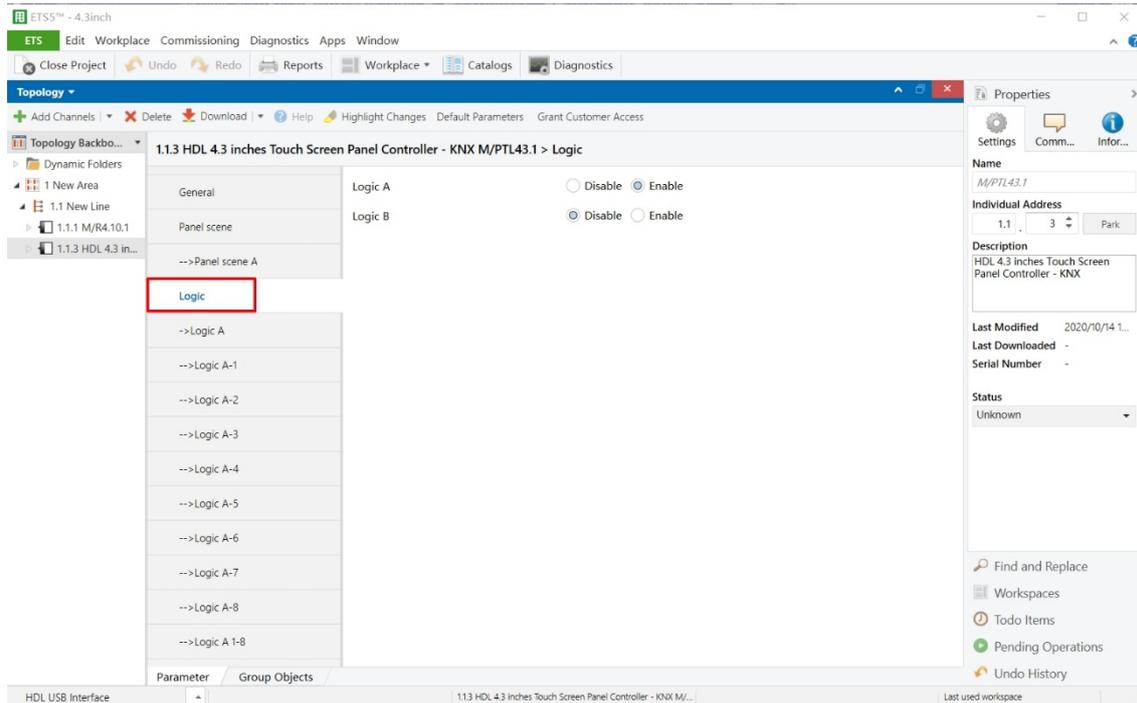
Figure 4-2 Logic setting

Granite Display supports a total of 2 logic. After enabled, "Logic A" or "Logic B" tabs will show up on the left. Click to open the page, as shown in Figure 4-3.
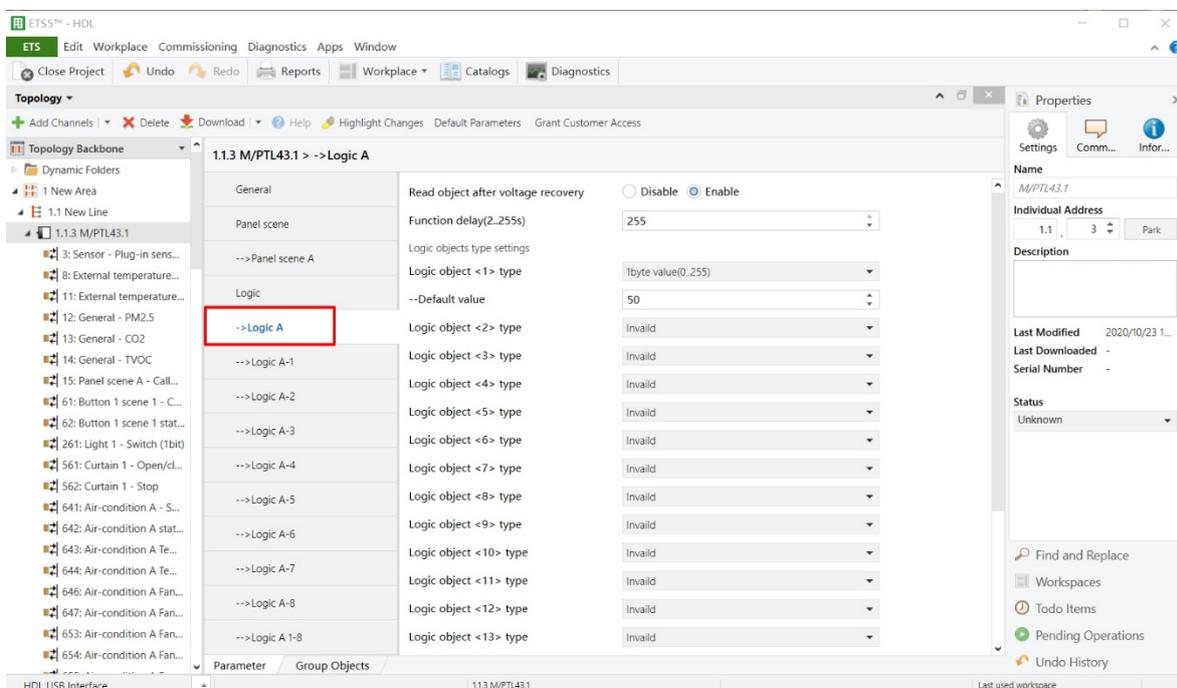
Figure 4-3 Logic A setting

The setting items are explained below:

1. Read object after voltage recovery: to enable read the status of object after voltage recovery.

2. Function delay: once enabled, to set the delay time for reading object, range from 2~255s.

3. Logic object <n> type: to enable and set the type of logic object, including 'invalid', 1bit, 1byte.

➢ Default value: 1bit ('0' or '1')

➢ Default value: 1byte (0~255)

Note: if disabled Read object after voltage recovery, the initial value of logic object would be the Default one.

Logic A/B supports a total of 9 logic blocks. As Figure 4-4 shown, take Logic A-1 as example, after enabled, "Logic A-1" tab will show up on the left. Click to open the page, as shown in Figure 4-4.
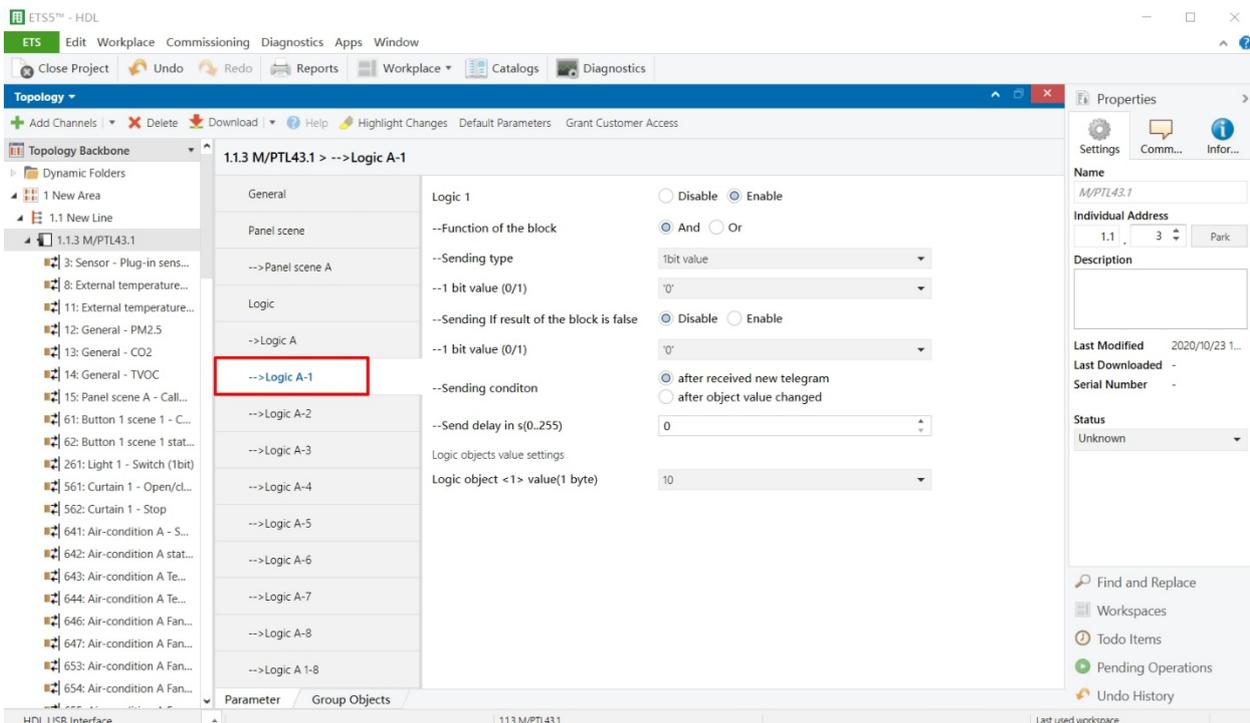
Figure 4-4 Logic A-1 setting

The setting items are explained below:

1. Logic 1: to enable Logic 1.

2. Function of the block: to set logic relation for Logic 1, which can be 'AND' or 'OR'.

Sending type: to select the type of sending value for Logic 1, including 1bit，1byte，2byt，scene, then make corresponding values.

➢ 1bit value (0/1): sending value: 0 or 1

➢ 1 byte value (0..255): sending value range from 0~255

➢ 2 byte value (0..65535): sending value range from 0~65535

➢ Scene NO. (1..64): sending value from Scene No.1~64

4. Sending if result of the block is false: If the result of Logic 1 is false, to enable send/don't send; after enabled, set corresponding values.

➢ 1bit value (0/1): sending value: 0 or 1

➢ 1 byte value (0..255): sending value range from 0~255

➢ 2 byte value (0..65535): sending value range from 0~65535

➢ Scene NO. (1..64): sending value from Scene No.1~64

5. Sending condition: to set condition for sending

➢ □After receive new telegram: once receive the object, execute logic and send out the data.

➢ □After object value changed: once the value received by the object is changed, execute logic and send out the data.

6. Sending delay in s(0⋯255): to set the delay time for sending out object value, range from 0~255s.

7. Logic object < n > value (1 byte): to set the value of logic object <n>.

Note: when Logic A-1~8 is false, you can set Logic A 1-8. After enabled Logic A, "Logic A 1-8" tab will show up on the left. Click to open the page, as shown in Figure 4-5.
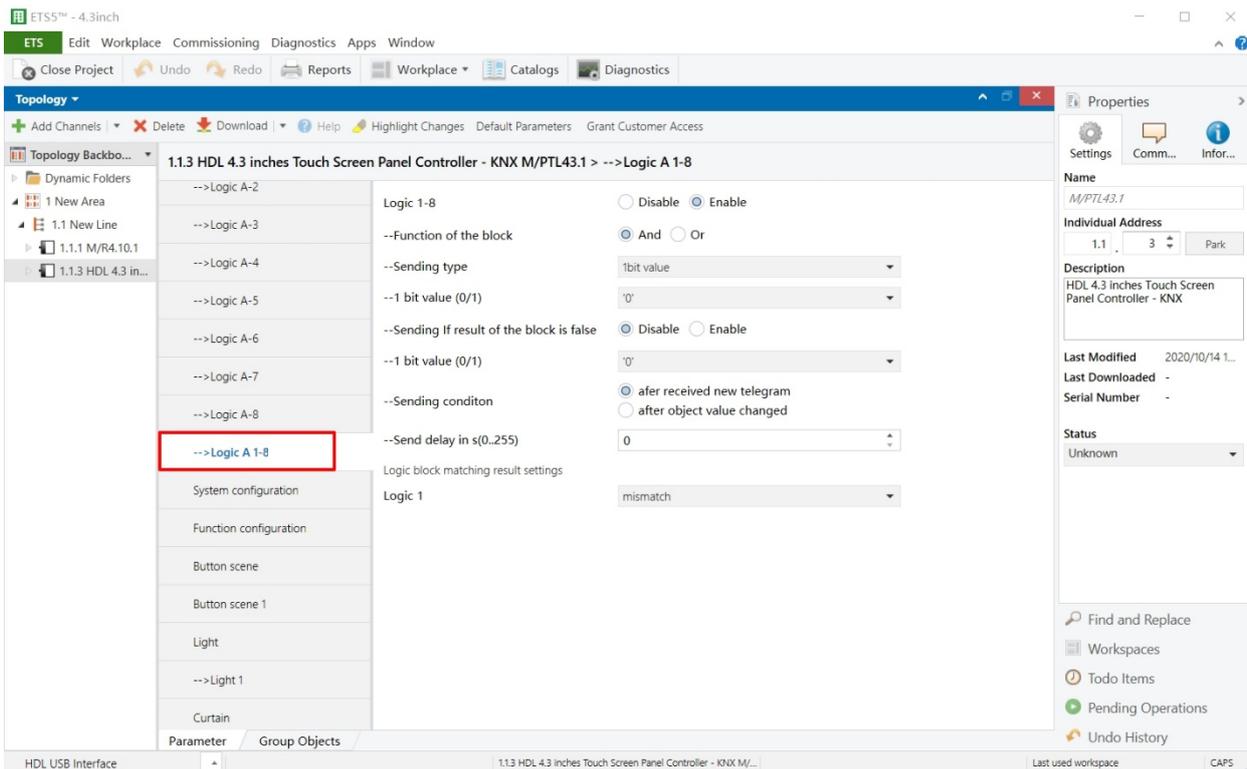
Figure 4-5 Logic A 1-8 setting

The setting items are explained below:

1.   Logic 1-8: to enable Logic 1-8.

2.   Function of the block: to set logic relation for Logic 1-8, which can be 'AND' or 'OR'.

Sending type: to select the type of sending value for Logic 1-8, including 1bit，1byte，2byt，scene, then make corresponding values.

➢   1bit value (0/1): sending value: 0 or 1

➢   1 byte value (0..255): sending value range from 0~255

➢   2 byte value (0..65535): sending value range from 0~65535

➢   Scene NO. (1..64): sending value from Scene No.1~64

4.   Sending if result of the block is false: If the result of Logic 1 is false, to enable send/don't send; after enabled, set corresponding values.

➢   1bit value (0/1): sending value: 0 or 1

➢   1 byte value (0..255): sending value range from 0~255

➢   2 byte value (0..65535): sending value range from 0~65535

➢   Scene NO. (1..64): sending value from Scene No.1~64

5. Sending condition: to set condition for sending

> ☐After receive new telegram: once receive the object, execute logic and send out the data.

> ☐After object value changed: once the value received by the object is changed, execute logic and send out the data.

6. Sending delay in s(0···255): to set the delay time for sending out object value, range from 0~255s.

7. Logic block matching result settings: to set the result of logic block n, including 'invalid', 'true', 'false'.

5 System Configuration

Click "System configuration" in the parameter menu, as shown in Figure 5-1.
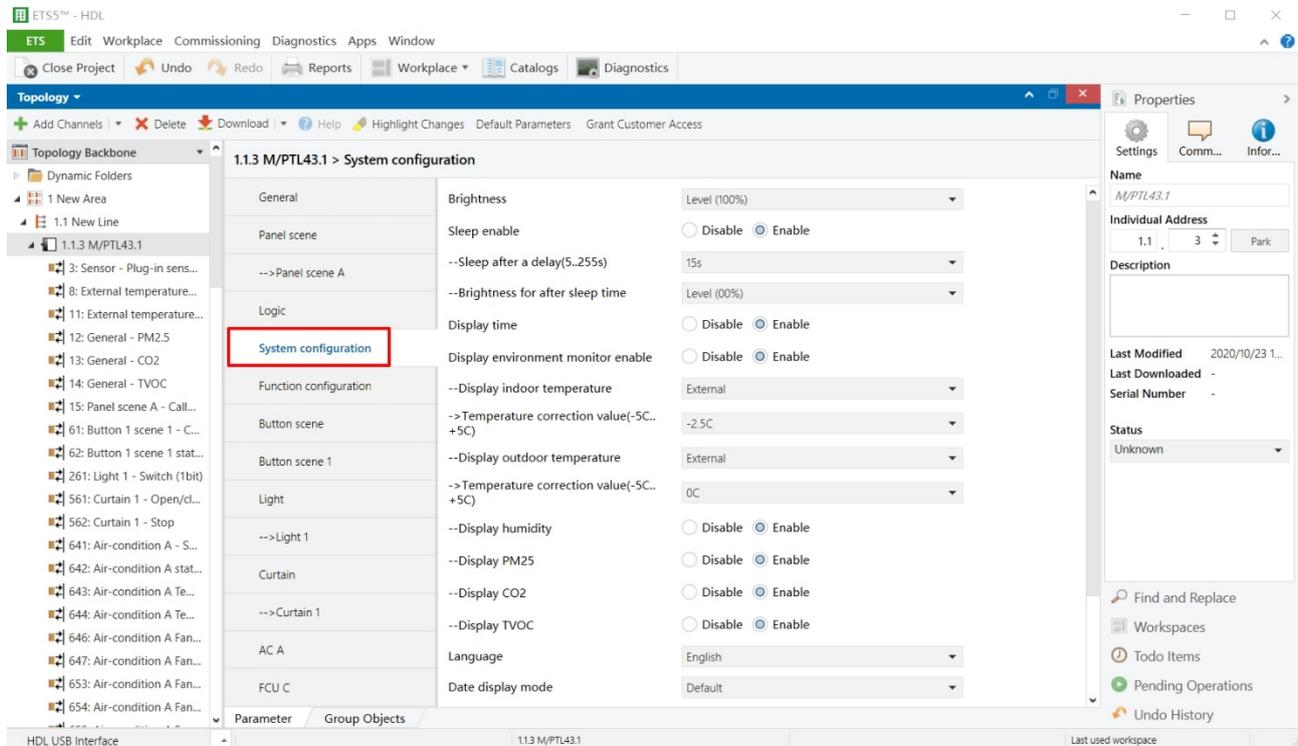
Figure 5-1 System setting

The setting items are explained below:

1. Brightness：to set screen brightness, with five levels for selection, i.e., 0%, 25%, 50%, 75%, 100%.

2. Sleep enable: to enable sleeping function.

   ➢ Sleep after a delay: to set the delay time of entering the sleep status, with three options for choice, i.e., 15s, 1min, never.

   ➢ Brightness for after sleep time: to set the screen brightness when the panel is in sleep mode, with three levels for selection, i.e., 0%, 10%, 20%.

3. Display time: to enable displaying the time and date in the main page.

4. Display environment monitor enable: to enable displaying environmental data in the main page.

   ➢ Display indoor/outdoor temperature: to enable/disable displaying indoor/outdoor temperature. If enabled, select data source of temperature, including "Internal

temperature probe" and "External".

If "Internal temperature probe" is selected, go to the "General" page→select "Temperature correction value" to correct the temperature, range from -5℃ to +5℃;

If "External" is selected, correct the temperature below, range from -5℃ to +5℃.

➢ Display humidity/PM 2.5/CO_2/TVOC: to choose whether to display "humidity/ PM2.5/ Carbon dioxide/TVOC" data.

5. Language: to select the system language, 18 languages are available, including simplified Chinese, English, Czech, Danish, Dutch, Finnish, French, German, Greek, Italian, Japanese, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish.

6. Date display mode: to set the display sequence of year, month, day, day of the week.

7. Time display: to select 12/24-clock as the time display mode.

8. Temperature accuracy: to set the temperature display accuracy as 0.5/1°.

9. Unlock protected by password: to set the unlock password. Default password is 0000.

➢ Enable universal password: to enable universal password. After enabled, both user password and universal password can be used to unlock the panel.

➢ Password (1-4): to set 4-digit password.

10. Proximity sensor: to enable human body movement detection function, detection distance range from 25~35cm.

➢ Proximity sensor sensitive: to select the sensor sensitivity, range from 0-100%, and the default value is 80%.

➢ Recovery the LCD brightness: to enable LCDs to wake up when human bodies are detected.

➢ Enable send to bus: to enable sending detection status to the bus, including ON/ OFF.

➢ Send to bus: Toggle is to take the negation operation, (for example: When the sensor senses human bodies for the first time, the system sends ON. When human bodies are sensed for the second time, the system sends OFF.) ON is to turn on, OFF is to turn off.

➢ Send to bus after delay time: to be set to sending sensing status to the bus after the delay time, Toggle is to take the negation operation, (for example: When the sensor senses human bodies for the first time, the system sends ON. When human bodies are sensed for the second time, the system sends OFF.) ON is to turn on, OFF is to turn off.

➢ Delay time: to set the delay time of feedbacks to the bus, range from 5 to 255s.

6 Function Configuration

Click the main menu button of Granite Display to open the main menu (control page), all the buttons in the control page (air-conditioner, light, and scene, etc.) can be displayed or hidden by configuring ETS.

Click "Function configuration" in the parameter menu, as shown in Figure 6-1.
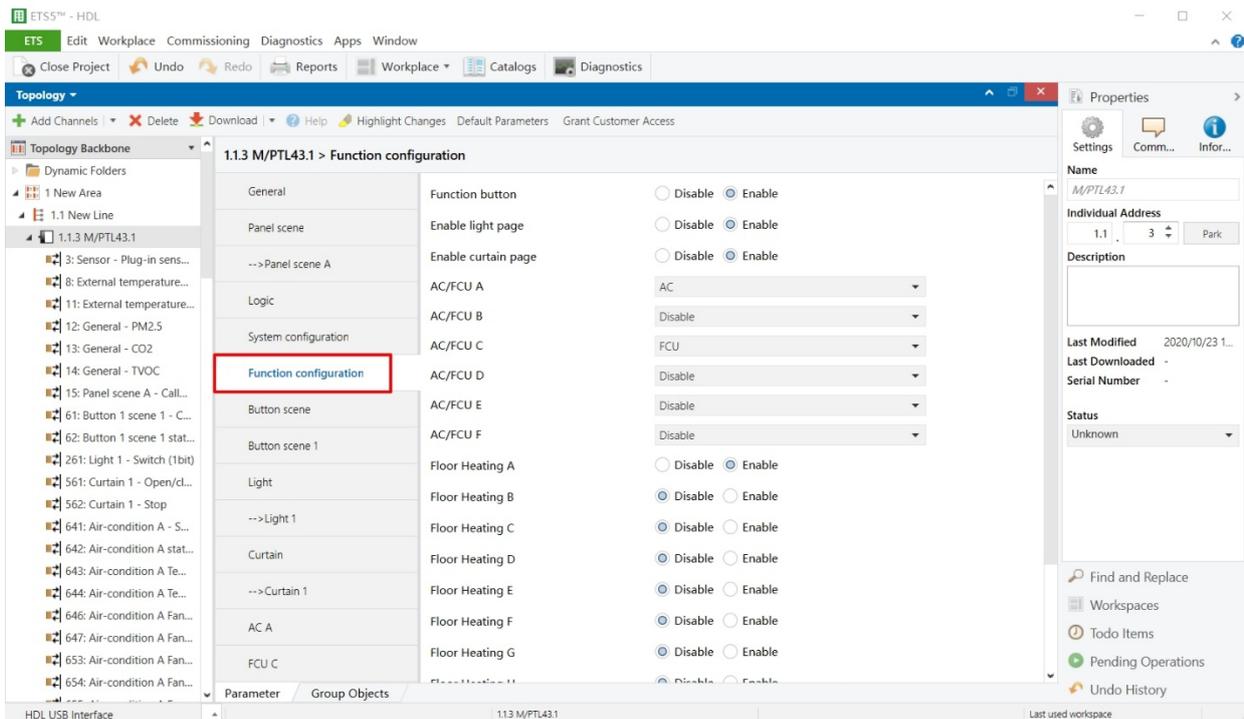
Figure 6-1 Function setting

The setting items are explained below:

1. Function button: to enable scenes.

2. Enable light page: to enable lights.

3. Enable curtain page: to enable curtains.

4. AC/FCU: to enable AC/FCU (a total of six).

5. Floor Heating N: to enable floor heating (a total of eight).

6. Fresh air: to enable fresh air (only one).

7. Audio page: to enable audio control (only one).

8. Shortcut key page: to enable shortcut buttons (at the top of the main page, up to 3).

9. Function navigation: to enable shortcut navigation keys (at the bottom of the main page and on each side of the home button, up to 4 for landscape mode, 2 for portrait mode).

