Granite Metal Push Button Panel (KNX)
User Manual

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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	Oct.25, 2019

1 Introduction

This user manual offers the information on configuring Granite Metal Push Button Panel (KNX) (hereinafter referred to as Granite), by taking US panel with 6 buttons as an example. The following tools might be included:

➢ Granite Metal Push Button Panel (KNX) and corresponding power interface (Model: M/PCI.1-A in conjunction with EU panel, M/PCI.3-A in conjunction with US panel).)

➢ A computer with ETS5 software

➢ KNX USB interface (Model: M/USB.1)

➢ KNX power supply and auxiliary power supply

➢ KNX project files

➢ Dedicated KNX cable(s)

1.1 Import Data

1.1.1 Import Database to ETS (.knxprod)

1. **Import Catalogs:** click "Catalogs" → "Import…" in the main page of ETS5 software and select local database files with the suffix of .knxprod, as shown in Figure 1-1.
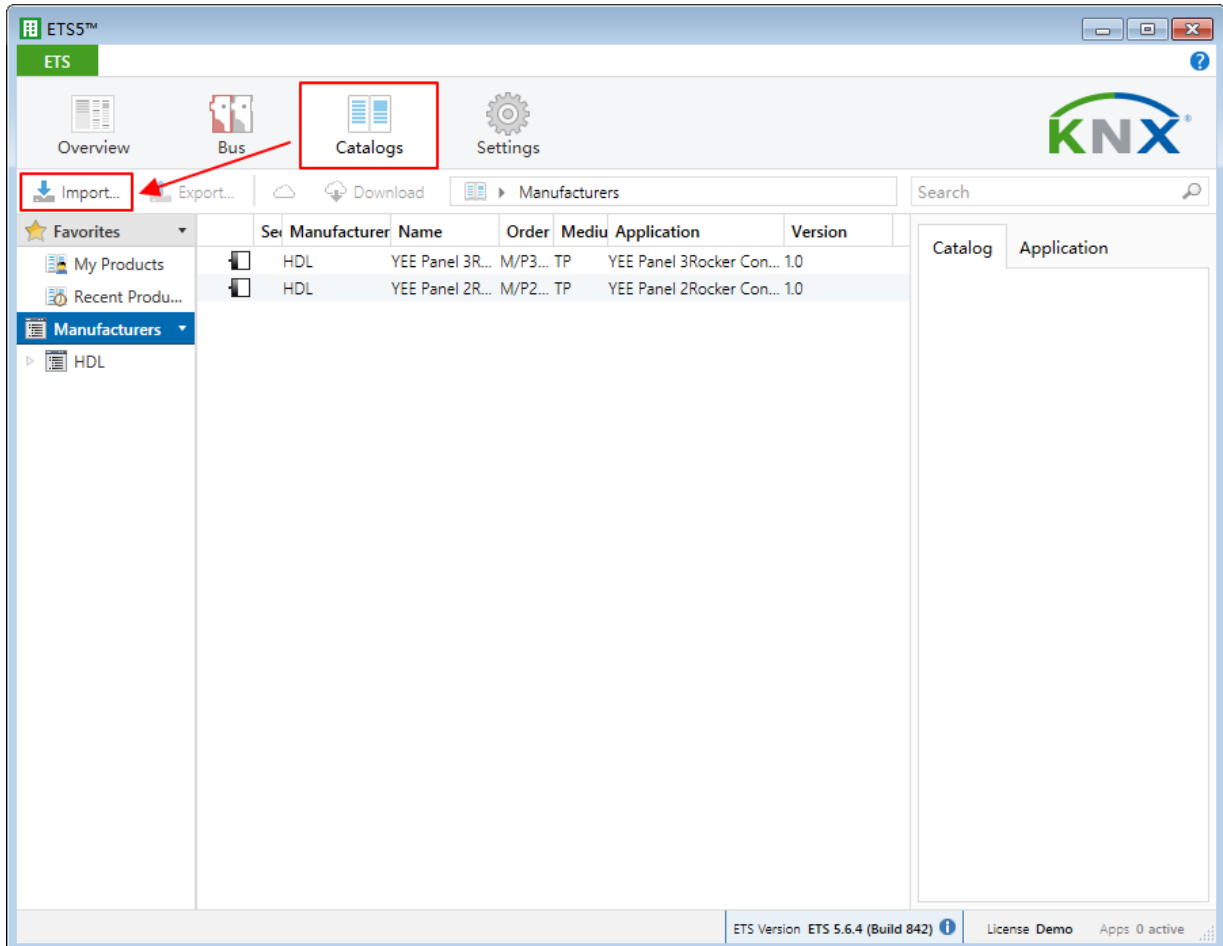
Figure 1-1 Import catalog

2. **Create Projects:** as shown in Figure 1-2, in "Your Projects" tab from ETS5 software's "Overview" page, click "+" to create projects. After editing project name, please keep other setting items by default.
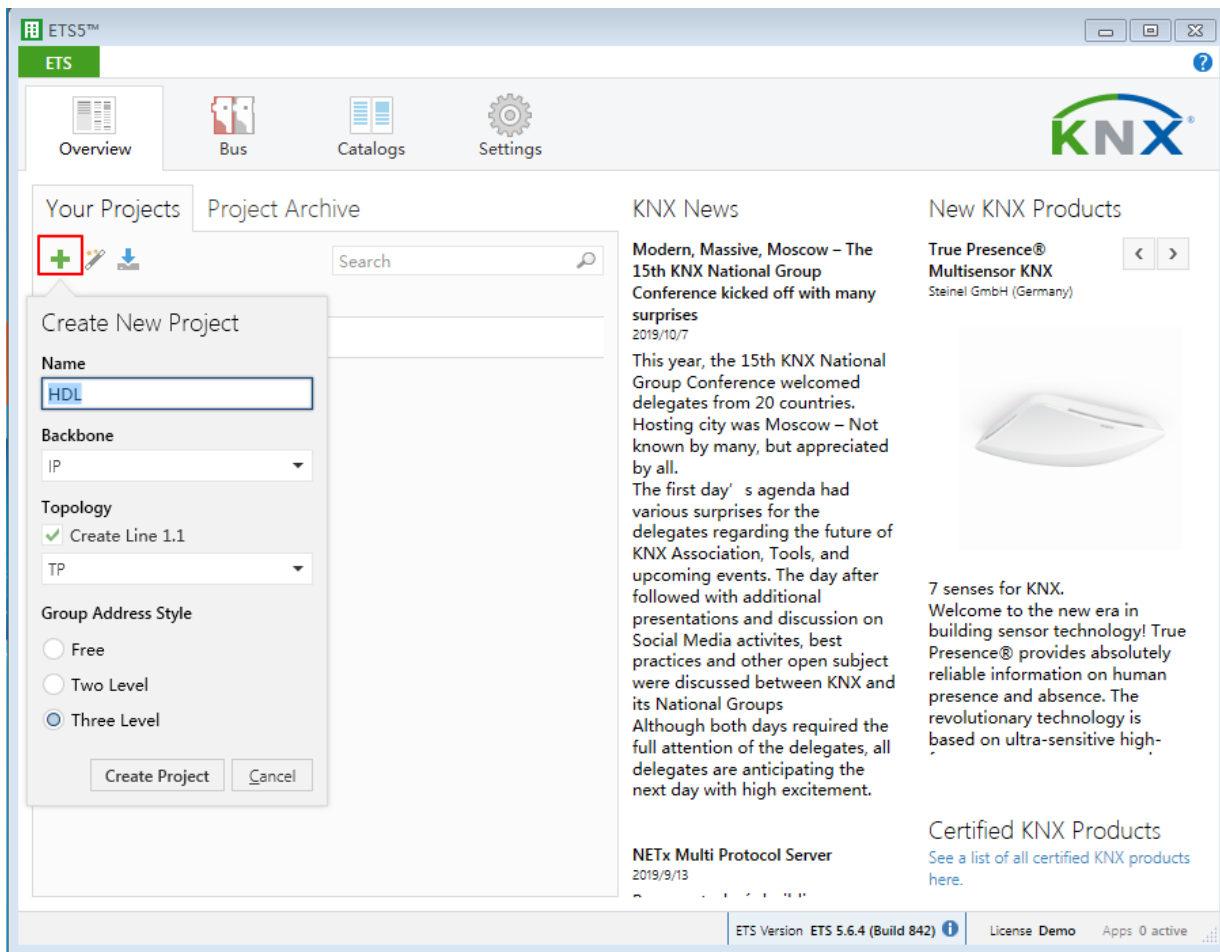
Figure 1-2 Create projects

3. Add Devices to Projects

① After creating a project, the project page will show up by default. Click "Buildings" and select "Topology", as shown in Figure 1-3.
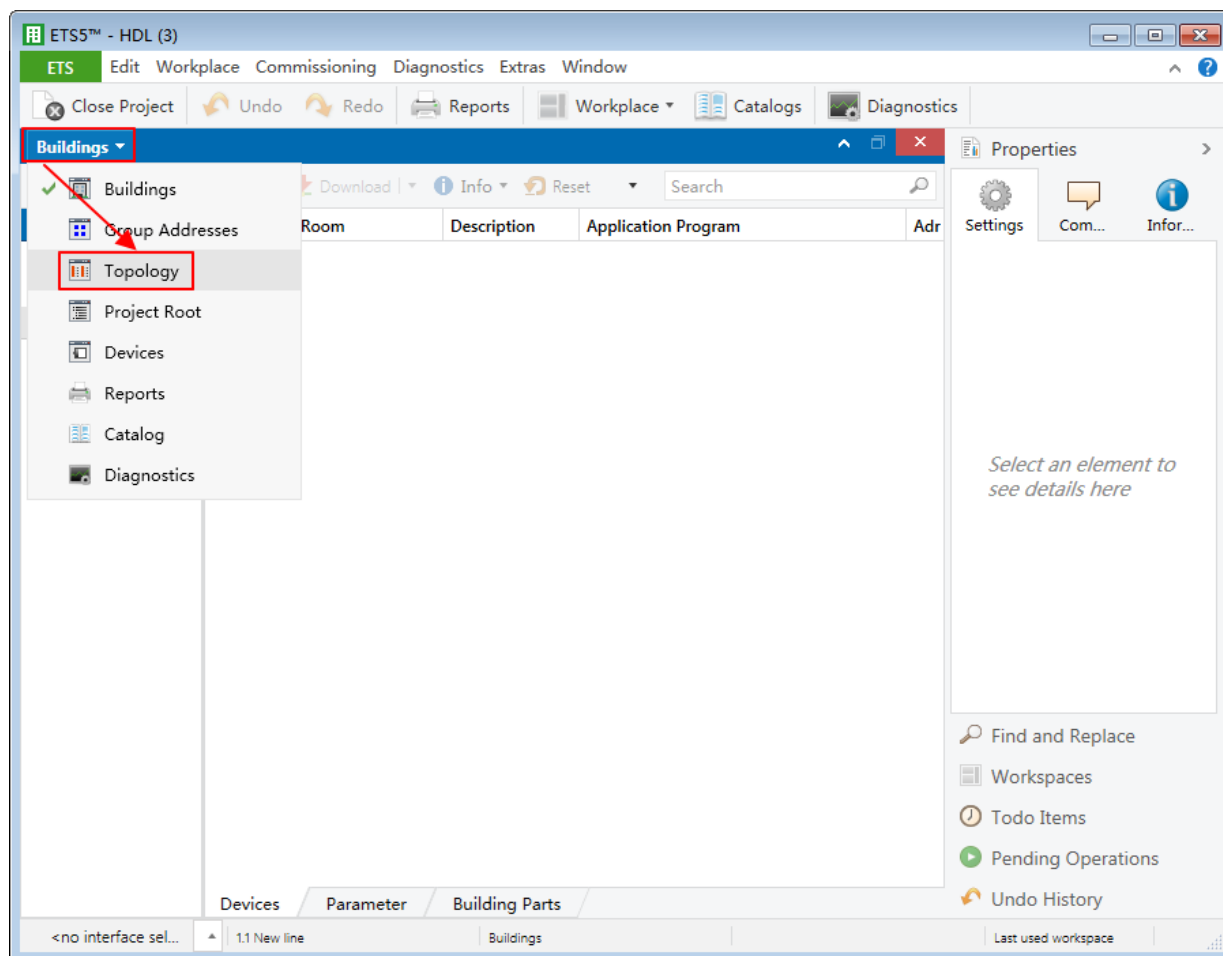
Figure 1-3 Select topology

② Figure 1-4 shows "Topology" page, click the arrow beside "Add Areas" and select "Devices", and the catalog page will show up below.
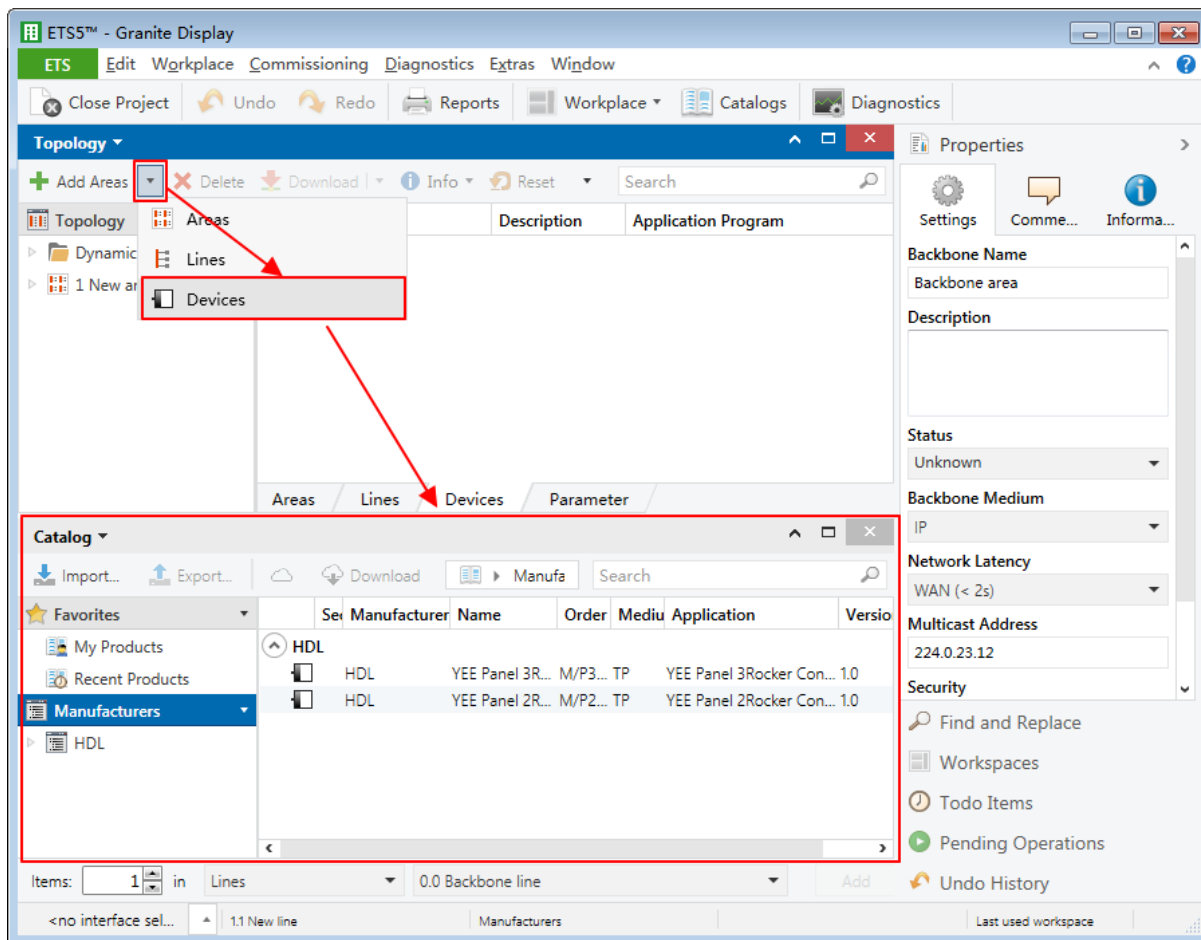
Figure 1-4 Open catalog page

③ As shown in Figure 1-5, click "HDL" in "Manufactures" column and select devices to be added to the project on the right. Drag devices to the above area (Method 1) or click "Add" button to add devices after clicking the location needed to add projects below (Method 2).
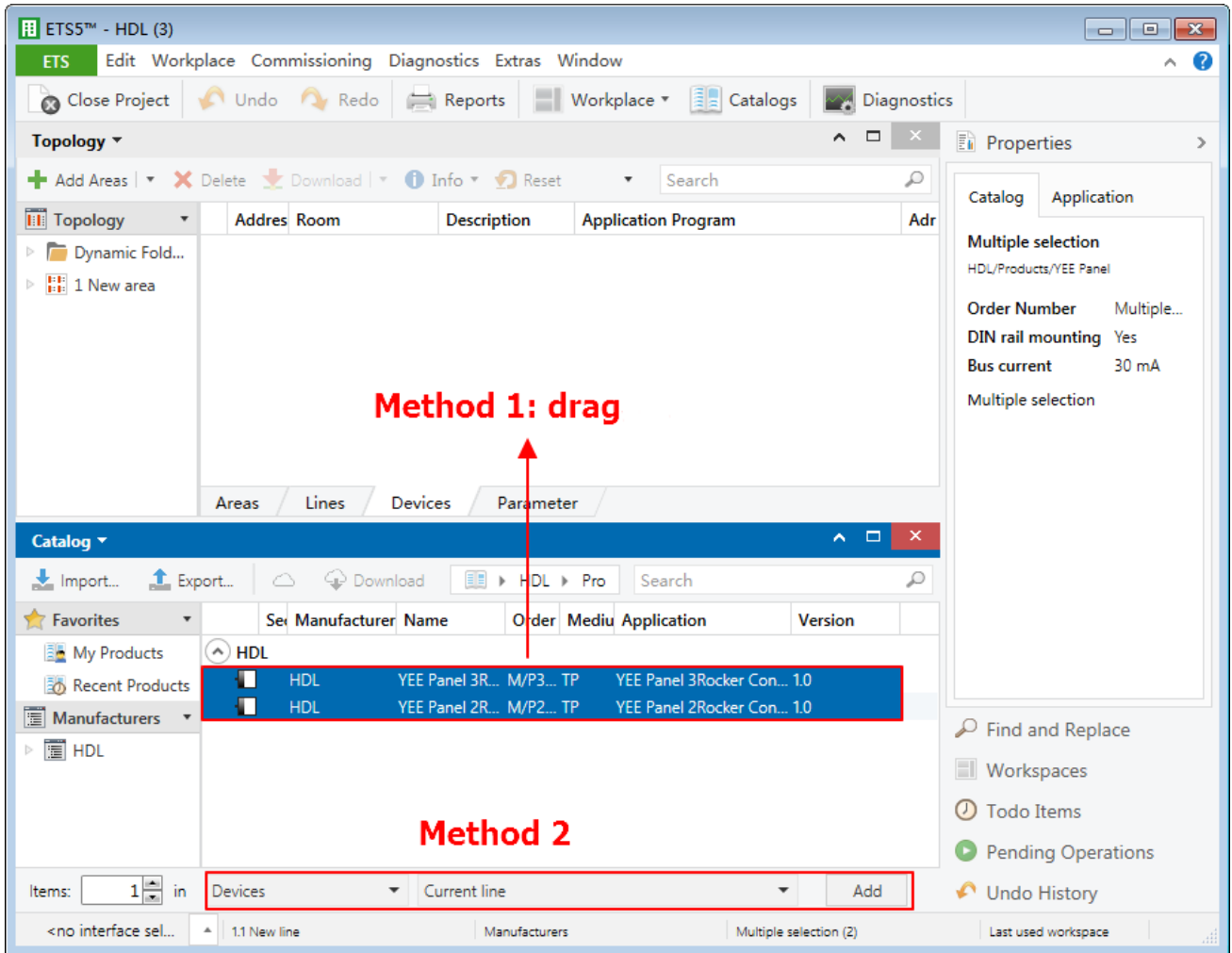
Figure 1-5 Add devices to projects

1.1.2 Import Projects (.knxproj)

As shown in Figure 1-6. Open ETS5 and click "Import project" button of "Your Project" tab of "Overview" page and import obtained KNX project files with the suffix of .knxproj. After importing projects, added/created projects will be listed below. Double click to edit.
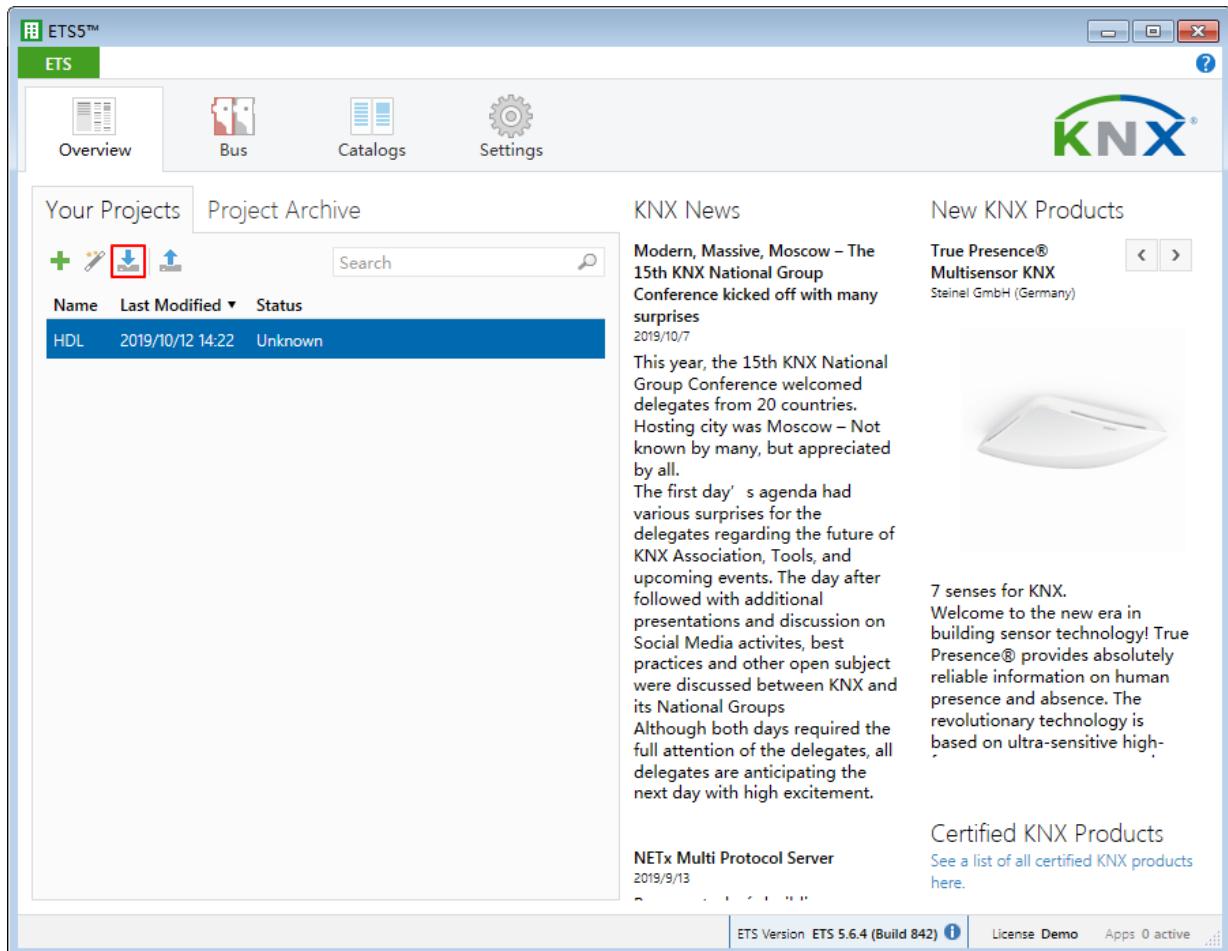
Figure 1-6 Import projects

1.2 Open Configuration Window

Double click the project to be configured. Click "Workspace" → "Open New Panel" → "Topology" to open the window, as shown in Figure 1-7.
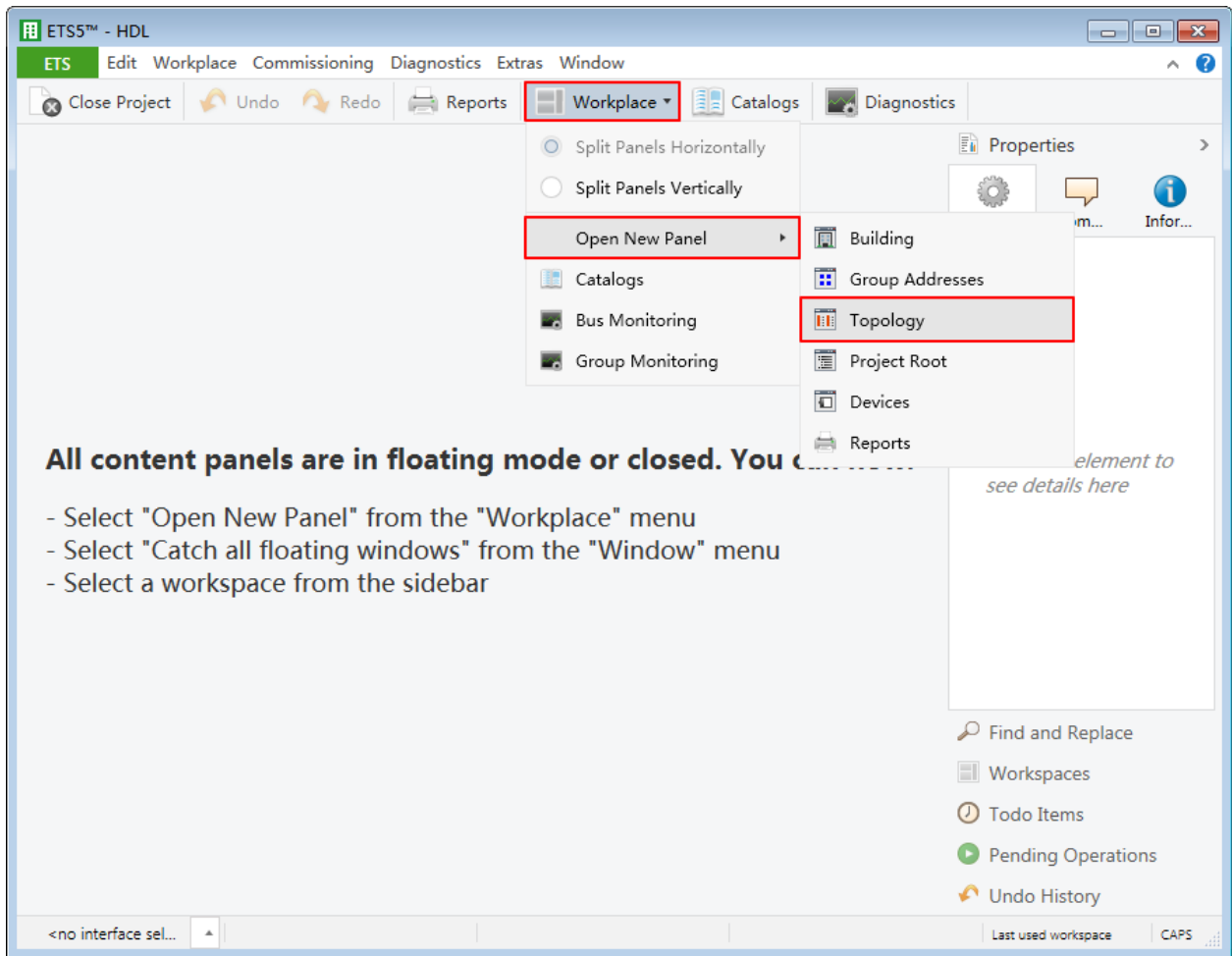
Figure 1-7 Open configuration window

