HyPanel-KNX Device Configuration

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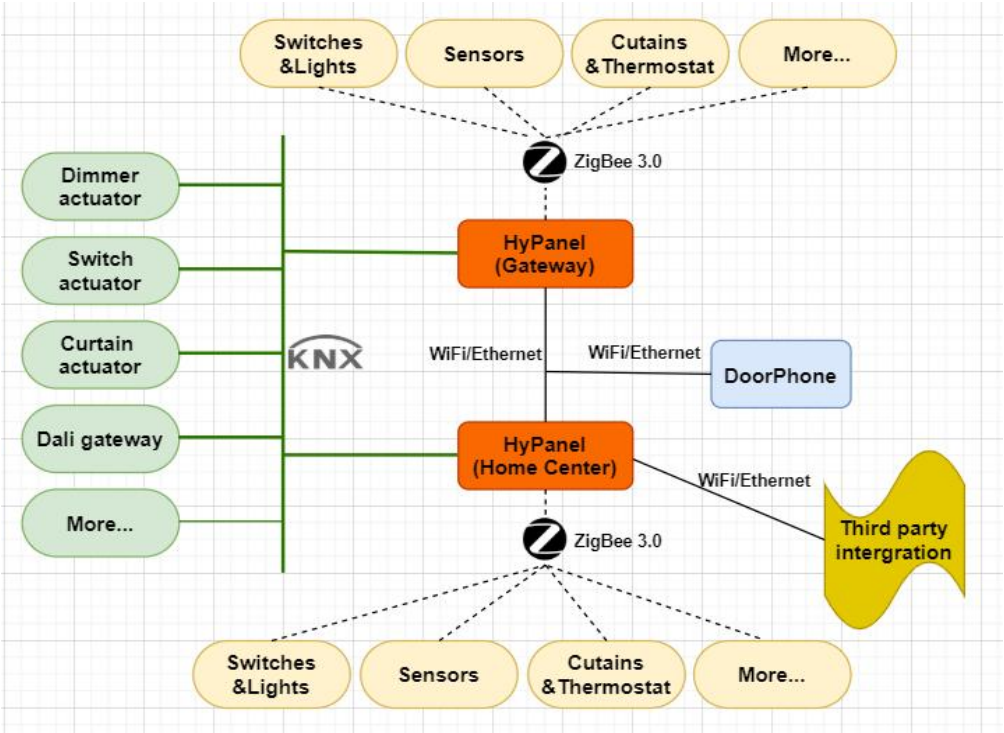
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Topology and Description



KNX compatibility

The KNX version of HyPanel devices, including HyPanel, HyPanel Lite, HyPanel Pro, can be used in pure KNX systems. They can communicate with various KNX devices such as switch actuators, dimming actuators, blind actuators, DALI gateways and so on through the KNX bus.

Integration compatibility

- Supported integration

  The HyPanel devices can also interface with non-KNX devices, including ZigBee devices, third-party ecosystems, and door phones.

- Functionality options

  (1) *HyPanels usage*: A family can have a single HyPanel or multiple HyPanels, with one acting as the home center and others as gateways. The HyPanels communicate via WiFi or Ethernet.

  (2) *ZigBee devices adding*: Every HyPanel can function as a ZigBee gateway, connecting to nearby sensors, switches, curtains, temperature controllers, and more.

  (3) *Third-party integration*: The home center device supports connecting to

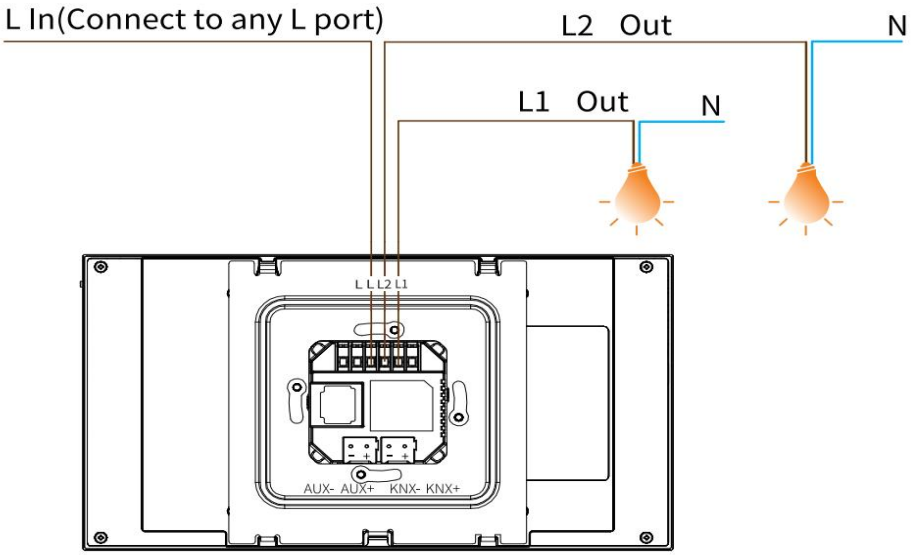
third-party systems such as HomeKit, Alexa, Philips Hue, and more. For more information, please see here.

(4) *Intercom and door control*: The HyPanel communicates with the door phones via WiFi or wired network for intercom and door opening functions.