7 Button Scene Setting

Users may enable scene control buttons in "Function configuration", as shown in Figure 7-1. After enabled, scene control buttons will show up in the main menu. Click buttons to control scenes.
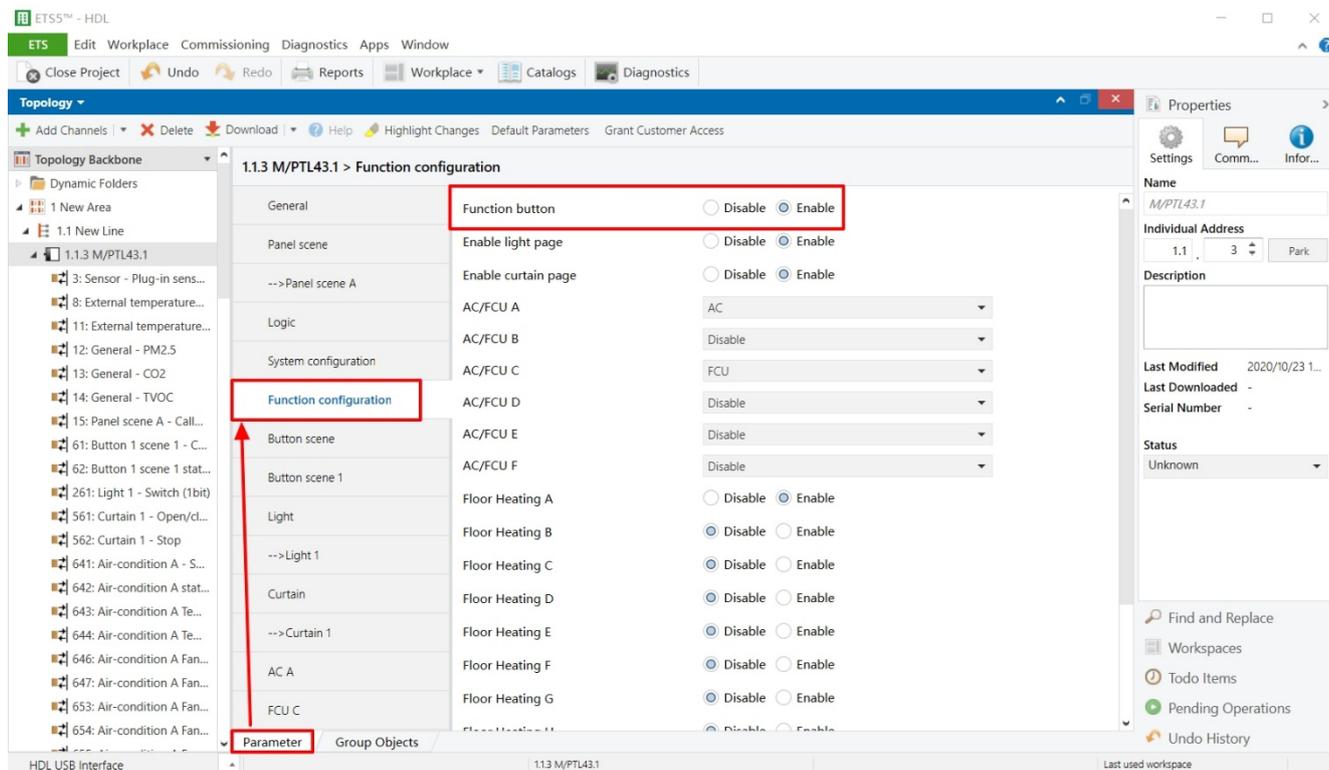
Figure 7-1 Enable scene control

Click "Button scene" in the parameter menu, as shown in Figure 7-2.
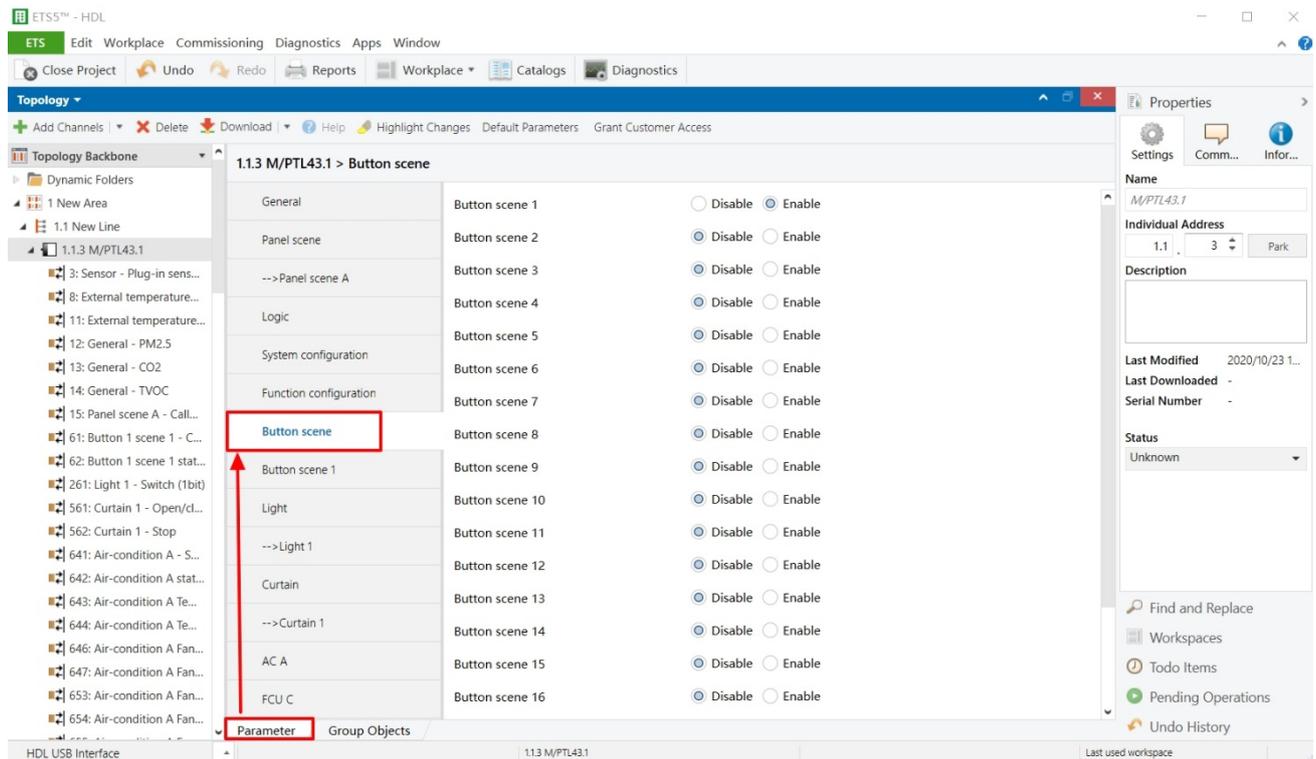
Figure 7-2 Open the button scene enable page

Granite Display supports a total of 20 button scenes. After enabled, "Button scene" tab will show up on the left. Click to open the page, as shown in Figure 7-3.
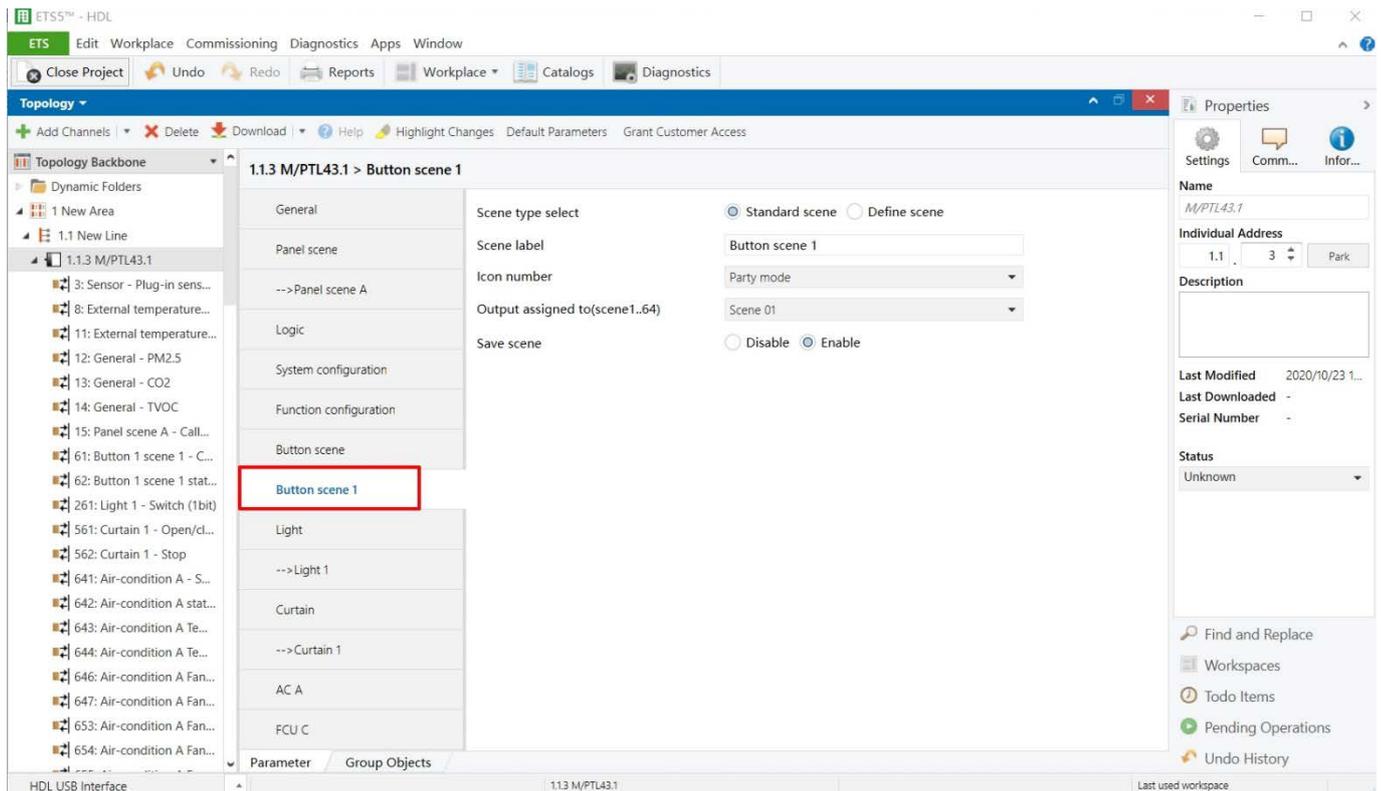
Figure 7-3 Open the scene configuration page

The setting items are explained below:

1. Scene type select: to select scene types, including "Standard scene" and "Defined scene".

    ➢ The standard scene is to send scene numbers, and up to 64 scenes can be selected, 20 standard scenes can be controlled.

    ➢ The define scene is to send target commands to control targets in scenes.

2. Scene label: to change scene names.

3. Icon number: to change scene icons, and up to 17 scene icons can be selected.

4. Output assigned to (only applicable for the Standard scene): output the scene linked with the number, and up to 64 scene numbers can be selected.

5. Save scene (only applicable for Standard scene): if the scene function is enabled, short press to call the scene; long press to save current scene.

6. Output object <n> type（only applicable for the Define scene）: to choose to output the object type and each scene supports up to 10 objects.

8 Light Setting

Enable light control buttons in "Function configuration", as shown in Figure 8-1. After enabled, light control buttons will show up in the main menu.
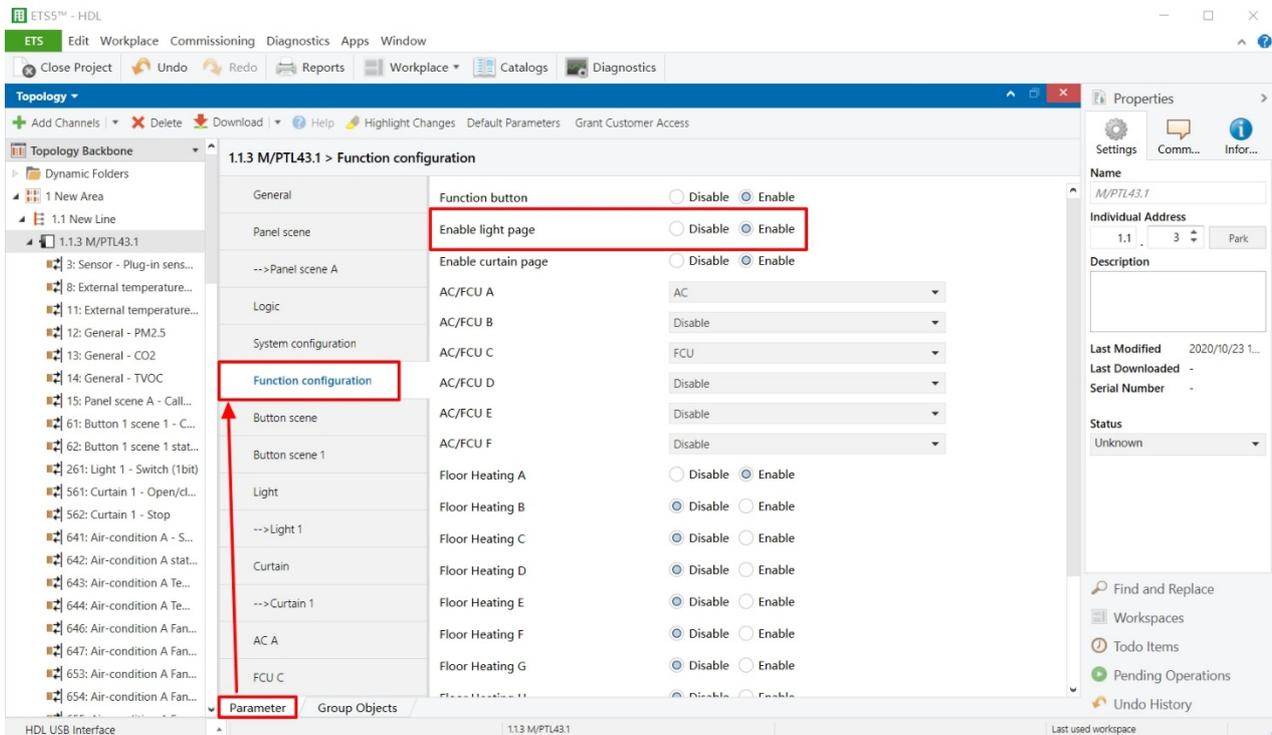
Figure 8-1 Enable the light control button

Click "Light" in the parameter menu, as shown in Figure 8-2.
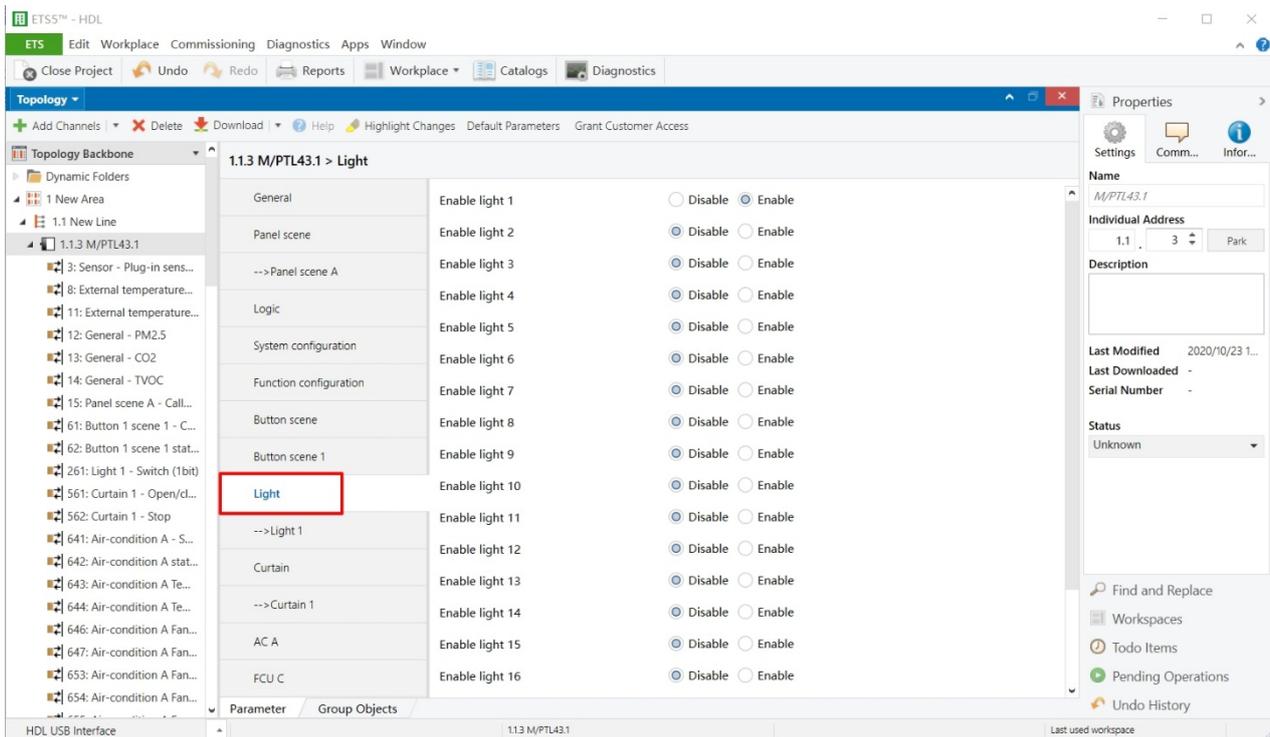
Figure 8-2 Open the light enable page

Granite Display supports a total of 20 lights. After enabled, "Light n" (n=1-20) tab will show up on the left. Click the tab to open the page, as shown in Figure 8-3.
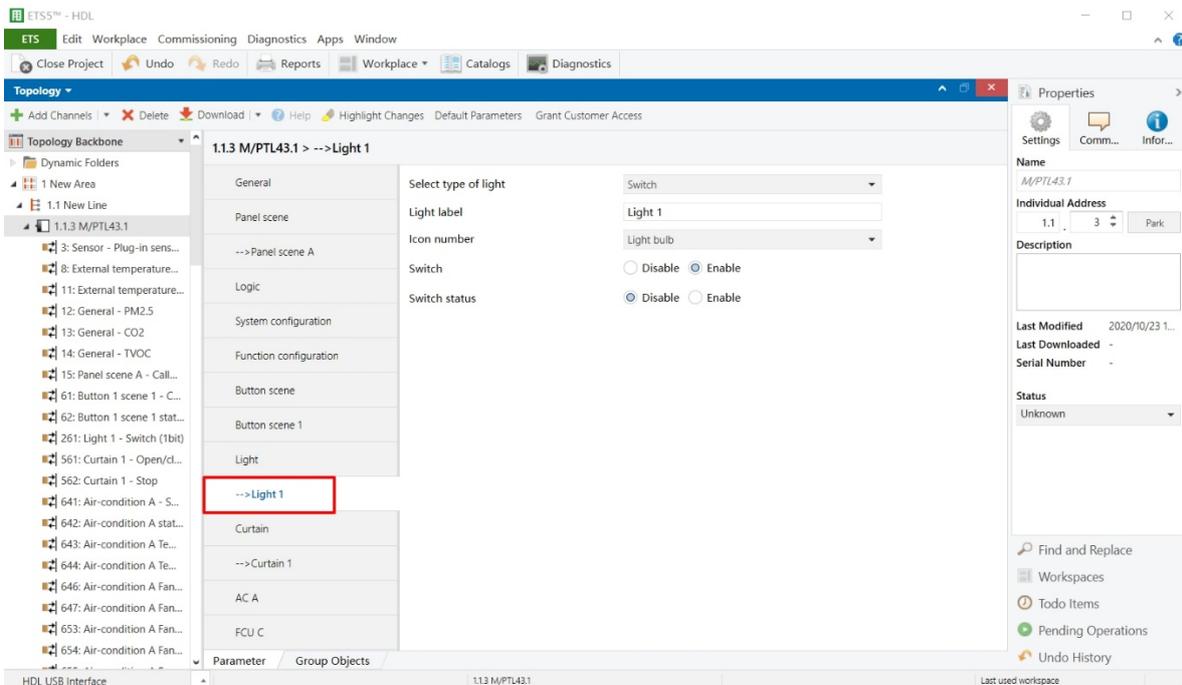
Figure 8-3 Open the light configuration page

Firstly, a light control type is selected in "Select type of light", including "Switch, Dimmer, RGB dimmer and CCT". And then light name can be changed in "Light label", and light icon can be changed in "Icon number".

1. If Switch is selected:

   ➢ Switch: to enable the panel to turn on/off lights.

   ➢ Switch status: to enable synchronizing light switch status.

2. If Dimmer is selected:

   ➢ Dimming: to enable the panel to adjust light brightness.

   ➢ Dimming status: to enable synchronizing light dimming status.

3. If RGB dimmer is selected:

   ➢ RGB absolute dimming (1byte): to enable RGB dimming via absolute value.

   ➢ RGB color: to enable adjusting lighting color and select the type of objects.

   ➢ RGB absolute dimming status (1byte): to enable synchronizing RGB dimming status via absolute value.

   ➢ RGB color status: to enable synchronizing RGB color status.

4. If CCT is selected:

   ➢ Percentage: to enable changing CCT (color temperature) via percentage.

   ➢ Color temperature (2 byte): to enable color temperature adjustment via 2-byte target.

   ➢ Percentage status (1 byte): to enable color temperature percentage status sync.

   ➢ Color temperature status (2 byte): to enable color temperature status sync via 2-byte target.