1.3 Button Number Instruction

All button numbers in this user manual are subject to Figure 1-8.
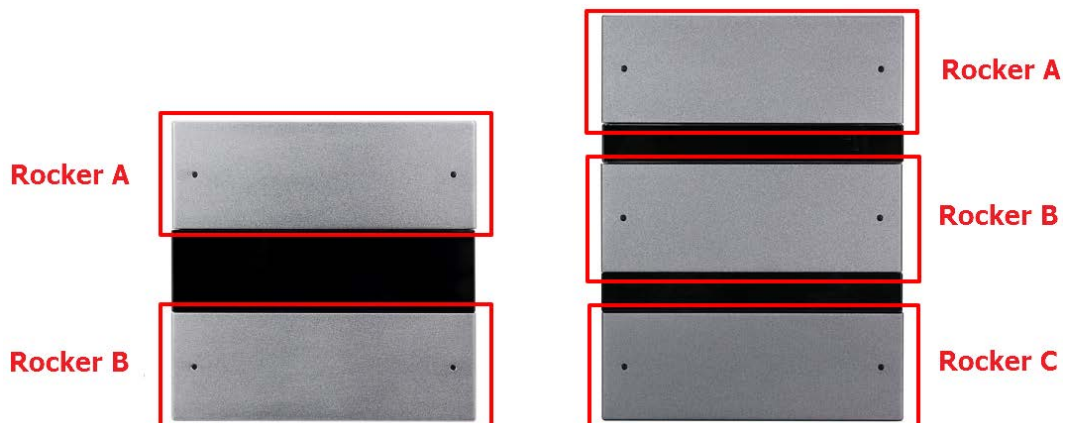
Figure 1-8 Button number

2 General Setting

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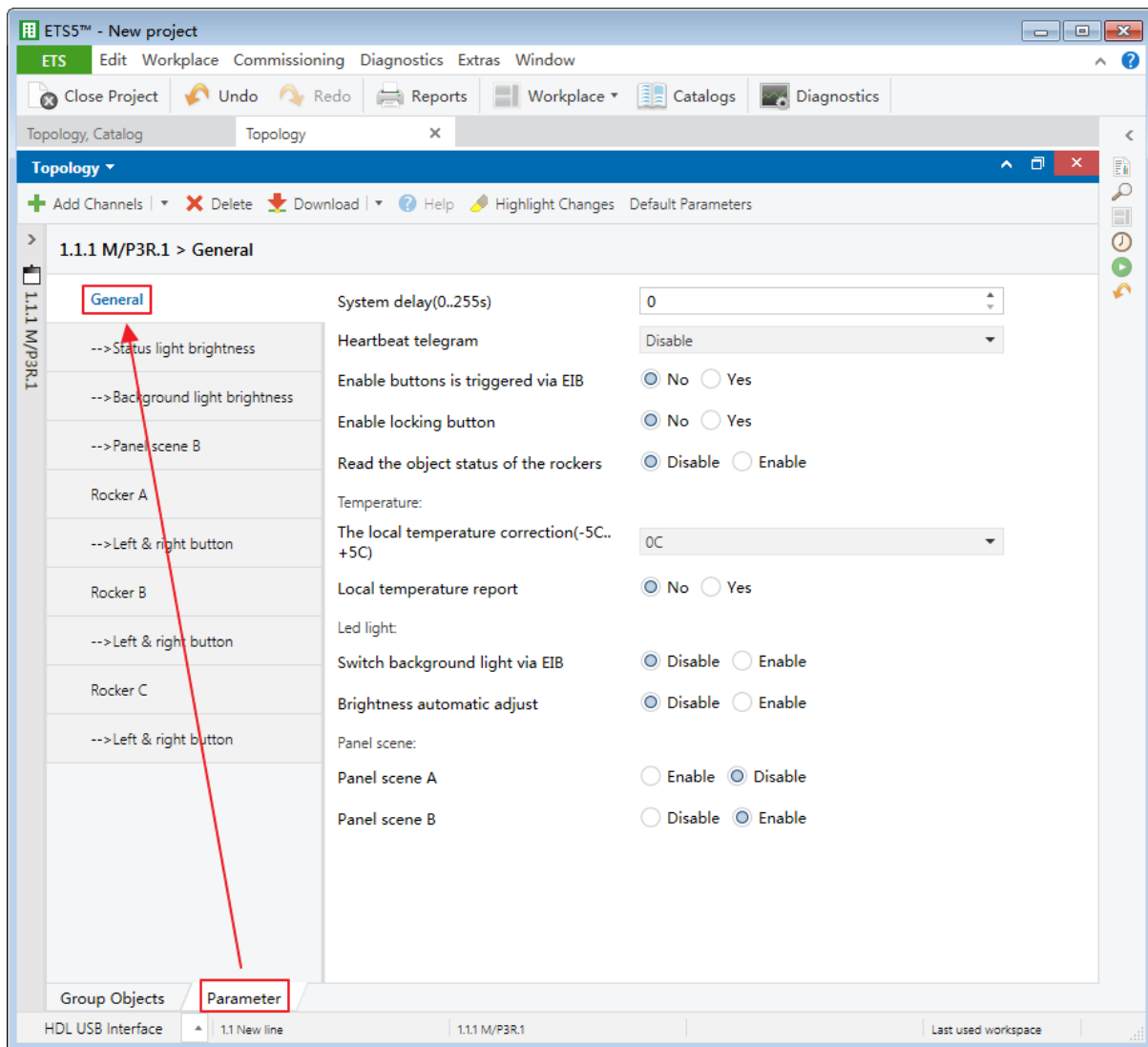
Figure 2-1 General setting

The setting items are explained below:

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

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

   ➢ Telegram is sent time interval: to set the interval of sending heartbeat telegram.

---

3. Enable buttons is triggered via EIB: to enable triggering buttons via EIB.

   ➢ The button trigger condition: to choose to trigger buttons when receiving 0 or 1.

   ➢ Enable buttons is triggered via EIB: to enable triggering button A/B/C via EIB.

4. Enable locking button: to enable locking buttons.

5. Read the object status of the rockers: to enable reading the object status of buttons. After enabled, users may set the delay time of reading object status in "Delay for read the object status" below, range from 5 to 255s.

6. The local temperature correction: to choose to correct local temperature, range from -5℃ to +5℃.

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

   ➢ Temperature report mode: to select the mode of sending temperature signal, including "Report when changed" and "Report cyclic". When the former is selected, users may change the period of checking temperature, range from 1 to 50℃. While the latter is selected, users may change the period of sending temperature signal, range from 1 to 255s.

8. Switch background light via EIB: to enable turning on background light via EIB.

9. Brightness automatic adjust: to enable adjusting brightness automatically.

   ➢ Automatic adjust after a delay: to set the delay time of adjusting the brightness of background light automatically, range from 3 to 255s.

   ➢ The operation of first time press the button: to select the operation of buttons pressed for the first time, including "Normal operation" and "The brightness of ON status".

10. Panel scene A/B: to enable panel scene A/B.

2.1 Status Light Brightness Adjustment

Status light is to indicate button status.

Select "Status light brightness" in "Parameter" tab, as shown in Figure 2-2.
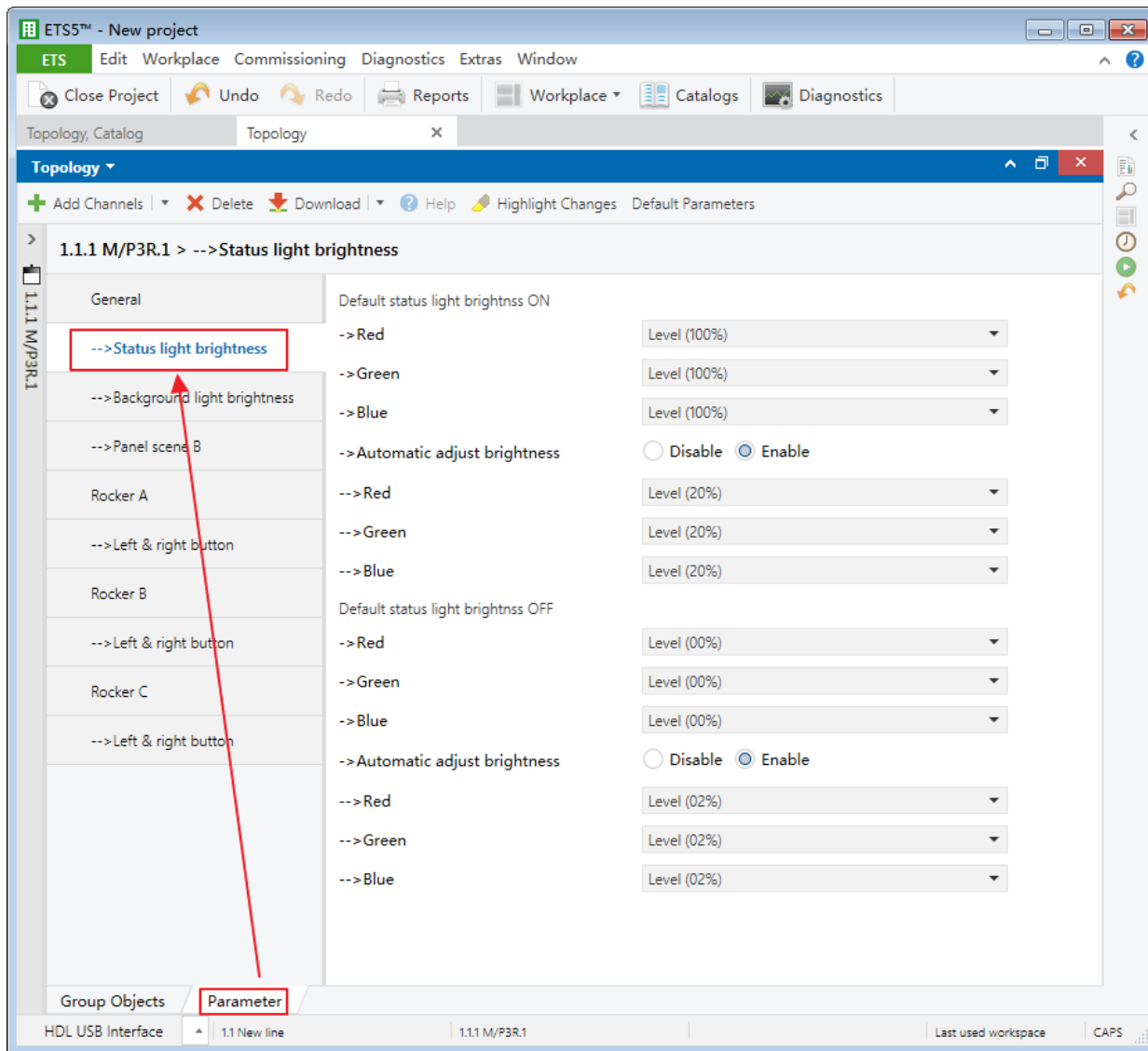
Figure 2-2 Adjust the color of status light

"Default status light brightness ON/OFF" is to set the default brightness of button status light when objects of buttons are opened/closed, the value can be set by changing the level value of RGB below.

 "Automatic adjust brightness" is to set the value of adjusting brightness automatically. After enabled, the value can be set by changing the level value of RGB below.

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2.2 Background Light Brightness Adjustment

Background light is located between rockers to indicate object status.

Select "Background light brightness" in "Parameter" tab, as shown in Figure 2-3.
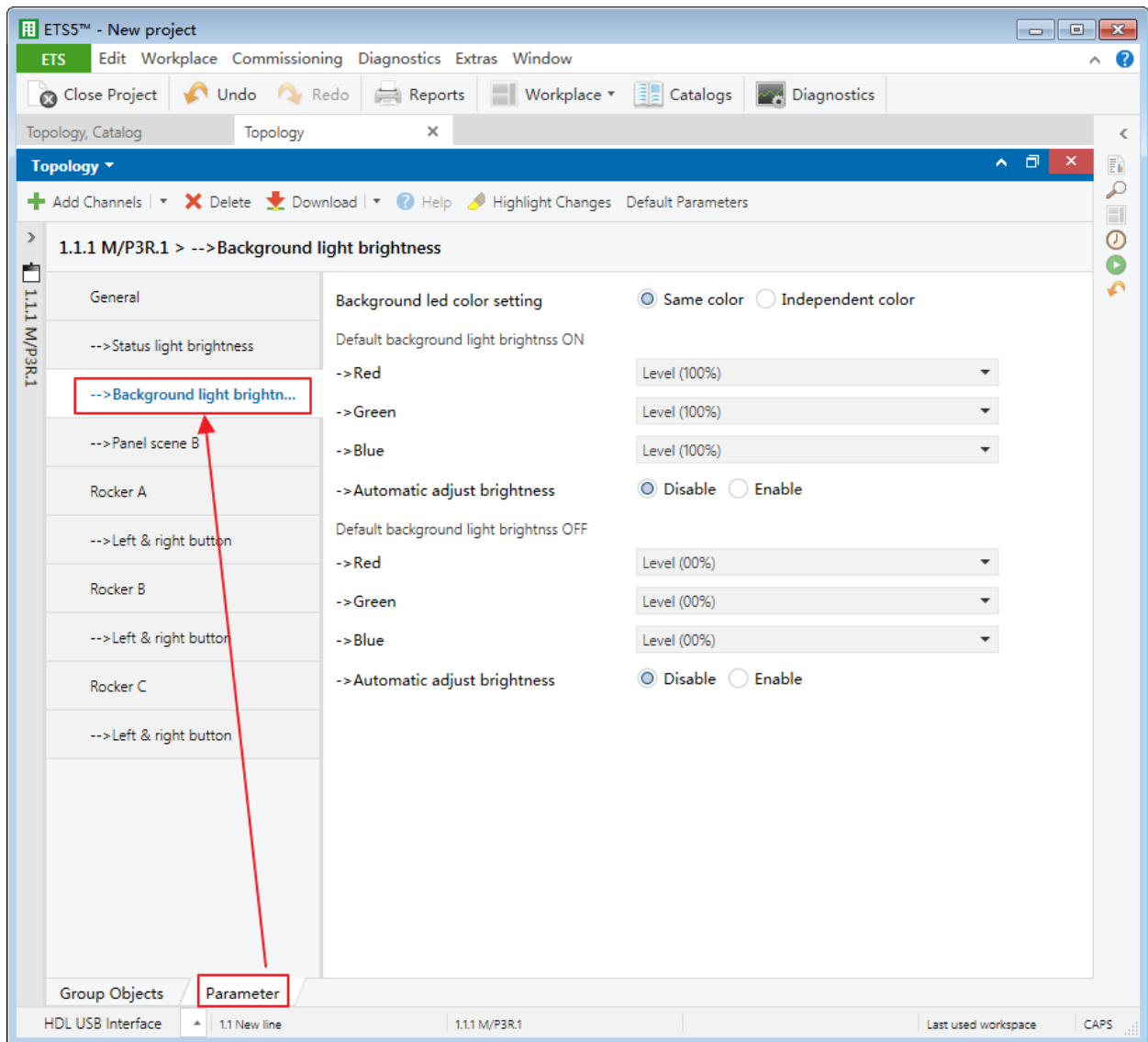
Figure 2-3 Adjust the brightness of background light

Background led color setting: all buttons are in the same color or independent color.

➢ If selecting "Same color", the background light color of buttons on/off can be set, only by changing the level value of RGB below.

In the meantime, button color can be adjusted automatically when buttons are on/off. Users may change the level value of RGB below to set the color for automatic adjustment.

➢ If selecting "Independent color", buttons can be set in the same way above. The relationship between button name and button number in Figure 1-8 is as follows: "Rocker 1/2/3" corresponds to rocker A/B/C , "Rocker 1 left/right" corresponds to the left and right button of rocker A, and so on.

2.3 Panel Scene Setting

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

2.3.1 Enable Panel Scenes

Click "General" in the parameter list to enable/disable Panel scene A/B at the bottom, as shown in Figure 2-4.
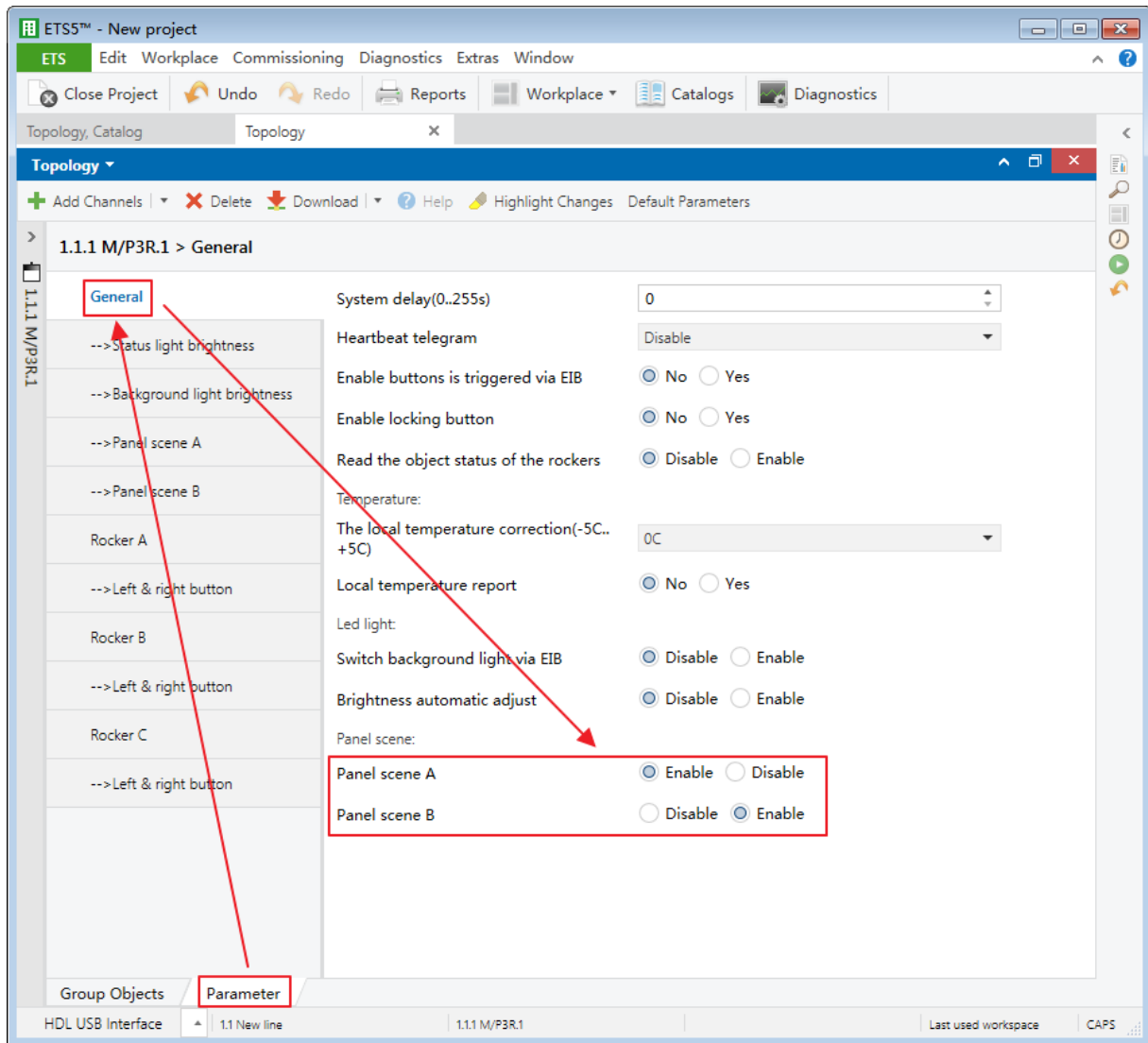
Figure 2-4 Enable panel scenes

2.3.2 Scene Setting

After enabling panel scenes, click the panel scene to be configured on the left, as shown in Figure 2-5.
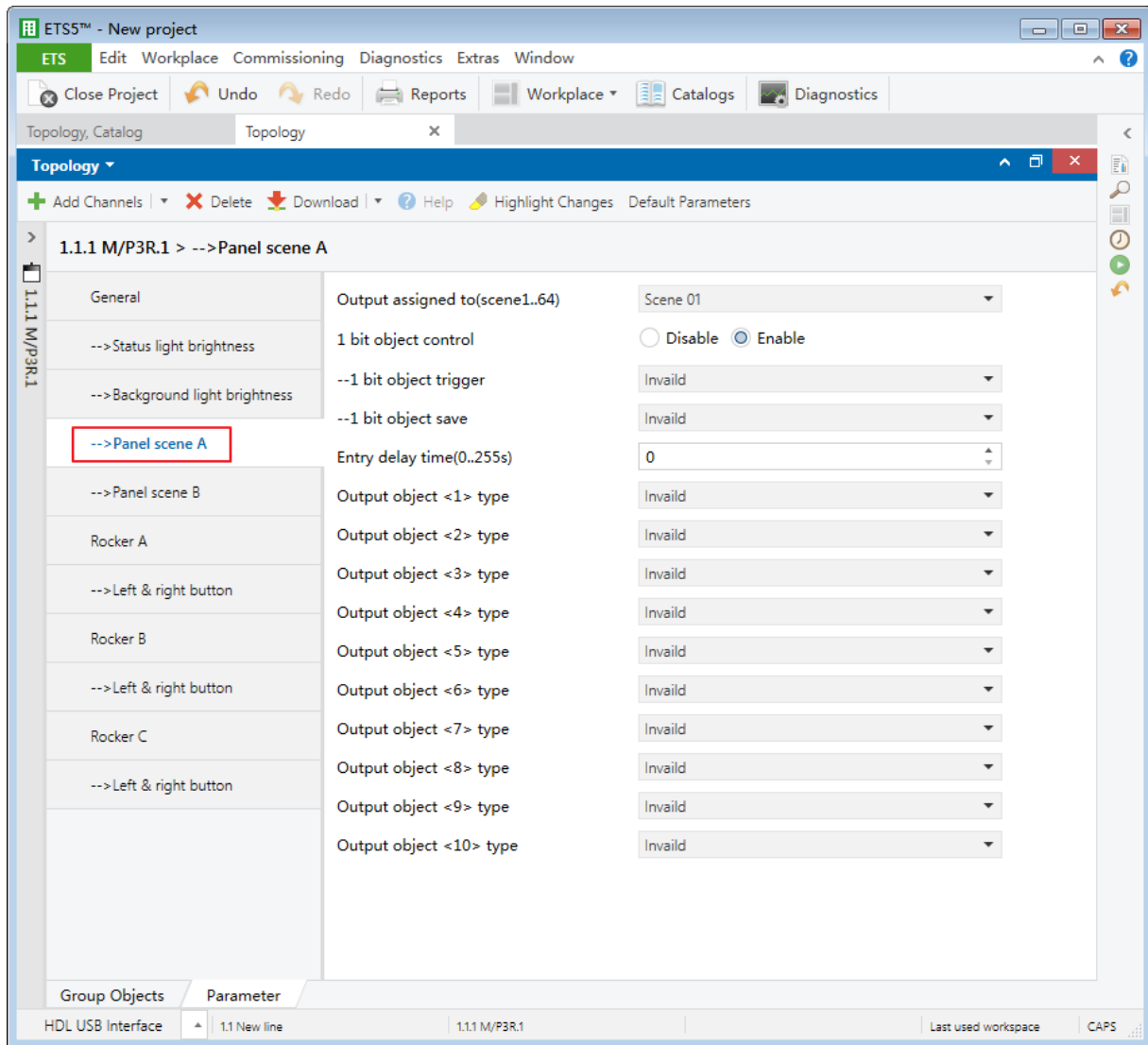
Figure 2-5 Scene setting

The setting items are explained as follows:

1. Output assigned to: to choose to output corresponding scene number (Up to 64 scene numbers available).

2. 1 bit object trigger: to enable turning on/off devices in scenes by selecting 0, 1 or 1/0.

3. 1 bit object save: to choose whether to save object switch status in current scene to overwrite scene setting when objects are changed by the panel.

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

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

3 Button Setting

This chapter takes "Rocker A" as an example to introduce the way of configuring buttons.

Click "Rocker A" in the button list to open the setting menu, as shown in Figure 3-1.
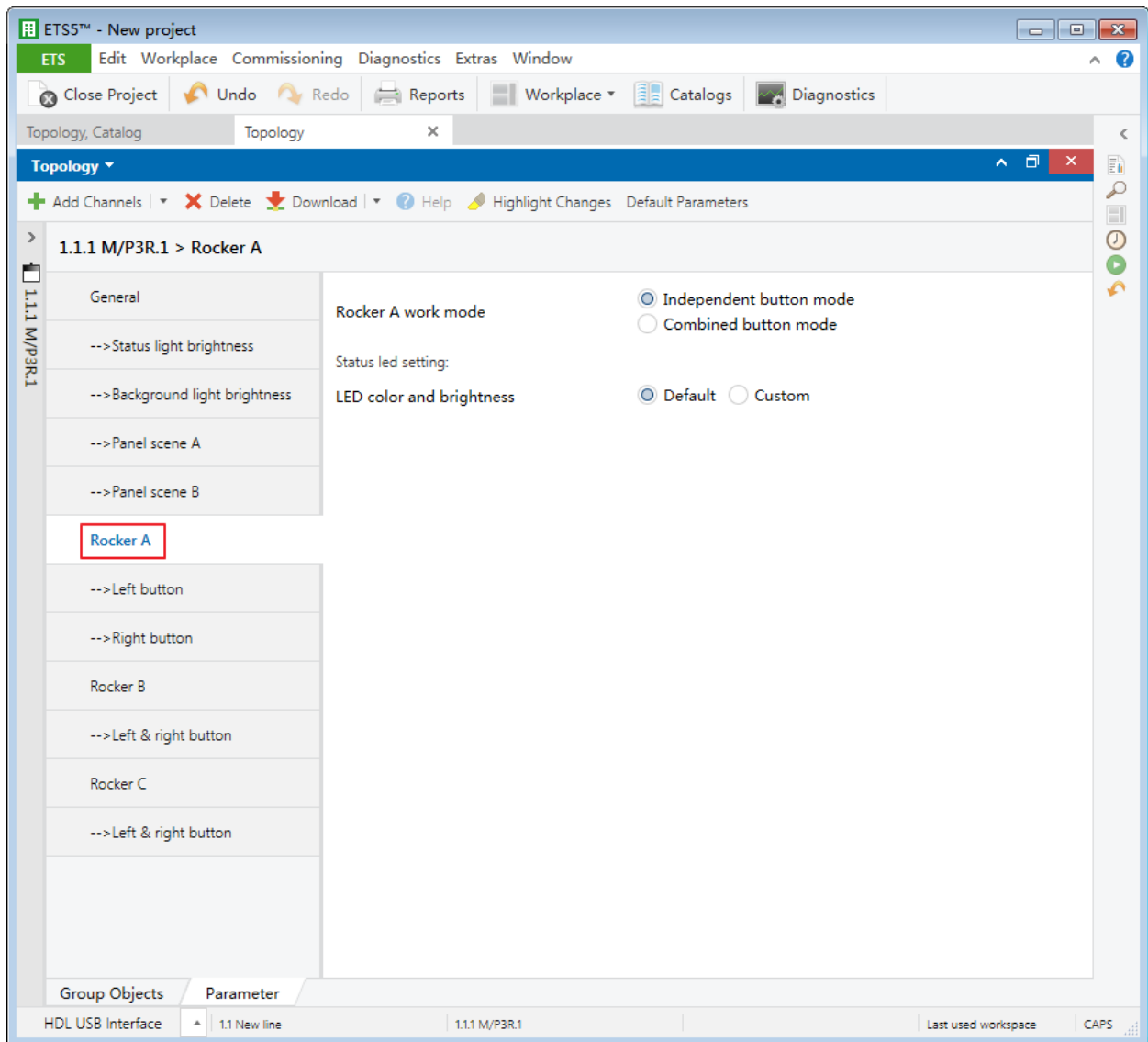
Figure 3-1 Button setting

1. Rocker A Work Mode

   ➢ Independent button mode: the left button and right button of "Rocker A" can control objects independently.