Wiring

Identify HyPanel-KNX wires

Here we take the flush mounted module of HyPanel Pro as an example.



- KNX+ and KNX-: Connect to KNX bus.
- AUX+ and AUX-: Provide 21-30VDC auxiliary power supply to the HyPanel Pro.

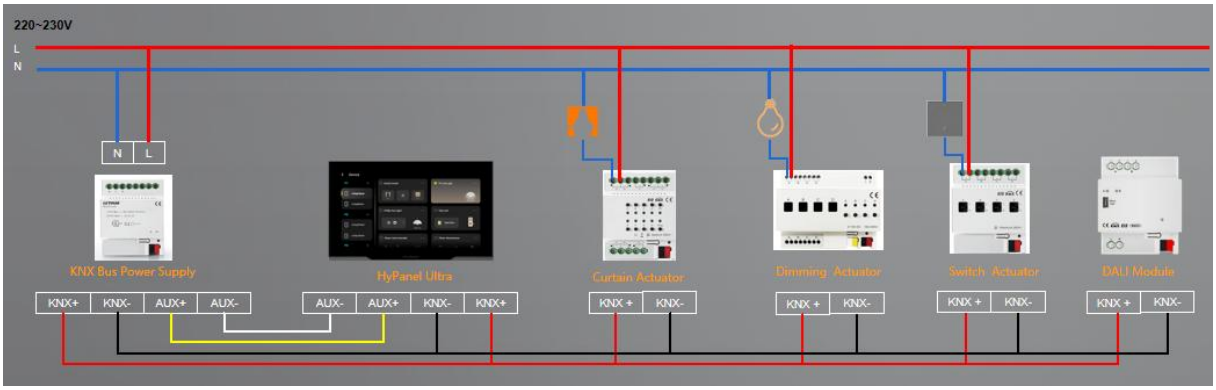
For more detailed information, please refer to the installation guides specific to the KNX version of HyPanel devices.

Wiring requirements

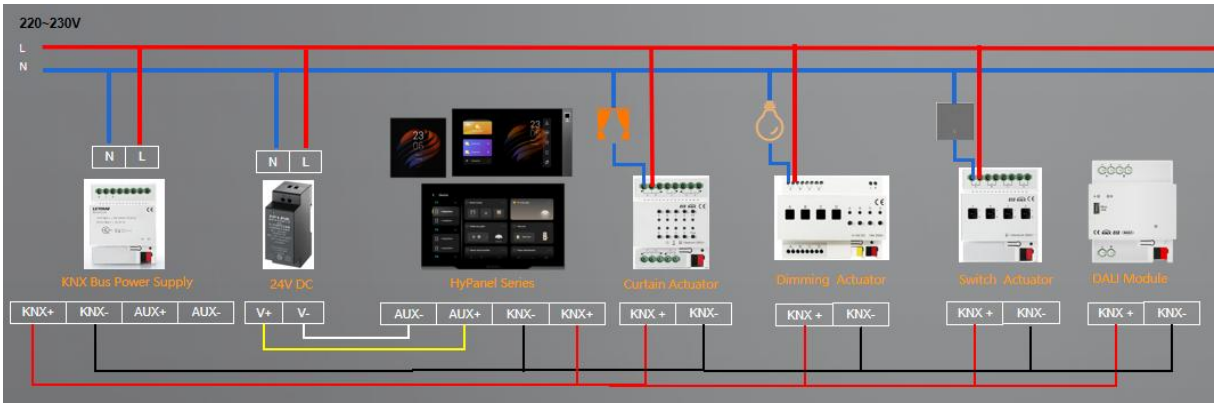
In a KNX wiring topology, the KNX bus power supply is essential. It ensures stable voltage and data communication for both the HyPanel devices and actuators in the system. However, each KNX power supply can only support a limited number of

devices. It's necessary to add additional 24VDC power supplies if the number of HyPanels and actuators exceeds the capacity of a KNX power supply.

If you have a KNX power supply with a specification of 960mA and 20W, it can support approximately 1 HyPanel Pro, 1 HyPanel, and 1 HyAPanel Lite(each consuming about 5-6W at full load), along with several actuators. Ensure the total number of connected HyPanels and actuators stays within this range. Refer to the following wiring topology for guidance.



If there are a larger number of HyPanels and actuators in the system, 24V DC power supplies are required. Please refer to the following wiring diagram:

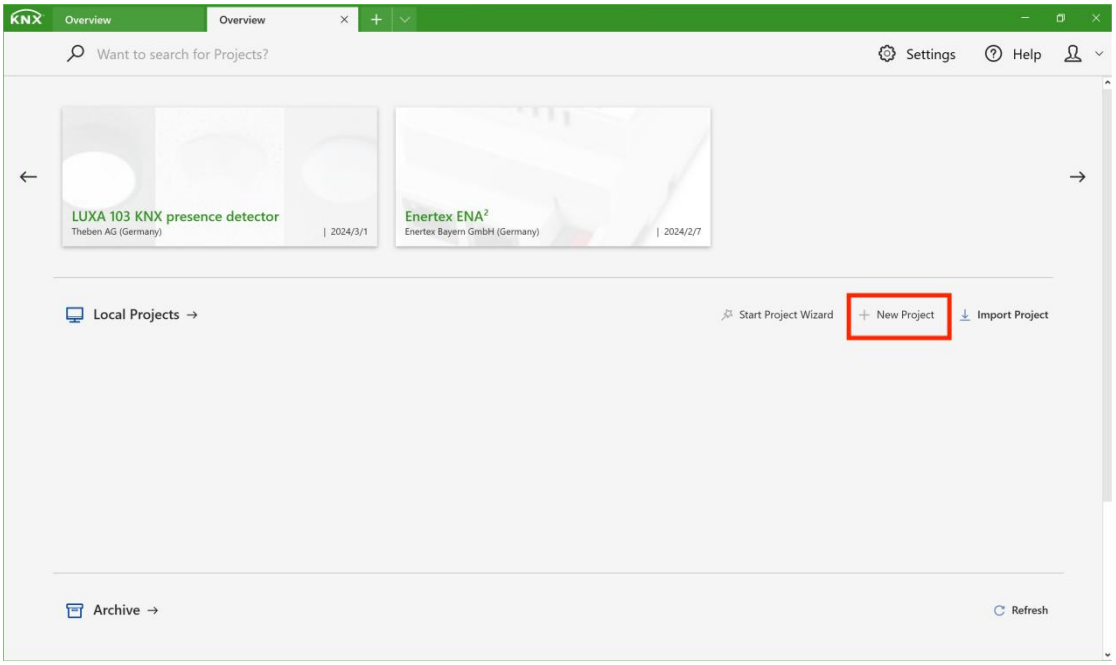


Start a KNX Project with ETS

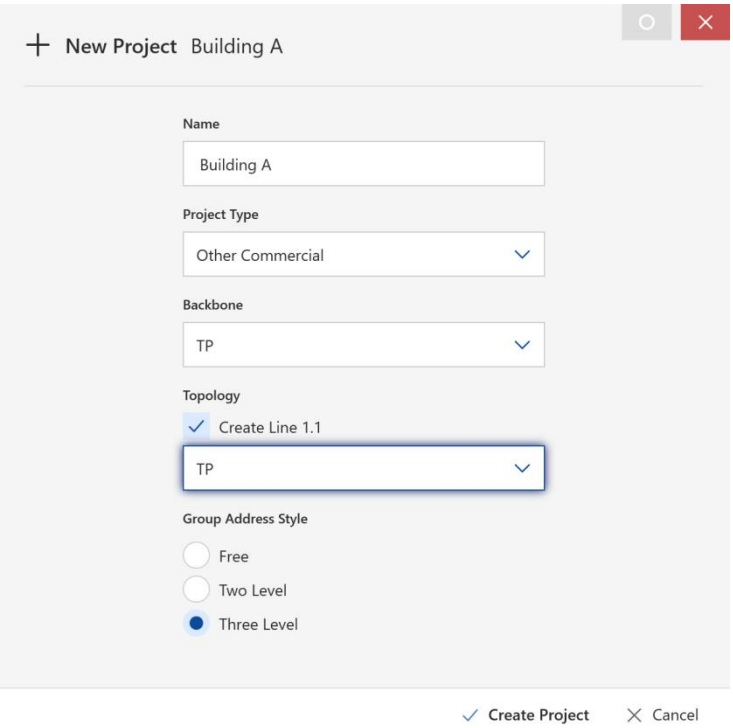
Before proceeding, please have the ETS software installed on your computer. In this guide, we will be using ETS6.