9 Curtain Setting

Users may enable curtain control buttons in "Function configuration", as shown in Figure 9-1. And then curtain control buttons will show up in the main menu.
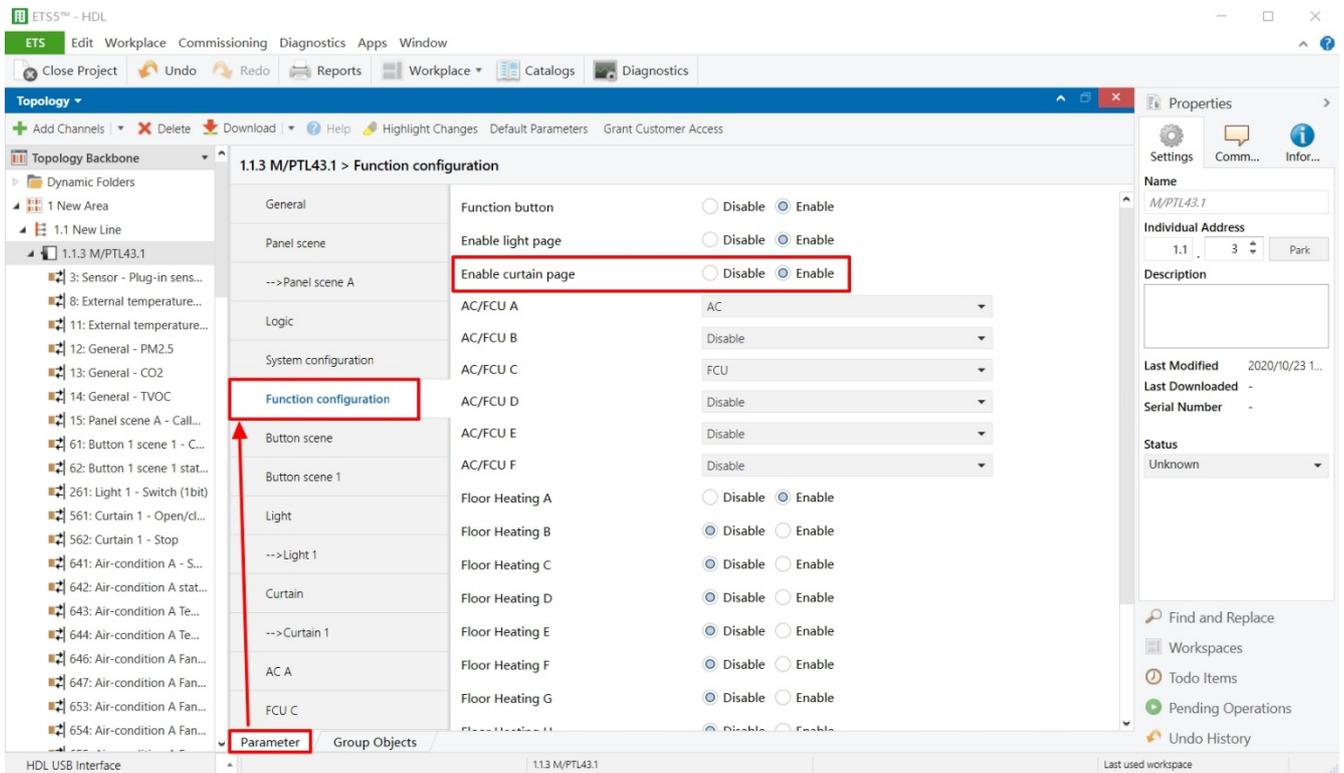
Figure 9-1 Function configuration page

Click "Curtain" in the parameter menu, as shown in Figure 9-2.
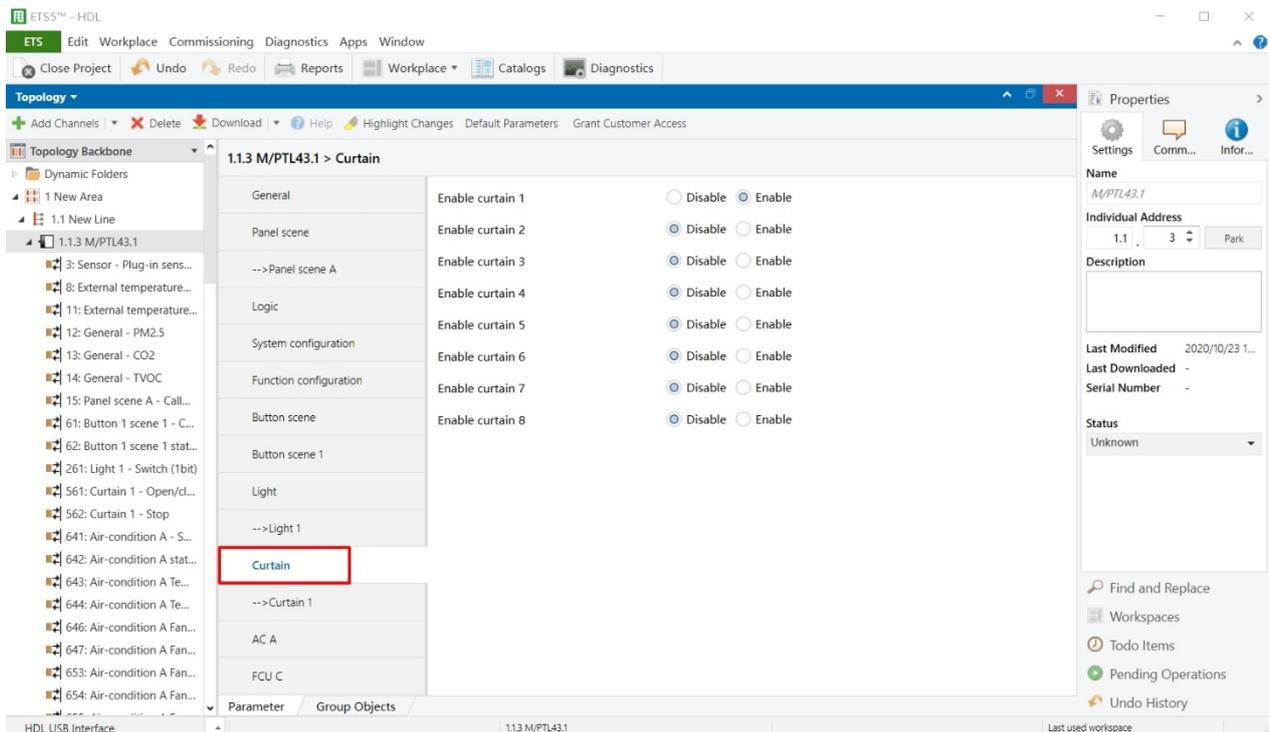
Figure 9-2 Open the curtain enable page

Granite supports 8 curtains in total. After enabled, "Curtain n" tab will show up on the left. Click the tab to open the page, as shown in Figure 9-3.
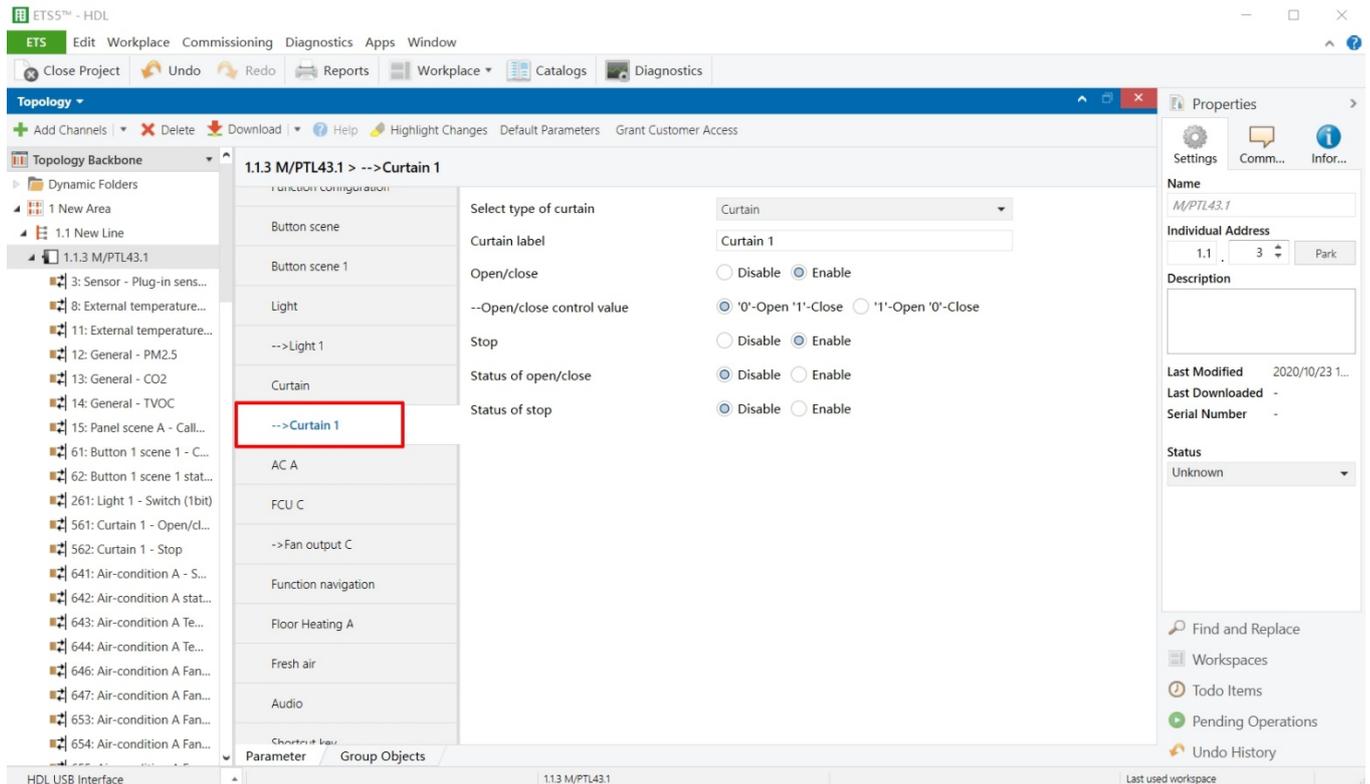
Figure 9-3 Open the curtain configuration page

The setting items are explained below:

1. Select type of curtain: to select curtain types, including "Curtain", "Motor curtain", "Roller blind" and "Blinds".

    Notice:

    If "Curtain" is selected, the panel only supports turning on/off curtains and stopping curtains. The options include "1-open, 0-close" and "0-open, 1-close".

2. Curtain label: to change curtain name.

3. Open/close: to enable opening or closing curtains. After enabled, user may select 1/0 to control open/close.

4. Stop: to enable stopping curtains via sending 0.

5. Percentage control: to enable the percentage control of curtains.

6. Status of open/close: to enable synchronizing curtain on/off status. After enabled, user may select 1/0 to control open/close.

7. Status of stop: to enable synchronizing curtain stopping status.

8. Status of percentage: to enable synchronizing curtain percentage status, range from

0-100%.

9. Slat adjustment (only valid for blinds): to enable slat tilt angle adjustment, range from 0-180°.

10. Status of slat adjustment (only valid for blinds): to enable slat tilt angle adjustment status sync, range from 0-180°.

10 AC/FCU Setting

Users may select AC/FCU types in "Function configuration", as shown in Figure 10-1. Granite Display supports a total of 6 AC/FCU.
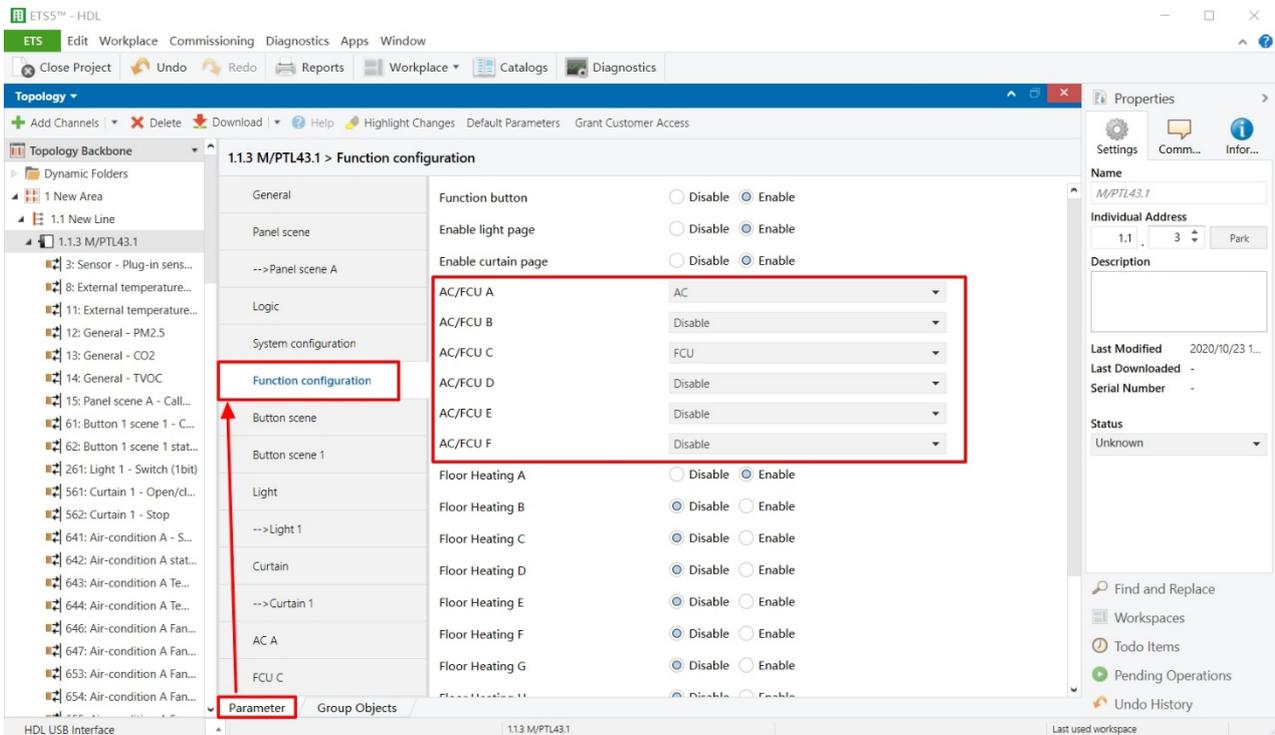
Figure 10-1 Function configuration page

"AC/FCU" tab will show up on the left after the selection, then click to configure.

10.1 AC Setting

After AC is enabled, click "AC" tab to configure, as shown in Figure 10-2.
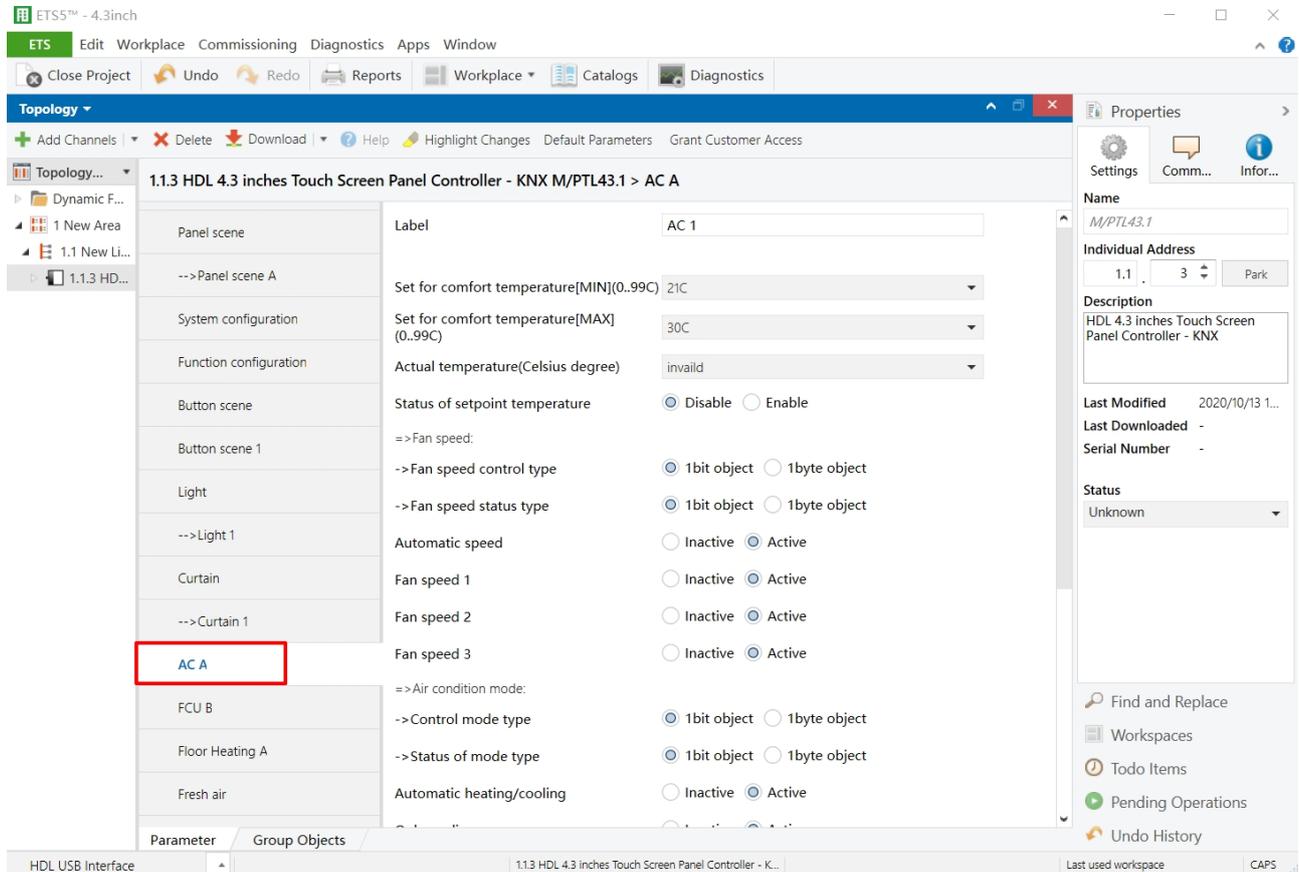
Figure 10-2 AC setting

The setting items are explained below:

1. Label: to change AC name.

2. Set for comfort temperature [MIN/MAX]: to adjust the maximum and minimum of comfortable temperature, range from 0 to 99℃.

3. Actual temperature: to select the source of local temperature data, including "Local sensor" and "EIB".

   If "Local sensor" is selected, go to the "General" page→select "Temperature correction value" to correct the temperature, range from -5℃ to +5℃;

   If EIB is selected, correct the read temperature data of the panel at the bottom, range from -5℃ to +5℃.

4. Status of setpoint temperature: to enable synchronizing the set temperature. For

example, if AC temperature of current panel is set to 30℃ then the other panel's AC

temperature is set to 25℃, the AC temperature of current panel will be synchronized to

Fan Speed Setting

25℃.

5. Fan speed control type: to select fan speed control types. 1-bit object is to control fan speed via 1-bit object, while 1-byte object is to control via 1-byte object. If 1-byte object is selected, the details can be configured below.

➢ Automatic speed value: to set the fan speed of auto mode, range from 1-255.

➢ Fan speed n value: to set fan speed for different grade. Up to 3 grades are available, and the value of each grade can be set separately. The value for each fan speed grade is as following:

Automatic speed value: 0

Fan speed 1 value: 85

Fan speed 2 value: 170

Fan speed 3 value: 255

6. Fan speed status type: to select data types synchronized by fan speed status.

7. Automatic speed value: to enable adjusting fan speed automatically.

8. Fan speed n: to enable fan speed for different levels.

Air Condition Mode

9. Control mode type: to select control types of air condition. 1-bit object is to control air condition via 1-bit object while 1-byte object is to control via 1-byte object. If 1-byte object is selected, the details can be configured below.

➢ Automatic heating/cooling value

➢ Only cooling value

➢ Only heating value

➢ Only dehumidification value

➢ Only fan value

10. Status of mode type: to select data types synchronized by AC mode status.

11. Automatic heating/cooling

12. Only cooling

13. Only heating

14. Only dehumidification

15. Only fan

16. The status operation after power on: to select the operation after AC is powered on. "Unchange" is unchanged, "Recovery" is to recover the status before the blackout. If "Recovery" is selected, set delay time of recovery status in "Delay for status recovery" below, which range from 2-255s, and the default value is 5s.

17. The status operation after AC switch ON: to select the operation after AC is turned on. If "Recovery" is selected, set delay time of recovery status in "Delay for status recovery" below, which range from 0-20s, and the default value is 1s.

18. Output control the relay actuator: to enable the output of controlling the relay actuator. If enable is selected, click "AC output" on the left to configure the relay actuator in detail, as shown in the following part.

10.2 AC Output of Controlling Relay Actuator

In AC setting, enable Output control the relay actuator, and AC Output will appear, click to configure AC output, as shown in Figure 10-3.
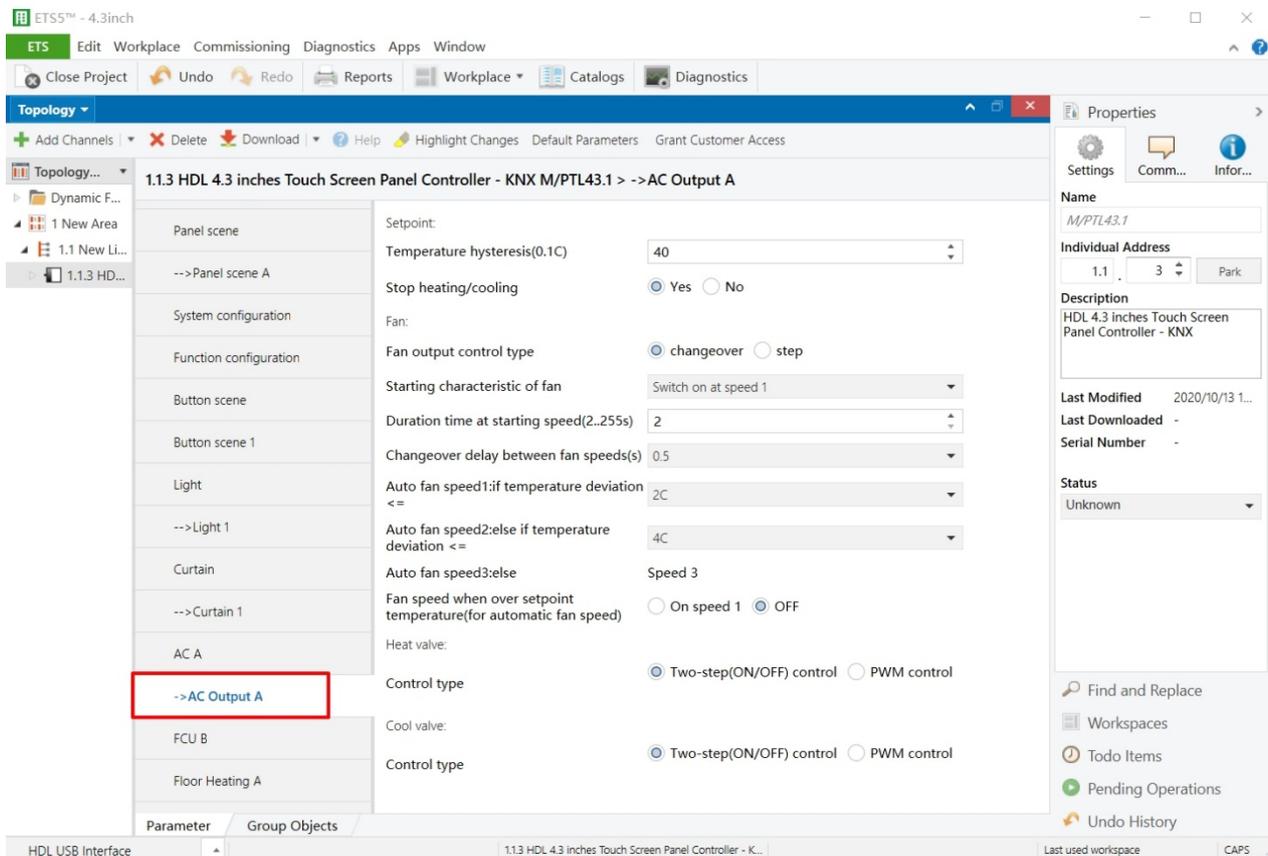
Figure 10-3 AC output setting

The setting items are explained below:

1. Temperature hysteresis: range from 0.1℃~20℃.

2. Stop heating/cooling

   Fan Output Control Setting

3. Fan output control type: fan output control types include "Changeover" and "Step".

4. Starting characteristic of fan: to select default fan speed after AC is powered on from Speed 1/2/3.

5. Duration time at starting speed: a duration of FCU's running at default speed after FCU is powered on, which range from 2-255s, and the default value is 2s.

6. Changeover delay between fan speeds: the delay time between one fan speed and another, which range from 0.5-10s, and the default value is 0.5s.

7. Duration on fan speed: to set the running time of the speed, which range from 2-255s, and the default value is 2s.

8. Auto fan speed 1：if temperature deviation<=: to run fan speed 1 when the temperature is not higher than the set temperature.

9. Auto fan speed 2：if temperature deviation<=: to run fan speed 2 when the temperature is not higher than the set temperature.

10. Auto fan speed 3：else: to run fan speed 3 under the circumstances except "Auto fan speed 1: if temperature deviation<=:" and "Auto fan speed 2: if temperature deviation<=:".

11. Fan speed when over setpoint temperature (for automatic fan speed): when the temperature exceeds the set temperature, run fan speed 1 or turn off fan speed.