   ➢ Combined button mode: objects can be controlled by the combination of the left button and right button of "Rocker A".

2. LED Color and Brightness Adjustment

   ➢ Default: to keep the default settings.

   ➢ Custom: to customize items. When selecting "Custom", users may click "A: LED color" on the left and set LED color and brightness of the left and right button on/off independently, which is achieved by changing the corresponding level value of RGB. In the meantime, "Automatic adjust brightness" option can be enabled, the details can be set below.

3.1 Combined Button Mode

3.1.1 Select Operation Mode

The operation mode of combined buttons can be selected at the top of "Left & right button" tab, as shown in Figure 3-2.
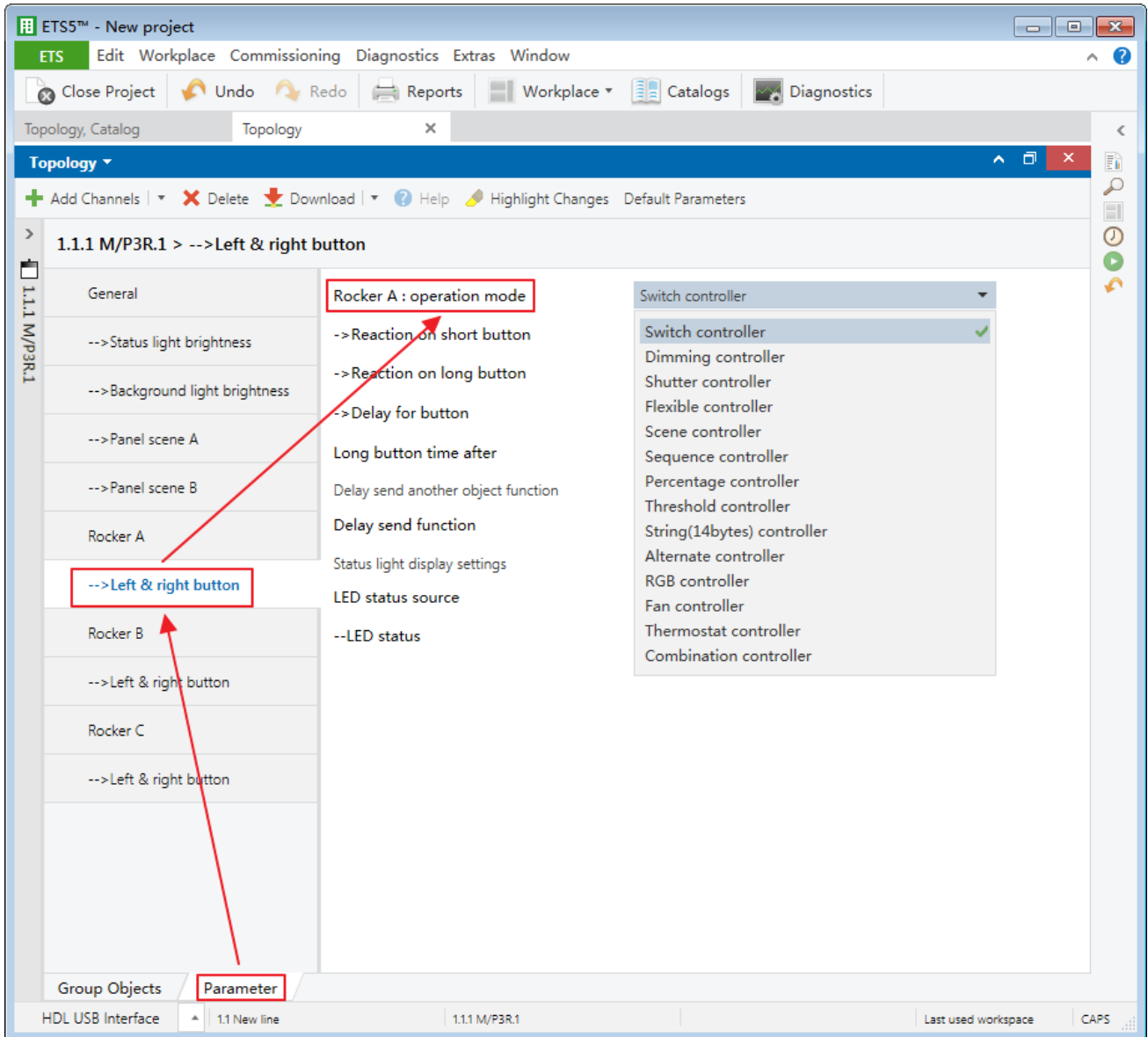
Figure 3-2 Select operation mode

3.1.1 Switch Controller Setting

Figure 3-3 shows switch controller setting page.
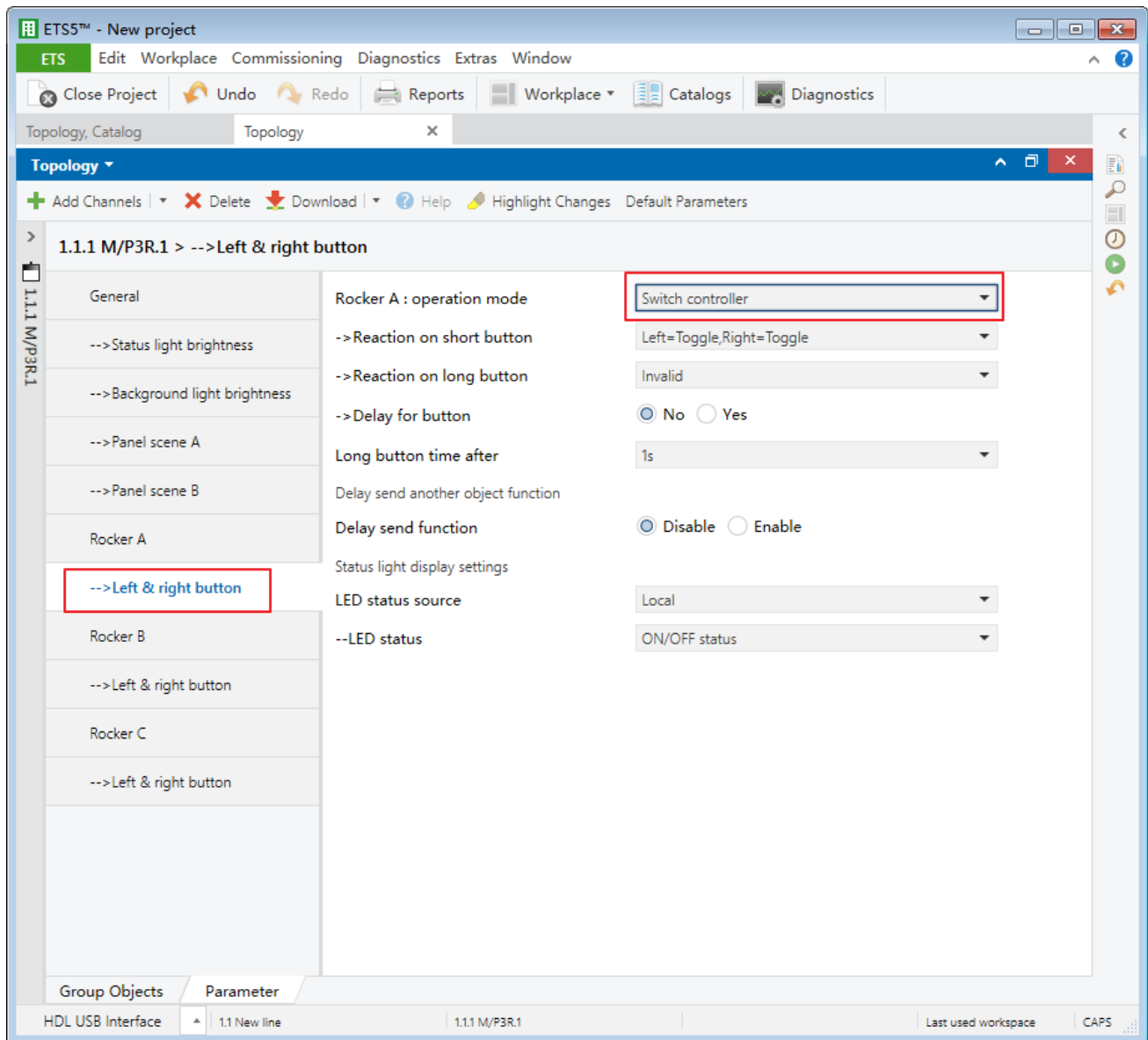
Figure 3-3 Switch controller setting page

1. Reaction on short/long button: to set the operation mode of "short/long press". The left and right button can be set independently, including:

   ➢ Invalid: buttons have no response.

   ➢ Toggle: to select buttons to turn on closed objects, and vice versa.

   ➢ ON: to turn on objects.

> ➢ OFF: to turn off objects.

2. Delay for button: to enable activating buttons after the delay time.

   Delay for switch ON/OFF of short/long button: to set the delay time between "short/long press" and turning on/off objects, range from 0 to 255s.

3. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. Delay send function: to enable "Delay send function".

   Delay send for short/long button: to enable "Delay send for short/long button".

   Delay send when button object value: to enable "Delay send function" when button object is on/off/on or off.

   Delay send value: to set the value sent after the delay time.

   Send after a delay: to set the delay time of sending, range from 0 to 255s.

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   > ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   > ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   > ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1   Dimming Controller Setting

Figure 3-4 shows dimming controller setting page.

Figure 3-4 Dimming controller setting page

The setting items are explained as follows:

1. Reaction on short/long button: to select the operation of "short/long press" ("short press" only controls turning on/off, "long press" controls dimming).

   Delay for switch ON/OFF of short button: to set the delay time between "short press" and turning on/off lights, range from 0 to 255s.

2. Dimming steps: There are 7 dimming steps. For example, if selecting Step3 (25%),

objects will be up to 25% brighter (The maximum object brightness is 100%).

3. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1 Shutter Controller Setting

Figure 3-5 shows shutter controller setting page.

Figure 3-5 Shutter controller setting page

The setting items are explained as follows:

1. Reaction on short button: to select the operation of "short press" on the panel, including:

   ➢ Left/Right=Increase/Decrease/Stop: to open/close curtain via short pressing the left/right button and stop via short pressing again.

   ➢ Left/Right=Stepping → Toggle/Stop: to switch between rolling up/down roller shutter via short pressing the left/right button and stop via short pressing again.

> ➢ Left/Right=Up/Down: to roll up/down roller shutter via short pressing the left/right button.

> ➢ Left/Right=Moving → Toggle: to switch between rolling up/down via short pressing the left/right button.

> ➢ Left/Right=Up/Down/Stop: to roll up/down roller shutter via short pressing the left/right button and stop via short pressing again.

> ➢ Left/Right=Moving → Toggle/Stop: to switch between rolling up/down and stop via short pressing again.

2. Reaction on long button: to select the operation of "long press" on the panel, including:

> ➢ Left/Right=Increase/Decrease/Stop: to open/close curtain constantly via long pressing the left/right button and stop via releasing buttons.

> ➢ Left/Right=Stepping → Toggle/Stop: to switch between rolling up/down roller shutter via long pressing the left/right button and stop via pressing again.

> ➢ Left/Right=Up/Down/Stop: to roll up/down via long pressing the left/right button.

> ➢ Left/Right=Moving → Toggle/Stop: to switch between rolling up/down via long pressing the left/right button.

> ➢ Press: Left=Move → Up/Down, Right=Move → Down/Up; Release: Stop: to roll up/down roller shutter via long pressing the left/right button and stop via releasing buttons.

> ➢ Press: Left/Right=Move → Toggle; Release: Stop: to switch between rolling up/down roller shutter via long pressing the left/right button and stop via releasing buttons.

3. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

> ➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

> ➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.2 Flexible Controller Setting
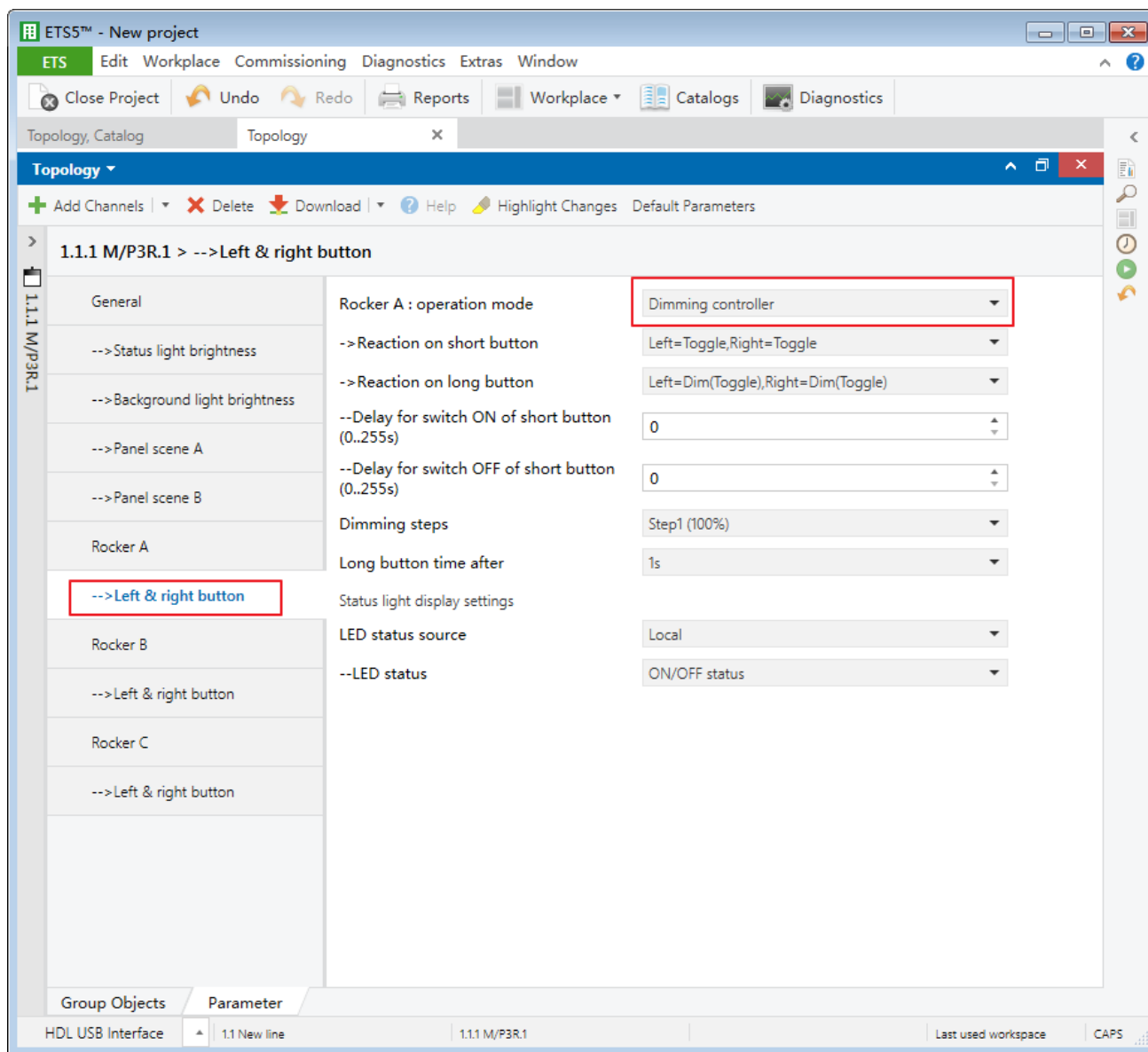
Figure 3-6 shows flexible controller setting page.

Figure 3-6 Flexible controller setting page

The setting items are explained as follows:

1. Operation of the left/right button: to select the operation of short pressing the left/right buttons, including:

   ➢ Press=ON: to send ON when pressing and to be invalid when releasing.

   ➢ Release=ON: to send ON when releasing and to be invalid when pressing.

   ➢ Press=ON, Release=ON: to send ON when pressing/releasing.

   ➢ Press=OFF: to send OFF when pressing and to be invalid when releasing.

   ➢ Release=OFF: to send OFF when releasing and to be invalid when pressing.

   ➢ Press=OFF, Release=OFF: to send OFF when pressing/releasing.

   ➢ Press=ON, Release=OFF: to send ON when pressing and to send OFF when releasing.

   ➢ Press=OFF, Release=ON: to send OFF when pressing and to send ON when releasing.

2. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.3 Scene Controller Setting
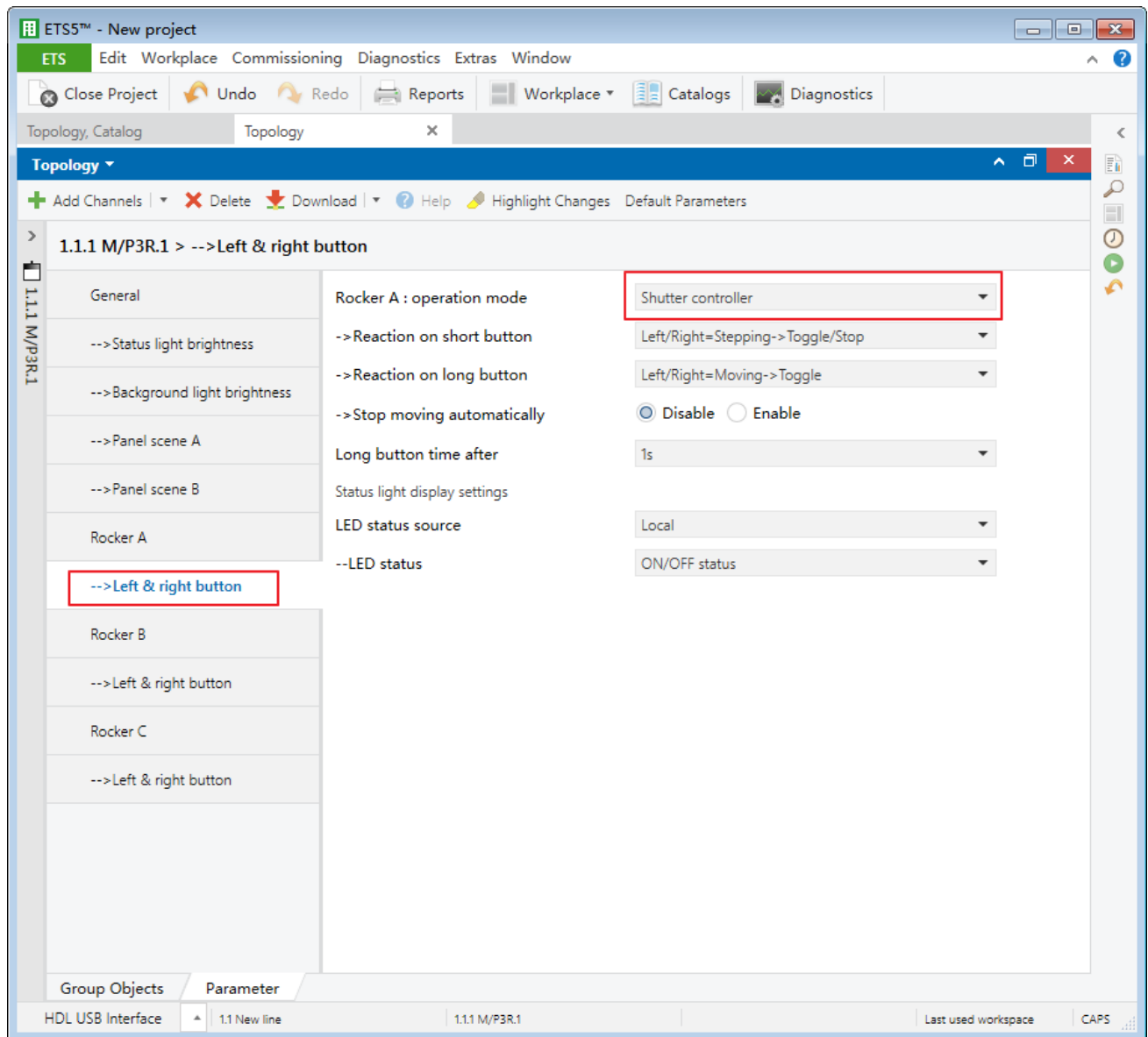
Figure 3-7 shows scene controller setting page.
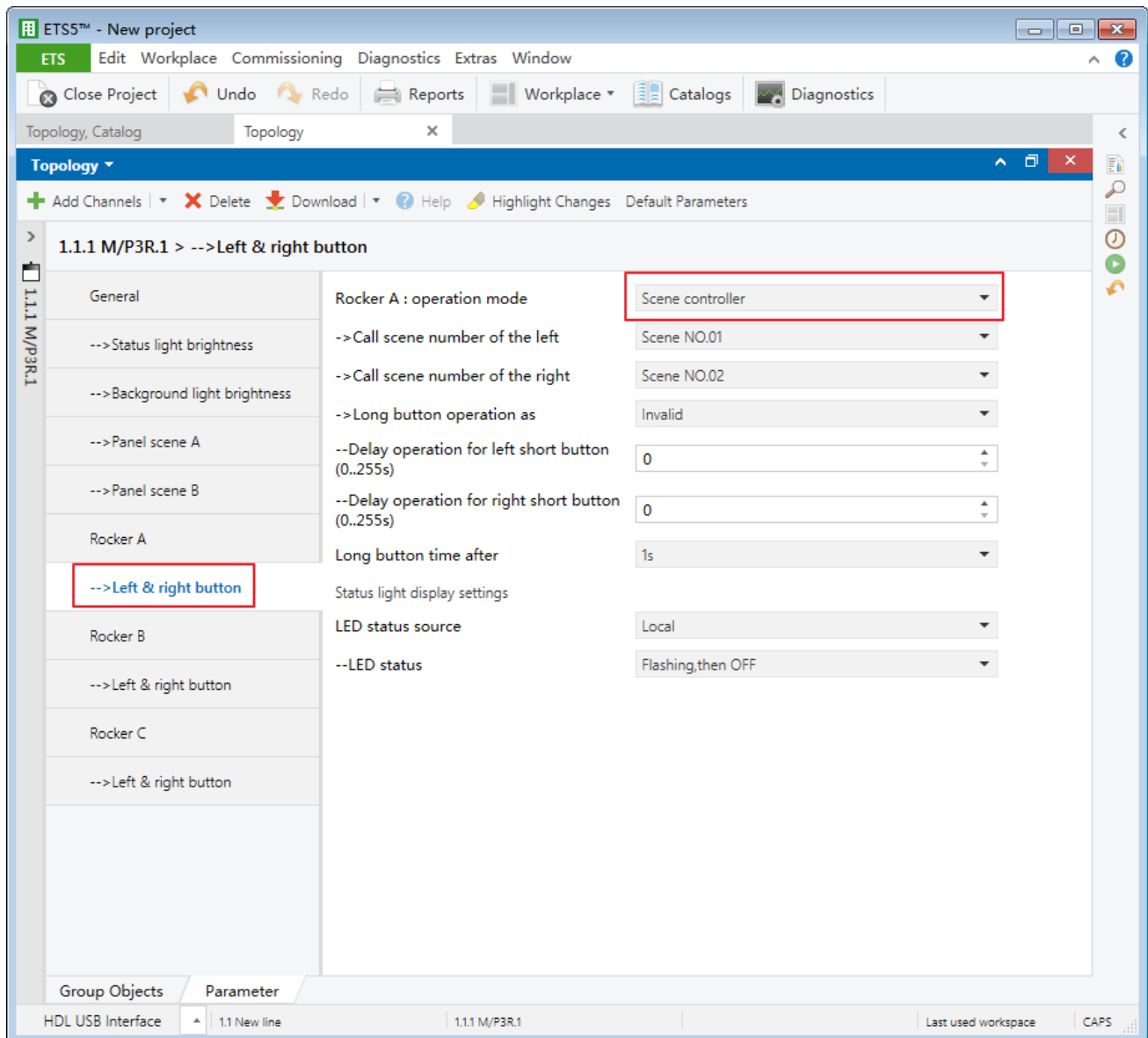
Figure 3-7 Scene controller setting page

The setting items are explained as follows:

1. Call scene number of the left/right: to select corresponding scene number of the left/right button (Up to 64 scene numbers available).

2. Long button operation as: to select the operation of "long press", including:

   ➢ Scene dimming

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> ➢ 1 bit object save: to enable saving current scene to overwrite scene setting, when current scene changes.