Create a project

1. Open ETS6. On the dashboard, click on the **New Project** button under the Overview tab.



2. The New Project window opens, and do as the following:

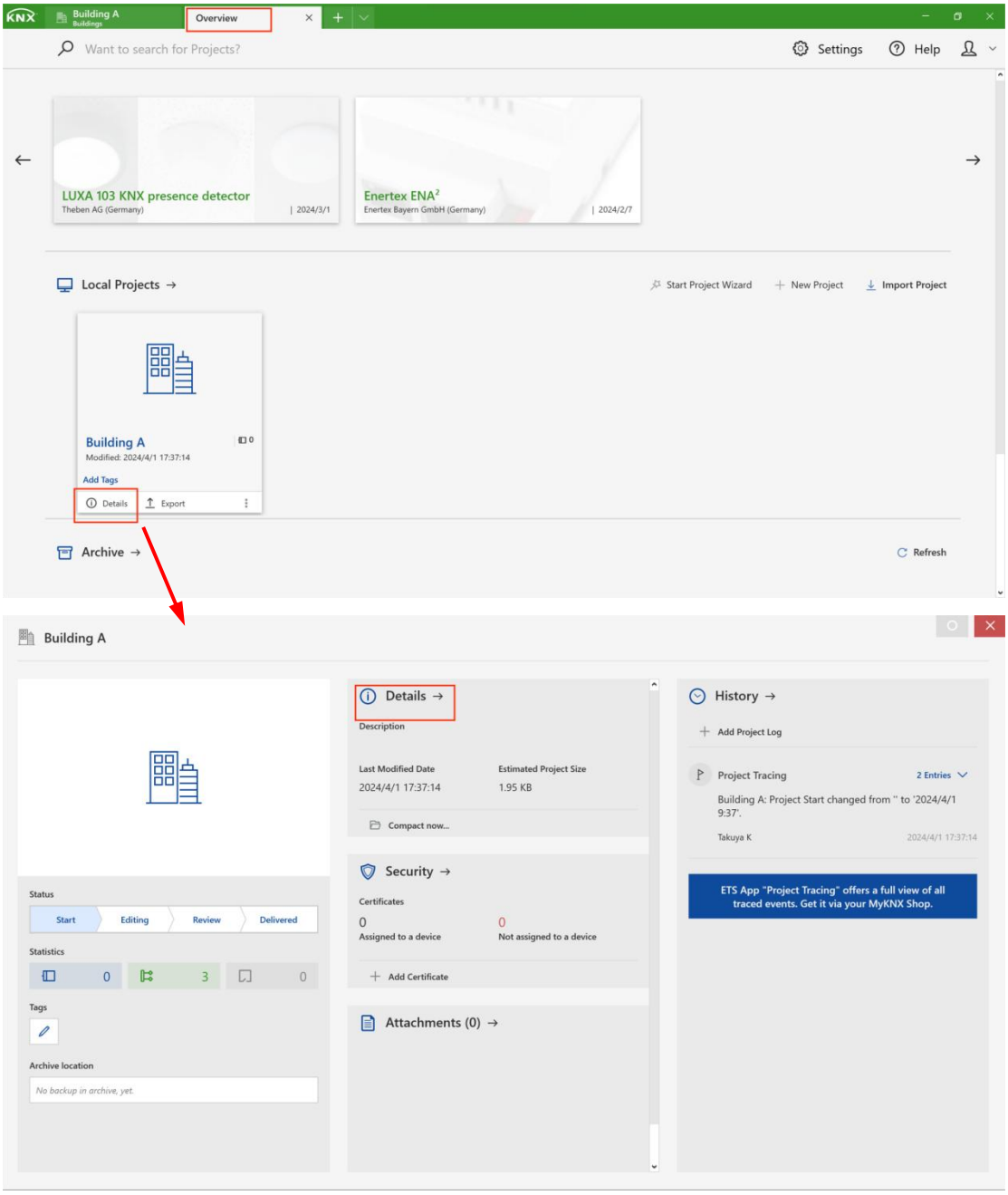


- **Name** your project.
- Specify the **Project Type**. It helps you find your project quickly and does not affect functionality.
- Select the medium for the **Backbone** line.
  - TP(Twisted pair): Ideal for small projects like apartments.
  - IP(Internet Protocol): Ideal for large projects with long distance between devices.
- Check the **Create Line 1.1** option.
  - If checked, the Area 1, Main line 1.0 (implicitly) and Line 1.1 are auto-created in the topology using the medium specified in the dropdown menu.
  - If not checked, only a Backbone line is created in the topology, using the specified medium.
- Specify the medium of **topology** based on the scenario.
  - TP
  - PL(Power line): Data transmission over power grid.
  - RF(Radio-frequency)
- Specify the **group address** display style. Three Level style is recommended for the convenience.

3. Click on **Create Project**.

TIP:

If you'd like to see the new project's details or to change its settings, go to the Overview tab and click on the **Details > Details** of the project.



Create a topology

Configuring the project's topology includes creating and managing areas, lines, and individual addresses of KNX devices.

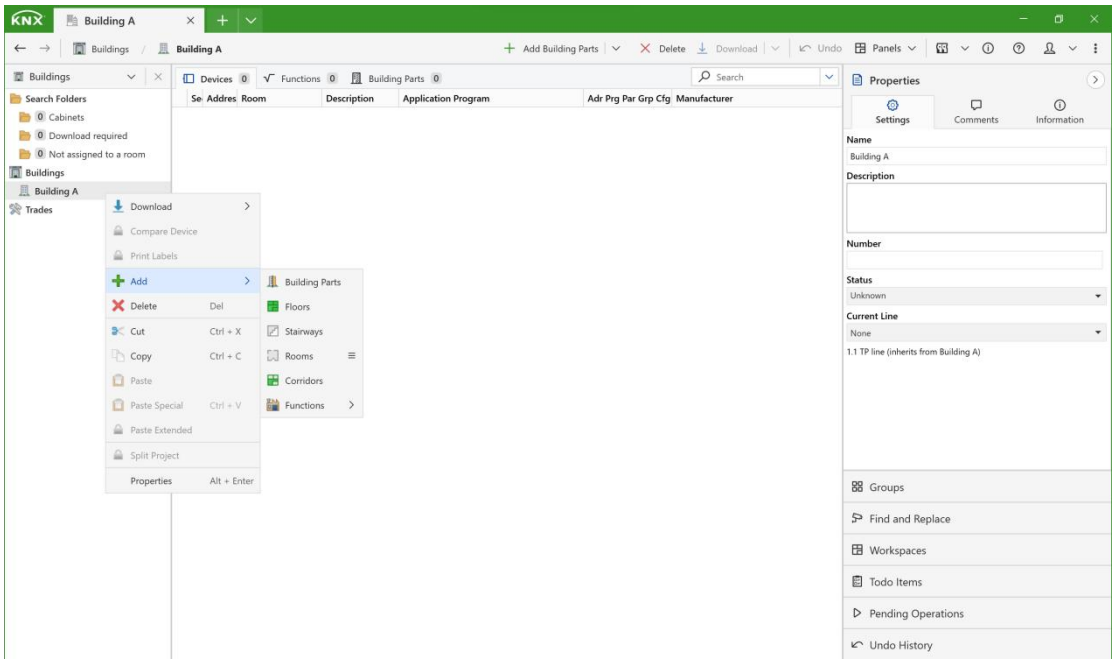
NOTE:

In areas with multiple lines, each line must feature KNX power supply and Line Couplers. Line Couplers can expand the network further, allowing up to 15 lines to be operated via Line Couplers on a single line.

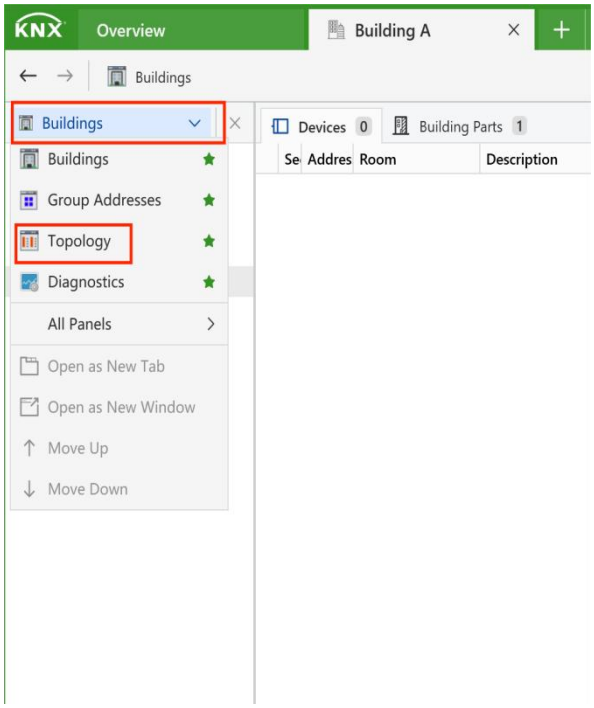
1. Under the Overview tab, double click the newly-created project to open its configuration panels.

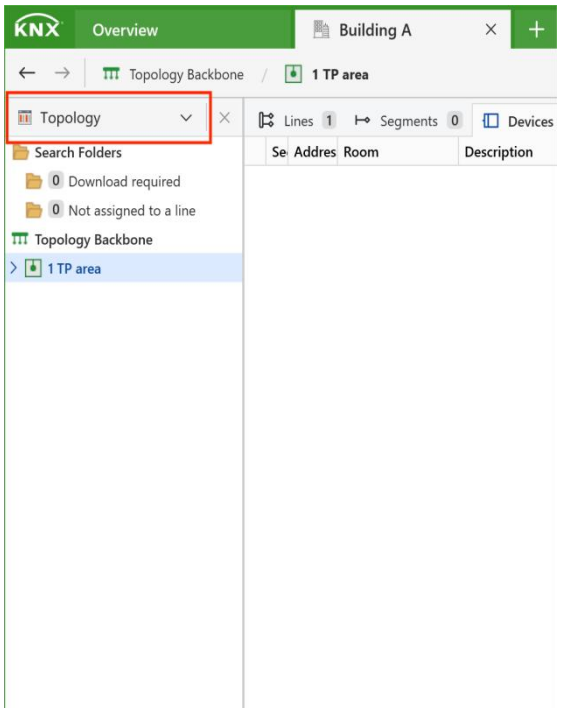
TIP：

The default configuration panel that opens is “Buildings”. It enables you to create a building structure mirroring the real physical layout and place devices into the specific structure elements, helping in device management and troubleshooting. Importantly, the building structure has no impact on actual wiring or project functionality. For more details, see here.



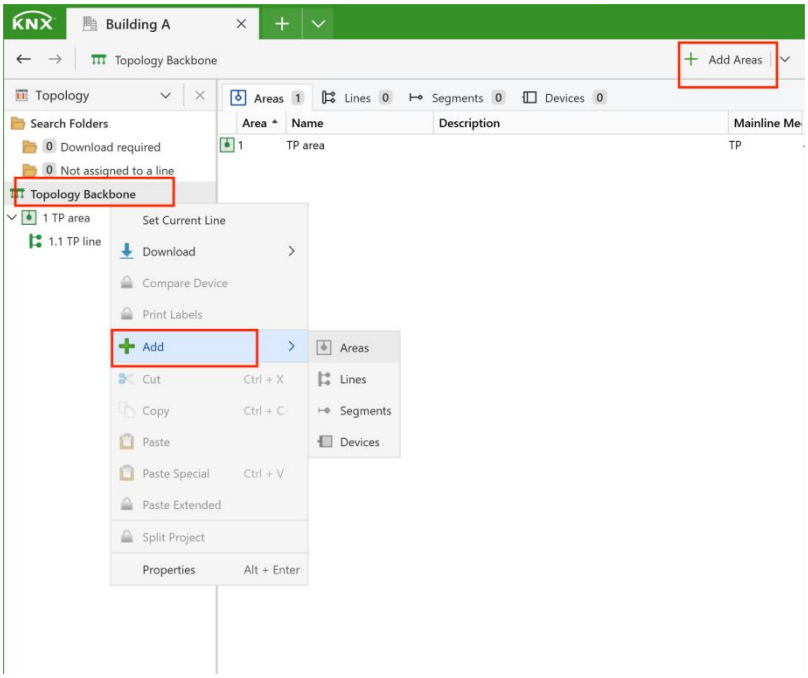
2. To change to the topology configuration page, click on **Buildings** and select **Topology** from the dropdown list.