    Heat/Cool Valve Setting

12. Control type: to select control types, including "Two-step control" and "PWM control". If the latter is selected, the details can be configured below.

    ➢ Heating/Cooling speed (For PI)

    ➢ PWM period

    ➢ Minimum/Maximum PWM valve

10.3 FCU Setting

After enabling "FCU", click the tab to configure, as shown in Figure 10-4.
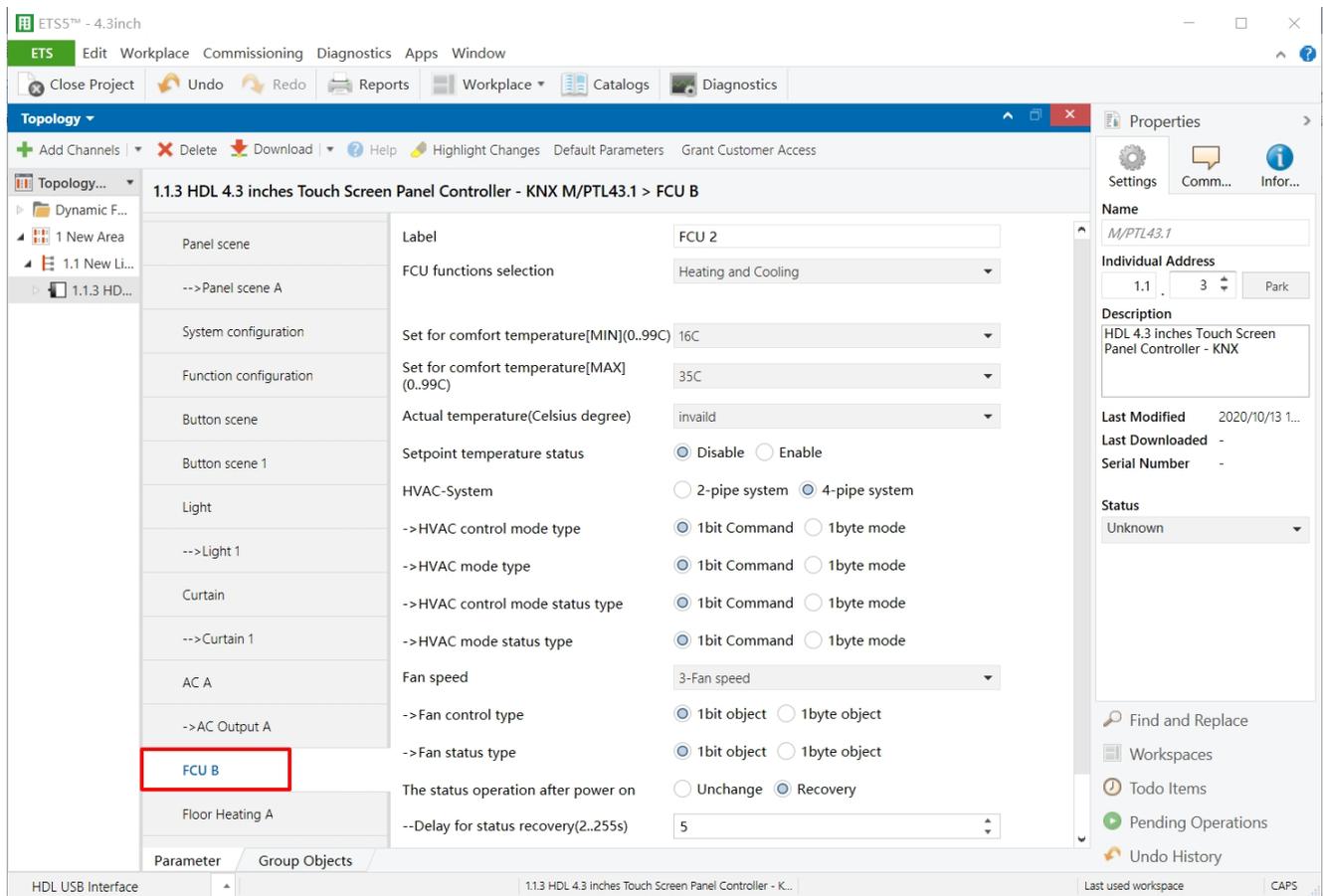
Figure 10-4 FCU setting

The setting items are explained below:

1. Label: to change FCU name.

2. FCU functions selection: to select FCU functions, including "Fan", "Heating", "Cooling" and "Heating".

3. Set for comfort temperature [MIN/MAX]: to adjust the maximum and minimum of comfortable temperature, range from 0 to 99℃, the default value range from 21~30℃. This item is only valid when Heating, Cooling, Heating and Cooling are chosen at FCU functions selection.

4. Actual temperature: to choose whether to display actual temperature, and choose source of the temperature, including "Local sensor" or "EIB".

   If "Local sensor" is selected, go to the "General" page→select "Temperature correction value" to correct the temperature, range from -5℃ to +5℃;

If the EIB is selected, obtained temperature data can be corrected in "Temperature correction value" below, range from -5℃ to +5℃.

5. Setpoint temperature status: to enable the setup for target temperature status, which can be synchronized with the status of AC.

6. HVAC-System: to select the system type of AC from 2/4-pipe system. This item is only valid when Heating and Cooling is selected in FCU functions selection.

7. HVAC control mode type: to select HVAC control mode type from 1 bit command control or 1 byte command control. This item is only valid when Heating, Cooling, Heating and Cooling are chosen at FCU functions selection.

8. HVAC mode type: to select HVAC control type from 1 bit command control or 1 byte command control. This item is only valid when Heating, Cooling, Heating and Cooling are chosen at FCU functions selection.

9. HVAC control mode status type: to select HVAC mode status sync from 1 bit command control or 1 byte command control. This item is only valid when Heating, Cooling, Heating and Cooling are chosen at FCU functions selection.

10. HVAC mode status type: to select HVAC mode status sync from 1 bit command control or 1 byte command control. This item is only valid when Heating, Cooling, Heating and Cooling are chosen at FCU functions selection.

11. Fan speed: to select the number of fan speed grades, up to 3.

   ➢ Fan control type: to select fan speed control types. 1-bit object is to control the fan speed via 1-bit object, while 1-byte object is to control by 1-byte object. If 1-byte object is selected, the details can be configured below.

   ➢ Fan status type: to select fan status types. 1-bit object is to control the fan speed status via 1-bit object, while 1-byte object is to control status via 1-byte object.

12. The status operation after power on: to select FCU status after FCU is powered on, including "Unchange" and "Recovery". If the latter is selected, the recovery delay can be set in "Delay for status recovery" below. The default value is 5s, and the range is from 2-255s.

13. Output control the relay actuator: to enable the output of controlling the relay actuator. If enable is selected, click "FCU Output" on the left to configure in detail, as shown in the following part.

10.4 FCU Output Setting

After enabling "Output control the relay actuator" in FCU setting, "Fan Output" tab will show

up. Click the tab to set, as shown in Figure 10-5.
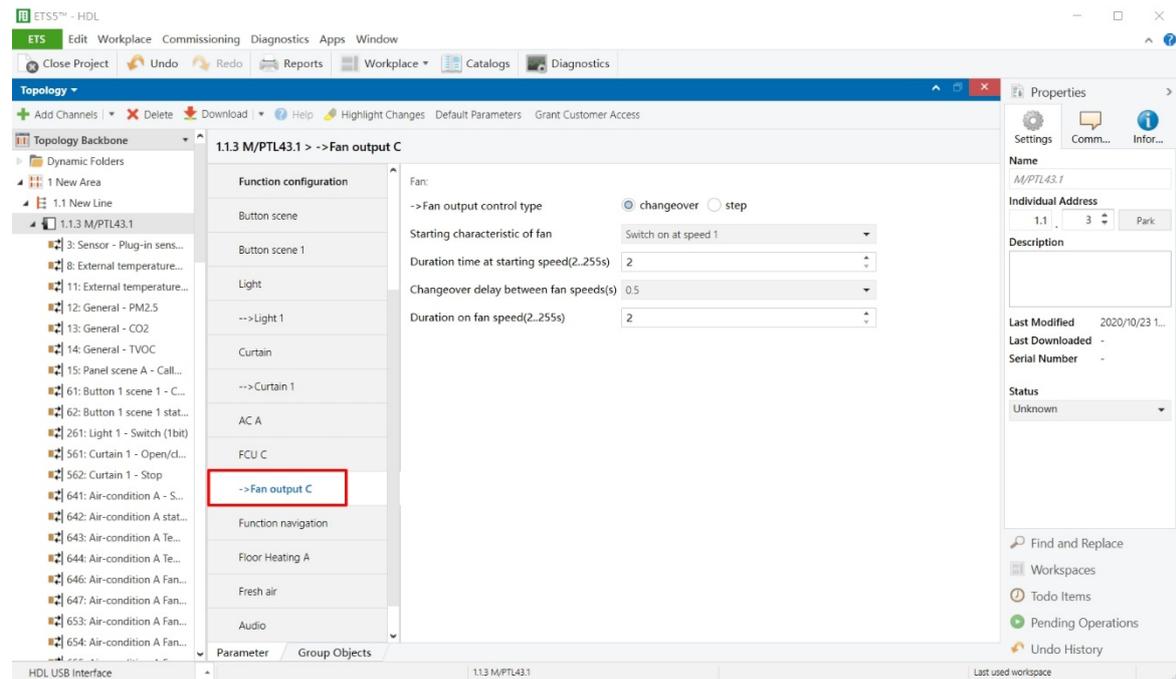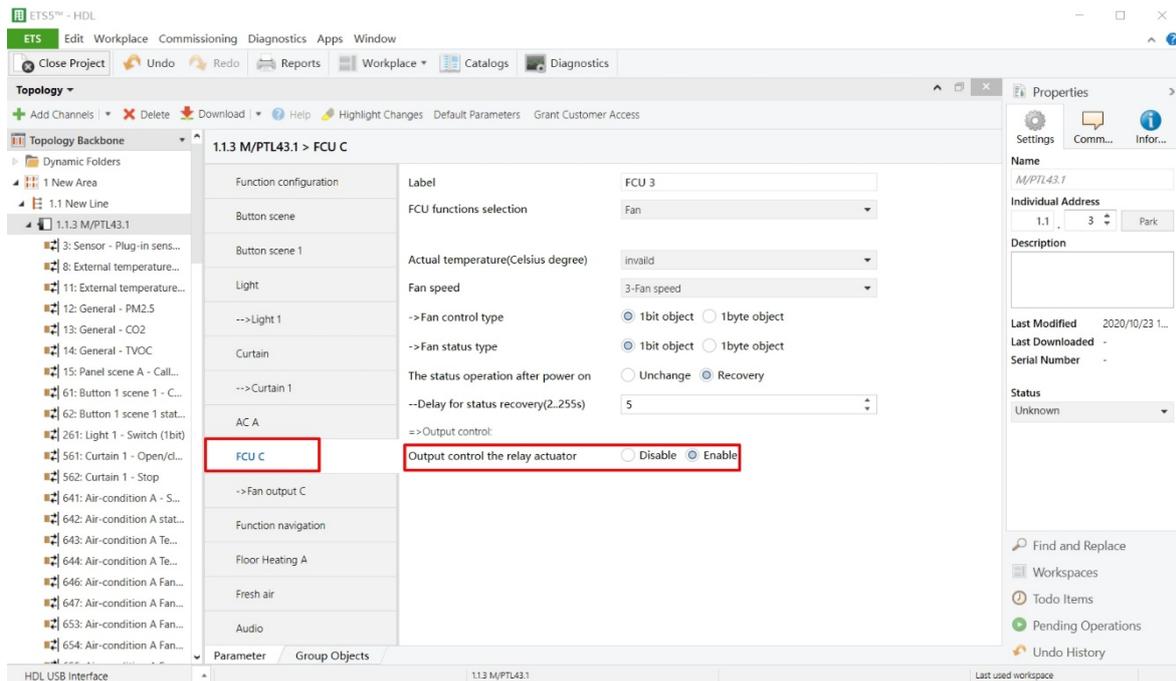
Figure 10-5 FCU output setting

The setting items are explained below:

Fan Output Control Setting

1. Fan output control type: fan output control types include "Changeover" and "Step".

2. Starting characteristic of fan: to select default fan speed after AC is powered on from Speed 1/2/3.

3. Duration time at starting speed: a duration of FCU's running at default speed after FCU is powered on, which range from 2-255s, and the default value is 2s.

4. Changeover delay between fan speeds: the delay time between one fan speed and another, which range from 0.5-10s, and the default value is 0.5s.

5. Duration on fan speed: to set the running time of the speed, which range from 2-255s, and the default value is 2s.

Note: as shown in Figure 10-6, when Heating/Cooling/Heating and Cooling is selected in FCU functions selections in FCU tag:
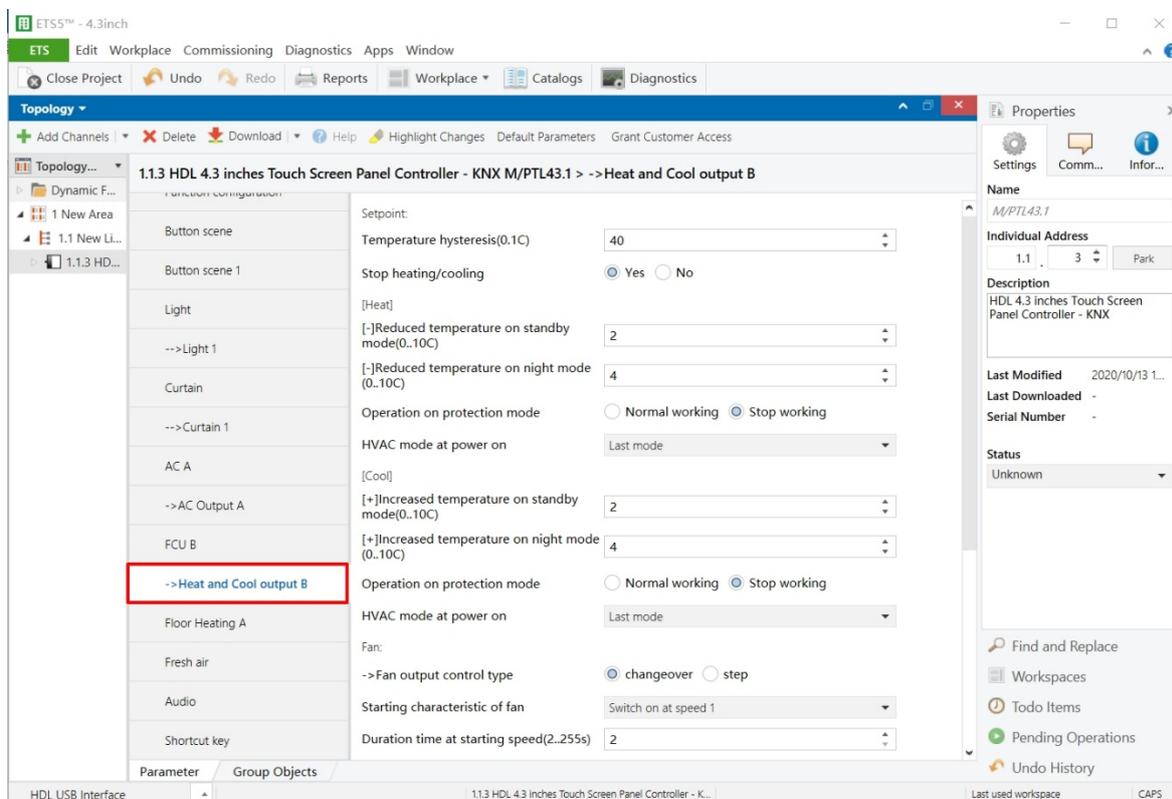
Figure 10-6 FCU output setting

6. Temperature hysteresis: the default value is 4, and the range is from 0.1-20.

7. Stop heating/cooling

8. Reduced/Increased temperature on standby mode: to set the reduced/increased temperature in standby mode. The default value is 2, and the range is from 0-10.

9. Reduced/Increased temperature on night mode: to set the reduced/increased temperature in night mode. The default value is 4, and the range is from 0-10.

10. Operation on protection mode: to set the operation of floor heating after entering safe mode from continue normal working and stop working.

11. HVAC mode at power on: to select the mode when the HVAC is powered on from last mode, comfort mode, standby mode, night mode and protection mode.

12. Auto fan speed 1：if temperature deviation<=: to run fan speed 1 when the temperature is not higher than the set temperature.

13. Auto fan speed 2：if temperature deviation<=: to run fan speed 2 when the temperature is not higher than the set temperature.

14. Auto fan speed 3：else: to run fan speed 3 under the circumstances except "Auto fan speed 1: if temperature deviation<=:" and "Auto fan speed 2: if temperature deviation<=:".

15. Fan speed when over setpoint temperature (for automatic fan speed): when the temperature exceeds the set temperature, run fan speed 1 or turn off fan speed.

Heat/Cool Valve Setting

16. Control type: to select control types, including "Two-step control" and "PWM control". If the latter is selected, the details can be configured below.

17. Heating/Cooling speed (For PI)

18. PWM period

19. Minimum/Maximum PWM valve

11 Floor Heating Setting

11.1 Floor Heating Setting

Users may enable floor heating in "Function configuration", as shown in Figure 11-1.
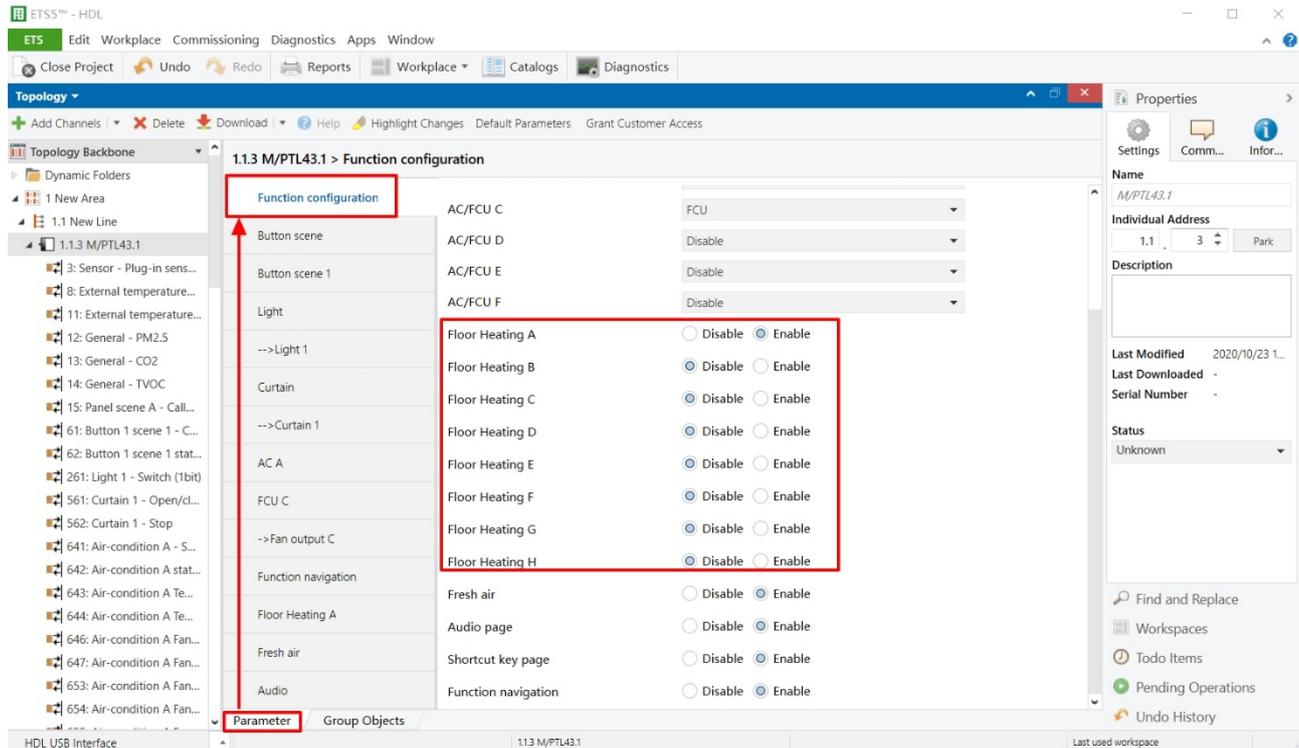
Figure 11-1 Enable floor heating

Granite Display supports a total of 8 floor heating. After enabled, "Floor Heating" tab will show up on the left. Click the tab, as shown in Figure 11-2.
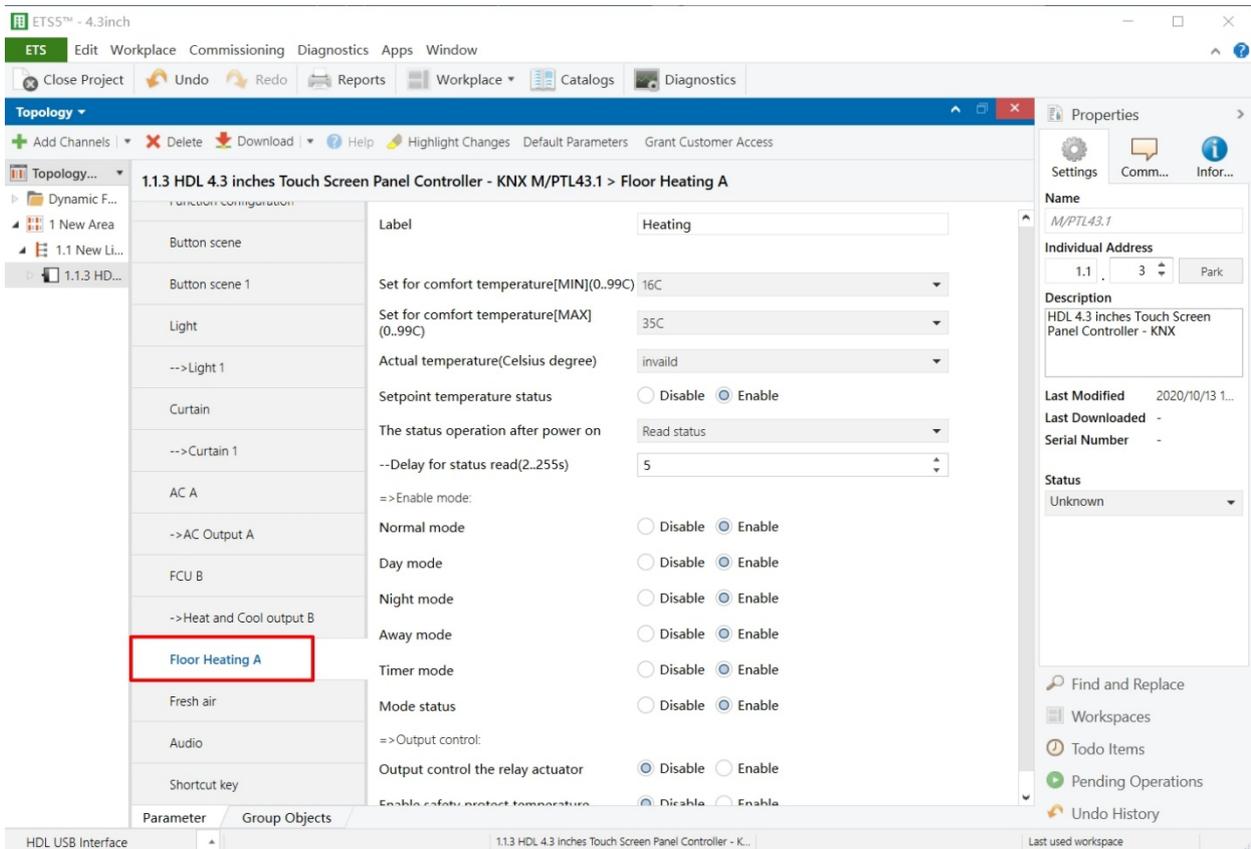
Figure 11-2 Open the floor heating configuration page

The setting items are explained below:

1. Label: to change floor heating name.

2. Set for comfort temperature [MIN/MAX]: to adjust the maximum and minimum of comfortable temperature, range from 0 to 99℃, default value range from 21~30℃.