3. Delay operation for left/right short button: to set the delay time of the left/right button, range from 0 to 255s.

4. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

> ➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

> ➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

> ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1   Sequence Controller Setting

Figure 3-8 shows sequence controller setting page.
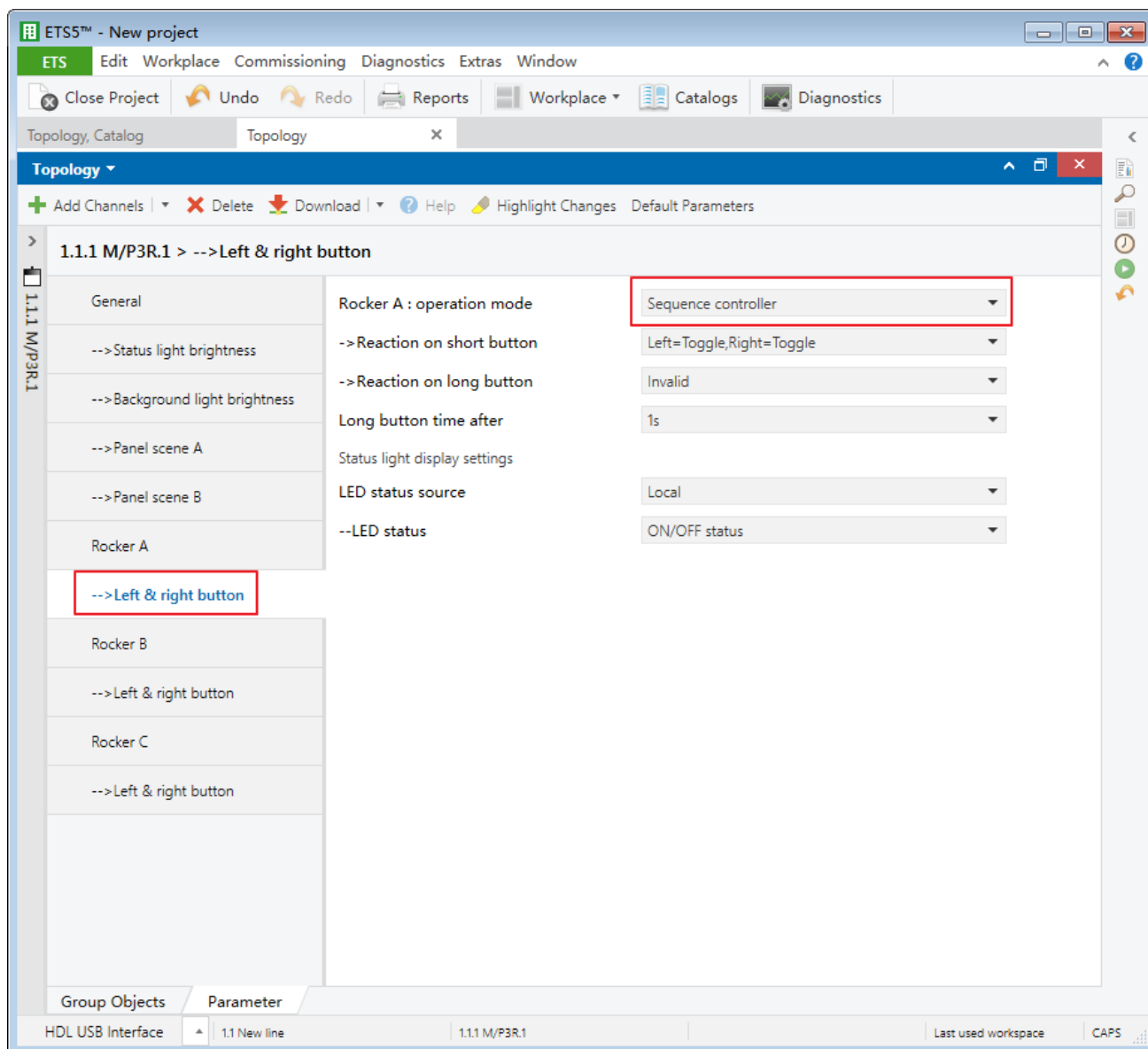
Figure 3-8 Sequence controller setting page

The setting items are explained as follows:

1. Reaction on short button: to set the operation of "short/long press", including:

    ➢   Left/Right=Toggle: to toggle the left/right button.

    ➢   Left/Right=Start/Stop with 0/1: the left/right button starts/stops with 0 or 1.

2. Long button time after: the time for system to identify "long press". For example, if the

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time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

3. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1   Percentage Controller Setting

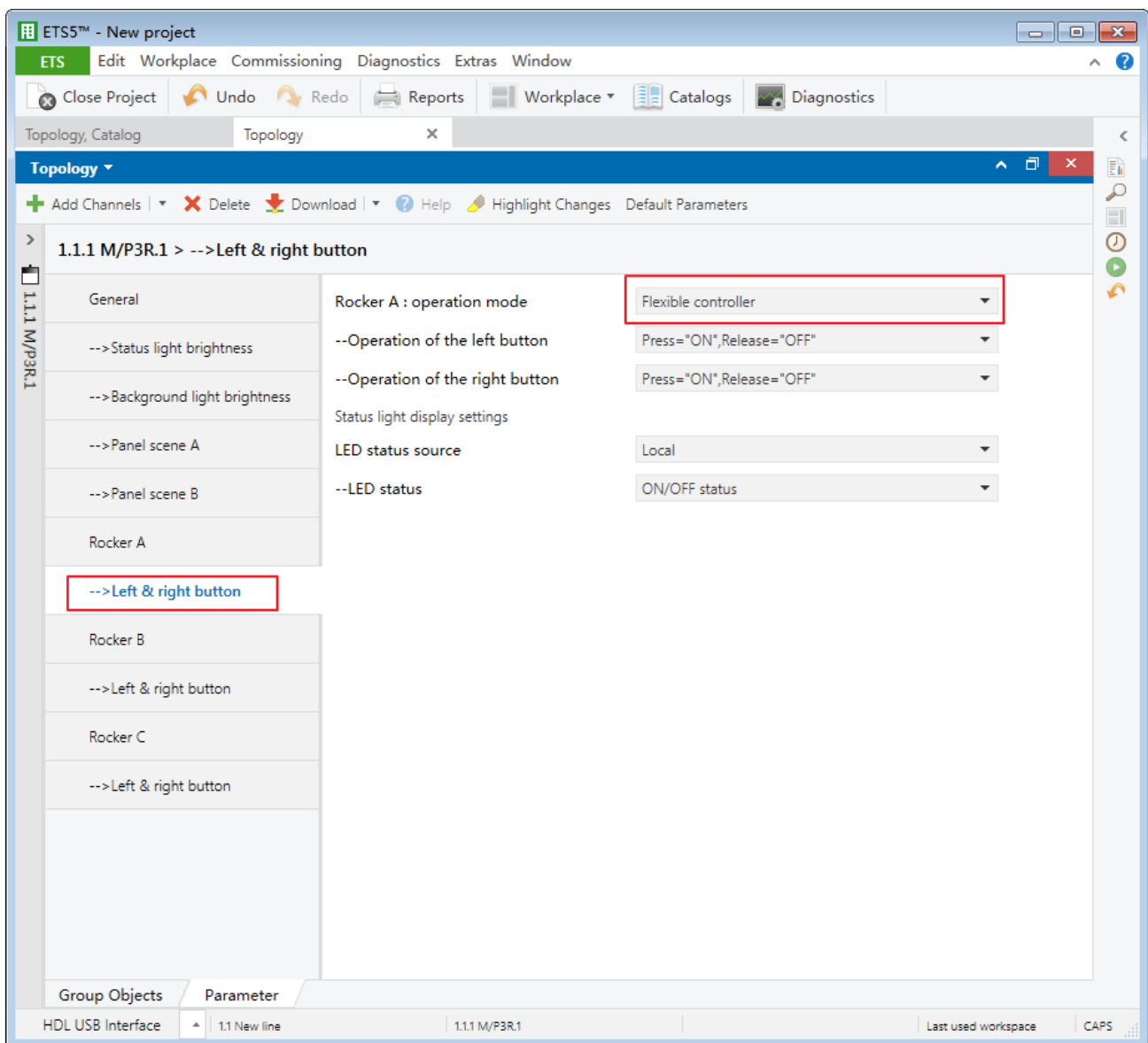Figure 3-9 shows percentage controller setting page.
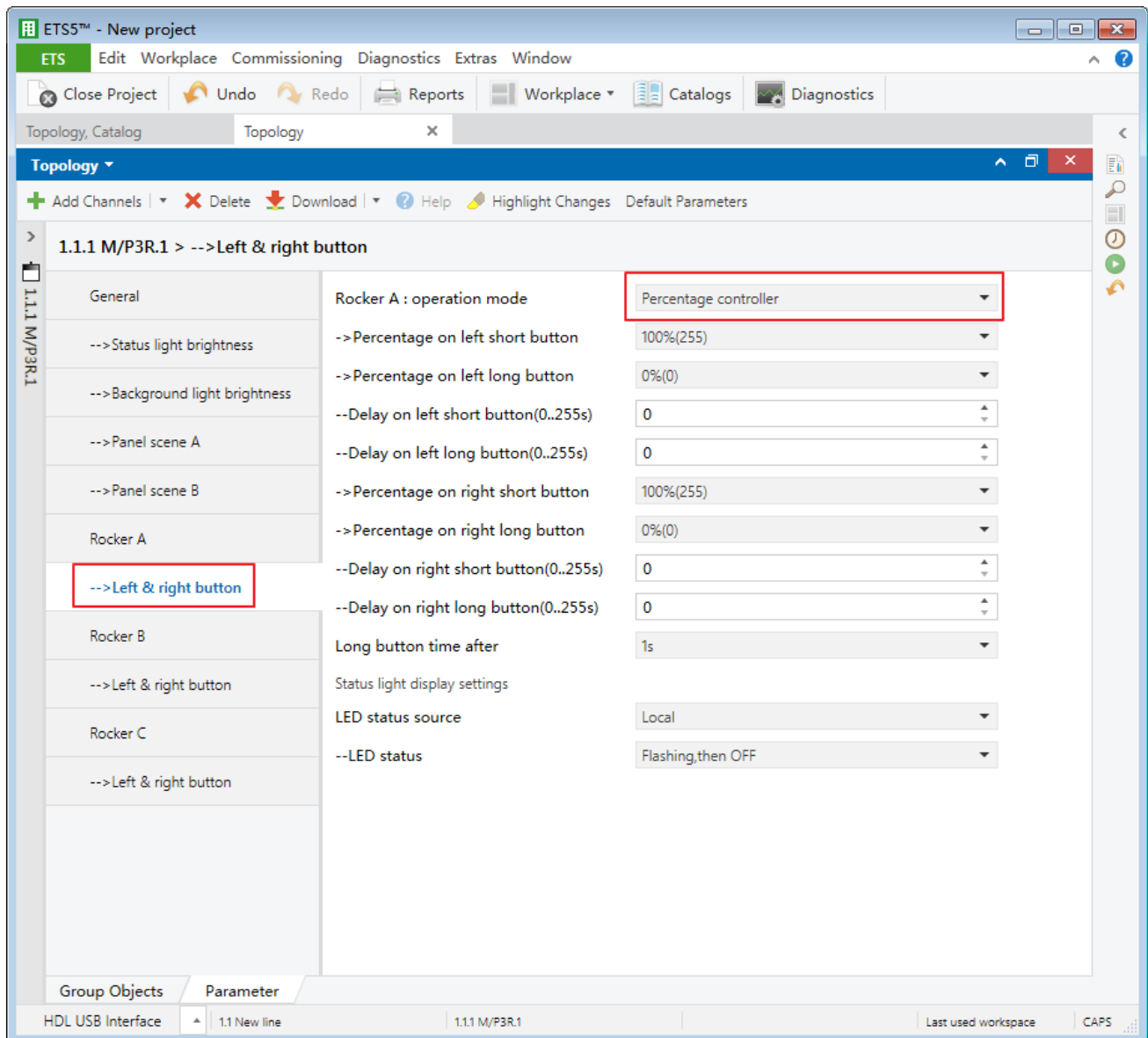
Figure 3-9 Percentage controller setting page

The setting items are explained as follows:

1. Reaction on short button: to select the operation of percentage controller when short/long pressing the left/right button.

2. Delay send for short/long button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

3. Long button time after: the time for system to identify "long press". For example, if the

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time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1   Threshold Controller Setting

Figure 3-10 shows threshold controller setting page.

Figure 3-10 Threshold controller setting page

The setting items are explained as follows:

1. Threshold value type: to select threshold type, including 1-byte threshold, 2-byte threshold and 2-byte float threshold.

2. Threshold on left/right short/long button: to set the sent threshold via short/long pressing the left/right button. Threshold value depends on the type selected in the first point.

3. Delay on right/left short/long button: to set the delay time of short/long pressing the

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left/right button, range from 0 to 255s.

4. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

    ➢   If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

    ➢   If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

    ➢   If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1   14-Byte String Controller Setting

Figure 3-11 shows 14-byte string controller setting page.

Figure 3-11 14-Byte string controller setting page

The setting items are explained as follows:

1. String on left/right short/long button: to select the sent string via short/long pressing the left/right button.

2. Delay on left short button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

3. Long button time after: the time for system to identify "long press". For example, if the

time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

 ➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

 ➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

 ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.2 Alternate Controller Setting

Figure 3-12 shows alternate controller setting page.
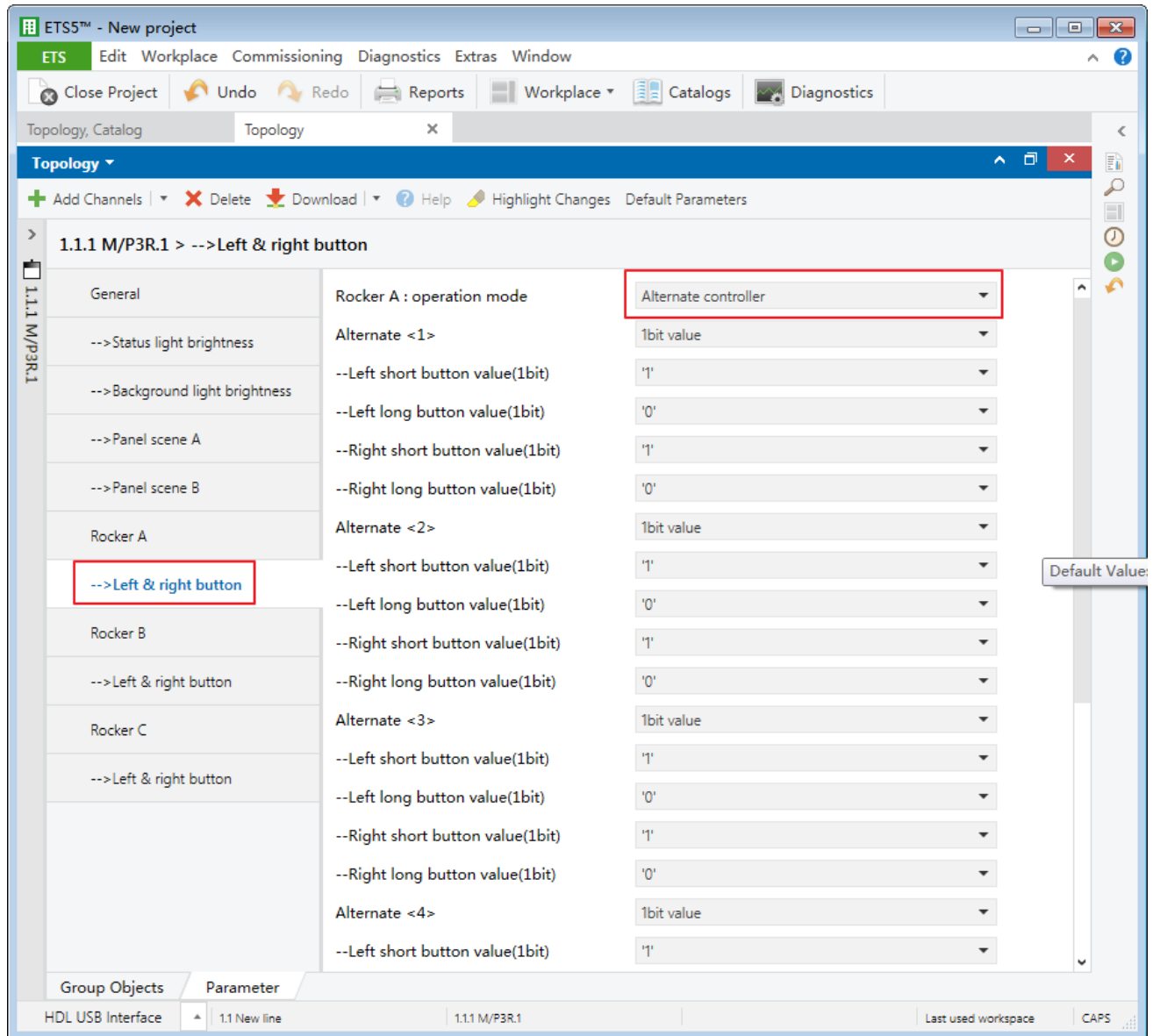
Figure 3-12 Alternate controller setting page

The setting items are explained as follows:

1. Alternate <1/2/3/4>: to select the control type of "Alternate <1/2/3/4>".

2. Left/Right short/long button value: to set the value of short/long pressing the left/right button, whose length depends on the type selected in the first point.

3. Alternate on left/right short/long button: to enable the alternate function of short/long pressing the left/right button.

4. Long button timer after: the time for the system to identify "long press". For example, if the time is set to 3s, keeping pressing buttons for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.3   RGB Controller Setting
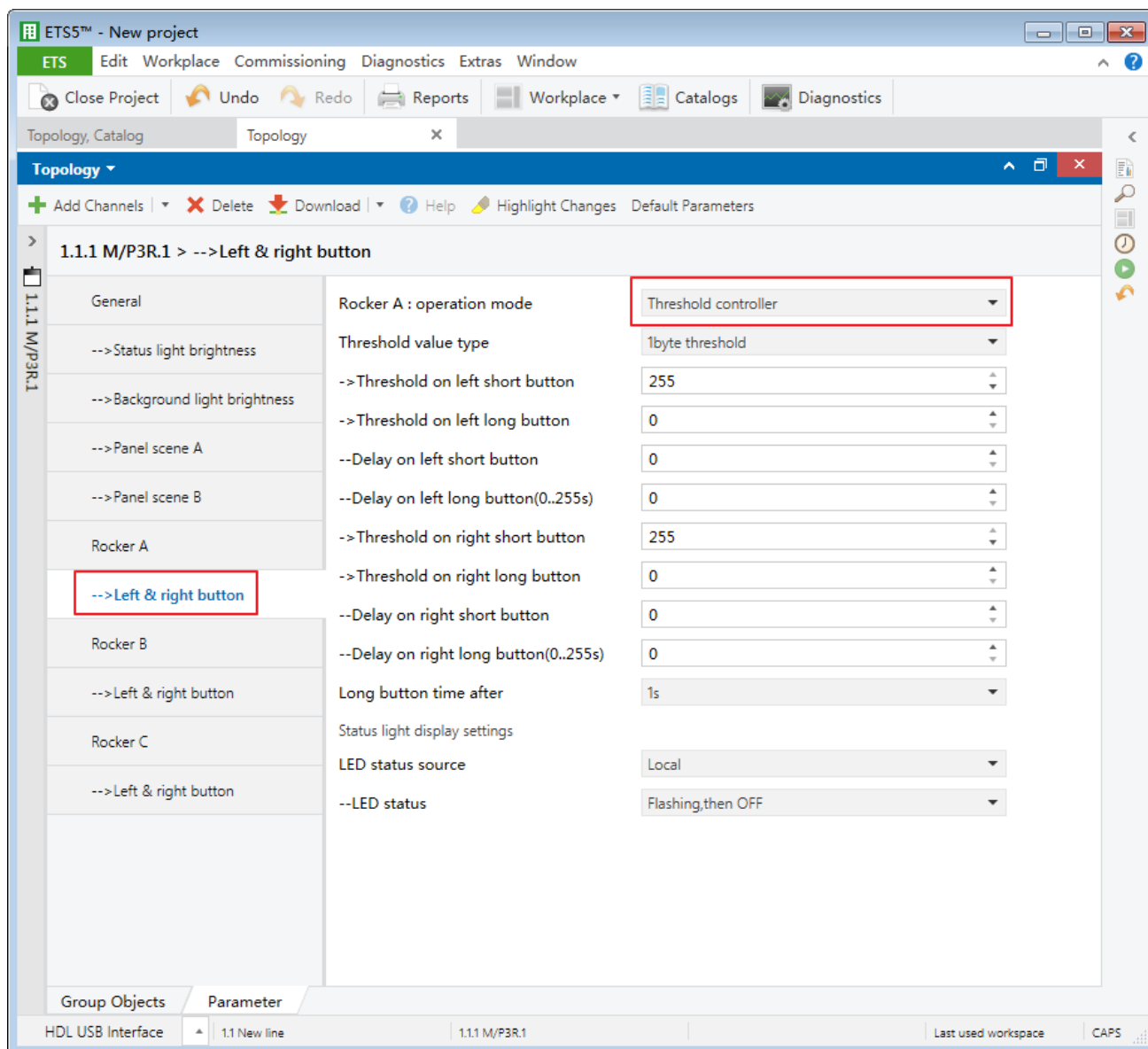
Figure 3-13 shows RGB controller setting page
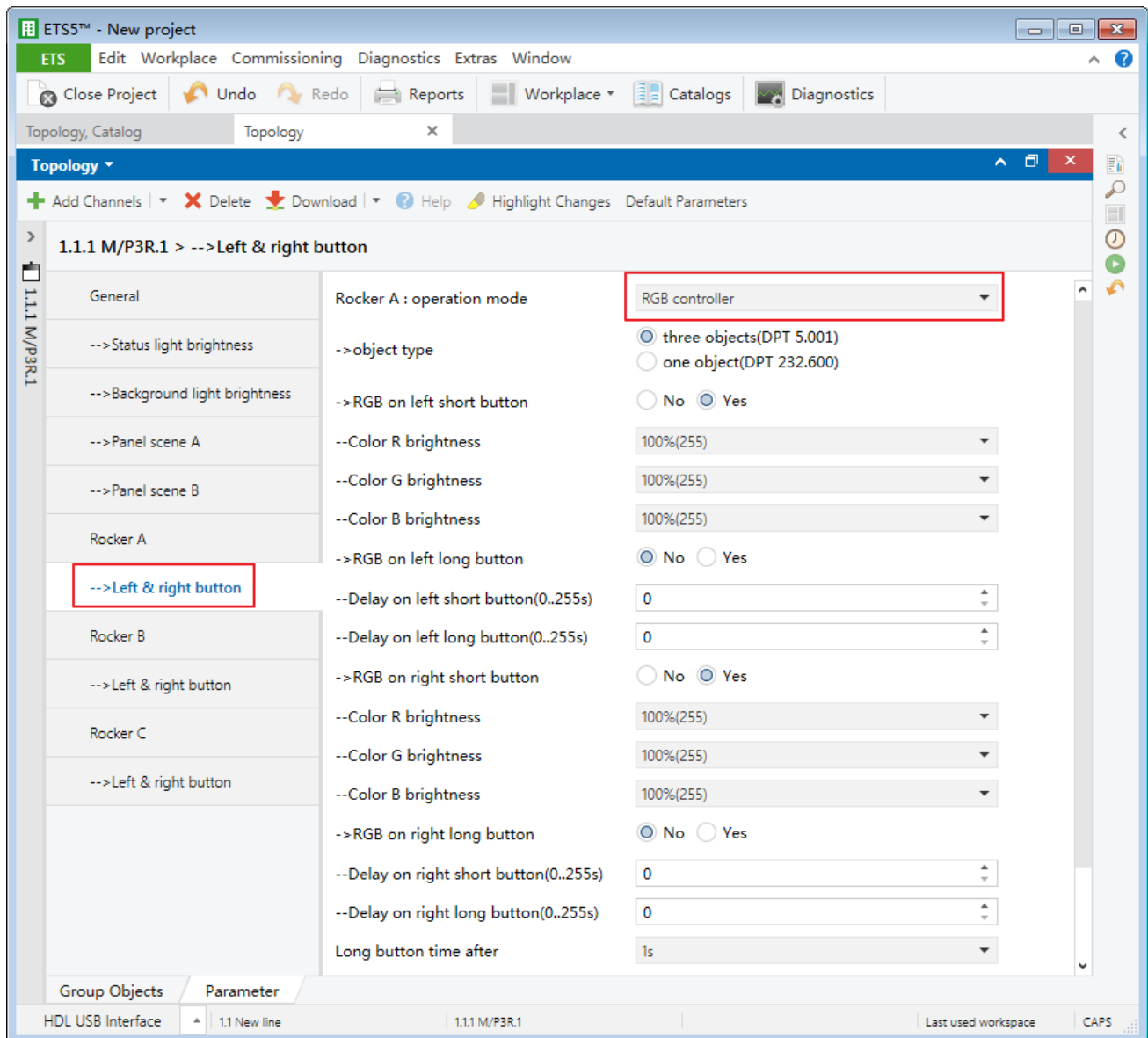
Figure 3-13 RGB controller setting page

The setting items are explained as follows:

1. Object type: to select the type of dimming object. "3 objects" is to control dimming via R, G and B independently while "1 object" is to control via RGB.

2. RGB on left/right short button: to enable dimming via short pressing the left/right button. After enabled, color and brightness can be customized by selecting RGB value in "Color R/G/B brightness" below.

3. RGB on left/right long button: to enable dimming via long pressing the left/right button.

4. Delay on left/right short/long button: to select the delay time of short/long pressing the left/right button, range from 0 to 255s.

5. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

6. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.1 Fan Controller Setting

Figure 3-14 shows fan controller setting page.
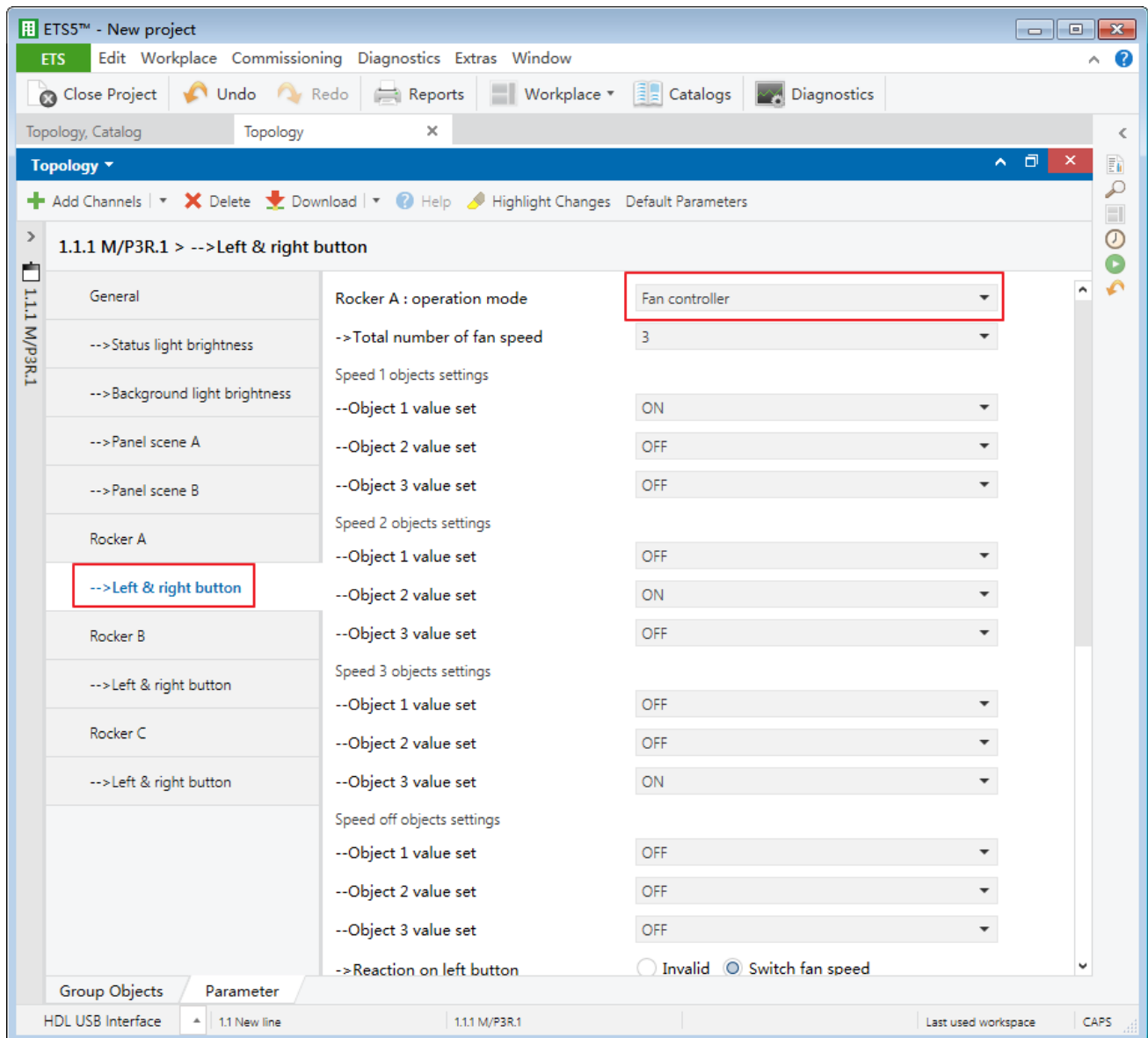
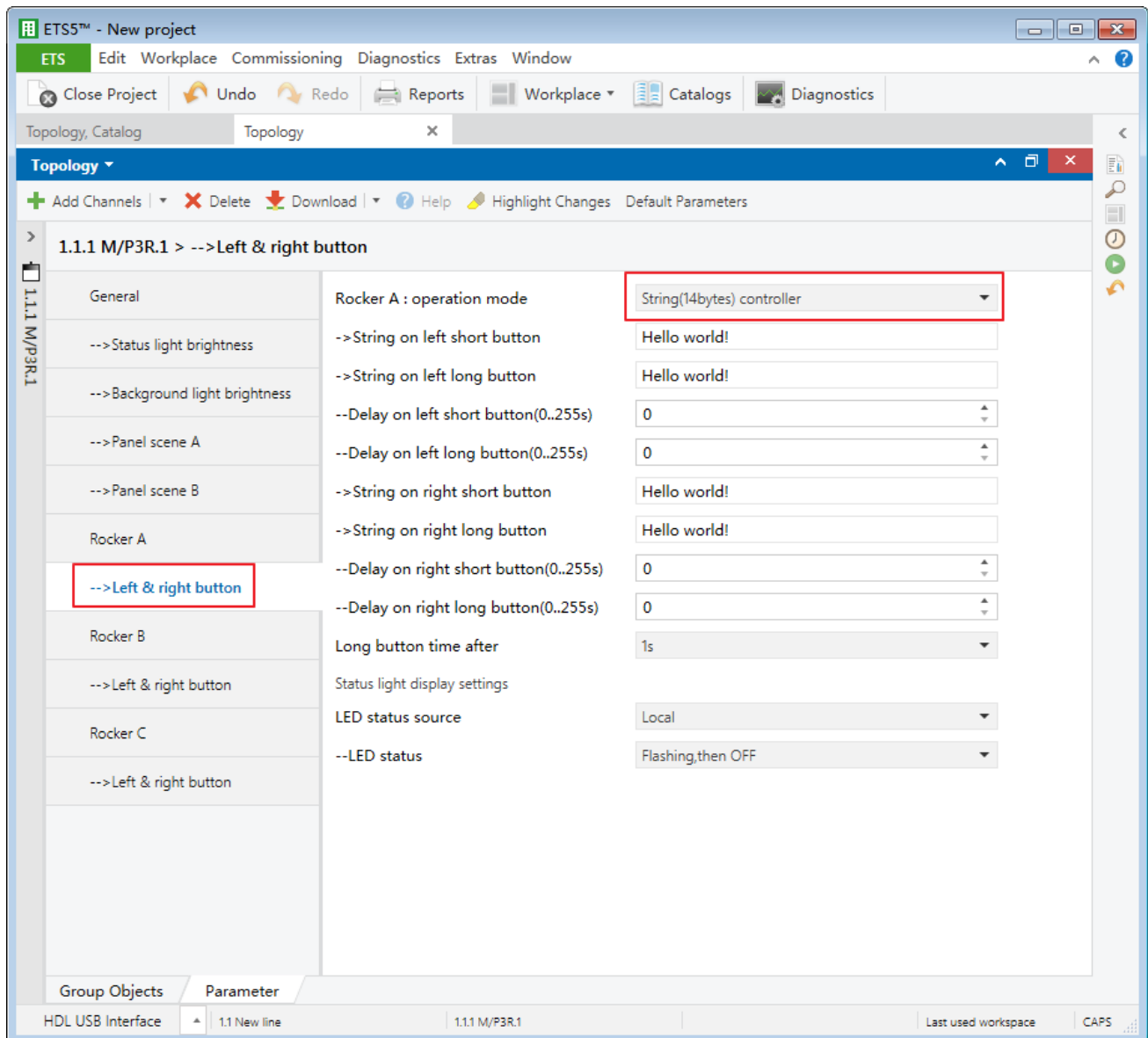**Figure 3-14 Fan controller setting page**

The setting items are explained as follows:

1. Total number of fan speed: to select the number of fan speed levels, range from 2 to 4.

2. Speed 1/2/3/4 object settings: each level of fan speed can be set in detail, "Object1/2/3/4 value set" corresponds to the value of object 1/2/3/4 independently.

3. Speed off objects settings: to set the value of objects when fan is off.

4. Reaction on left/right button: to enable adjusting fan speed via the left/right button. After enabled, the details can be set below.

    ➢ Switch speed direction: to adjust wind direction, "FWD" means forward wind, while "RWD" means backward wind.

    ➢ Speed 1/2/3/4: to enable the fan speed of corresponding level.

    ➢ Turn off fan: to enable turning off fan.

5. Delay to send ON after OFF: to set the delay time between sending OFF command and sending ON command again, range from 0 to 255s.

6. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

7. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

    ➢ If "Local" is selected:

    LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

    ➢ If "From bus" is selected:

    LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

    Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

    Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

    ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.1.2 Thermostat Controller Setting

Figure 3-15 shows thermostat controller setting page.
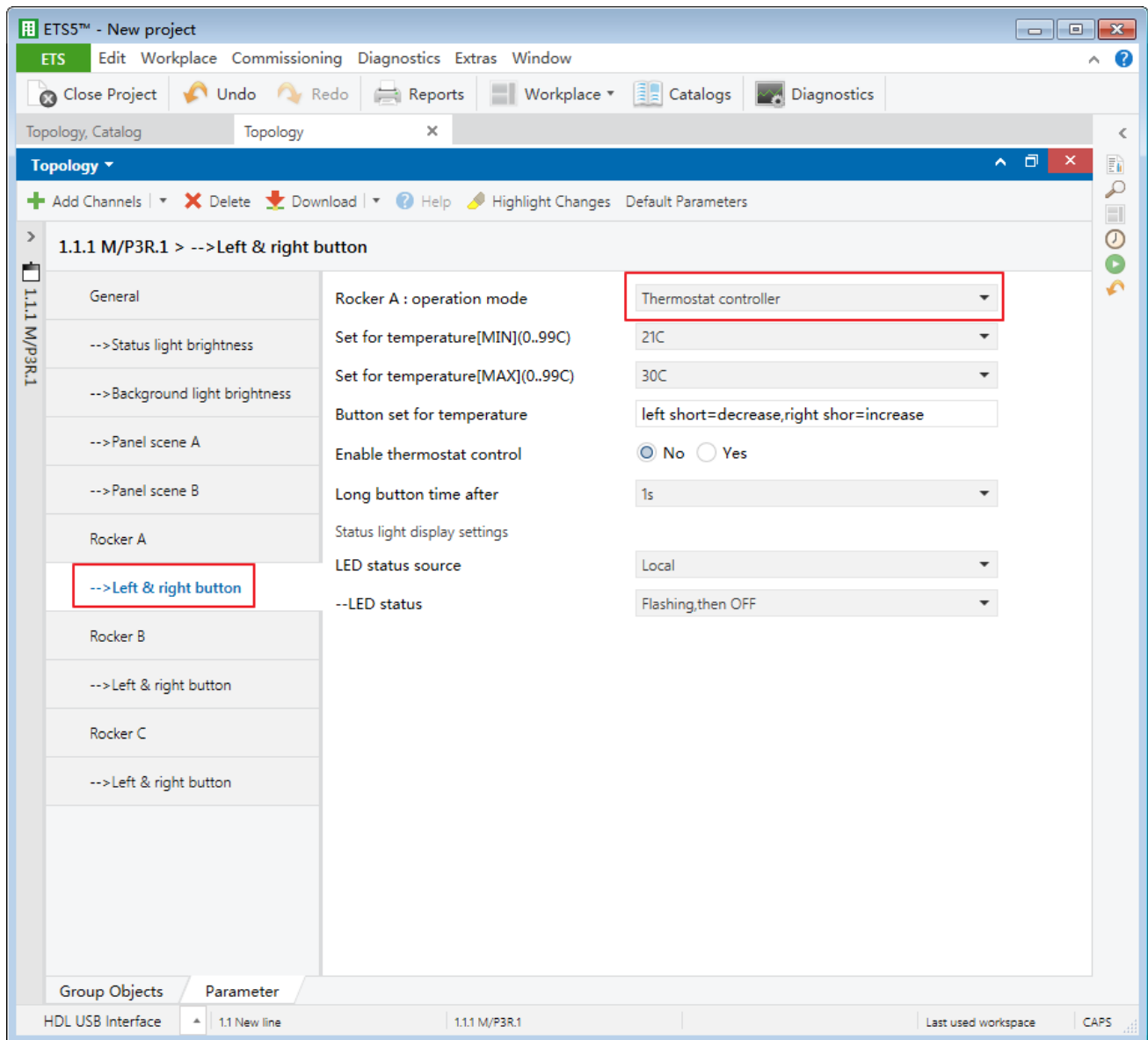
Figure 3-15 Thermostat controller setting page

The setting items are explained as follows:

1. Set for comfort temperature [MIN/MAX]: to set the upper/lower limit of temperature, which both range from 0 to 99℃.

2. Button set for temperature: for Granite Display, the left button is set to turn down the temperature, while the right button is set to turn up the temperature.

3. Enable thermostat control: to choose whether to activate thermostat controller function.

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After enabled, the details can be set below.

- ➢ Actual temperature source: to obtain actual temperature from "Local sensor" or via EIB.

- ➢ Control type: to select temperature control type, including "Heating" and "Cooling".

- ➢ Hysteresis: to select hysteresis value, range from 1 to 10℃.

- ➢ Button switch the thermostat: to set the way of turning on/off thermostat. Users may choose to turn on/off via long pressing the left/right button (Left/Right long=ON/OFF) or via long pressing any buttons (Toggle long button ON/OFF).

4. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

- ➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

- ➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

- ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

### 3.1.3   Combination Controller Setting

Figure 3-16 shows combination controller setting page.

Notice: because combination controller only supports up to 20 objects, "n" in this part is a positive integer less than 21.
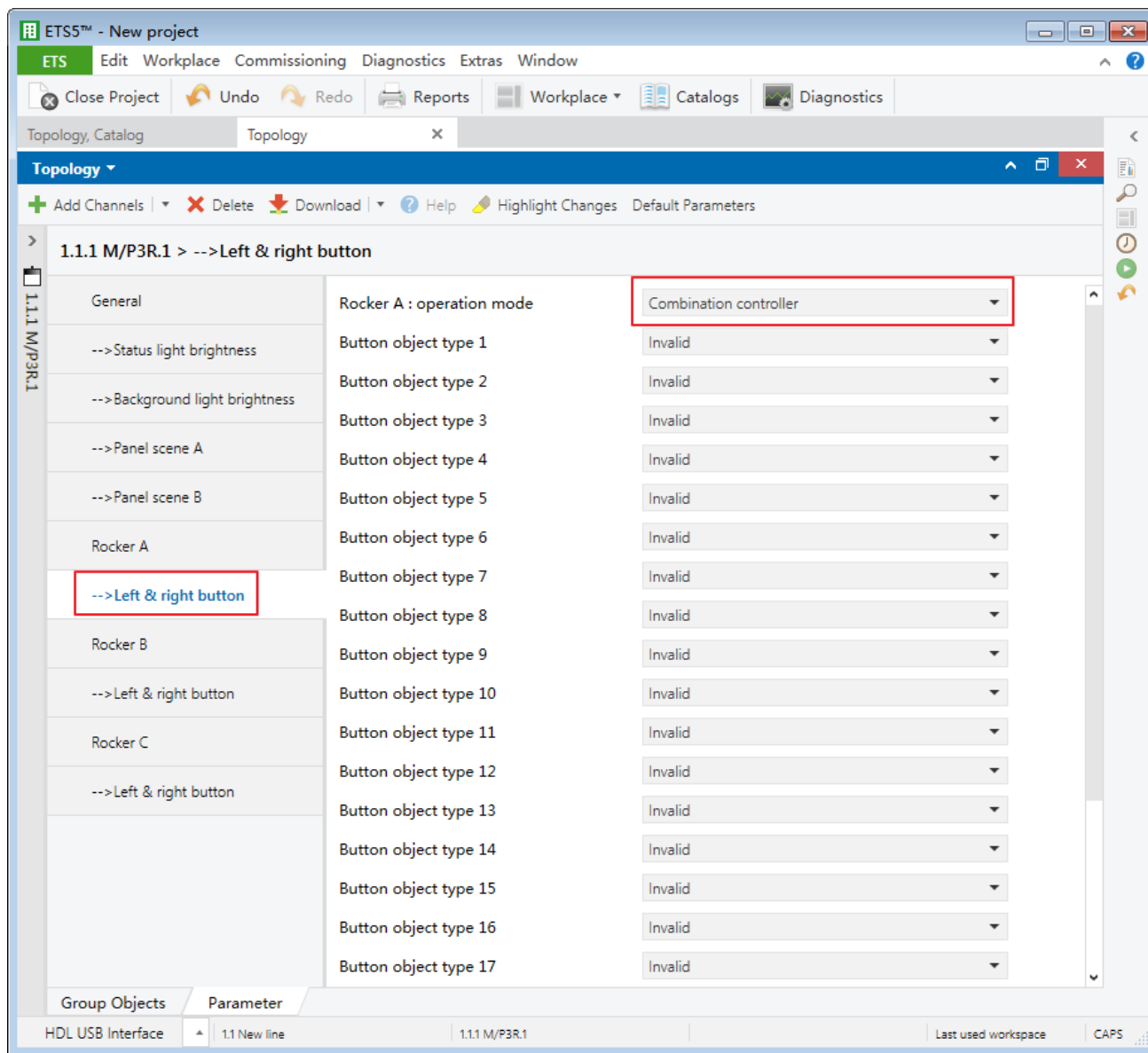
Figure 3-16 Combination controller setting page

3.1.3.1 Switch Controller Setting

Switch value: to select switch value, including "ON/OFF" and "Toggle".

3.1.3.2 Shutter Controller Setting

Shutter value: to select shutter status, including "UP/DOWN" and "Toggle".

3.1.3.3 Scene Controller Setting

1. Scene value: to choose to output corresponding scene number (Up to 64 scene numbers available).

2. Scene toggled: to enable exchanging scenes. The number of scenes to be exchanged can be selected in "Toggled scene No. is".

3.1.3.4 Sequence Controller Setting

Sequence value: to select sequence value, including "Start/Stop" and "Toggle".

3.1.3.5 Percentage Controller Setting

1. Percentage value: to select percentage value.

2. Percentage toggled: to enable exchanging percentage. After enabled, the percentage to be exchanged can be selected in "Toggled percentage is" below.

3.1.3.6 Threshold Controller Setting

1. Threshold value type: to select threshold type, including 1-byte/2-byte threshold.

2. Threshold value: to select threshold value, whose range depends on the threshold type selected in the first point.

3. Threshold toggled: to enable exchanging threshold. After enabled, the threshold to be exchanged can be selected in "Toggled threshold is" below.

3.1.3.7 String Controller Setting

String (14 bytes) value: to edit items controlled by 14 bytes.

3.2   Independent Button Mode

This chapter takes "Left button" of "Rocker A" as an example to introduce the way of configuring dependent button mode.

3.2.1 Select Operation Mode

The control type of combined buttons can be selected at the top of "Left button" tab, as shown in Figure 3-17.
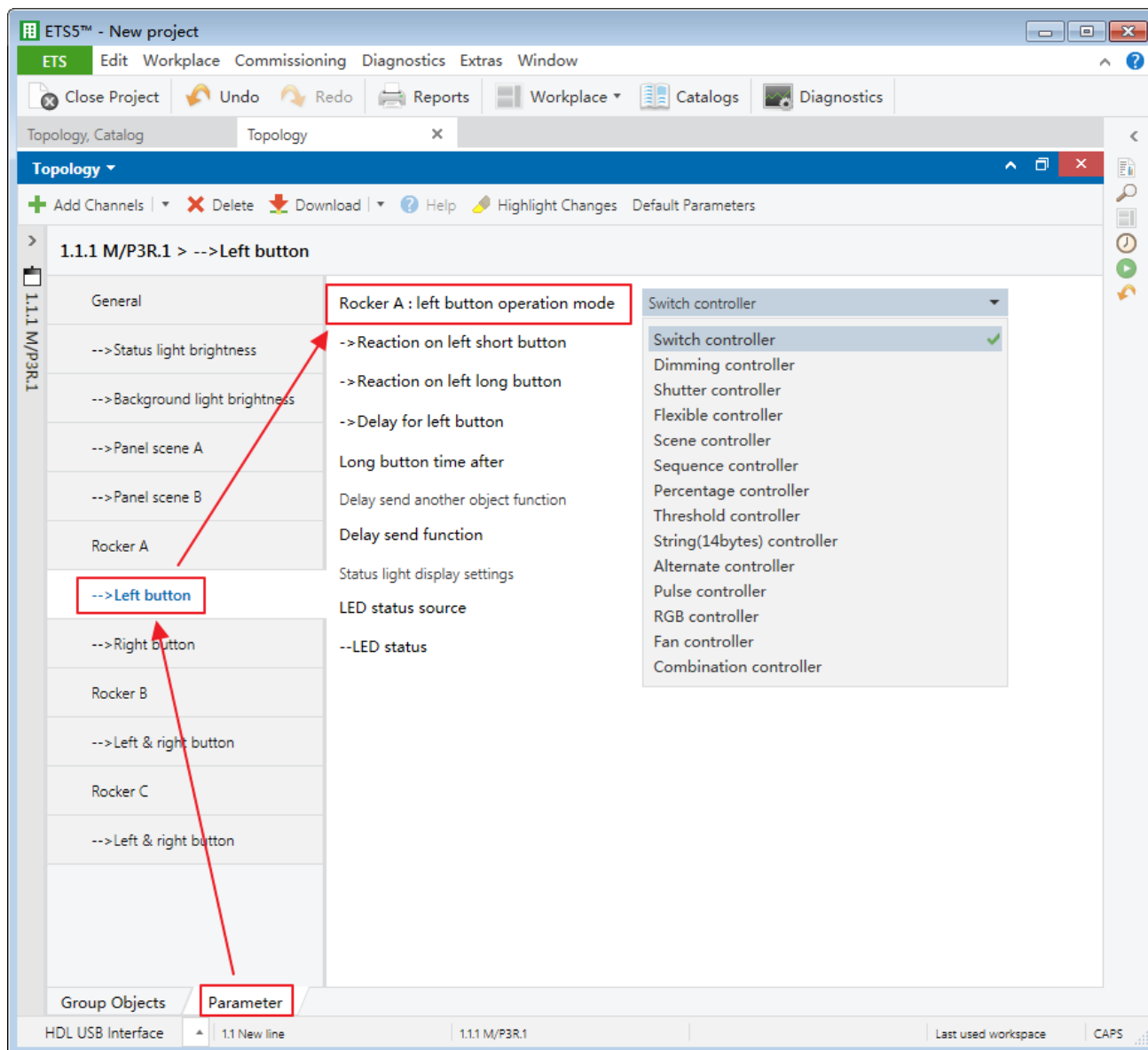
Figure 3-17 Select control type

3.2.2 Switch Controller Setting

Figure 3-18 shows switch controller setting page.
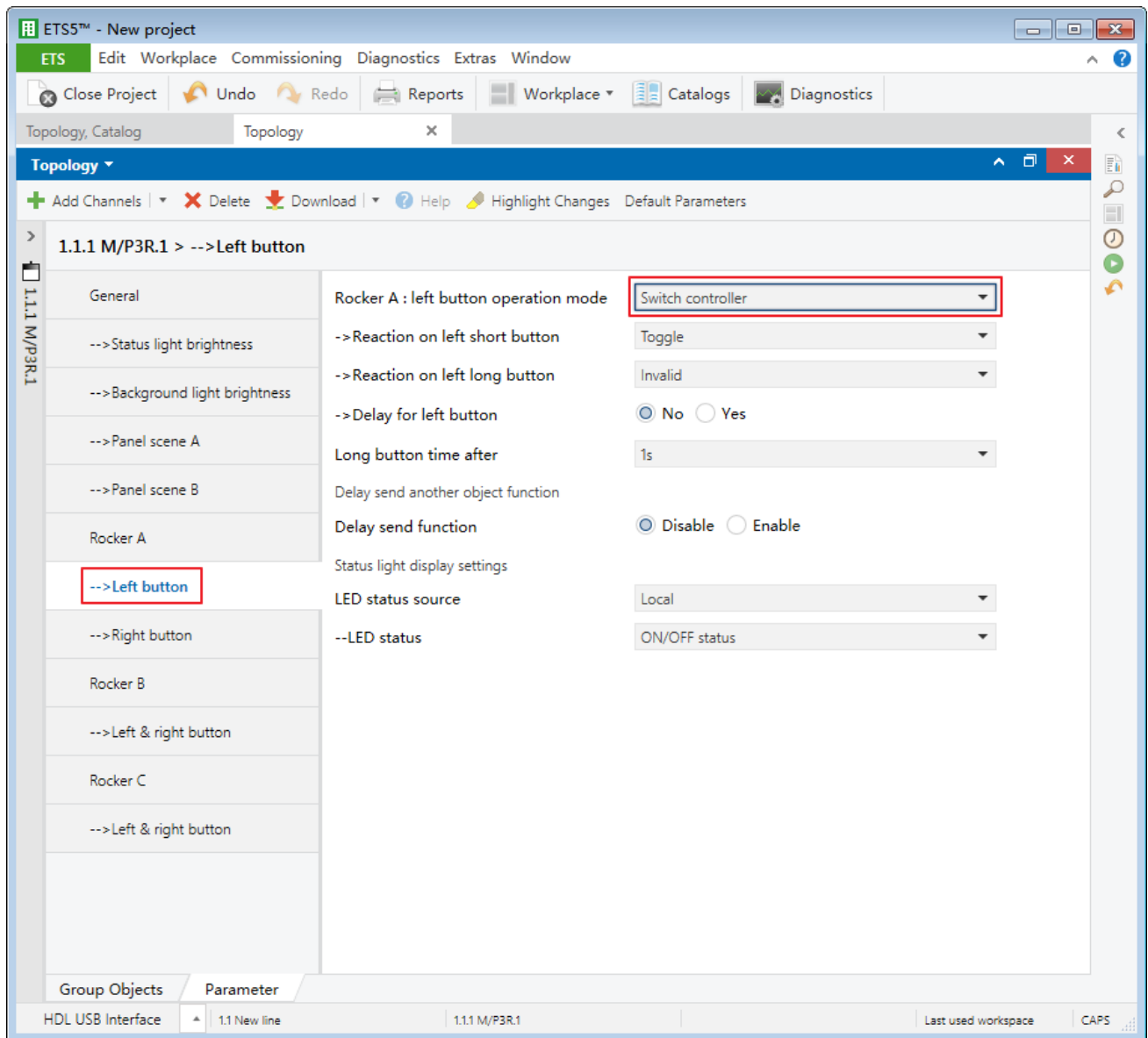
Figure 3-18 Switch controller setting page

1. Reaction on left short/long button: to set the control type of "short/long press", including:

   ➢ Invalid: buttons have no response.

   ➢ Toggle: to select buttons to turn on closed objects, and vice versa.

   ➢ ON: to turn on objects.

   ➢ OFF: to turn off objects.

2. Delay send for short/long button: to enable the delay time of buttons.

   Delay for switch ON/OFF of short/long button: to set the delay time between "short/long press" and turning on/off objects, range from 0 to 255s.

3. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. Delay send function: to enable "Delay send function".

   Delay send for short/long button: to enable "Delay send function" of "short/long press".

   Delay send when button object value: to enable "Delay send function" when the object status of buttons is on/off/on or off.

   Delay send value: to set the value of "Delay send".

   Send after a delay: to set the delay time of sending, range from 0 to 255s.

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.3 Dimming Controller Setting

Figure 3-19 shows dimming controller setting page.
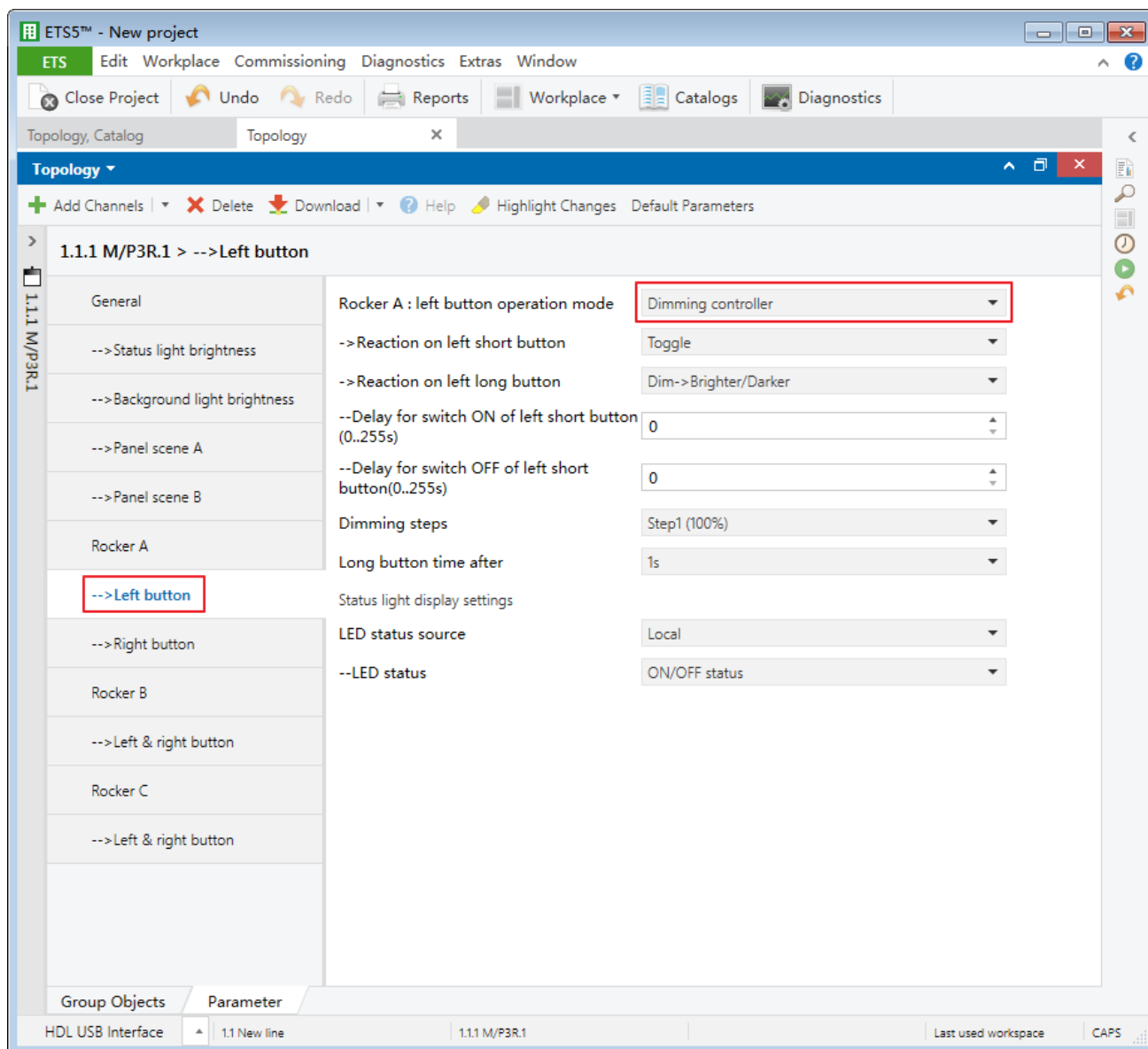
Figure 3-19 Dimming controller setting page

The setting items are explained as follows:

1. Reaction on short button: to select the operation of "short/long press" ("short press" is only to turn on/off, "long press" is to adjust brightness.).