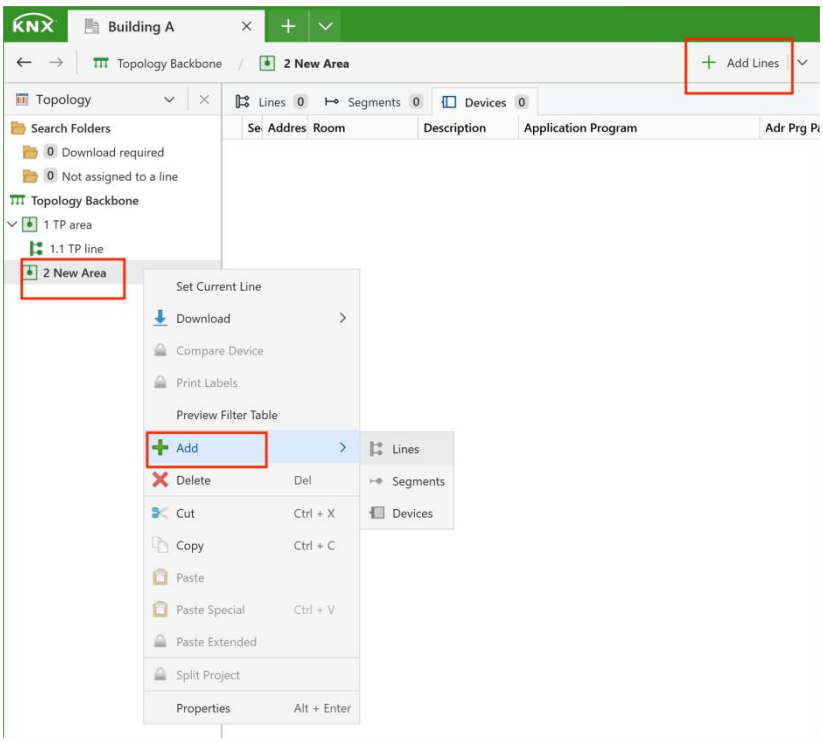
3. To create an area before adding the line(s), do any of the following:

- Select the **Topology Backbone** in the tree view, then click **Add Areas** button in the upper bar;
- Right-click on the **Topology backbone > Add > Areas**.



4. Select the area to which additional line(s) to be added, then do any of the following:

- Click the **Add Lines** button in the upper bar;
- Right-click on the area and click **Add > Lines**.



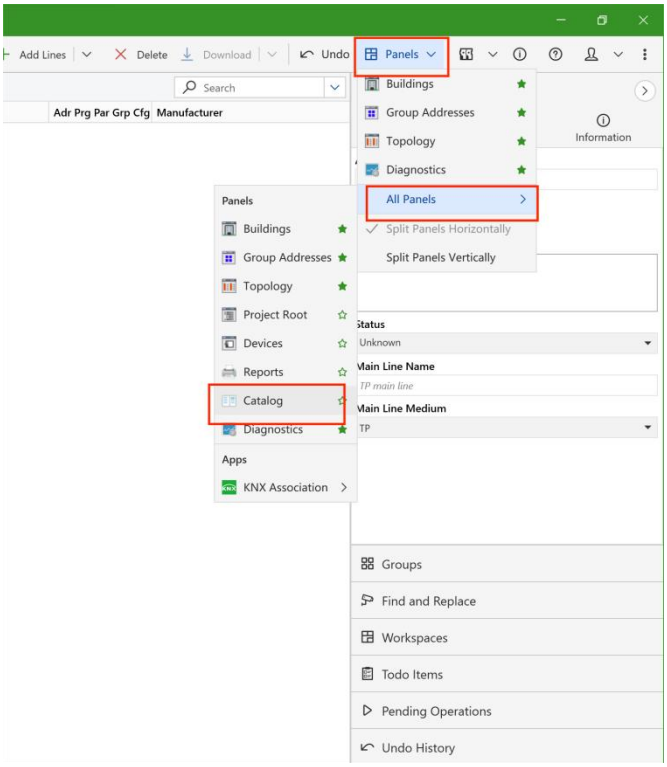
Add devices onto lines

On the Topology panel, it is possible to drag and drop existing devices or insert new devices into the desired lines. Once added, the device can be assigned an individual address, and have its behaviour programmed.