3. Actual temperature: to select the source of local temperature data, including "Local sensor" and "EIB".

    If "Local sensor" is selected, go to the "General" page→select "Temperature correction value" to correct the temperature, range from -5℃ to +5℃;

    If EIB is selected, correct the read temperature data of the panel at the bottom, range from -5℃ to +5℃.

4. Setpoint temperature status: to enable synchronizing the set temperature.

5. The status operation after power on: to select the operation after the panel is powered on. "Unchange" is unchanged, "Recovery" is to recover the status set by itself. "Read

status" is to read the bus setting status.

6. Enable mode: to enable work modes, including "Normal mode", "Day mode", "Night mode", "Away mode" and "Timer mode".

7. Mode status: to enable synchronizing floor heating mode status.

8. Output control the relay actuator: to enable the output of controlling relay actuator. If enabled, click "FH Output" tab on the left to configure, as shown in the following part.

Information Zone Setting

9. Enable safety protect temperature: to enable over-heat protection function. If enabled, set limit temperature of triggering the function in "Stop floor heating when temperature>=" below. When actual temperature is higher than limit temperature, floor heating will be turned off.

11.2 FH Output Setting

After enabling "Output control the relay actuator" in the floor heating setting, "FH Output" tab will show up. Click the tab to set, as shown in Figure 11-3.
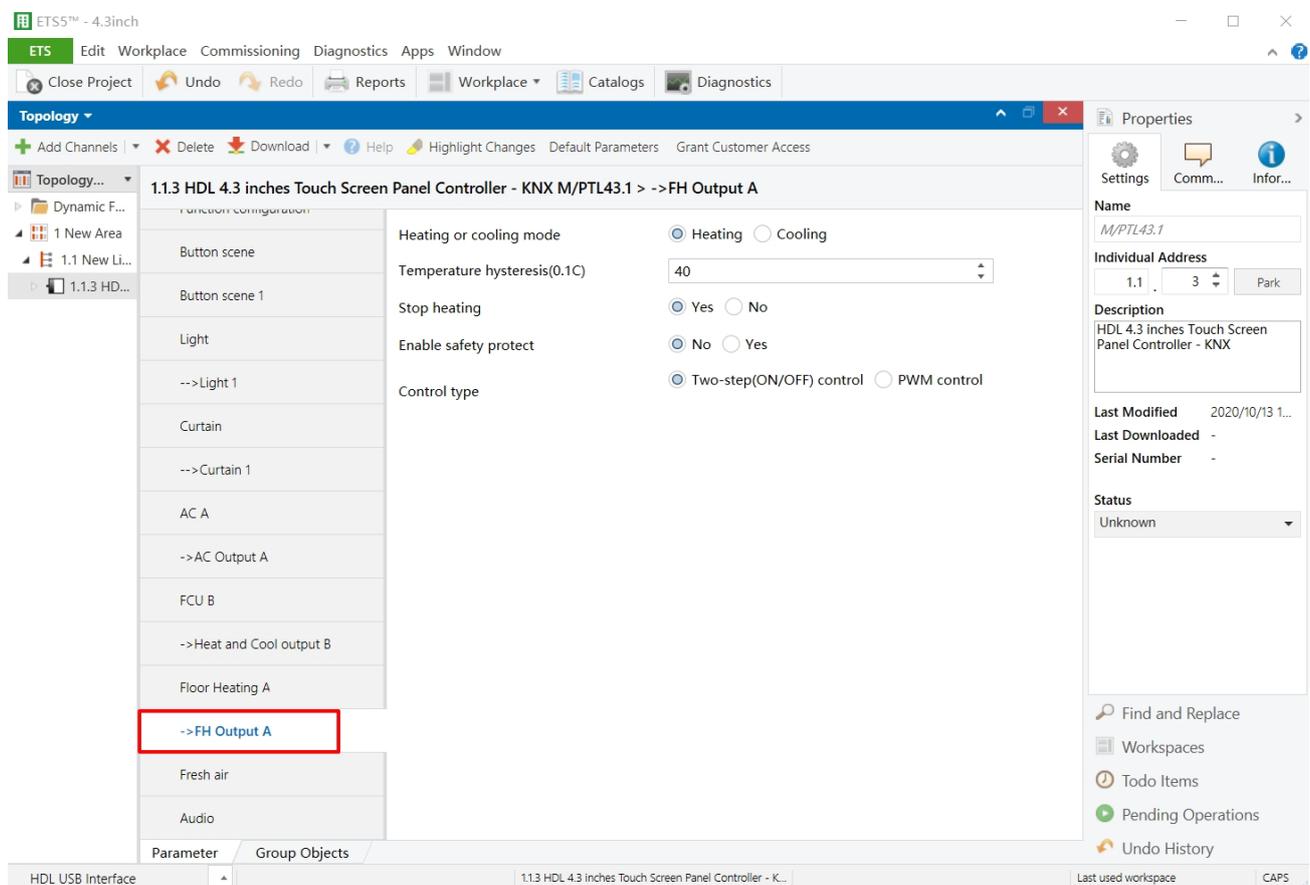
Figure 11-3 Floor heating setting

The setting items are explained below:

1. Heating or cooling mode

2. Temperature hysteresis

3. Stop heating

4. Enable safety protect: to enable safety protection function and the details can be configured below.

   ➢ Temperature source: to select temperature source, including "Local sensor" or "EIB".

   ➢ Active/Cancel protection: to set the temperature of activating or deactivating protection (both range from 0℃ to 99℃). When the temperature is higher or lower than the temperature, protection function will be activated or deactivated.

   ➢ Active/Cancel operation: to set the operation of activating or deactivating protection function, including "Unchange", "ON" and "OFF".

5. Control type: to select control types, including "Two-step control" and "PWM control". If the latter is selected, the details can be configured below.

   ➢ Floor heating/cooling speed (For PI)

   ➢ PWM control object: targets to be controlled by PWM output. 1-bit object is to control by 1-bit object PWM output duty radio while 1-byte object is to control by 1-byte object PWM output duty radio.

   ➢ PWM period

   ➢ Minimum/Maximum PWM valve

12 Fresh Air Setting

Users may enable fresh air in "Function configuration", as shown in Figure 12-1.
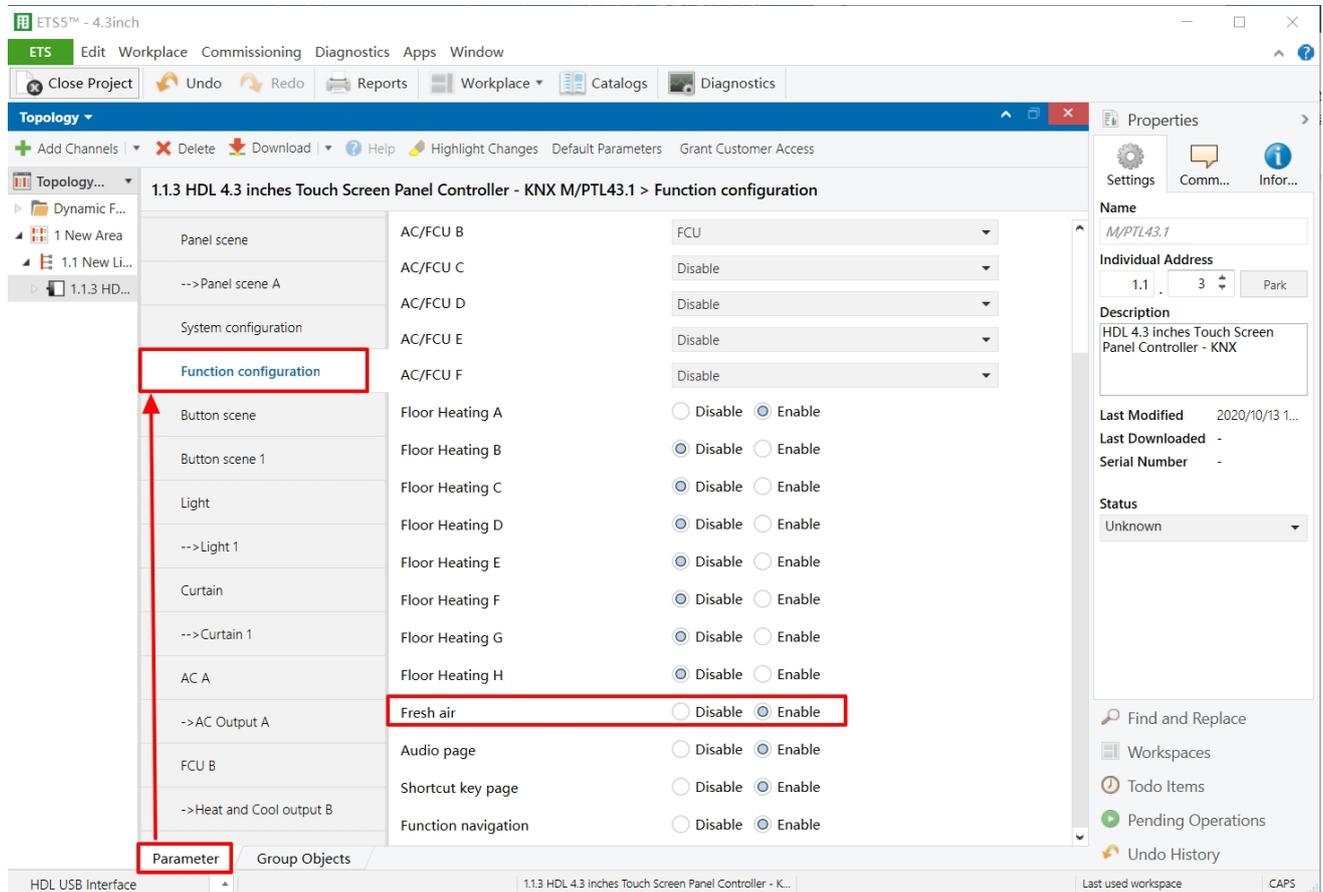
Figure 12-1 Enable fresh air

12.1 Fresh Air Setting

Granite Display supports a total of 1 fresh air system. After enabled, "Fresh air" tab will show up on the left. Click to configure, as shown in Figure 12-2.
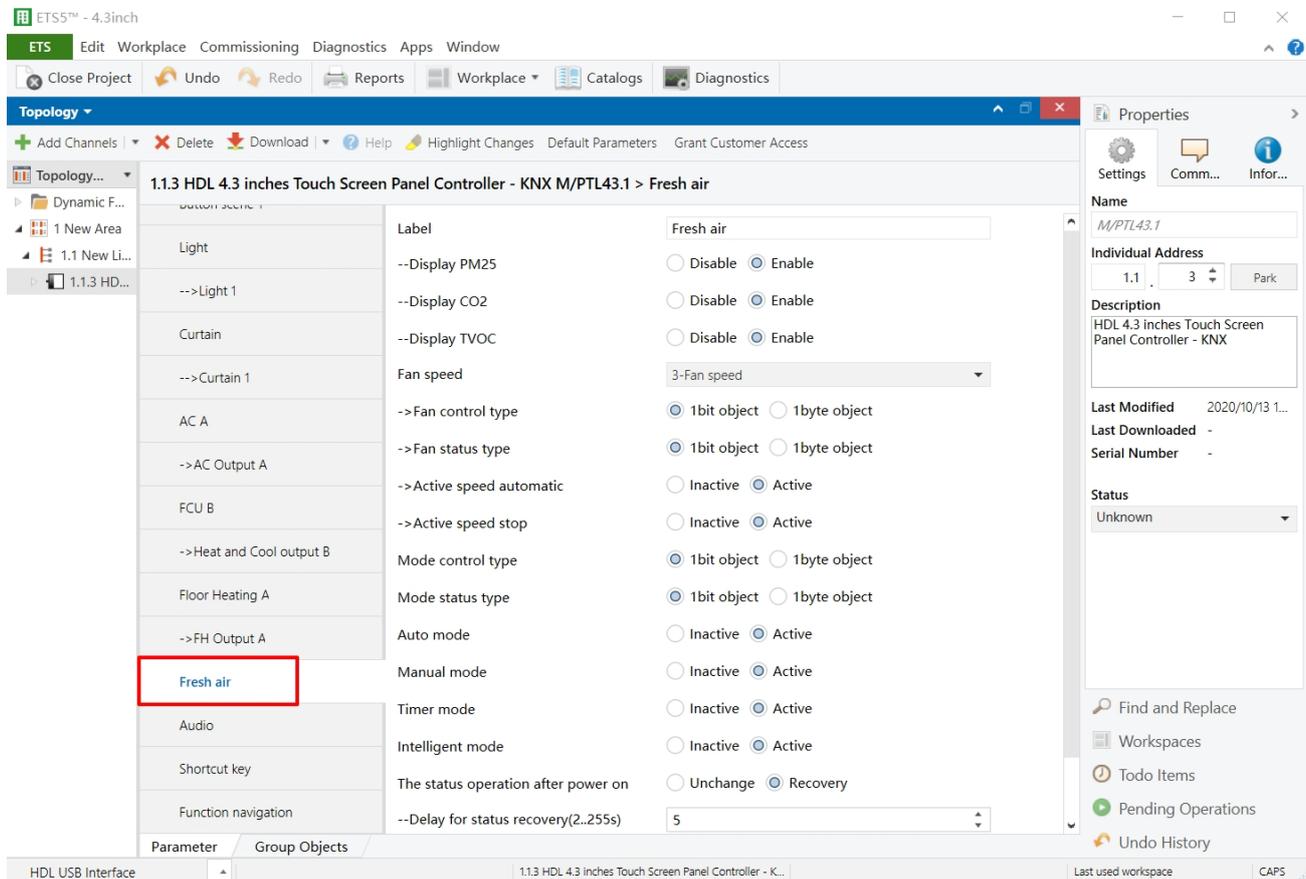
Figure 12-2 Fresh air setting

The setting items are explained below:

1. Label: to change fresh air name.

2. Display PM2.5/CO_2/TVOC: to enable displaying "PM2.5/ CO_2/TVOC" data.

3. Fan speed: to select fan speed levels, up to 3.

4. Fan control type: to select fan speed control types. 1-bit object is to control by 1-bit while 1-byte object is to control by 1-byte. If the latter is selected, set target value in detail below, including "Speed automatic value", "Speed n value" and "Speed stop value".

5. Fan status type: to select synchronized modes for fan speed.

6. Active speed automatic: to enable automatic fan speed.

7. Active speed stop: to enable stopping fan speed.

8. Mode control type: to select mode control types. 1-bit object is to control by 1-bit while 1-byte object is to control by 1-byte. If the latter is selected, the value of each mode can be set below, including Auto/Manual/Timer/Intelligent mode value.

9. Mode status type: to set mode status types. 1-bit object is to control by 1-bit while 1-byte object is to control by 1-byte.

10. Auto/Manual/Timer/Intelligent mode: to enable "Auto/Manual/Timer/Intelligent mode".

11. The status operation after power on: to select the operation after fresh air is powered on. "Unchange" is unchanged while Recovery is to recover the status before the blackout. If the latter is selected, set delay time of recovery status in "Delay for status recovery" below, which range from 2-255s, and the default value is 5s.

12. Output control the relay actuator: to enable the output of controlling relay controller. If enabled, click "Fresh Air Output" tab on the left to configure, as shown in the following part.

12.2 Fresh Air Output Setting

After enabling "Output control the relay actuator" in the fresh air setting, "Fresh Air Output" tab will show up. Click to set fresh air, as shown in Figure 12-3.
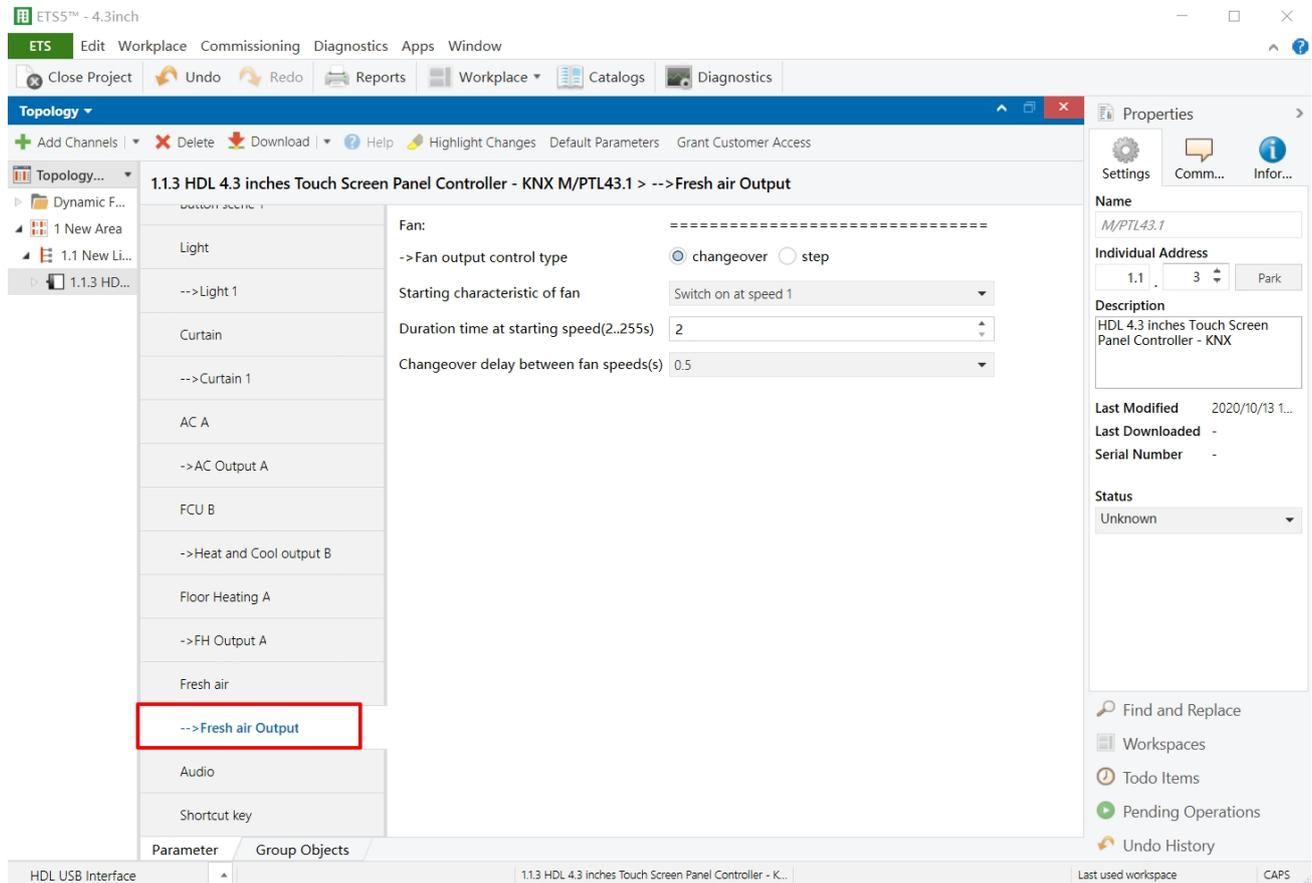
Figure 12-3 Fresh air output setting

The setting items are explained below:

1. Fan output control type: to select fresh air control types, including Changeover or Step.

2. Starting characteristic of fan: to select default fan speed after fresh air is powered on from Speed 1/2/3.

3. Duration time at starting speed: a duration of FCU's running at default speed after FCU is powered on, which range from 2-255s, and the default value is 2s.

4. Changeover delay between fan speeds: the delay time between one fan speed and another, which range from 0.5-10s, and the default value is 0.5s.

13 Audio Control Setting

Users may enable audio function in "Function configuration", as shown in Figure 13-1.
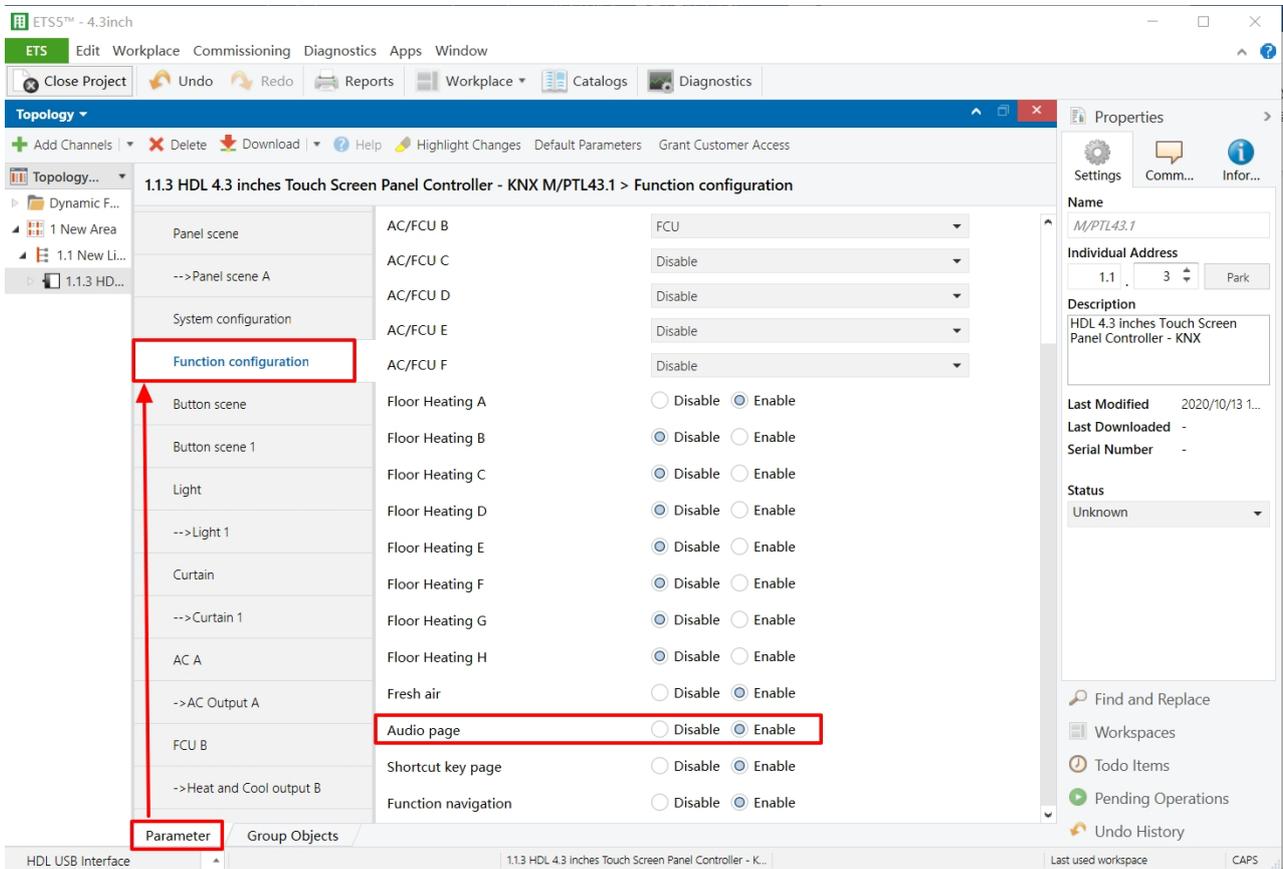
Figure 13-1 Enable audio control