    Delay for switch ON/OFF of short/long button: to set the delay time of turning on/off lights via short pressing, range from 0 to 255s.

5. Dimming steps: There are 7 dimming steps. For example, if selecting Step3 (25%),

objects will be up to 25% brighter (The maximum object brightness is 100%).

2. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

3. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 Shutter Controller Setting

Figure 3-20 shows shutter controller setting page.
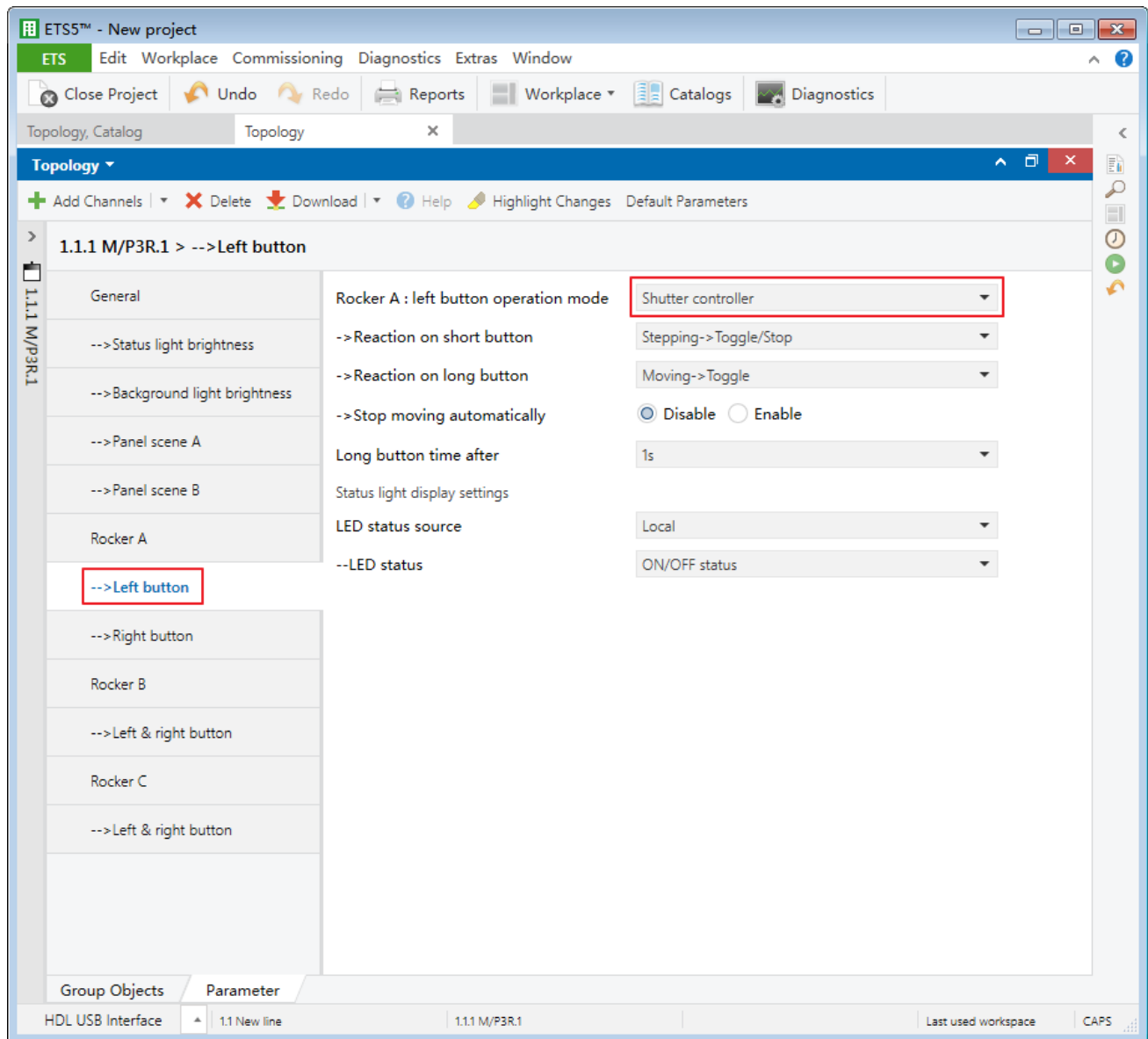
Figure 3-20 Shutter controller setting page

The setting items are explained as follows:

1. Reaction on short button: to select the operation of "short press" on the panel, including:

   ➢ Stepping → Increase (Decrease/Toggle) /Stop: to increase/decrease via short pressing and stop via short pressing again.

   ➢ Moving → Up/Down/Toggle: to roll up/down via short pressing.

➢ Stop moving automatically: to choose whether to stop automatically.

2. Long button time after: to select the delay time of long pressing, range from 1 to 60s.

3. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.2 Flexible Controller Setting

Figure 3-21 shows flexible controller setting page.
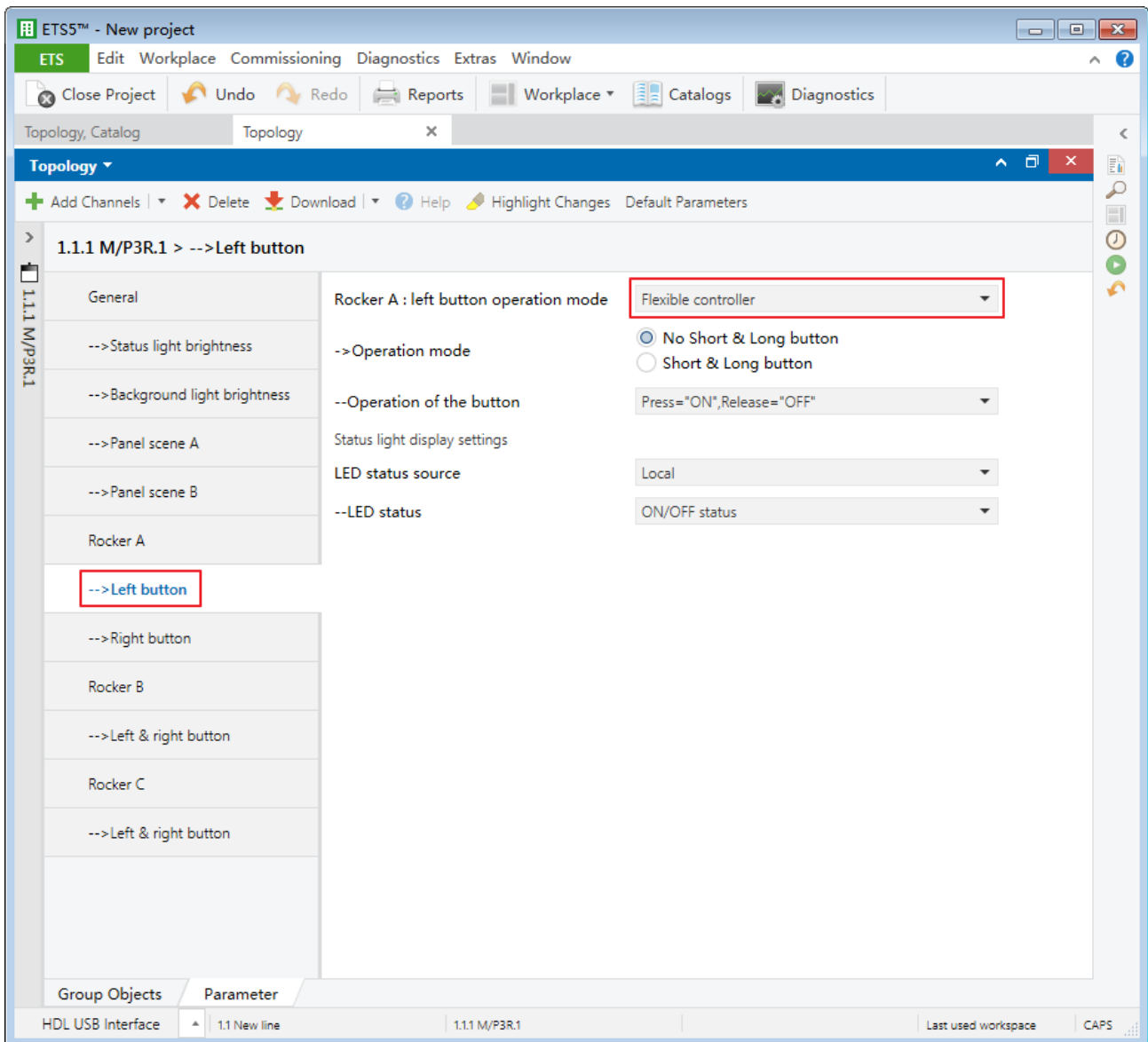
Figure 3-21 Flexible controller setting page

The setting items are explained as follows:

1. Operation mode: to select the operation mode of flexible controller, including "No Short & Long button" and "Short & Long button".

2. ("No Short & Long button" is selected) Operation of the button: including:

    Press=OFF, Release=OFF: to send ON/OFF after pressing/releasing.

3. ("Short & Long button" is selected) Operation of short button: including sending

ON/OFF/Toggle.

4. ("Short & Long button" is selected) Operation of long button: including:

> Press=ON: to send ON when pressing and to be invalid when releasing.

> Release=ON: to send ON when releasing and to be invalid when pressing.

> Press=ON, Release=ON: to send ON when pressing/releasing.

> Press=OFF: to send OFF when pressing and to be invalid when releasing.

> Release=OFF: to send OFF when releasing and to be invalid when pressing.

> Press=OFF, Release=OFF: to send OFF when pressing/releasing.

> Press=ON, Release=OFF: to send ON when pressing and to send OFF when releasing.

> Press=OFF, Release=ON: to send OFF when pressing and to send ON when releasing.

5. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

6. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

> If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

> If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

> If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.3 Scene Controller Setting

Figure 3-22 shows threshold controller setting page.
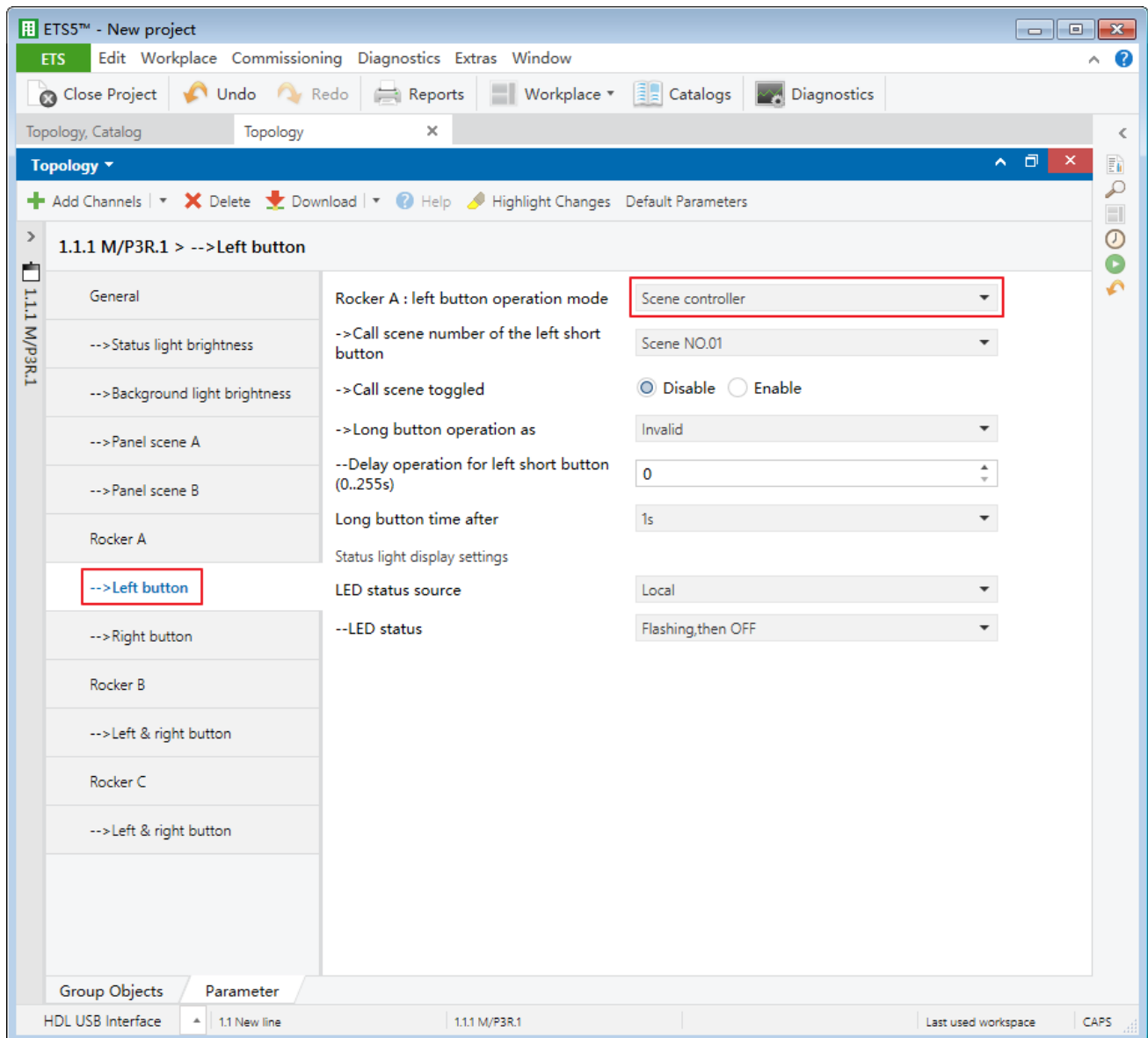
Figure 3-22 Scene controller setting page.

The setting items are explained as follows:

1. Call scene number of the left/right: to select corresponding scene number of short pressing the left button (Up to 64 scene numbers available).

2. Call scene toggled: to enable exchanging scenes. After enabled, the number of scenes to be exchanged can be selected in "Toggled scene number" below.

3. Long button operation as: to select the operation of "long press", including:

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➢ Scene dimming

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

4. Delay on right/left short/long button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

5. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

6. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 Sequence Controller Setting

Figure 3-23 shows sequence controller setting page.
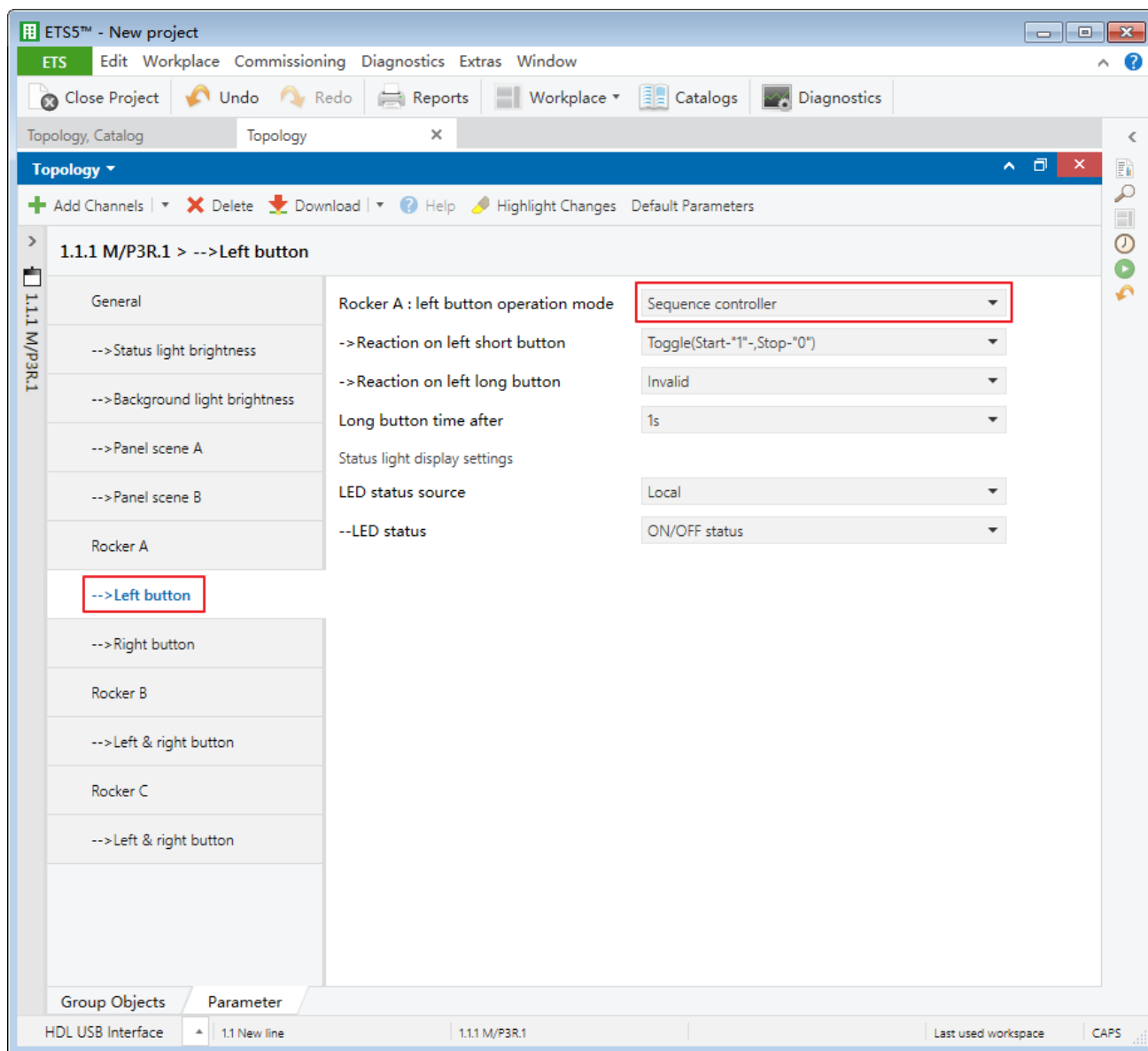
Figure 3-23 Sequence controller setting page

The setting items are explained as follows:

1. Reaction on short button: to set the operation of short/long pressing the left button, including:

   ➢ Toggle

   ➢ Start with 1

➢ Stop with 0

2. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

3. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 Percentage Controller Setting

Figure 3-24 shows percentage controller setting page.
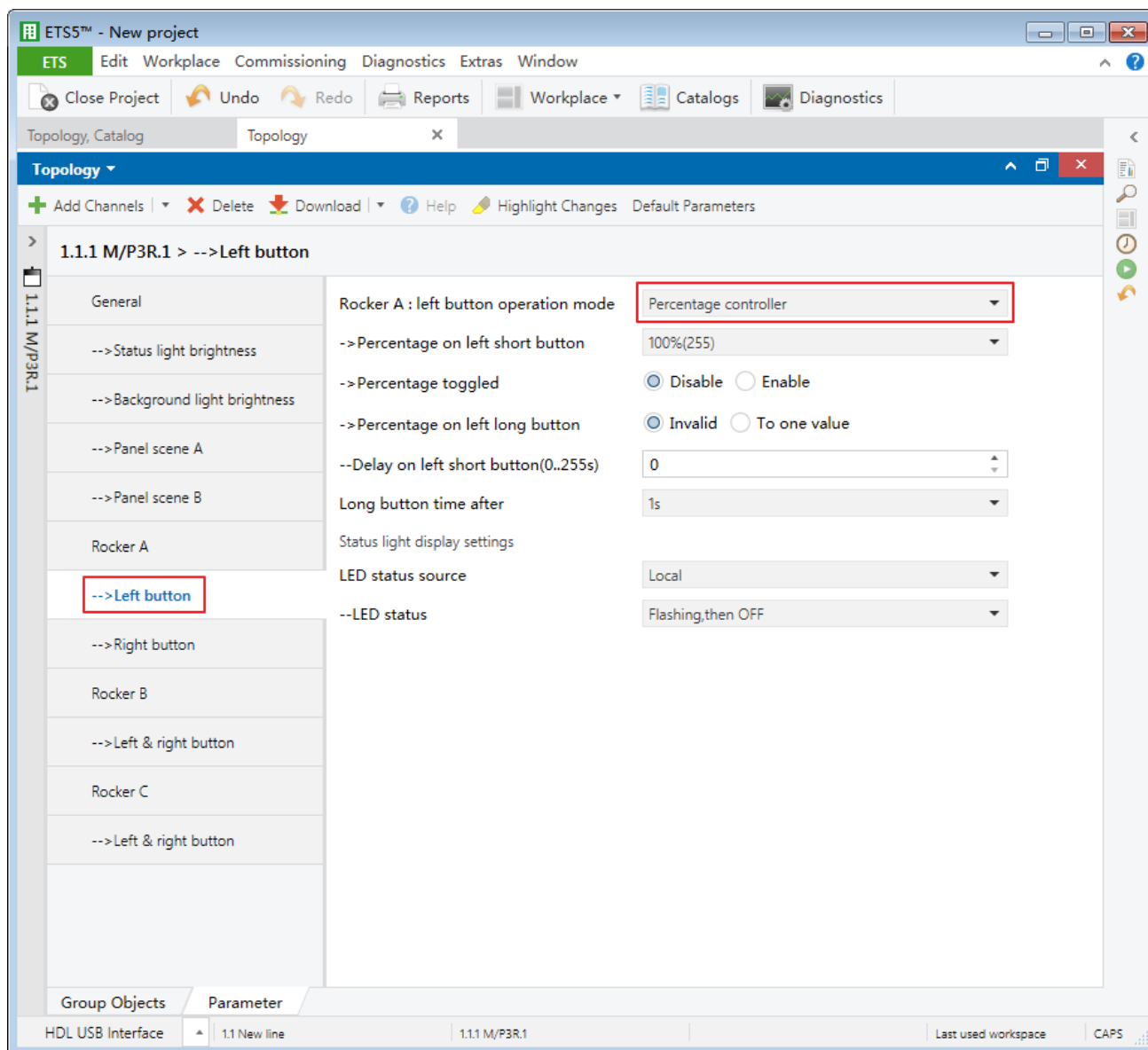
Figure 3-24 Percentage controller setting page

The setting items are explained as follows:

1. Reaction on short button: to select the percentage operation of short pressing the left button, including:

2. Percentage toggled: to enable exchanging percentage. After enabled, the percentage value to be switched can be selected in "Toggled percentage value".

3. Percentage on left long button: to enable percentage control to one value via long

pressing the left button. After enabled, the limit of percentage control can be selected in "Percentage value" below.

4. Delay on right/left short/long button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

5. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

6. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

> If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

> If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

> If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 Threshold Controller Setting

Figure 3-25 shows threshold controller setting page.
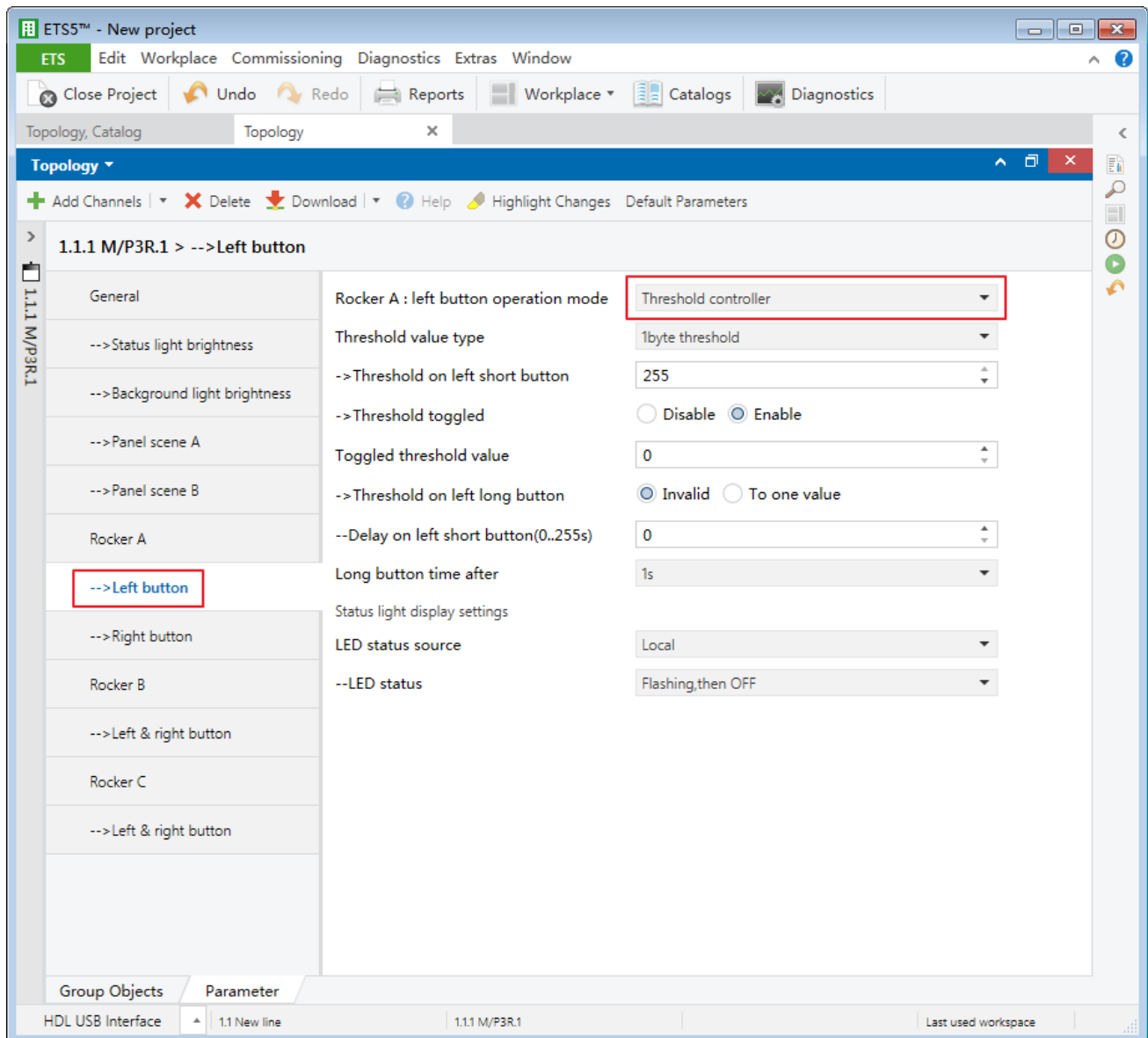
Figure 3-25 Threshold controller setting page

The setting items are explained as follows:

1. Threshold value type: to select threshold type, including 1-byte threshold, 2-byte threshold and 2-byte floating threshold.

2. Threshold on left short/long button: to set the sent threshold of short/long pressing the left/right button, which depends on the type selected in the first point.

3. Threshold toggled: to enable toggle threshold. After enabled, the toggled threshold value

can be set in "Toggled threshold value" below.