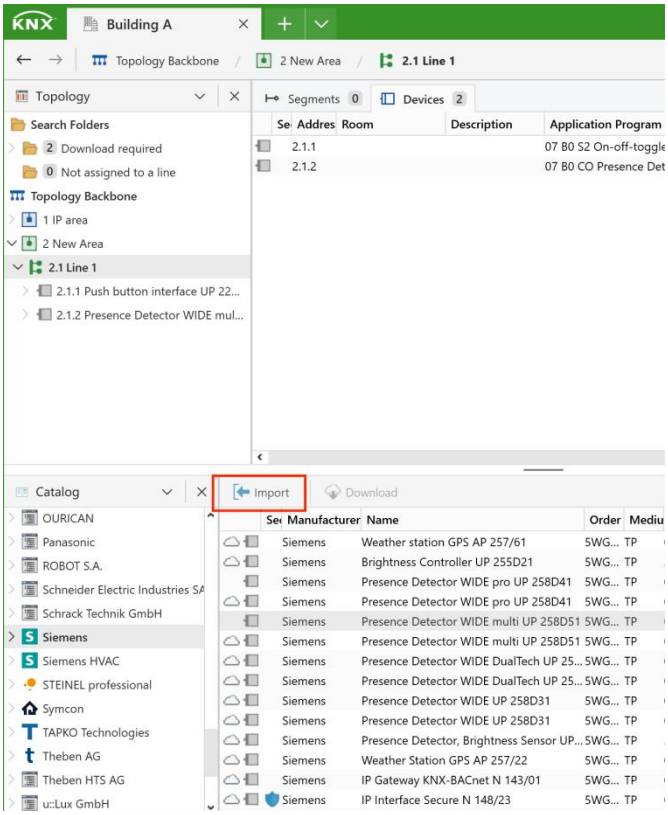
You can add new devices in three ways: import local product lists, use the online catalog, or copy from other projects.

Import your product list

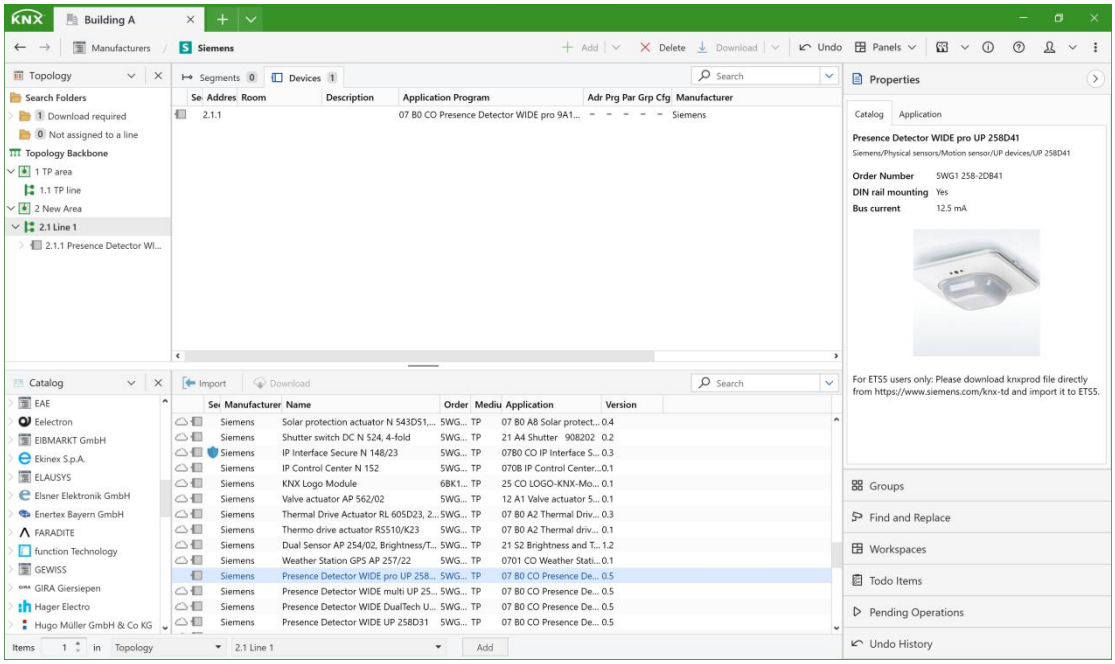
1. In the upper bar, select **Panels > All Panels > Catalog** to open the Catalog panel.