Granite Display supports a total of 1 audio player. After enabled, "Audio" tab will show up on the left. Click to configure, as shown in Figure 13-2.
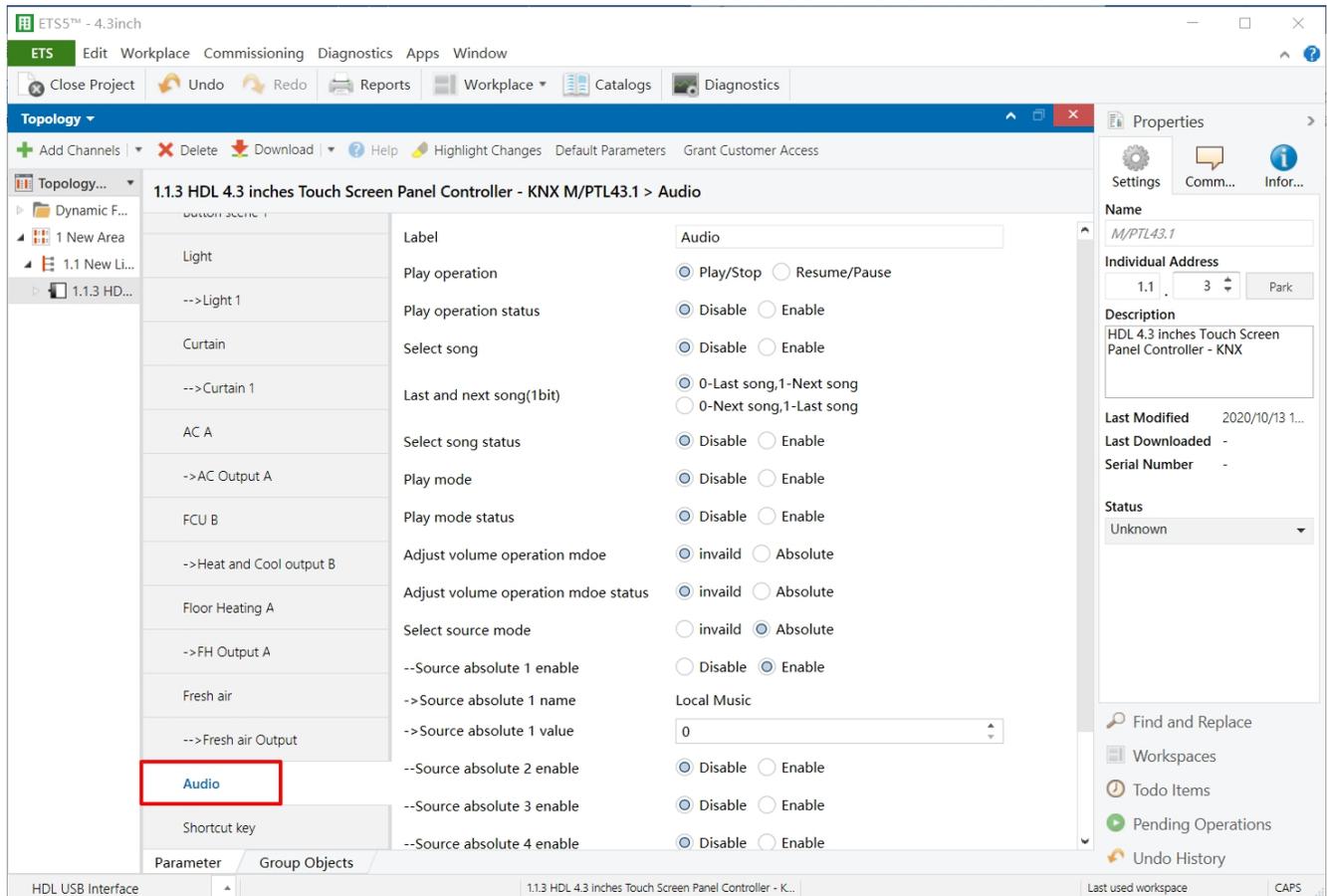
Figure 13-2 Set audio player

The setting items are explained below:

1. Label: to change audio player name.

2. Play operation: to enable stopping or start playing. Send 1 to start, and send 0 to pause.

3. Play operation status: to enable synchronizing starting or stopping status.

4. Select song: to enable song selection.

5. Last and next song: to select the operation mode of "Last" or "Next". Available choices are "0-last, 1-next" and "0-next, 1-last".

6. Select song status: to enable the status of selecting songs ("Last" or "Next") to be synchronized.

7. Play mode: to enable different playing mode. After enabled, user can select "Single play", "Loop play", "List play", "List loop" and "Random play".

8. Play mode status: to enable playing mode status to be synchronized.

9. Adjust volume operation mode: to adjust volume operation mode, including "Invalid" and "Absolute".

10. Adjust volume operation mode status: to synchronize volume status.

11. Select source mode: maximum five sources are available, including Local music, SD card, Buletooth, Server and Live stream

    As below, we take one of them as example.

    To select switching modes of audio source, including "Invalid" and "Absolute". If the latter is selected, the details can be configured below.

    ➢ Source absolute 1 enable: to enable the value of "audio source 1".

    ➢ Source absolute 1 value: to change the value of "audio source 1".

12. Select source mode status: to enable synchronizing the audio source switching status.

13. Display 14 bytes object for song name: to set whether to display song name via 14-byte object.

14 Shortcut Key Setting

Granite Display supports up to 3 shortcut keys, which are used for activating corresponding scenes and show up at the top of the main page, as shown in Figure 14-1.
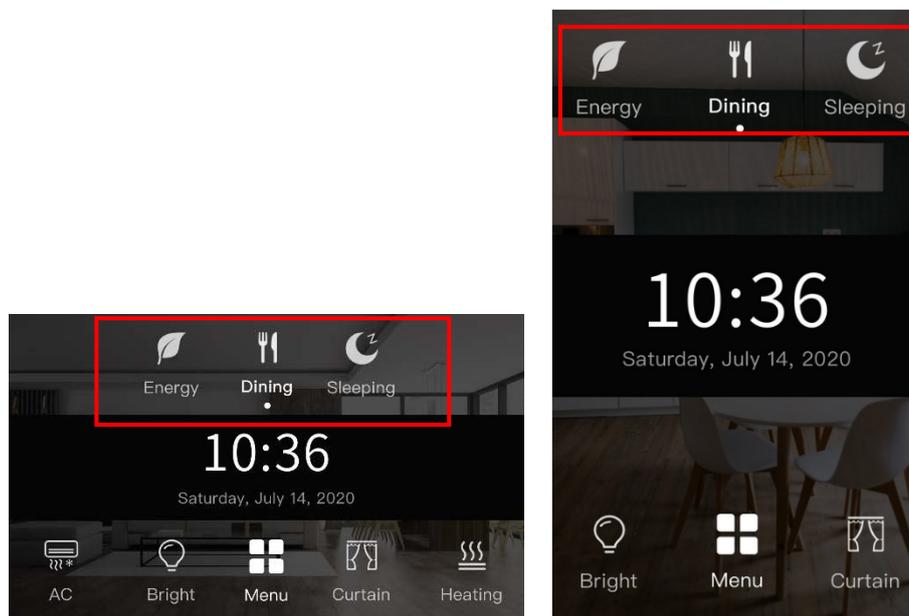
Figure 14-1 Main page of Granite Display (landscape mode / portrait mode)

Users may enable shortcut key in "Function configuration", as shown in Figure 14-2.
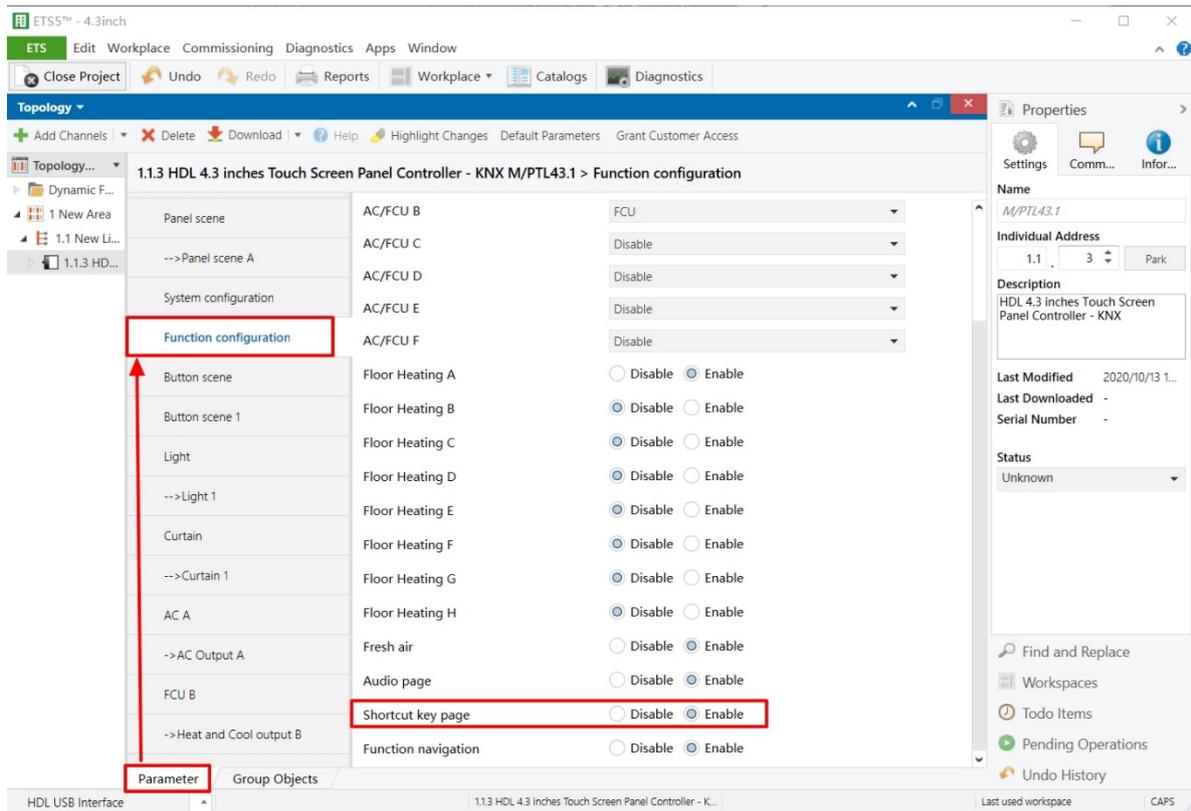
Figure 14-2 Enable floor heating

Users may select "Shortcut key" in the "Parameter" tab to open the page, as shown in Figure 14-3.
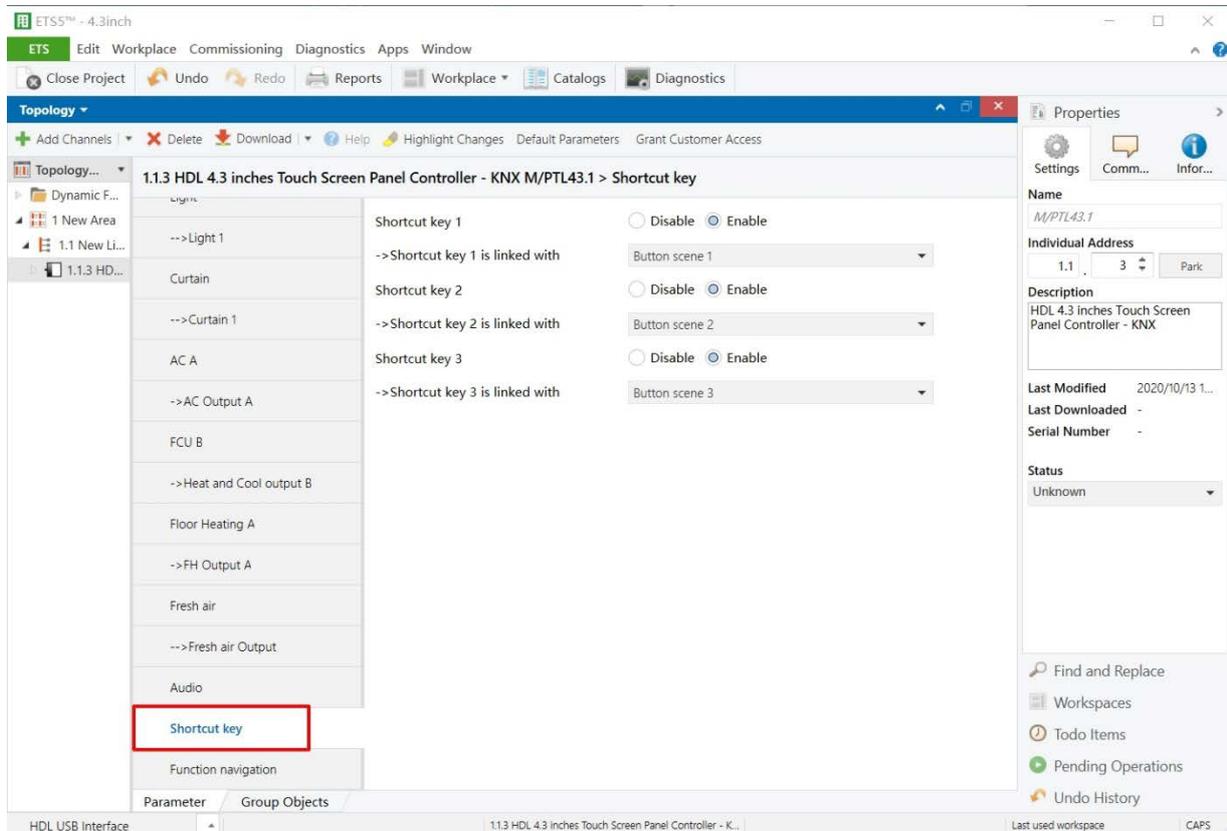
Figure 14-3 Open the shortcut key page

After enabling corresponding shortcut keys, the details can be configured below.

1. Shortcut key n: to enable corresponding shortcut key.

2. Shortcut key is linked with: to select scenes linked with shortcut keys.

15 Navigation Button Setting

Granite Display displays navigation buttons at the bottom of the main page and on either side of the main page button, which are used for opening corresponding control pages quickly, as shown in Figure 15-1.
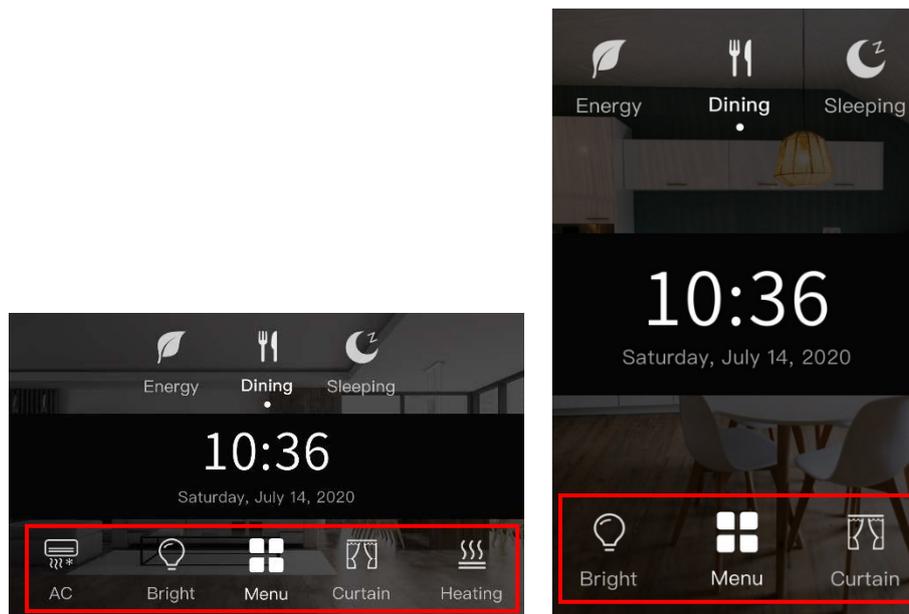
Figure 15-1 Main page of Granite Display (landscape mode / portrait mode)

Users may enable navigation button in "Function configuration", as shown in Figure 15-2.
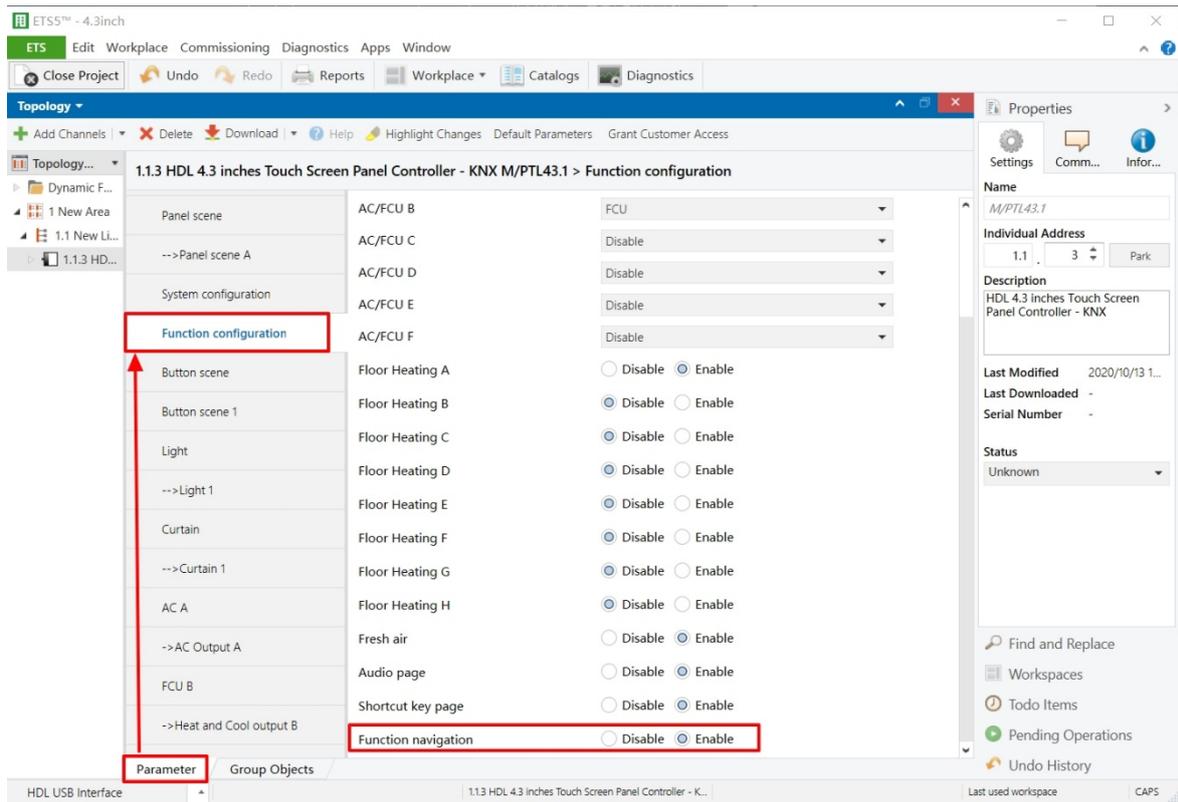
Figure 15-2 Enable the navigation button

Users may select "Function navigation" in "Parameter" tab to open the page, as shown in Figure 15-3.
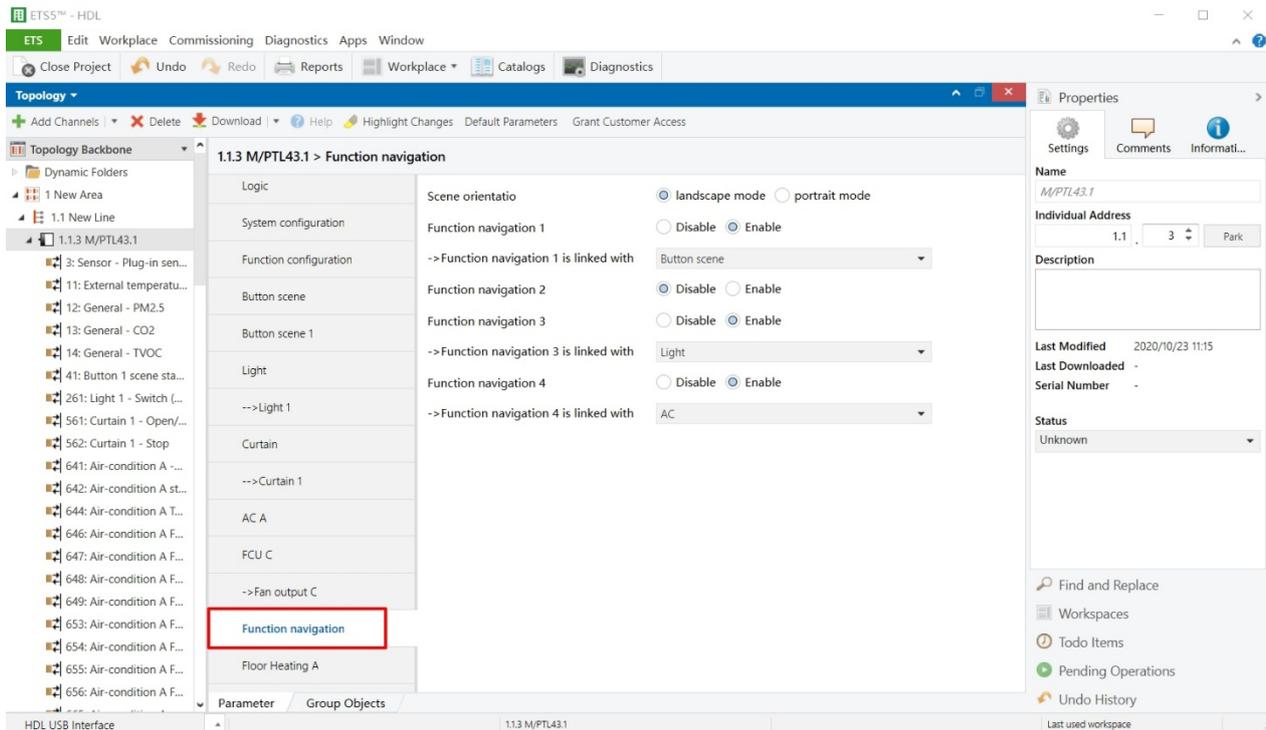
Figure 15-3 Open the navigation setting page

After enabling corresponding navigation shortcut keys, the details can be configured below.

1. Scene orientation: landscape mode; portrait mode

2. Function navigation n: to enable corresponding navigation key.

3. Function navigation is linked with: to select the corresponding function of the navigation button, including button scene, light, curtain, audio, AC, FH, fresh air.

16 Data Downloaded to the Panel

16.1 Interface Setting

If users need to download data to the panel, KNX interface is necessary.