4. Delay on right/left short/long button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

5. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

6. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 14-Byte String Controller Setting

Figure 3-26 shows 14-byte string controller setting page.

Figure 3-26 14-Byte string controller setting page

The setting items are explained as follows:

1. Delay on right/left short/long button: to set the string sent via short/long pressing the left button.

2. Delay on right/left short/long button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

3. Long button time after: the time for system to identify "long press". For example, if the

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time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

4. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 Alternate Controller Setting

Figure 3-27 shows alternate controller setting page.

Figure 3-27 Alternate controller setting page

The setting items are explained as follows:

1. Alternate <1/2/3/4>: to select the control type of "Alternate <1/2/3/4>".

2. Short/Long button value: to set the data sent via short/long pressing, whose length depends on the type selected in the first point.

3. RGB on left/right long button: to enable the alternate function of short/long pressing the left button.

4. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

5. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

➢ If "Local" is selected:

LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

➢ If "From bus" is selected:

LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 Pulse Controller Setting

Figure 3-28 shows pulse controller setting page.

Figure 3-28 Pulse controller setting page

The setting items are explained as follows:

1. Positive/Negative pulse

2. Output to bus after bus recovery: to enable outputting pulse to the bus after the bus voltage recovery. After enabled, "Output to bus after a delay" and "Minimum hold time after bus recovery" can be set below.

Pulse 1/2 settings

3. Open/Close status duration time: to set the duration of pulse in open/close status, range from 1 to 255s.

4. Pulses number set: to select the number of pulses to be sent, including "Send continuously" and "Numbers". If the latter is selected, the number can be set in "Pulses number", range from 1 to 65535.

5. Reaction on short/long button: to set the operation of "short/long press", including "Toggle", "Stop" and "Pulse 1/2".

6. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

7. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1 RGB Controller Setting
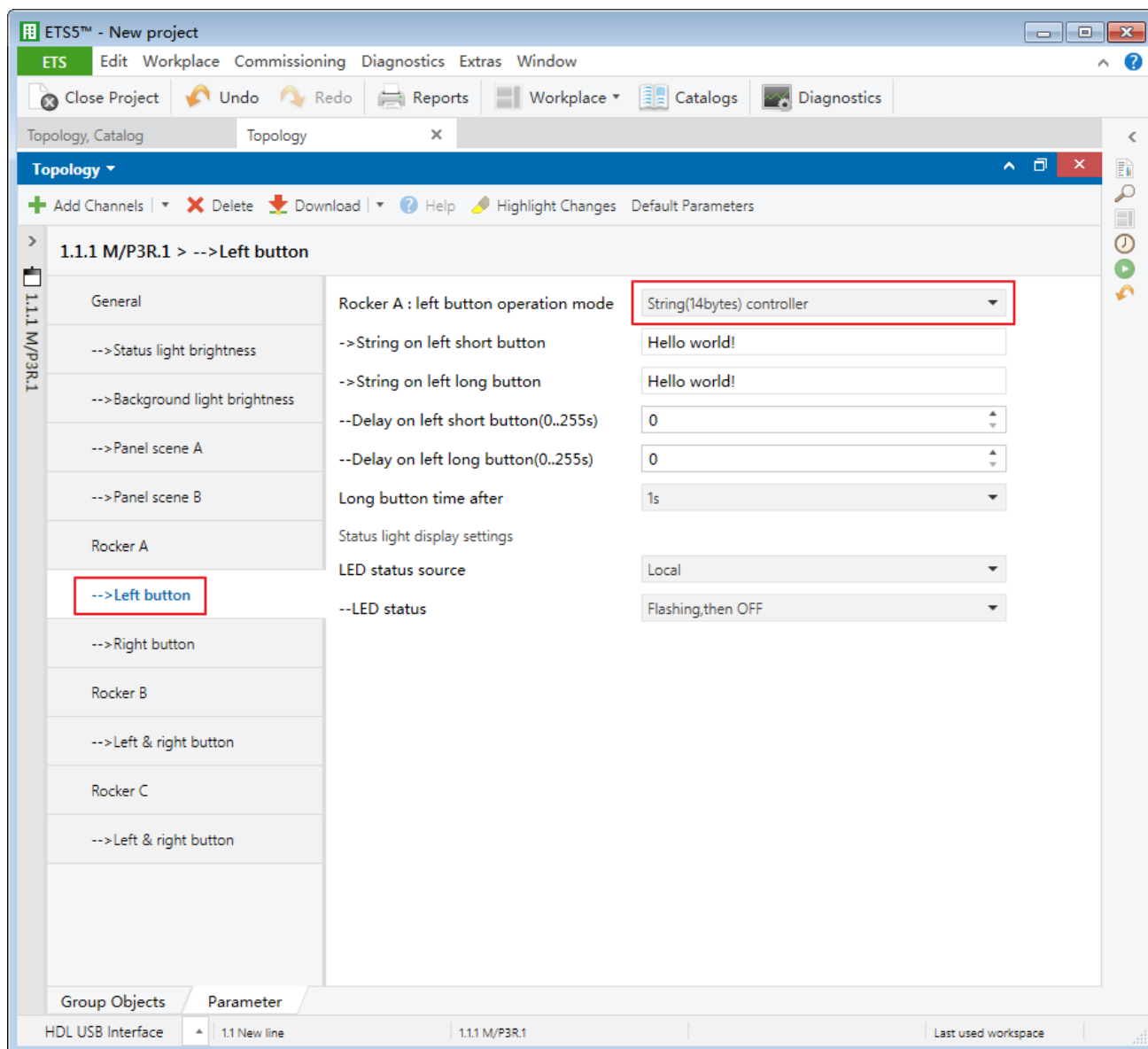
Figure 3-29 shows RGB controller setting page.
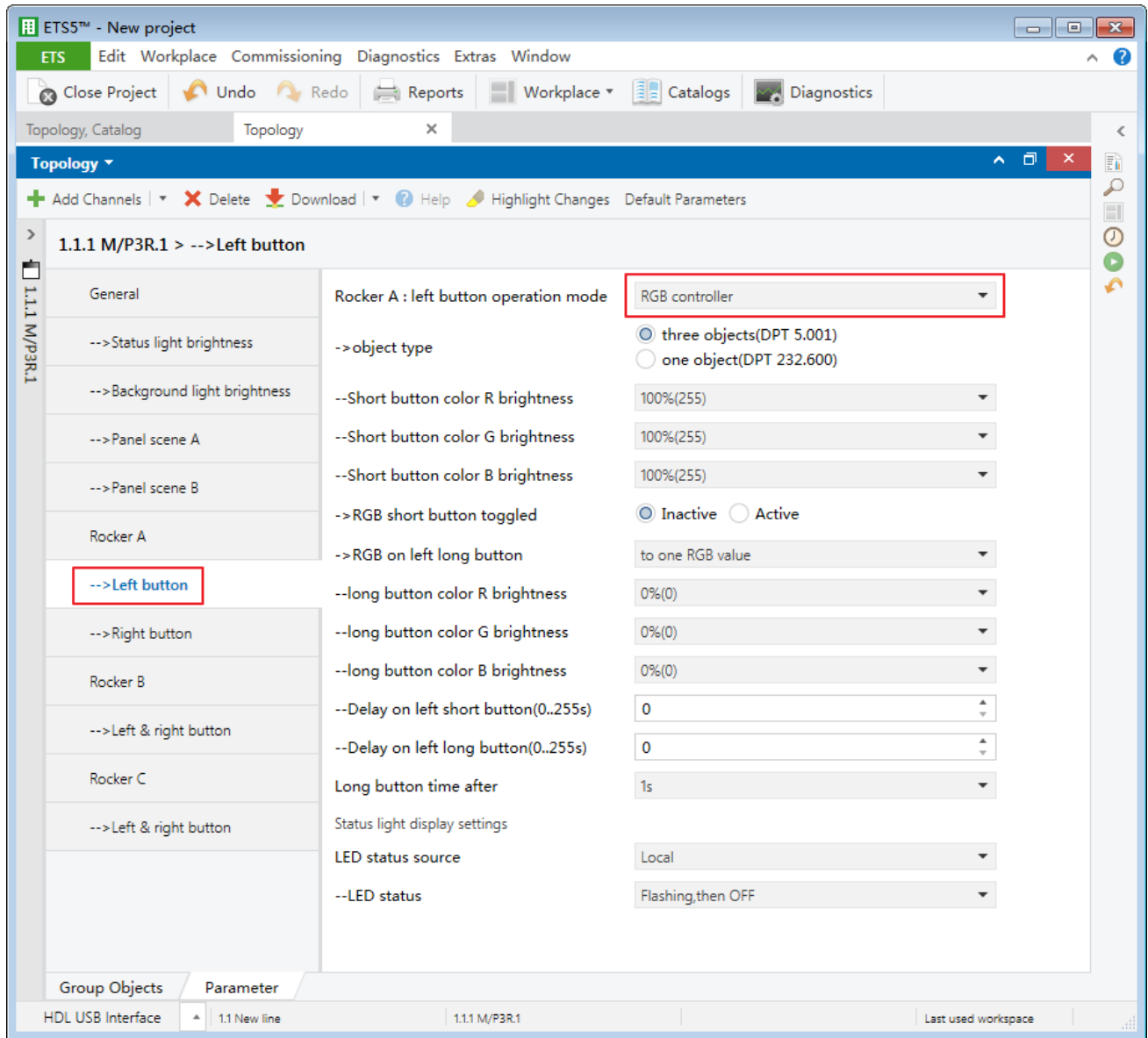
Figure 3-29 RGB controller setting page

The setting items are explained as follows:

1. Object type: to select dimming object type. "3 objects" is to control dimming via R, G, and B independently, while "1 object" is to control dimming via RGB.

2. Short button color R/G/B brightness: to set RGB of short pressing.

3. RGB short button toggled: to enable the toggle function of short pressing. After enabled, RGB to be toggled can be set in "Short button toggled color R/G/B brightness".

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4. RGB on left short button: to enable the operation of short pressing the left button, including "to one RGB value" and "adjust short button color". If the former is selected, the color and brightness can be customized in "Long button color R/G/B brightness" below. If the latter is selected, the minimum, maximum and increment value can be set in "Minimum value", "Maximum value" and "Increment value".

5. Delay on right/left short/long button: to set the delay time of short/long pressing the left/right button, range from 0 to 255s.

6. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

7. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➢ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➢ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➢ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.1　Fan Controller Setting

Figure 3-30 shows fan controller setting page.

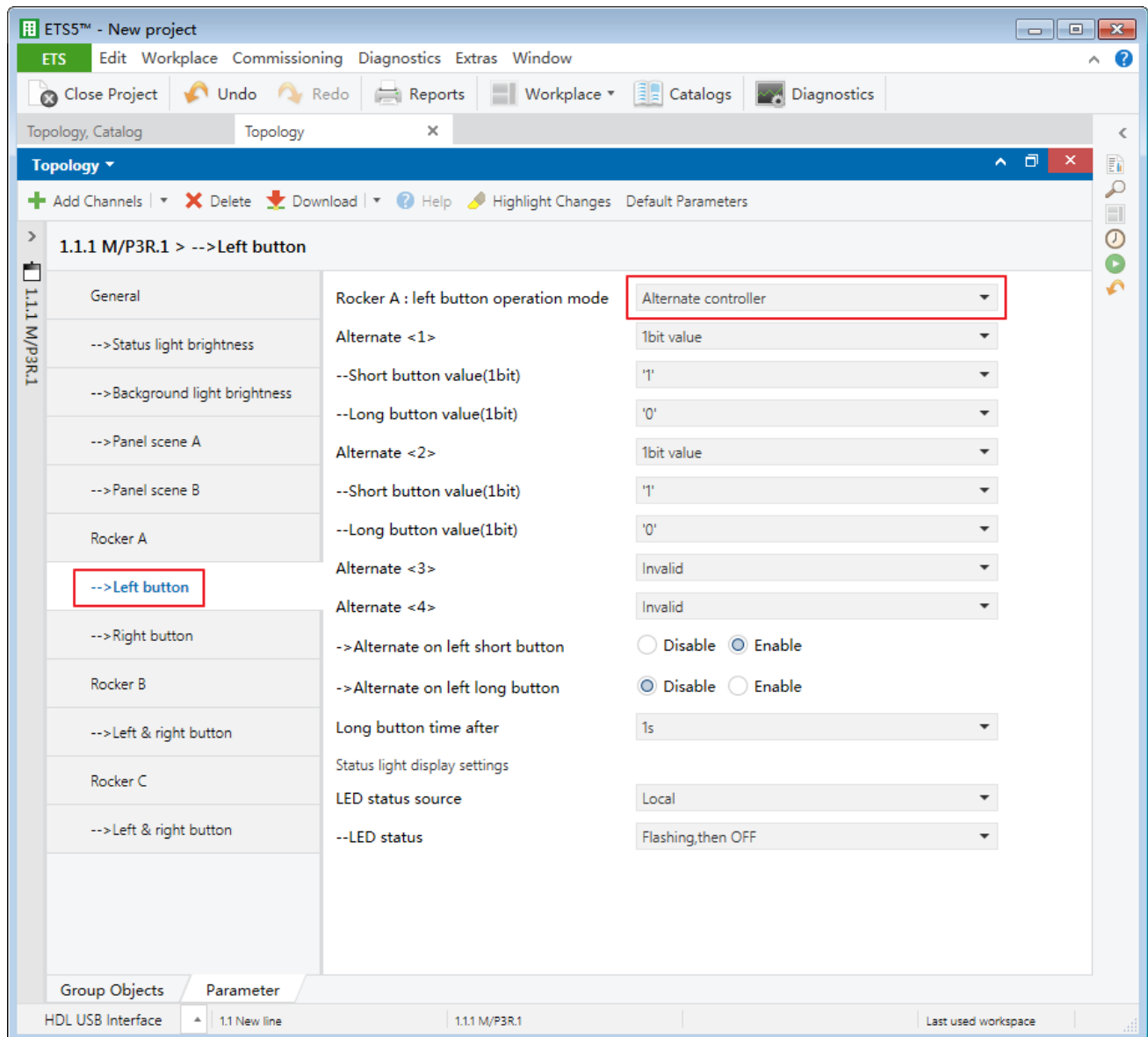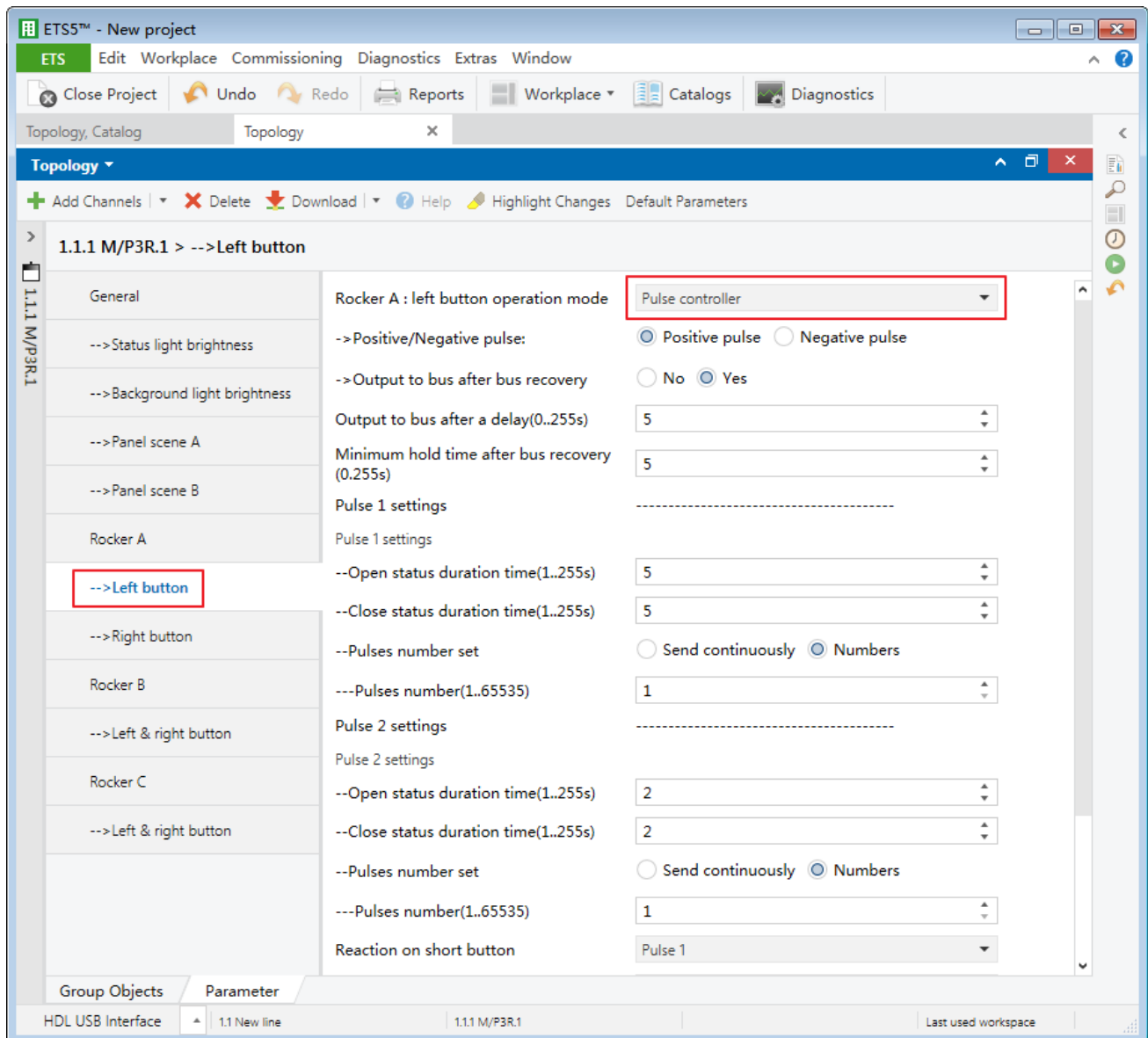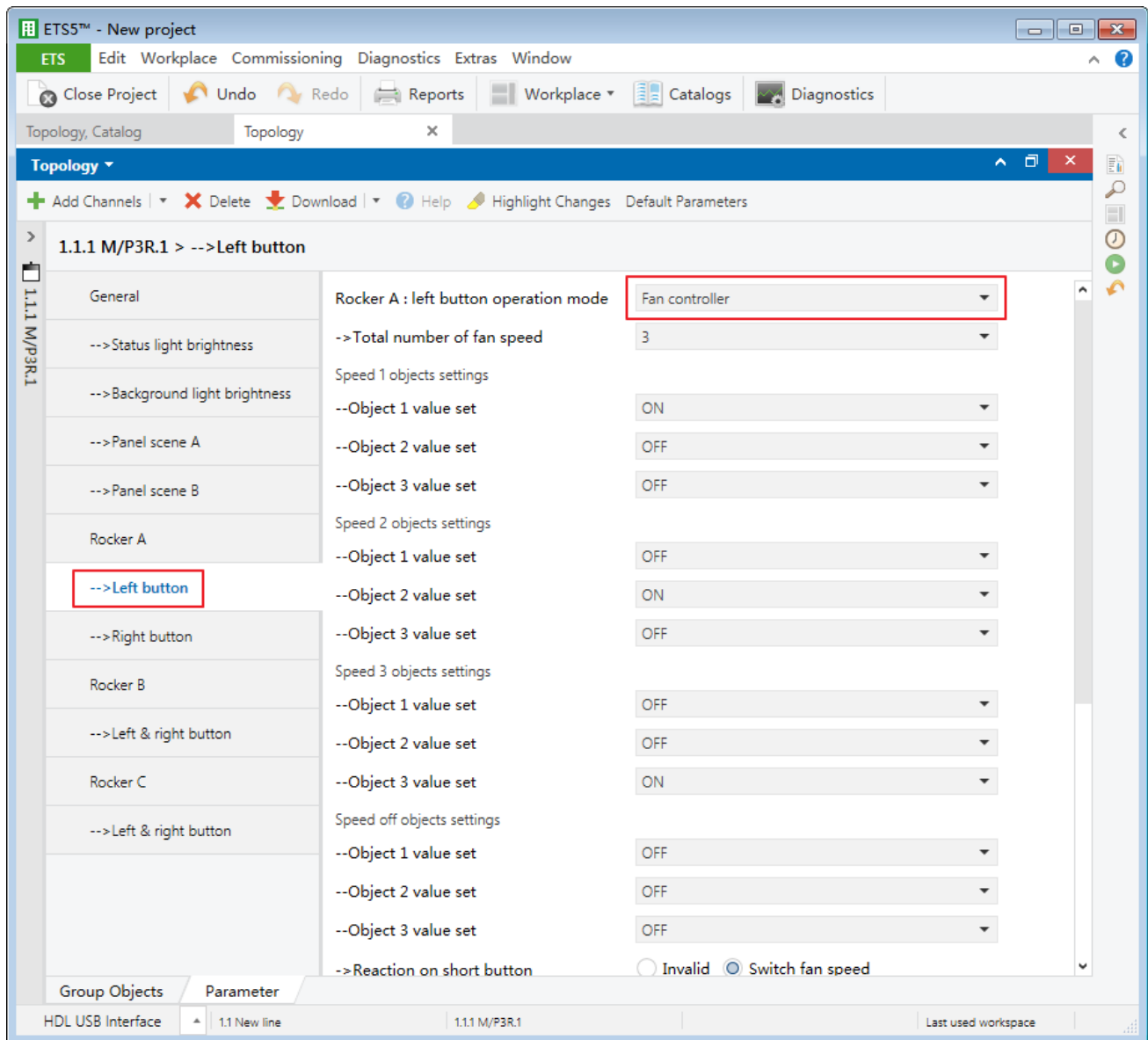**Figure 3-30 Fan controller setting page**

The setting items are explained as follows:

1. Total number of fan: select the number of fan speed levels, range from 2 to 4.

2. Speed 1/2/3/4 object settings: the details of fan speed levels can be set. "Object1/2/3/4 value set" corresponds to the value of object 1/2/3/4**.**

3. Speed off objects settings: to set object value when fan is off.

4. Reaction on short button: to enabling adjusting fan speed via short/long pressing the left button. After enabled, the details can be set below:

   ➤ Switch speed direction: to adjust wind direction, "FWD" means forward wind while "RWD" means backward wind.

   ➤ Speed 1/2/3/4: to enable the fan speed of correspond level.

   ➤ Turn off fan

5. Delay to send ON after OFF: to set the delay time between sending OFF command and sending ON command again, range from 0 to 255s.

6. Long button time after: the time for system to identify "long press". For example, if the time is set to 3s, keeping pressing for more than 3s will be identified as "long press" while less than 3s will be identified as "short press".

7. LED status source: the source of LED status, including "Local", "From bus" and "Mutually exclusive display".

   ➤ If "Local" is selected:

   LED status: to select LED status, including "Flashing, then ON", "Flashing, then OFF", "Flashing, then status" and "ON/OFF status".

   ➤ If "From bus" is selected:

   LED status reaction: to select the reaction of LED when the bus information is received. For example, LED is on when receiving 1 and is off when receiving 0.

   Button status reaction (1 bit): to toggle object value received from the bus and update the value to button value.

   Delay read LED status after power on: to set the delay time between powering on the device and reading LED status, range from 1 to 255s. 0 is set to have no response.

   ➤ If "Mutually exclusive display" is selected: to set that the selected button and other buttons are mutually exclusive.

3.2.2 Combination Controller Setting

Figure 3-31 shows combination controller setting page.

Notice: because combination controller only supports up 10 objects, "n" in this part is a positive integer less than 11.
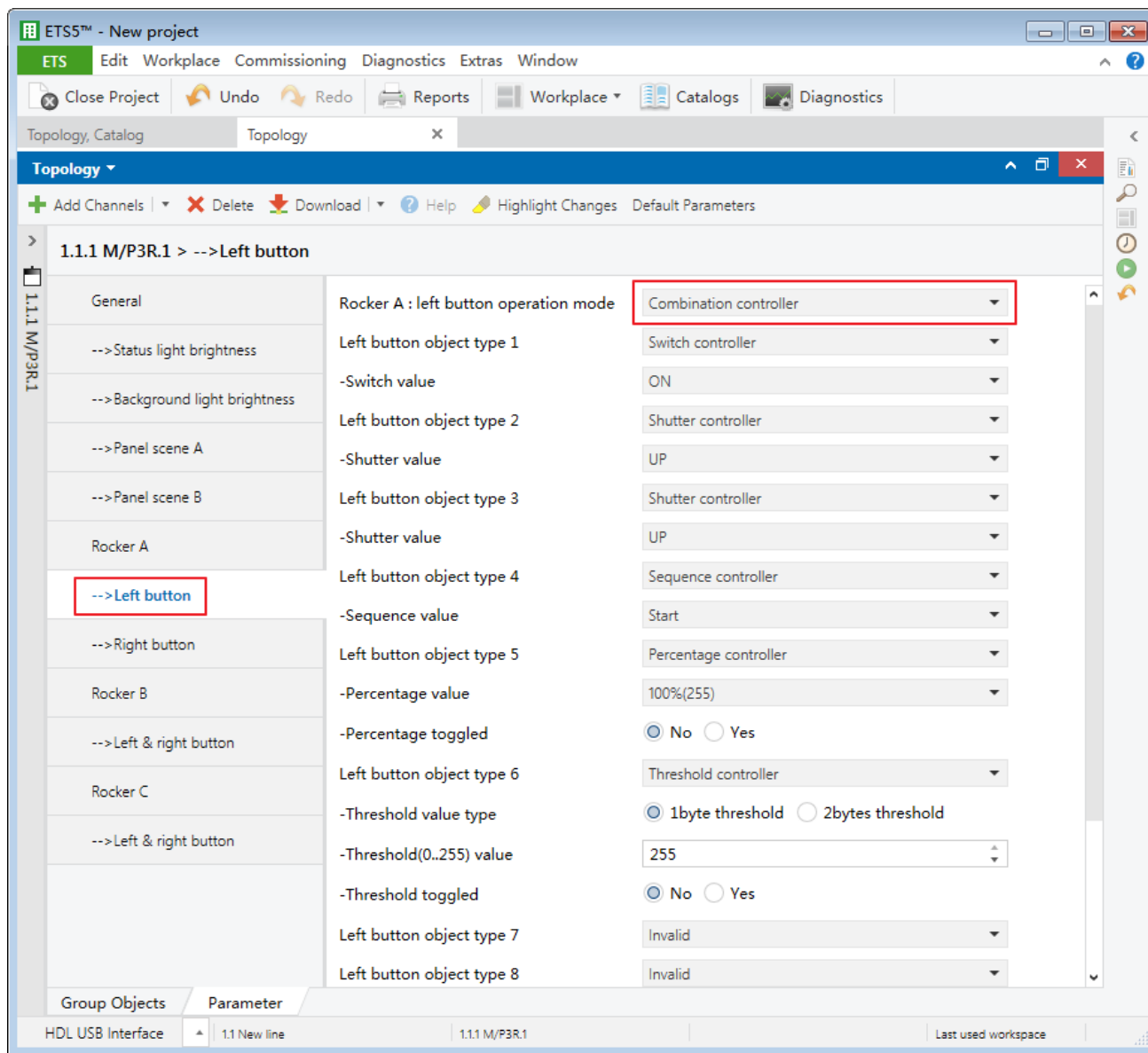
Figure 3-31 Combination controller setting page

3.2.2.1 Switch controller

Switch value: to select switch value, including "ON/OFF" and "Toggle".

3.2.2.2 Shutter Controller

Shutter value: to select shutter status, including "UP/DOWN" and "Toggle".

3.2.2.3 Scene Controller

1. Scene value: to select the number of scenes to be output (Up to 64 numbers available).

2. Scene toggled: to enable exchanging scenes. After enabled, the number of scenes to be exchanged can be selected in "Toggled scene No. is" below.

3.2.2.4 Sequence Controller

Sequence value: to select sequence value, including "Start/Stop" and "Toggle".

3.2.2.5 Percentage Controller

1. Percentage value: to select percentage controller value.

2. Percentage toggled: to enable exchanging percentage. The percentage to be exchanged can be selected in "Toggled percentage is" below.

3.2.2.6 Threshold Controller

1. Threshold value type: to select threshold type, including 1-byte/2-byte threshold.

2. Threshold value: to select threshold value, whose range depends on the selected type in the first point.

3. Threshold toggled: to enable exchanging threshold. After enabled, the threshold value to be exchanged can be selected in "Toggled threshold is".

3.2.2.7 14-Byte String Controller

String (14 bytes) value: to edit items controlled by 14-byte string.

4 Data Downloaded to the Panel

4.1 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 successfully and the interface will show up in "Current Interface", as shown in Figure 4-1.
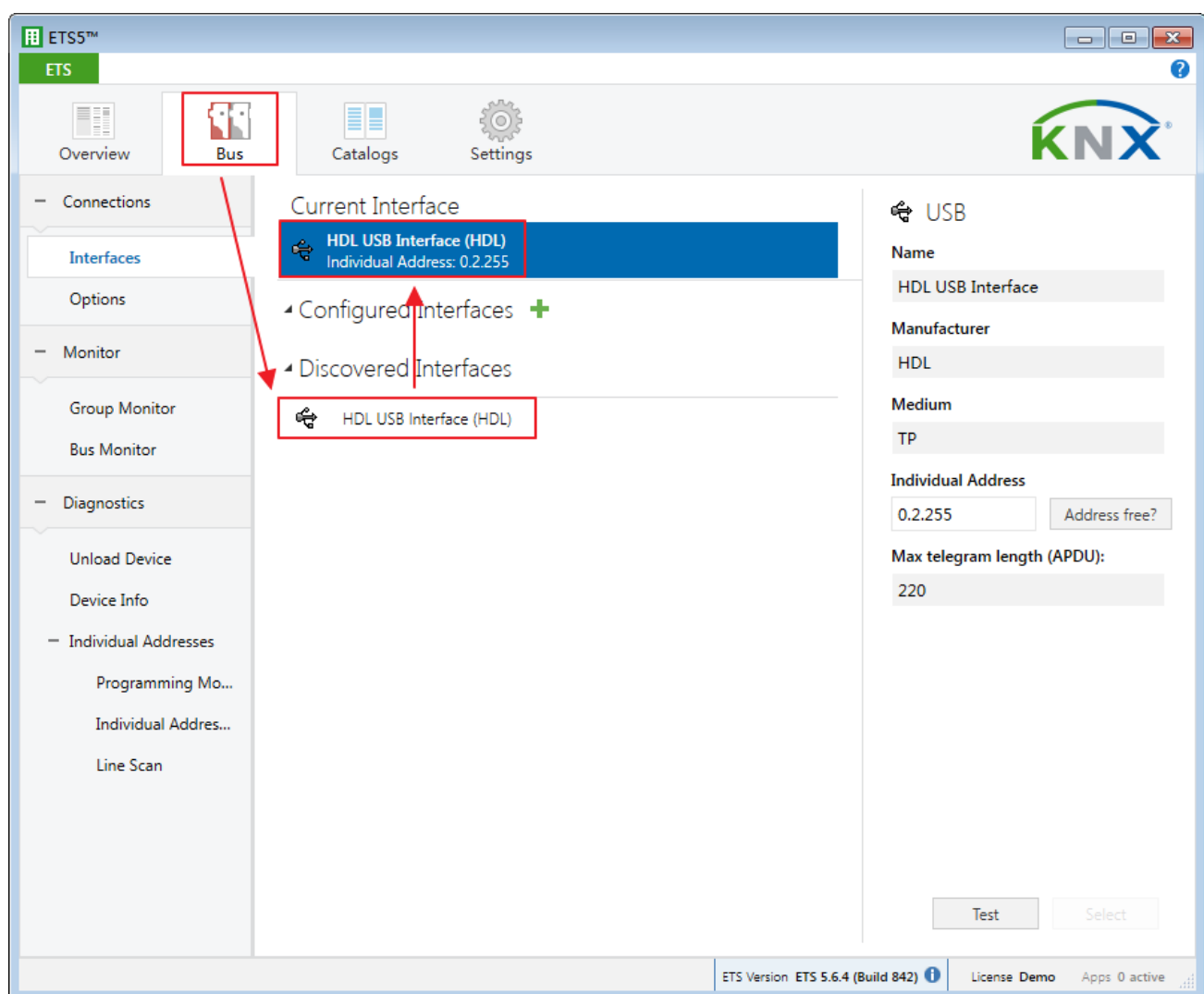
Figure 4-1 Interface setting

4.2   Download Data

Right click on the data to be downloaded to the panel and select "Download". Keep pressing the top left button and bottom right button for about 2s to enable the programming mode of the panel. The information indicates the end of the process on the right side of ETS, as shown in Figure 4-2.
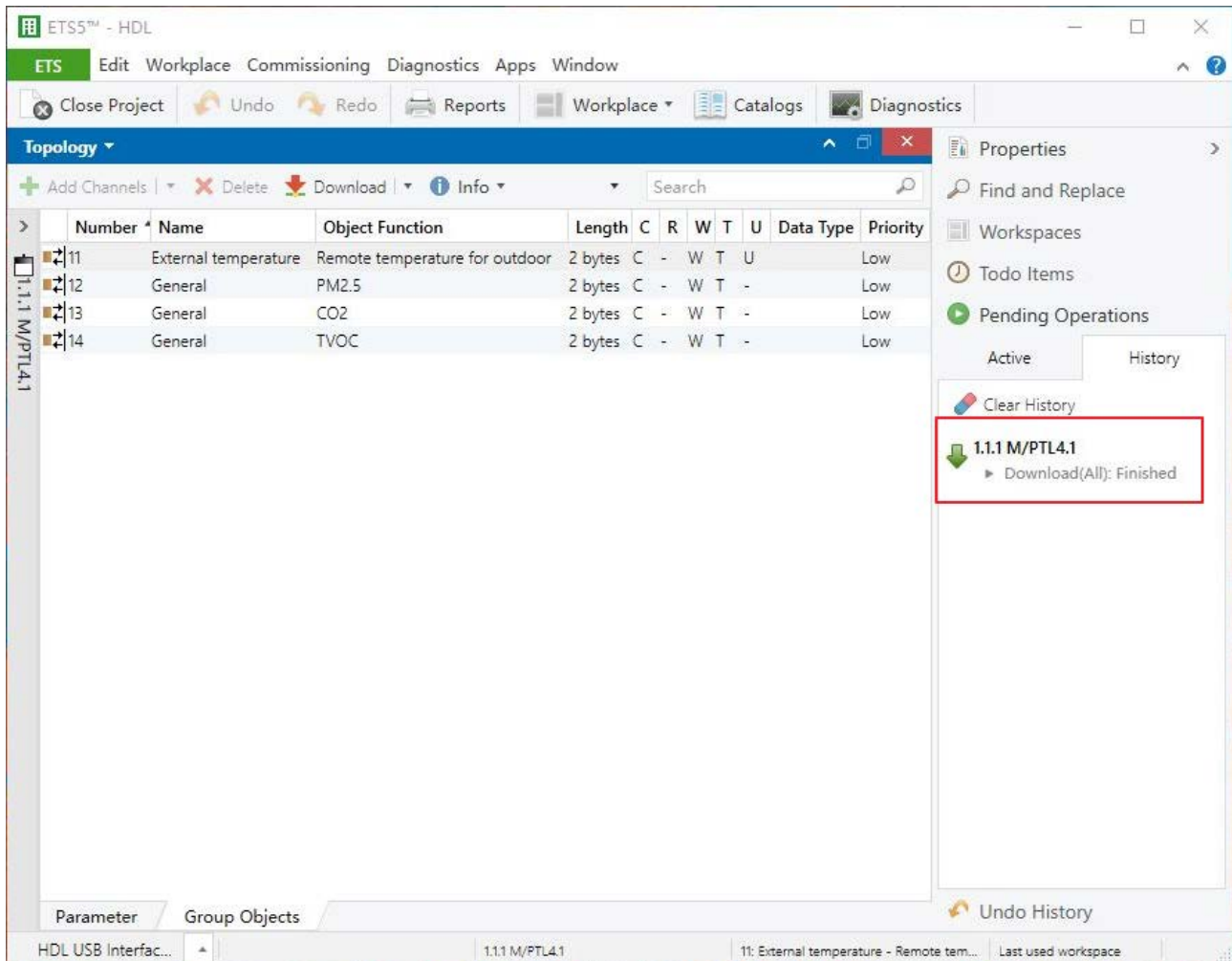
Figure 4-2 Download data

5 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 object value can be read via the bus.

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

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

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

5.1 Objects "General"

Objects "General"										
序号 ▲	名称	对象功能	长度	C	R	W	T	U	数据类型	优先级
1	General	Heartbeat telegram	1 bit	C	-	-	T	-	enable	低
8	General	Trigger left of Rock A	1 bit	C	-	W	T	U	trigger	低
9	General	Trigger right of Rock A	1 bit	C	-	W	T	U	trigger	低
10	General	Trigger left of Rock B	1 bit	C	-	W	T	U	trigger	低
11	General	Trigger right of Rock B	1 bit	C	-	W	T	U	trigger	低
12	General	Trigger left of Rock C	1 bit	C	-	W	T	U	trigger	低
13	General	Trigger right of Rock C	1 bit	C	-	W	T	U	trigger	低
20	General	Lock button	1 bit	C	-	W	T	U	enable	低

No.	Name	Function	Flag	Data Type
1	General	Heartbeat telegram	C T	DPT1.003 1 bit
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.				
8-13	General	Trigger left/right of Rock A/B/C	C W T U	DPT1.008 1 bit
These objects are used for activating the left and right button in "Rock A/B/C".				
20	General	Lock button	C W T U	DPT1.003 1 bit

This object is used for enabling the lock function of the panel.				
21	Local temperature	Temperature report	C R T	DPT9.005 2 bytes
This object is used for sending local temperature signal.				
27-30	Background light 1/2 left/right	Switch	C W	DPT 1.001 1bit
These objects are used for controlling status background light.				

5.2 Objects "Panel scene"

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
41	Panel scene A	Call scene (1byte)	1 byte	C	-	W	T	U	scene cont...	低
42	Panel scene A	Call scene (1bit)	1 bit	C	-	W	T	U	switch	低
43	Panel scene A	Save scene (1bit)	1 bit	C	-	W	T	U	switch	低
44	Panel scene A	Object 1 value(1bit)	1 bit	C	-	W	T	U	switch	低
45	Panel scene A	Object 2 value(1byte:scaling)	1 byte	C	-	W	T	U	percentag...	低
46	Panel scene A	Object 3 value(0..255)	1 byte	C	-	W	T	U	percentag...	低
47	Panel scene A	Object 4 value(2byte:float)	2 bytes	C	-	W	T	U	temperatu...	低
48	Panel scene A	Object 5 value(0..65535)	2 bytes	C	-	W	T	U	pulses	低
49	Panel scene A	Object 6 value(3byte:RGB)	3 bytes	C	-	W	T	U	RGB value...	低
50	Panel scene A	Object 7 value(1bit)	1 bit	C	-	W	T	U	switch	低
51	Panel scene A	Object 8 value(1byte:scaling)	1 byte	C	-	W	T	U	percentag...	低
52	Panel scene A	Object 9 value(0..255)	1 byte	C	-	W	T	U	percentag...	低
53	Panel scene A	Object 10 value(2byte:float)	2 bytes	C	-	W	T	U	temperatu...	低
61	Panel scene B	Call scene (1byte)	1 byte	C	-	W	T	U	scene cont...	低
62	Panel scene B	Call scene (1bit)	1 bit	C	-	W	T	U	switch	低
63	Panel scene B	Save scene (1bit)	1 bit	C	-	W	T	U	switch	低
64	Panel scene B	Object 1 value(1bit)	1 bit	C	-	W	T	U	switch	低
65	Panel scene B	Object 2 value(1byte:scaling)	1 byte	C	-	W	T	U	percentag...	低
66	Panel scene B	Object 3 value(0..255)	1 byte	C	-	W	T	U	percentag...	低
67	Panel scene B	Object 4 value(2byte:float)	2 bytes	C	-	W	T	U	temperatu...	低
68	Panel scene B	Object 5 value(0..65535)	2 bytes	C	-	W	T	U	pulses	低
69	Panel scene B	Object 6 value(3byte:RGB)	3 bytes	C	-	W	T	U	RGB value...	低
70	Panel scene B	Object 7 value(1byte:scaling)	1 byte	C	-	W	T	U	percentag...	低
71	Panel scene B	Object 8 value(0..255)	1 byte	C	-	W	T	U	percentag...	低
72	Panel scene B	Object 9 value(3byte:RGB)	3 bytes	C	-	W	T	U	RGB value...	低
73	Panel scene B	Object 10 value(0..65535)	2 bytes	C	-	W	T	U	pulses	低

No.	Name	Function	Flag	Data Type
41,61	Panel scene A/B	Call scene(1byte)	C W T U	DPT18.001

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				1byte
42,62	Panel scene A/B	Call scene(1bit)	C W T U	DPT1.001 1bit
43,63	Panel scene A/B	Save scene(1bit)	C W T U	DPT1.001 1bit
These objects are used for applying scenes (1 byte/1 bit) and saving scenes. Applied scene number ranges from 1 to 64 and the value ranges from 0 to 63.				
44~53, 64~73	Panel scene A/B	Object 1~10 value (1bit,1byte: scaling, 0..255, 2byte:float,0..65535,3byte:RGB)	C W T U	DPT1.001 1bit DPT5.001 1byte DPT5.004 1byte DPT9.001 2bytes DPT7.001 2bytes DPT232.600 3bytes
These objects are used for setting object type value.				

5.3 Objects "Rocker A/B/C"

5.3.1   Objects "Rocker A/B/C" (Switch and Dimming Function)

Objects function status--"Rocker A/B/C"

(Take "Rocker A" as an example)

81	Rocker A left short	Switching	1 bit	C - W T U switch	低
82	Rocker A left long	Switching	1 bit	C - W T U switch	低
83	Rocker A left delay send	Switching	1 bit	C - W T U switch	低
92	Rocker A right short	Switching	1 bit	C - W T U switch	低
93	Rocker A right long	Switching	1 bit	C - W T U switch	低
94	Rocker A right delay send	Switching	1 bit	C - W T U switch	低

No.	Name	Function	Flag	Data Type
81-83, 92-94, 111-113, 122-124,	Rocker A/B/C (left/right) short/long/delay send	Switching	C W T U	DPT1.001 1 bit

141-143, 152-154				
These objects are used for turning on/off objects via buttons.				
81-83, 92,93, 111,112, 122,123, 141,142, 152,153	Rocker A/B/C (left/right) short/long	Switching/Dimming	C W T U	DPT1.001 1 bit DPT 3.007 4 bits
These objects are used for turning on/off lights and controlling dimming.				

5.3.2 Objects "Rocker A/B/C" (LED Status)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				

91	Rocker A left	LED status	1 bit	C R W T U switch	低
102	Rocker A right	LED status	1 bit	C R W T U switch	低

No.	Name	Function	Flag	Data Type
91,102, 121,132, 151,162	Rocker A/B/C left/right	LED status	C R W T U	DPT1.001 1bit
These objects are used for indicating button status via LED.				

5.3.3 Objects "Rocker A/B/C" (Curtain Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				

81	Rocker A	Adjust/Stop for shutter	1 bit	C - W T U step	低
82	Rocker A	Move for shutter	1 bit	C - W T U up/down	低
92	Rocker A	Adjust/Stop for shutter	1 bit	C - W T U step	低
93	Rocker A	Move for shutter	1 bit	C - W T U up/down	低

No.	Name	Function	Flag	Data Type
81,82, 92,93, 111,112,	Rocker A/B/C	Adjust/Stop for shutter Move for shutter	C W T U	DPT1.007 1 bit DPT1.008

				1 bit
122,123, 141,142, 152,153				
These objects are used for opening/closing or stopping curtain.				

5.3.4 Objects "Rocker A/B/C" (Flexible Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81 Rocker A left Flexible 1 bit C - W T U switch 低 92 Rocker A right Flexible 1 bit C - W T U switch 低				

No.	Name	Function	Flag	Data Type
81,92, 111,122, 141,152	Rocker A/B/C	Flexible	C W T U	DPT1.001 1bit
These objects are used for flexible controller.				

5.3.5 Objects "Rocker A/B/C" (Scene Controller)

Objects function status--"Rocker A/B/C"				
(Take "HVAV A" as an example)				
81 Rocker A left short Call scene 1 byte C - W T U scene cont...低 82 Rocker A left long Scene dimming 4 bit C - W T U dimming c...低 92 Rocker A right short Call scene 1 byte C - W T U scene cont...低 93 Rocker A right long Scene dimming 4 bit C - W T U dimming c...低				

No.	Name	Function	Flag	Data Type
81,82, 92,93, 111,112, 122,123, 141,142, 152,153	Rocker A/B/C (left/right) short/long	Call scene, Scene dimming	C W T U	DPT18.001 1 byte DPT3.007 4 bits
These objects are used for applying scene number and controlling scene dimming.				

5.3.6 Objects "Rocker A/B/C" (Sequence Controller)

Objects function status--"Rocker A/B/C"				
(Take "Floor Heating A" as an example)				
81	Rocker A left short	Sequence	1 bit C - W T U start/stop 低	
82	Rocker A left long	Sequence	1 bit C - W T U start/stop 低	
92	Rocker A right short	Sequence	1 bit C - W T U start/stop 低	
93	Rocker A right long	Sequence	1 bit C - W T U start/stop 低	

No.	Name	Function	Flag	Data Type
81,82, 92,93, 111,112, 122,123, 141,142, 152,153	Rocker A/B/C (left/right) short/long	Sequence	C W T U	DPT1.010 1bit
These objects are used for sequence controller.				

5.3.7 Objects "Rocker A/B/C" (Percentage Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81	Rocker A left	Percentage	1 byte C - W T U percentag... 低	
92	Rocker A right	Percentage	1 byte C - W T U percentag... 低	

No.	Name	Function	Flag	Data Type
81,92, 111,122, 141,152	Rocker A/B/C (left/right) short/long	Percentage	C W T U	DPT5.001 1 byte
These objects are used for percentage controller.				

5.3.8 Objects "Rocker A/B/C" (Threshold Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81	Rocker A left	Threshold(2bytes float)	2 bytes C - W T U temperatu... 低	
92	Rocker A right	Threshold(1byte)	1 byte C - W T U percentag... 低	

No.	Name	Function	Flag	Data Type

81,92, 111,122, 141,152	Rocker A/B/C (left/right)	Threshold (1 byte/2 bytes/2 bytes float)	C W T U	DPT5.004 1 byte DPT7.001 2 bytes DPT9.001 2 bytes
These objects are used for threshold controller.				

5.3.9   Objects "Rocker A/B/C" (String (14 bytes) Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81 Rocker A left Threshold(2bytes float) 2 bytes C - W T U temperatu... 低				
92 Rocker A right Threshold(1byte) 1 byte C - W T U percentag... 低				
No.	**Name**	**Function**	**Flag**	**Data Type**
81,92, 111,122, 141,152	Rocker A/B/C (left/right)	String (14bytes) value	C W T U	DPT16.000 14 bytes
These objects are used for string (14 bytes) controller.				

5.3.10   Objects "Rocker A/B/C" (Alternate Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81 Rocker A left Alternate <1> (1bit) 1 bit C - W T U switch 低				
82 Rocker A left Alternate <2> (1bit) 1 bit C - W T U switch 低				
83 Rocker A left Alternate <3> (1bit) 1 bit C - W T U switch 低				
84 Rocker A left Alternate <4> (1byte) 1 byte C - W T U percentag... 低				
92 Rocker A right Alternate <1> (1bit) 1 bit C - W T U switch 低				
93 Rocker A right Alternate <2> (1bit) 1 bit C - W T U switch 低				
94 Rocker A right Alternate <3> (1byte) 1 byte C - W T U percentag... 低				
95 Rocker A right Alternate <4> (2bytes) 2 bytes C - W T U pulses 低				
No.	**Name**	**Function**	**Flag**	**Data Type**
81-84,92-95, 111-114,122-125, 141-144,152-155	Rocker A/B/C (left/right)	Alternate <1/2/3/4> (1 bit/1 byte/2 bytes)	C W T U	DPT1.001 1 bit DPT5.004 1 byte

				DPT7.001 2 bytes
These objects are used for alternate controller.				

5.3.11 Objects "Rocker A/B/C" (Pulse Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81 Rocker A left Pulse 1 bit C - W T U open/close 低 92 Rocker A right Pulse 1 bit C - W T U open/close 低				

No.	Name	Function	Flag	Data Type
81,92, 111,122, 141,152	Rocker A/B/C (left/right)	Pulse	C W T U	DPT1.009 1 bit
These objects are used for pulse controller.				

5.3.12 Objects "Rocker A/B/C" (RGB Controller)

Objects function status--"Rocker A/B/C"				
(Take "Rocker A" as an example)				
81 Rocker A left RGB red channel 1 byte C - W T U percentag... 低 82 Rocker A left RGB green channel 1 byte C - W T U percentag... 低 83 Rocker A left RGB blue channel 1 byte C - W T U percentag... 低 92 Rocker A right RGB red channel 1 byte C - W T U percentag... 低 93 Rocker A right RGB green channel 1 byte C - W T U percentag... 低 94 Rocker A right RGB blue channel 1 byte C - W T U percentag... 低				

No.	Name	Function	Flag	Data Type
81,92, 111,122, 141,152	Rocker A/B/C (left/right)	RGB color	C W T U	DPT232.600 3 bytes
81-83, 92-94, 111-113, 122-124, 141-143, 152-154	Rocker A/B/C (left/right)	RGB red/green/blue channel	C W T U	DPT5.001 1 byte
These objects are used for RGB controller.				

5.3.13 Objects "Rocker A/B/C" (Fan Controller)

Objects function status--"Rocker A/B/C"

(Take "Rocker A" as an example)

81	Rocker A left	Fan object 1	1 bit	C	-	W	T	U	switch	低
82	Rocker A left	Fan object 2	1 bit	C	-	W	T	U	switch	低
83	Rocker A left	Fan object 3	1 bit	C	-	W	T	U	switch	低
84	Rocker A left	Fan object 4	1 bit	C	-	W	T	U	switch	低
92	Rocker A right	Fan object 1	1 bit	C	-	W	T	U	switch	低
93	Rocker A right	Fan object 2	1 bit	C	-	W	T	U	switch	低
94	Rocker A right	Fan object 3	1 bit	C	-	W	T	U	switch	低
95	Rocker A right	Fan object 4	1 bit	C	-	W	T	U	switch	低

No.	Name	Function	Flag	Data Type
81-84,92-95, 111-114,122-125, 141-144,152-155	Rocker A/B/C (left/right)	Fan object 1/2/3/4	C W T U	DPT1.001 1 bit
These objects are used for fan controller.				

5.3.14 Objects "Rocker A/B/C" (Thermostat Controller)

Objects function status--"Rocker A/B/C"

(Take "Rocker A" as an example)

81	Rocker A	Thermostat switch ON/OFF	1 bit	C	R	W	T	U	switch	低
82	Rocker A	Thermostat set temperature	2 bytes	C	R	W	T	U	temperatu...	低
83	Rocker A	Thermostat actual temperature	2 bytes	C	R	W	T	U	temperatu...	低
84	Rocker A	Thermostat output	1 bit	C	-	W	T	U	switch	低

No.	Name	Function	Flag	Data Type
81-84, 111-114, 141-144	Rocker A/B/C	Thermostat switch ON/OFF/ set temperature/ actual temperature/ output	C W T U	DPT1.001 1 bit DPT9.001 2 bytes DPT9.001 2 bytes DPT1.001 1 bit
These objects are used for thermostat controller.				

5.3.1 Objects "Rocker A/B/C" (Combination Controller)

Objects function status--"Rocker A/B/C"

(Take "Rocker A" as an example)

81	Rocker A left	COMB OBJ1 switching	1 bit	C - - T -	switch	低
82	Rocker A left	COMB OBJ2 shutter	1 bit	C - - T -	up/down	低
83	Rocker A left	COMB OBJ3 scene	1 byte	C - - T -	scene cont...低
84	Rocker A left	COMB OBJ4 sequence	1 bit	C - - T -	start/stop	低
85	Rocker A left	COMB OBJ5 percentage	1 byte	C - - T -	percentag... 低
86	Rocker A left	COMB OBJ6 threshold(1byte)	1 byte	C - - T -	percentag... 低
87	Rocker A left	COMB OBJ7 String(14bytes)	14 bytes	C - - T -	Character... 低
88	Rocker A left	COMB OBJ8 switching	1 bit	C - - T -	switch	低
89	Rocker A left	COMB OBJ9 shutter	1 bit	C - - T -	up/down	低
90	Rocker A left	COMB OBJ10 scene	1 byte	C - - T -	scene cont...低
92	Rocker A right	COMB OBJ11 sequence	1 bit	C - - T -	start/stop	低
93	Rocker A right	COMB OBJ12 percentage	1 byte	C - - T -	percentag... 低
94	Rocker A right	COMB OBJ13 threshold(1byte)	1 byte	C - - T -	percentag... 低
95	Rocker A right	COMB OBJ14 String(14bytes)	14 bytes	C - - T -	Character... 低
96	Rocker A right	COMB OBJ15 switching	1 bit	C - - T -	switch	低
97	Rocker A right	COMB OBJ16 shutter	1 bit	C - - T -	up/down	低
98	Rocker A right	COMB OBJ17 scene	1 byte	C - - T -	scene cont...低
99	Rocker A right	COMB OBJ18 sequence	1 bit	C - - T -	start/stop	低
100	Rocker A right	COMB OBJ19 percentage	1 byte	C - - T -	percentag... 低
101	Rocker A right	COMB OBJ20 String(14bytes)	14 bytes	C - - T -	Character... 低

No.	Name	Function	Flag	Data Type
81-90,92-101, 111-120,122-131, 141-150,152-161	Rocker A/B/C (left/right)	COMB OBJ 1-20 switching / shutter / scene / sequence / percentage / threshold (1 byte) / threshold (2 bytes) / String (14 bytes)	C T	DPT1.001 1 bit DPT1.008 1 bit DPT18.001 1 byte DPT1.010 1 bit DPT5.001 1 byte DPT5.004 1 byte DPT7.001 2 bytes DPT16.000 14 bytes

These objects are used for combination controller, independently corresponding to 20 objects (The combined button mode of "Left & right button" supports a total of 20 objects, the independent button

mode of "Left & right button" supports a total of 10 objects independently). Operation mode includes: "switching/shutter/scene/sequence/percentage/threshold (1 byte)/threshold (2 bytes)/string (14 bytes)".