After connecting KNX interface to a computer via USB, click "Bus" tab in ETS' main page, "HDL USB Interface" will show up in "Discovered Interface". Double click to add, and the interface can be found in "current interface", as shown in Figure 16-1.
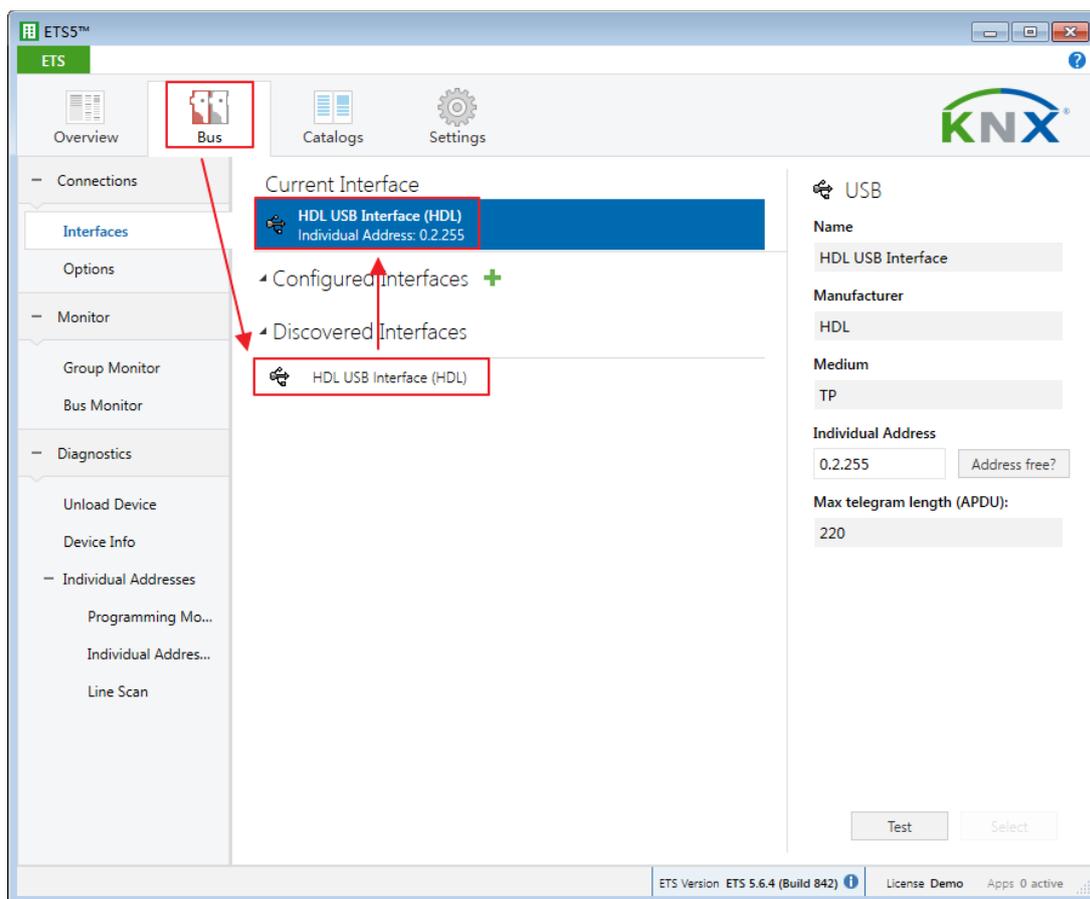
Figure 16-1 Interface setting

16.2 Data Downloading

Right click on the database to be downloaded to the panel and select "Download". Click the main page button of the panel → Setting button → Drag to the bottom. Turn on the programming mode, as shown in Figure 16-2.
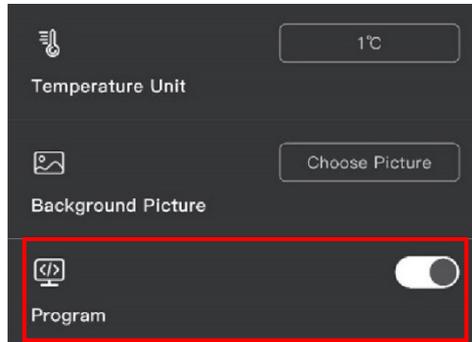
Figure 16-2 Turn on the programming mode switch

It shows the data has been downloaded on the right side of ETS, as shown in Figure 16-3.
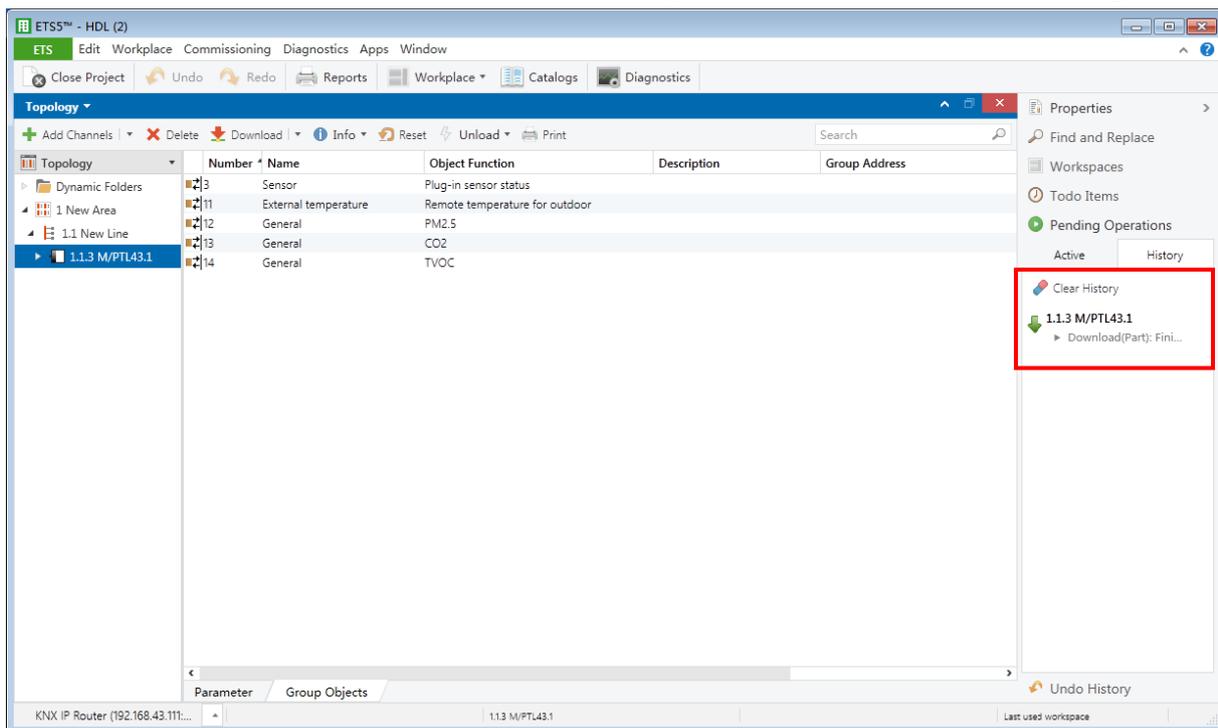
Figure 16-3 Download the data

17 Object Instruction

KNX communication objects are used for receiving and sending data. The length of these objects is from 1 to 14 bits according to different function settings. Each object has a flag with communication property.

1. "C"-Communication, representing that communication objects are connected normally via the bus.

2. "R"-Read, representing that communication objects value can be read via the bus.

3. "W"-Write, representing that communication objects value can be rewritten via the bus.

4. "T"-Transmit, representing that communication objects have transmit function. When this object value is modified, the message will be sent.

5. "U"-Update, representing that communication object can be updated via the bus response message.

17.1 Objects "General"

Objects "General"					
1	General	Heartbeat telegram	1 bit	C - - T U	
2	General	Change brightness	1 byte	C - W T U	
4	General	Proximity sensor output	1 bit	C R - T U	
5	Slave clock	Network datetime	8 bytes	C - W T U	
6	Slave clock	Network date	3 bytes	C - W T U	
7	Slave clock	Network time	3 bytes	C - W T U	
8	External temperature	Remote temperature for indoor	2 bytes	C - W T U	
9	Local temperature	Temperature report	2 bytes	C R - T U	
10	General	Local humidity report	2 bytes	C R - T U	
11	External temperature	Remote temperature for outdoor	2 bytes	C - W T U	
12	General	PM2.5	2 bytes	C - W T -	
13	General	CO2	2 bytes	C - W T -	
14	General	TVOC	2 bytes	C - W T -	

No.	Name	Function	Flag	Data Type
1	General	Heartbeat telegram	CTU	DPT1.003 1bit
This object can be activated by selecting "Send value "0"cyclically, Send value"1"cyclically or Send value"1/0" inverted cyclically" in the parameter "Heartbeat Telegram", which is used for checking if the device is connected to the system normally.				
2	General	Change brightness	CWTU	DPT5.001

				1byte
This object is used for adjusting the brightness of the panel.				
4	General	Proximity sensor output	CRTU	DPT1.001 1bit
This object is used for controlling the panel human body sensor.				
5,6,7	Slave lock	Network date time Network date Network time	CWTU	DPT19.001 8bytes DPT11.001 3bytes DPT10.001 3bytes
These objects are used for indicating slave clock status. "Network date time" is to display the time and date. "Network date" is only to display the date while "Network time" is only to display the time. Slave clock means the panel can receive time signal to display time.				
8,11	External temperature	Remote temperature for indoor/outdoor	CWTU	DPT9.001 2bytes
These objects are used for displaying indoor/outdoor temperature.				
9	Local temperature	Temperature report	CRTU	DPT9.001 2bytes
This object is used for taking control of sending local temperature signals.				
10	General	Local humidity report	CRTU	DPT9.007 2bytes
This object is used for taking control of sending local humidity reports.				
12,13,14	General	PM2.5/CO_2/TVOC	CWTU	DPT9.030 2bytes DPT9.008 2bytes
These objects are used for displaying "PM2.5/CO_2/TVOC" data.				

17.2 Objects "Panel scene"

序号 ▲	名称	对象功能	长度	C	R	W	T	U	数据类型	优先级
21	Panel scene A	Call scene (1byte)	1 byte	C	-	W	T	U		低
22	Panel scene A	Call scene (1bit)	1 bit	C	-	W	T	U		低
23	Panel scene A	Save scene (1bit)	1 bit	C	-	W	T	U		低
24	Panel scene A	Object 1 value(1bit)	1 bit	C	R	W	T	U		低
25	Panel scene A	Object 2 value(1byte:scaling)	1 byte	C	R	W	T	U		低
26	Panel scene A	Object 3 value(0..255)	1 byte	C	R	W	T	U		低
27	Panel scene A	Object 4 value(2byte:float)	2 bytes	C	R	W	T	U		低
28	Panel scene A	Object 5 value(0..65535)	2 bytes	C	R	W	T	U		低
29	Panel scene A	Object 6 value(3byte:RGB)	3 bytes	C	R	W	T	U		低
30	Panel scene A	Object 7 value(1bit)	1 bit	C	R	W	T	U		低
31	Panel scene A	Object 8 value(1byte:scaling)	1 byte	C	R	W	T	U		低
32	Panel scene A	Object 9 value(0..255)	1 byte	C	R	W	T	U		低
33	Panel scene A	Object 10 value(2byte:float)	2 bytes	C	R	W	T	U		低
41	Panel scene B	Call scene (1byte)	1 byte	C	-	W	T	U		低
42	Panel scene B	Call scene (1bit)	1 bit	C	-	W	T	U		低
43	Panel scene B	Save scene (1bit)	1 bit	C	-	W	T	U		低
44	Panel scene B	Object 1 value(1bit)	1 bit	C	R	W	T	U		低
45	Panel scene B	Object 2 value(1byte:scaling)	1 byte	C	R	W	T	U		低
46	Panel scene B	Object 3 value(0..255)	1 byte	C	R	W	T	U		低
47	Panel scene B	Object 4 value(2byte:float)	2 bytes	C	R	W	T	U		低
48	Panel scene B	Object 5 value(0..65535)	2 bytes	C	R	W	T	U		低
49	Panel scene B	Object 6 value(3byte:RGB)	3 bytes	C	R	W	T	U		低
50	Panel scene B	Object 7 value(1bit)	1 bit	C	R	W	T	U		低
51	Panel scene B	Object 8 value(1byte:scaling)	1 byte	C	R	W	T	U		低
52	Panel scene B	Object 9 value(0..255)	1 byte	C	R	W	T	U		低
53	Panel scene B	Object 10 value(2byte:float)	2 bytes	C	R	W	T	U		低

No.	Name	Function	Flag	Data Type
21,41	Panel scene A/B	Call scene(1byte)	CWTU	DPT18.001 1byte
22,42	Panel scene A/B	Call scene(1bit)	CWTU	DPT1.001 1bit
23,43	Panel scene A/B	Save scene(1bit)	CWTU	DPT1.001 1bit
These objects are used for applying scenes (1byte/1bit) and saving scenes. Applied scene numbers range from 1 to 64 and the values range from 0 to 63.				
24~33, 44~53	Panel scene A/B	Object 1~10 value (1bit,1byte: scaling, 0..255, 2byte:float,0..65535,3byt	CWTU	DPT1.001 1bit DPT5.001 1byte

		e:RGB)		DPT5.004 1byte DPT9.001 2bytes DPT7.001 2bytes DPT232.600 3bytes
These objects are used for setting object type values.				

17.3 Objects "Button scene"

Objects function status--"Button Scene"								
(Take "Button 1" as an example)								

序号 ▲	名称	对象功能	长度	C	R	W	T	U	数据类型	优先级
61	Button 1 scene 1	Switch 1 value(1bit)	1 bit	C	R	W	T	U		低
62	Button 1 scene 2	Percentage 2 value(0..100%)	1 byte	C	R	W	T	U		低
63	Button 1 scene 3	Threshold 3 value(0..255)	1 byte	C	R	W	T	U		低
64	Button 1 scene 4	Temperature4 value(2byte)	2 bytes	C	R	W	T	U		低
65	Button 1 scene 5	Threshold5 value(0..65535)	2 bytes	C	R	W	T	U		低
66	Button 1 scene 6	RGB 6 value(3byte:RGB)	3 bytes	C	R	W	T	U		低
67	Button 1 scene 7	Threshold 7 value(4byte)	4 bytes	C	R	W	T	U		低
68	Button 1 scene 8	Switch 8 value(1bit)	1 bit	C	R	W	T	U		低
69	Button 1 scene 9	Percentage 9 value(0..100%)	1 byte	C	R	W	T	U		低
70	Button 1 scene 10	Threshold 10 value(0..255)	1 byte	C	R	W	T	U		低
61	Button 1 scene 1	Call scene(1 byte)	1 byte	C	R	W	T	U		低
62	Button 1 scene 1 status	Call scene status(1 byte)	1 byte	C	R	W	T	U		低

No.	Name	Function	Flag	Data Type
61,71,81 ,91,101, 111,121, 131,141, 151,161, 171,181, 191,201, 211,221, 231,241, 251	Button m scene 1 （m=1,2,…,20）	Call scene (1-byte)	CWTU	DPT18.001 1byte
These objects are used for controlling scenes when "Standard Scene" is selected.				
62,72,82 ,92,102, 112,122,	Button m scene 1 （m=1,2,…,20） Status	Call scene status (1-byte)	CWTU	DPT18.001 1byte

132,142, 152,162, 172,182, 192,202, 212,222, 232,242, 252				
These objects are used for synchronizing scene status when "Standard scene" is selected.				
61-70, 71-80, 81-90, 91-100, 101-110, 111-120, 121-130, 131-140, 141-150, 151-160, 161-170, 171-180, 181-190, 191-200, 201-210, 211-220, 221-230, 231-240, 241-250, 251-260	Button m scene n （M=1,2,…,20, n=1, 2,…, 10）	Switch n value (1-bit) Percentage n value (0-100%) Threshold n value (0-255) Temperature n value (2 bytes) Threshold n value (0-65535) RGB n value (3bytes: RGB) Threshold n value (4 bytes) (n=1, 2,…, 10)	CWTU	DPT1.001 1bit DPT5.001 1-bit DPT5.004 1-bit DPT9.001 2 bytes DPT7.001 2 bytes DPT232.600 3 bytes DPT12.001 4 bytes
When "Define scene" is selected, these objects are used for turning on/off devices in scenes (Switch n value, On is to send 1, OFF is to send 0), percentage control (Percentage n value, 0-100%), threshold control (Threshold n value, 0-255 or 0-65535 or 4 bytes), temperature control (2 bytes) and RGB dimming control (3 bytes), etc.				

17.4 Objects "Light"

Objects function status--"Light"				
(Take "Light 1" as an example)				

261	Light 1	Switch (1bit)	1 bit	C R - T U	低
268	Light 1	Switch status(1bit)	1 bit	C R - T U	低
262	Light 1	Dimming (1byte)	1 byte	C R - T U	低
269	Light 1	Dimming status(1 byte)	1 byte	C R - T U	低
262	Light 1	RGB absolute dimming(1byte)	1 byte	C R - T U	低
264	Light 1	RGB red channel	1 byte	C R - T U	低
265	Light 1	RGB green channel	1 byte	C R - T U	低
266	Light 1	RGB blue channel	1 byte	C R - T U	低
269	Light 1	RGB dimming status(1 byte)	1 byte	C R - T U	低
271	Light 1	RGB red channel status	1 byte	C R - T U	低
272	Light 1	RGB green channel status	1 byte	C R - T U	低
273	Light 1	RGB blue channel status	1 byte	C R - T U	低
274	Light 1	Color temperature status	2 bytes	C - W T U	低

No.	Name	Function	Flag	Data Type
261,268 276,283 291,298 306,313 321,328 336,343 351,358 366,373 381,388 396,403 411,418 426,433 441,448 456,463 471,478 486,493 501,508 516,523 531,538 546,553	Light n (n=1, 1,2,…, 20)	Switch (1bit) Switch status (1bit)	CWTU	DPT1.001 1bit
These objects are used for turning on/off lights or feedbacks on light switch status.				
262,269 277,284 292,299 307,314	Light n (n=1, 1,2,…, 20)	Dimming (1-byte) Dimming status (1-byte)	CWTU	DPT5.001 1-bit

322,329				
337,344				
352,359				
367,374				
382,389				
397,404				
412,419				
427,434				
442,449				
457,464				
472,479				
487,494				
502,509				
517,524				
532,539				
547,554				
These objects are used for adjusting the brightness or feedbacks on dimming status.				
262-266,269-274 277-281,284-289 292-296,299-304 307-311,314-319 322-326,329-334 337-341,344-349 352-356,359-364 367-371,374-379 382-386,389-394 397-401,404-409 412-416,419-424 427-431,434-439 442-446,449-454 457-461,464-469 472-476,479-484 487-491,494-499 502-506,509-514 517-521,524-529 532-536,539-544 547-551,554-559	Light n (n=1,2,···,20)	RGB absolute dimming (1 byte) RGB color (3 bytes) RGB red/green/blue channel RGB color status (1 byte) RGB red/green/blue channel status Color temperature status	C W T U	DPT5.001 1 byte DPT232.600 3 bytes DPT7.600 2 bytes
These objects are used for controlling RGB dimming or feedbacks on dimming/color temperature status.				

17.5 Objects "Curtain"

Objects function status--"Curtain"				
(Take "Curtain 1" as an example)				

561	Curtain 1	Open/close	1 bit	C R - T U	低
562	Curtain 1	Stop	1 bit	C R - T U	低
563	Curtain 1	Percentage	1 byte	C R - T U	低
564	Curtain 1	Slat adjustment	1 byte	C R - T U	低
565	Curtain 1	Open/close status	1 bit	C R - T U	低
566	Curtain 1	Stop status	1 bit	C R - T U	低
567	Curtain 1	Percentage status	1 byte	C R - T U	低
568	Curtain 1	Slat adjustment status	1 byte	C R - T U	低

No.	Name	Function	Flag	Data Type
561, 571, 581, 591, 601, 611, 621, 631	Curtain n (n=1, 2, …,8)	Open/close	CWTU	DPT1.009 1-bit
562, 572, 582, 592, 602, 612, 622, 632	Curtain n (n=1, 2, …,8)	Stop	CWTU	DPT1.007 1-bit
563, 573, 583, 593, 603, 613, 623, 633	Curtain n (n=1, 2, …,8)	Percentage	CWTU	DPT5.001 1-bit
These objects are used for controlling curtains, including "ON/OFF", "Stop" and "Percentage Control".				
565, 575, 585, 595, 605, 615, 625, 635	Curtain n (n=1, 2, …,8)	Open/close status	CWTU	DPT1.009 1-bit
566, 576, 586, 596, 606, 616, 626, 636	Curtain n (n=1, 2, …,8)	Stop status	CWTU	DPT1.007 1-bit
567, 577, 587, 597, 607, 617, 627, 637	Curtain n (n=1, 2, …,8)	Percentage status	CWTU	DPT5.001 1-bit
568, 578, 588, 598, 608, 618, 628, 638	Curtain n (n=1, 2, …,8)	Slat adjustment status	CWTU	DPT5.001 1-bit

These objects are used for feedbacks on curtain control status.

17.6 Objects "Air-condition"

Objects function status--"Air-condition"
(Take "Air-condition A" as an example)

641	Air-condition A	Switch ON/OFF	1 bit	C -	W T U
642	Air-condition A status	Switch ON/OFF status	1 bit	C -	W T U
643	Air-condition A Temperature	Actual temperature from EIB	2 bytes	C -	W T U
644	Air-condition A Temperature	Setpoint temperature	2 bytes	C -	W T U
645	Air-condition A Temperature status	Setpoint temperature status	2 bytes	C -	W T U
646	Air-condition A Fan	ON CMD for automatic	1 bit	C -	W T U
647	Air-condition A Fan	ON CMD for speed 1	1 bit	C -	W T U
648	Air-condition A Fan	ON CMD for speed 2	1 bit	C -	W T U
649	Air-condition A Fan	ON CMD for speed 3	1 bit	C -	W T U
653	Air-condition A Fan status	ON CMD for automatic staus	1 bit	C -	W T U
654	Air-condition A Fan status	ON CMD for speed 1 status	1 bit	C -	W T U
655	Air-condition A Fan status	ON CMD for speed 2 status	1 bit	C -	W T U
656	Air-condition A Fan status	ON CMD for speed 3 status	1 bit	C -	W T U
665	Air-condition A Mode	ON CMD for automatic	1 bit	C -	W T U
666	Air-condition A Mode	ON CMD for cooling	1 bit	C -	W T U
667	Air-condition A Mode	ON CMD for heating	1 bit	C -	W T U
668	Air-condition A Mode	ON CMD for dehumidification	1 bit	C -	W T U
669	Air-condition A Mode	ON CMD for fan	1 bit	C -	W T U
670	Air-condition A Mode status	Automatic status	1 bit	C -	W T U
671	Air-condition A Mode status	Cooling status	1 bit	C -	W T U
672	Air-condition A Mode status	Heating status	1 bit	C -	W T U
673	Air-condition A Mode status	Dehumidification status	1 bit	C -	W T U
674	Air-condition A Mode status	Fan status	1 bit	C -	W T U
675	Air-condition A Output	Relay-Heating	1 bit	C -	W T -
676	Air-condition A Output	Relay-Cooling	1 bit	C -	W T -
677	Air-condition A Output	Relay-Fan low speed	1 bit	C -	W T -
678	Air-condition A Output	Relay-Fan medium speed	1 bit	C -	W T -
679	Air-condition A Output	Relay-Fan hight speed	1 bit	C -	W T -

No.	Name	Function	Flag	Data Type
641,681, 721,761, 801,841	Air-condition A/B/C/D/E/F	Switch ON/OFF	CWTU	DPT1.001 1bit
These objects are used for turning on/off air conditioner. Sending 1 means ON while sending 0 means OFF.				
642,682, 722,762, 802,842	Air-condition A/B/C/D/E/F status	Switch ON/OFF status	CWTU	DPT1.001 1bit

These objects are used for indicating air conditioner switch status.

643,683, 723,763, 803,843	Air-condition A/B/C/D/E/F Temperature	Actual temperature from EIB	CWTU	DPT9.001 2 bytes

These objects are used for indicating temperature data from EIB.

644,684, 724,764, 804,844	Air-condition A/B/C/D/E/F Temperature	Setpoint temperature	CWTU	DPT9.001 2 bytes

These objects are used for setting temperature.

645,685, 725,765, 805,845	Air-condition A/B/C/D/E/F Temperature	Setpoint temperature status	CWTU	DPT9.001 2 bytes

These objects are used for indicating temperature status.

646-649, 686-689, 726-729, 766-769, 806-809, 846-849	Air-condition A/B/C/D/E/F fan	ON CMD for automatic/speed1/2/3	C W T U	DPT1.001 1bit

These objects are used for adjusting air conditioner speed.

653-656, 693-696, 733-736, 773-776, 813-816, 853-856	Air-condition A/B/C/D/E/F fan status	ON CMD for automatic/speed1/2/3	C W T U	DPT1.001 1bit

These objects are used for indicating air conditioner speed status in different levels.

647,687, 727,767, 807,847	Air-condition A/B/C/D/E/F fan	Fan speed with % value	CWTU	DPT5.001 1byte

These objects are used for controlling air conditioner speed via absolute values.

660,700, 740,780, 820,860	Air-condition A/B/C/D/E/F fan status	Fan speed with % value status	CWTU	DPT5.001 1byte

These objects are used for synchronizing air conditioner status.

665,705, 745,785, 825,865	Air-condition A/B/C/D/E/F control mode	AC control mode (byte)	CWTU	DPT 20.105 1byte

This object is used for setting air conditioner modes.

665-669,	Air-condition	ON CMD for	CWTU	DPT1.001

705-709, 745-749, 785-789, 825-829, 865-869,	Mode	automatic/cooling/heating/dehumidification/fan		1bit
These objects are used for indicating air conditioner modes, including "Automatic", "Cooling", "Heating", "Dehumidification" and "Fan".				
670,710, 750,790, 830,870	Air-condition A/B/C/D/E/F control mode status	AC control mode status (byte)	CWTU	DPT 20.105 1byte
These objects are used for indicating air conditioner control status.				
670-674, 710-714, 750-754, 790-794, 830-834, 870-874,	Air-condition A/B/C/D/E/F Mode status	Automatic/Cooling/Heating/Dehumidification/Fan status	CWTU	DPT1.001 1bit
These objects are used for indicating air conditioner modes, including "Automatic", "Cooling", "Heating", "Dehumidification" or "Fan status".				
675-679, 715-719, 755-759, 795-799, 835-839, 875-879,	Air-condition A/B/C/D/E/F Output	Relay-Heating/Cooling/ Fan low/medium/high speed	CWT	DPT1.001 1bit
These objects are used for outputting air conditioner speed, including "Relay-Heating", "Relay-Cooling", "Fan low", "Fan medium" and "Fan high speed".				

17.7 Objects "HVAC"

Objects function status--"HVAC" (Take "HVAV A" as an example)
881   HVAC FanA   Temperature from EIB   2 bytes C - W - U

No.	Name	Function						
884	HVAC SetpointA	Base setpoint temperature	2 bytes	C	-	W	T	U
885	HVAC Setpoint statusA	Setpoint temperature status	2 bytes	C	-	W	T	U
886	HVAC SetpointA	Instantaneous setpoint temp.	2 bytes	C	-	W	T	U
888	HVAC control modeA	Automatic heating/cooling mode	1 bit	C	-	W	T	U
889	HVAC control modeA	Activation of heating mode	1 bit	C	-	W	T	U
890	HVAC control modeA	Activation of cooling mode	1 bit	C	-	W	T	U
891	HVAC control modeA	Activation of fan only	1 bit	C	-	W	T	U
894	HVAC control mode statusA	Automatic mode status	1 bit	C	-	W	T	U
895	HVAC control mode statusA	Heating mode status	1 bit	C	-	W	T	U
896	HVAC control mode statusA	Cooling mode status	1 bit	C	-	W	T	U
897	HVAC control mode statusA	Only fan status	1 bit	C	-	W	T	U
900	HVAC modeA	ON CMD for comfort mode	1 bit	C	-	W	T	U
901	HVAC modeA	ON CMD for standby mode	1 bit	C	-	W	T	U
902	HVAC modeA	ON CMD for night mode	1 bit	C	-	W	T	U
903	HVAC modeA	ON CMD for building protection	1 bit	C	-	W	T	U
905	HVAC mode statusA	Comfort mode status	1 bit	C	-	W	T	U
906	HVAC mode statusA	Standby mode status	1 bit	C	-	W	T	U
907	HVAC mode statusA	Night mode status	1 bit	C	-	W	T	U
908	HVAC mode statusA	Building protection status	1 bit	C	-	W	T	U
909	HVAC FanA	Fan speed automatic	1 bit	C	-	W	T	U
911	HVAC FanA	Fan speed 1	1 bit	C	-	W	T	U
912	HVAC FanA	Fan speed 2	1 bit	C	-	W	T	U
913	HVAC FanA	Fan speed 3	1 bit	C	-	W	T	U
914	HVAC FanA	Status fan speed 1	1 bit	C	-	W	T	U
915	HVAC FanA	Status fan speed 2	1 bit	C	-	W	T	U
916	HVAC FanA	Status fan speed 3	1 bit	C	-	W	T	U
918	HVAC FanA	Status fan speed automatic	1 bit	C	-	W	T	U
923	HVAC OutputA	Relay-Heating	1 bit	C	-	W	T	-
924	HVAC OutputA	Relay-Cooling	1 bit	C	-	W	T	-
925	HVAC OutputA	Relay-Fan speed1	1 bit	C	-	W	T	-
926	HVAC OutputA	Relay-Fan speed2	1 bit	C	-	W	T	-
927	HVAC OutputA	Relay-Fan speed3	1 bit	C	-	W	T	-

No.	Name	Function	Flag	Data Type
881,931, 981,1031, 1081,1131	HVAC Fan A/B/C/D/E/F	Temperature from EIB	C W U	DPT9.001 2bytes
These objects are used for indicating temperature data from EIB.				
881,931, 981,1031, 1081,1131	HVAC Actual temperature A/B/C/D/E/F	Actual temperature	CWTU	DPT9.001 2bytes
These objects are used for indicating actual temperature.				
884,886, 934,936, 984,986,	HVAC Setpoint A/B/C/D/E/F	Base setpoint temperature Instantaneous setpoint temp.	CWTU	DPT9.001 2 bytes

1034,1036, 1084,1086, 1134,1136				
These objects are used for setting "Temperature/Instantaneous temperature".				
885,935, 985,1035, 1085,1135	HVAC Setpoint status A/B/C/D/E/F	Setpoint temperature status	CWTU	DPT9.001 2 bytes
These objects are used for indicating temperature status.				
887-891, 937-941, 987-991, 1037-1041, 1087-1091, 1137-1141	HVAC control mode A/B/C/D/E/F	HVAC control mode (byte) Activation of Automatic heating/cooling mode/ heating mode/cooling mode/ fan only/	C W T U	DPT20.105 1 byte DPT1.003 1bit
These objects are used for controlling air conditioner modes, including "Automatic heating/cooling code / heating mode /cooling mode/fan only".				
893-897, 943-947, 993-997, 1043-1047, 1093-1097, 1143-1147	HVAC control mode status A/B/C/D/E/F	HVAC control mode status (byte) Automatic mode status/ heating mode status/ cooling mode status/ Only fan status/	C W T U	DPT20.105 1 byte DPT1.003 1 bit
These objects are used for indicating air conditioner modes, including "Automatic heating/cooling code / heating mode /cooling mode/fan only".				
899-903, 949-953, 999-1003, 1049-1053, 1099-1103, 1149-1153,	HVAC mode A/B/C/D/E/F	HVAC mode (byte) ON CMD for comfort/standby/night/building protection mode	CWTU	DPT20.102 1-bit DPT1.001 1-bit
These objects are used for controlling air conditioner modes, including "Comfort/Standby/Night/Safety protection".				
904-908, 954-958, 1004-1008, 1054-1058, 1104-1108, 1154-1158,	HVAC mode status A/B/C/D/E/F	HVAC mode (byte) Comfort/Standby/Night/Building protection mode status	CWTU	DPT20.102 1-bit DPT1.001 1-bit
These objects are used for indicating air conditioner modes, including "Comfort/Standby/Night/Safety protection".				

909-913, 959-963, 1009-1013, 1059-1063, 1109-1113, 1159-1163,	HVAC Fan A/B/C/D/E/F	Fan speed automatic Fan speed with % value Fan speed 1/2/3	CWTU	DPT1.003 1bit DPT5.001 1-bit DPT1.001 1-bit
These objects are used for controlling air conditioner speed.				
914-918, 964-968, 1014-1018, 1064-1068, 1114-1118, 1164-1168,	HVAC Fan A/B/C/D/E/F	Status fan speed 1/2/3 Status fan speed Status fan speed automatic	CWTU	DPT1.001 1-bit DPT5.010 1-bit DPT1.003 1bit
These objects are used for indicating air conditioner speed.				
923-927, 973-977, 1023-1027, 1073-1077, 1123-1127, 1173-1177,	HVAC Output A/B/C/D/E/F	Relay-Heating/Cooling/ Fan speed 1/2/3	CWT	DPT1.001 1-bit
These objects are used for outputting air conditioner modes, including "Relay-Heating/Cooling and Fan speed 1/2/3".				

17.8 Objects "Floor Heating"

Objects function status--"Floor Heating" (Take "Floor Heating A" as an example)

No.	Name	Function		Flag		Data Type
1182	Floor Heating A	Actual temperature	2 bytes	C -	W T U	
1185	Floor Heating A	Normal-mode setpoint Temp.	2 bytes	C -	W T U	
1186	Floor Heating A	Day-mode setpoint Temp.	2 bytes	C -	W T U	
1187	Floor Heating A	Night-mode setpoint Temp.	2 bytes	C -	W T U	
1188	Floor Heating A	Away-mode setpoint Temp.	2 bytes	C -	W T U	
1189	Floor Heating A status	Normal-mode setpoint Temp.	2 bytes	C -	W T U	
1190	Floor Heating A status	Day-mode setpoint Temp.	2 bytes	C -	W T U	
1191	Floor Heating A status	Night-mode setpoint Temp.	2 bytes	C -	W T U	
1192	Floor Heating A status	Away-mode setpoint Temp.	2 bytes	C -	W T U	
1193	Floor Heating A	Preset 1 Temp. for timer mode	2 bytes	C -	W T U	
1194	Floor Heating A	Time of day for preset 1	3 bytes	C -	W T U	
1195	Floor Heating A	Start/Stop heating for preset1	1 bit	C -	W T U	
1196	Floor Heating A	Preset 2 Temp. for timer mode	2 bytes	C -	W T U	
1197	Floor Heating A	Time of day for preset 2	3 bytes	C -	W T U	
1198	Floor Heating A	Start/Stop heating for preset2	1 bit	C -	W T U	
1199	Floor Heating A	Preset 3 Temp. for timer mode	2 bytes	C -	W T U	
1200	Floor Heating A	Time of day for preset 3	3 bytes	C -	W T U	
1201	Floor Heating A	Start/Stop heating for preset3	1 bit	C -	W T U	
1202	Floor Heating A status	Preset 1 Temp. for timer mode	2 bytes	C -	W T U	
1203	Floor Heating A status	Time of day for preset 1	3 bytes	C -	W T U	
1204	Floor Heating A status	Start/Stop heating for preset1	1 bit	C -	W T U	
1205	Floor Heating A status	Preset 2 Temp. for timer mode	2 bytes	C -	W T U	
1206	Floor Heating A status	Time of day for preset 2	3 bytes	C -	W T U	
1207	Floor Heating A status	Start/Stop heating for preset2	1 bit	C -	W T U	
1208	Floor Heating A status	Preset 3 Temp. for timer mode	2 bytes	C -	W T U	
1209	Floor Heating A status	Time of day for preset 3	3 bytes	C -	W T U	
1210	Floor Heating A status	Start/Stop heating for preset3	1 bit	C -	W T U	
1211	Floor Heating A	Floor heating(1-ON,0-OFF)	1 bit	C -	W T U	
1212	Floor Heating A	Floor heating switch status	1 bit	C -	W T U	
1213	Floor Heating A	ON CMD for Normal-mode	1 bit	C -	W T U	
1214	Floor Heating A	ON CMD for Day-mode	1 bit	C -	W T U	
1215	Floor Heating A	ON CMD for Night-mode	1 bit	C -	W T U	
1216	Floor Heating A	ON CMD for Away-mode	1 bit	C -	W T U	
1217	Floor Heating A	ON CMD for Timer-mode	1 bit	C -	W T U	
1218	Floor Heating A status	ON CMD for Normal-mode status	1 bit	C -	W T U	
1219	Floor Heating A status	ON CMD for Day-mode status	1 bit	C -	W T U	
1220	Floor Heating A status	ON CMD for Night-mode status	1 bit	C -	W T U	
1221	Floor Heating A status	ON CMD for Away-mode status	1 bit	C -	W T U	
1222	Floor Heating A status	ON CMD for Timer-mode status	1 bit	C -	W T U	
1226	Floor Heating A Output	PWM(1bit)	1 bit	C -	W T U	

No.	Name	Function	Flag	Data Type
1182, 1232, 1282, 1332, 1382, 1432, 1482, 1532,	Floor Heating A/B/C/D/E/F/G/H	Actual temperature	C W T U	DPT9.001 2 bytes

These objects are used for indicating "Actual temperature".				
1185-1188, 1235-1238, 1285-1288, 1335-1338, 1385-1388, 1435-1438, 1485-1488, 1535-1538,	Floor Heating A/B/C/D/E/F/G/H	Normal-mode/ Day-mode/ Night-mode/ Away-mode setpoint temp.	CWTU	DPT9.001 2 bytes
These objects are used for setting temperature in different modes, including "Normal mode/Day mode/Night mode/Away mode".				
1189-1192, 1239-1242, 1289-1292, 1339-1342, 1389-1392, 1439-1442, 1489-1492, 1539-1542,	Floor Heating A/B/C/D/E/F/G/H status	Normal-mode/ Day-mode/ Night-mode/ Away-mode setpoint temp.	CWTU	DPT9.001 2 bytes
These objects are used for indicating temperature status in different modes, including "Normal mode/Day mode/Night mode/Away mode".				
1193,1196,1199, 1243,1246,1249, 1293,1296,1299, 1343,1346,1349, 1393,1396,1399, 1443,1446,1449, 1493,1496,1499, 1543,1546,1549	Floor Heating A/B/C/D/E/F/G/H	Preset 1/2/3 Temp. for timer mode	CWTU	DPT9.001 2 bytes
These objects are used for setting different preset temperature for timer mode.				
1194,1197,1200, 1244,1247,1250, 1294,1297,1300, 1344,1347,1350, 1394,1397,1400, 1444,1447,1450, 1494,1497,1500, 1544,1547,1550	Floor Heating A/B/C/D/E/F/G/H	Time of day for preset 1/2/3	CWTU	DPT10.001 3 bytes
These objects are used for controlling time status at preset temperature.				
1195,1198,1201, 1245,1248,1251,	Floor Heating A/B/C/D/E/F/G/H	Start/Stop heating for preset 1/2/3	CWTU	DPT1.010 1bit

1295,1298,1301, 1345,1348,1351, 1395,1398,1401, 1445,1448,1451, 1495,1498,1501, 1545,1548,1551				
These objects are used for controlling "Start/Stop heating" at preset temperature.				
1202,1205,1208, 1252,1255,1258, 1302,1305,1308, 1352,1355,1358, 1402,1405,1408, 1452,1455,1458, 1502,1505,1508, 1552,1555,1558	Floor Heating A/B/C/D/E/F/G/H Status	Preset 1/2/3 Temp. for timer mode	CWTU	DPT9.001 2 bytes
These objects are used for synchronizing preset temperature status in timer mode.				
1203,1206,1209, 1253,1256,1259, 1303,1306,1309, 1353,1356,1359, 1403,1406,1409, 1453,1456,1459, 1503,1506,1509, 1553,1556,1559	Floor Heating A/B/C/D/E/F/G/H Status	Time of day for preset 1/2/3	CWTU	DPT10.001 3 bytes
These objects are used for taking control of synchronizing time status at preset temperature in timer mode.				
1204,1207,1210, 1254,1257,1260, 1304,1307,1310, 1354,1357,1360, 1404,1407,1410, 1454,1457,1460, 1504,1507,1510, 1554,1557,1560	Floor Heating A/B/C/D/E/F/G/H Status	Start/Stop heating for preset 1/2/3	CWTU	DPT1.010 1bit
These objects are used for synchronizing starting/stopping status at preset temperature.				
1211,1261,1311, 1361,1411,1461, 1511,1561	Floor Heating A/B/C/D/E/F/G/H	Floor heating (1-ON, 0-OFF)	CWTU	DPT 1.001 1-bit
These objects are used for turning on/off floor heating.				
1212,1262,1312, 1362,1412,1462,	Floor Heating A/B/C/D/E/F/G/H	Floor heating switch status	CWTU	DPT1.001 1bit

1512,1562				
These objects are used for indicating floor heating switch status.				
1213-1217, 1263-1267, 1313-1317, 1363-1367, 1413-1417, 1463-1467, 1513-1517, 1563-1567,	Floor Heating A/B/C/D/E/F/G/H	ON CMD for Normal-mode/ Day-mode/ Night-mode/ Away-mode/ Timer-mode	CWTU	DPT1.001 1bit
These objects are used for turning on/off floor heating modes, including "Normal mode/Day mode/Night mode/Away mode/Timer-mode".				
1218-1222, 1268-1272, 1318-1322, 1368-1372, 1418-1422, 1468-1472, 1518-1522, 1568-1572,	Floor Heating A/B/C/D/E/F/G/H Status	ON CMD for Normal-mode/ Day-mode/ Night-mode/ Away-mode/ Timer-mode status	CWTU	DPT1.001 1bit
These objects are used for indicating switch status of floor heating in modes, including "Normal mode/Day mode/Night mode/Away mode/Timer-mode".				
1225,1226, 1275,1276, 1325,1326, 1375,1376 1425,1426, 1475,1476, 1525,1526, 1575,1576	Floor Heating A/B/C/D/E/F/G/H Output	Safety protect temperature Relay-Heating PWM (1-bit) PWM valve (1-byte)	CWTU	DPT9.001 2 bytes DPT1.001 1-bit DPT5.001 1-bit
These objects are used for outputting "Safety protect temperature/Relay-Heating/PWM (1 bit)/PWM value (1 byte).				
1227,1277, 1327,1377, 1427,1477, 1527,1577	Floor Heating A/B/C/D/E/F/G/H	Temperature for protect	CWTU	DPT9.001 2 bytes
These objects are used for setting the temperature value of overheat protection.				

17.9 Objects "Fresh Air"

Objects function status--"Fresh Air"							
1581	Fresh_airA	Switch ON/OFF	1 bit	C	-	W	T	U
1582	Fresh_airA	Switch status	1 bit	C	-	W	T	U
1585	Fresh_airA	PM2.5	2 bytes	C	-	W	T	-
1586	Fresh_airA	CO2	2 bytes	C	-	W	T	-
1587	Fresh_airA	TVOC	2 bytes	C	-	W	T	-
1589	Fresh_airA	Fan speed automatic	1 bit	C	-	W	T	U
1590	Fresh_airA	Fan speed 1	1 bit	C	-	W	T	U
1591	Fresh_airA	Fan speed 2	1 bit	C	-	W	T	U
1592	Fresh_airA	Fan speed 3	1 bit	C	-	W	T	U
1593	Fresh_airA	Fan speed stop	1 bit	C	-	W	T	U
1594	Fresh_airA	Status fan speed automatic	1 bit	C	-	W	T	U
1595	Fresh_airA	Status fan speed 1	1 bit	C	-	W	T	U
1596	Fresh_airA	Status fan speed 2	1 bit	C	-	W	T	U
1597	Fresh_airA	Status fan speed 3	1 bit	C	-	W	T	U
1598	Fresh_airA	Status fan speed stop	1 bit	C	-	W	T	U
1600	Fresh_airA	Auto mode	1 bit	C	-	W	T	U
1601	Fresh_airA	Manual mode	1 bit	C	-	W	T	U
1602	Fresh_airA	Timer mode	1 bit	C	-	W	T	U
1603	Fresh_airA	Intelligent mode	1 bit	C	-	W	T	U
1605	Fresh_airA	Auto mode status	1 bit	C	-	W	T	U
1606	Fresh_airA	Manual mode status	1 bit	C	-	W	T	U
1607	Fresh_airA	Timer mode status	1 bit	C	-	W	T	U
1608	Fresh_airA	Intelligent mode status	1 bit	C	-	W	T	U
1610	Fresh_air A Output	Relay-Fan speed1	1 bit	C	-	W	T	-
1611	Fresh_air A Output	Relay-Fan speed2	1 bit	C	-	W	T	-
1612	Fresh_air A Output	Relay-Fan speed3	1 bit	C	-	W	T	-

No.	Name	Function	Flag	Data Type
1581	Fresh air A	Switch ON/OFF	CWTU	DPT1.001 1-bit
This object is used for turning on/off fresh air.				
1582	Fresh air A	Switch status	CWTU	DPT1.001 1-bit
This object is used for indicating fresh air switch status.				
1585-1587,	Fresh air A	PM2.5/CO_2/TVOC	CWTU	DPT9.030 2bytes DPT9.008 2bytes
These objects are used for displaying "PM2.5/CO_2/TVOC" data.				
1588-1593,	Fresh air A	Fan speed with % value Fan speed	CWTU	DPT5.001 1-bit

		automatic/1/2/3/stop		DPT1.001 1-bit
This object is used for controlling fresh air speed.				
1594-1599,	Fresh air A	Status speed automatic/ Fan speed 1/2/3/stop	CWTU	DPT1.001 1-bit DPT5.010 1-bit
These objects are used for indicating fresh air speed status.				
1600-1604,	Fresh air A	Auto/Manual/Timer/Intelligent mode/ Fresh air mode (byte)	CWTU	DPT1.001 1-bit DPT5.001 1-bit
These objects are used for controlling fresh air modes, including "Auto/Manual/Timer/Intelligent".				
1605-1609,	Fresh air A	Auto/Manual/Timer/Intelligent mode status/ Fresh air mode status (byte)	CWTU	DPT1.001 1-bit DPT5.001 1-bit
These objects are used for indicating fresh air modes, including "Auto/Manual/Timer/Intelligent".				
1610-1612,	Fresh air A output	Relay-Fan speed 1/2/3	CWTU	DPT1.001 1-bit
These objects are used for outputting fresh air speed.				

17.10   Objects "Audio"

Objects function status--"Audio"					
1616	Audio controller	Switch	1 bit	C - - T U	
1617	Audio controller status	Switch status	1 bit	C - - T U	
1618	Audio controller	Start play	1 bit	C - - T U	
1619	Audio controller	Pause play	1 bit	C - - T U	
1620	Audio controller status	Start play status	1 bit	C - - T U	
1621	Audio controller status	Pause play status	1 bit	C - - T U	
1622	Audio controller	Select song(1 bit)	1 bit	C - - T U	
1624	Audio controller status	Select song status(1 bit)	1 bit	C - - T U	
1626	Audio paly mode	Play mode	1 byte	C - - T U	
1627	Audio paly mode status	Play mode status	1 byte	C - - T U	
1628	Audio controller	adjust volume	1 byte	C - - T U	
1629	Audio controller status	adjust volume status	1 byte	C - - T U	
1634	Audio controller	Select source	1 bit	C - - T U	
1635	Audio controller status	Select source status	1 bit	C - - T U	
1637	Audio controller	Display play(first)	14 bytes	C - - T U	
1638	Audio controller	Display play(second)	14 bytes	C - - T U	
1639	Audio controller	Display play(three)	14 bytes	C - - T U	

No.	Name	Function	Flag	Data Type
1616	Adjust volume/Select list/	Switch	CWTU	DPT1.001 1-bit
This object is used for turning on/off audio players.				
1617	Adjust volume/Select list/	Switch status	CWTU	DPT1.001 1-bit
This object is used for indicating audio player switch status.				
1618,1619	Adjust volume/Select list/	Start/Pause play	CWTU	DPT1.010 1-bit DPT1.003 1-bit
These objects are used for controlling audio player to start or pause the music.				
1620,1621	Adjust volume/Select list/	Start/Pause play status	CWTU	DPT1.010 1-bit DPT1.003 1-bit
These objects are used for indicating "Start/Pause play status" of audio player.				
1622,1626,1628, 1634	Audio controller	Select song (1 bit)/Play mode/ Adjust volume/Select source	CWTU	DPT1.007 1 bit DPT5.001 1 byte
These objects are used for "Select song (1-bit)/Play mode/Adjust volume/Select source." and				

selecting audio source.

1624,1627,1629, 1635	Audio controller	Select song (1 bit)/Play mode/ Adjust volume/Select source status	CWTU	DPT1.007 1 bit DPT5.001 1 byte
These objects are used for indicating status of "Select song (1-bit)/Play mode/Adjust volume/Select source".				
1637-1639,	Adjust volume/Select list/	Display play (first/second/three)	CWTU	DPT16.000 14 bytes
These objects are used for displaying song names.				