2. Click **Import** to upload the list file in .knxprod format.



3. Select the desired product, and drag and drop it to the desired line.

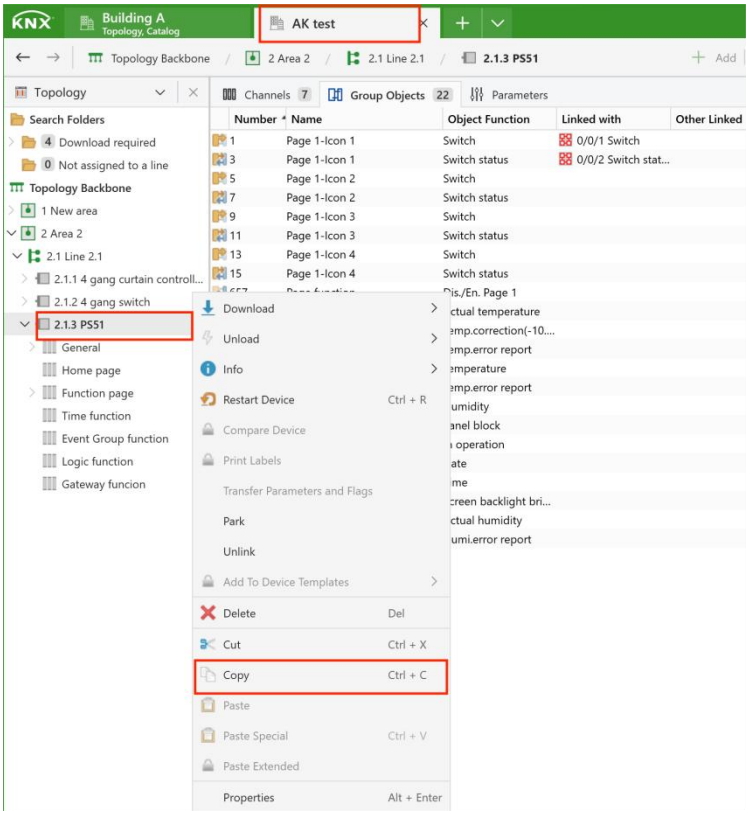


Select from the online catalog

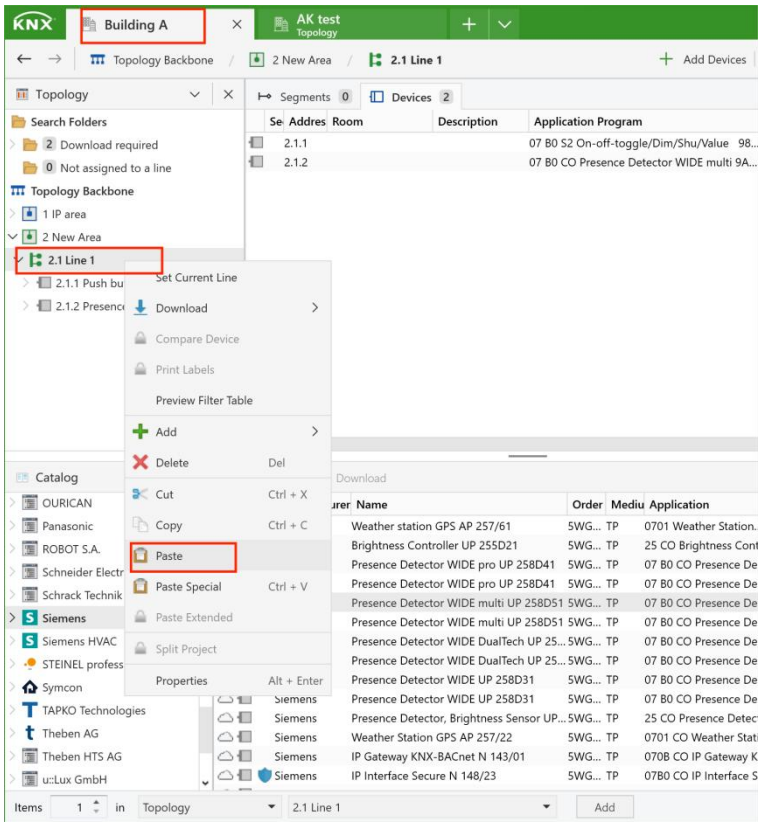
Once you specify the market, the Catalog panel will display the products offered for that market by manufacturers. From there, you can easily drag and drop the desired product to the specific line.

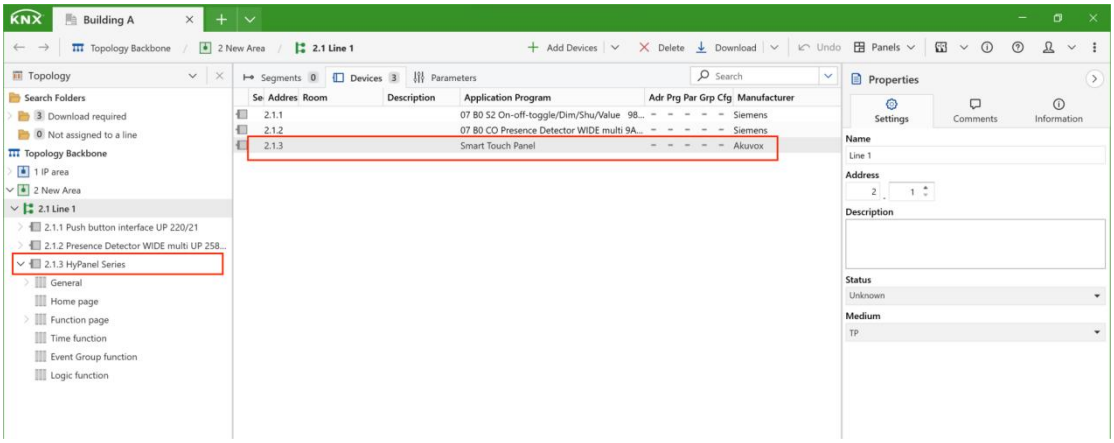
Copy from other projects

1. Open the project where you want to use its devices.
2. Go to its Topology panel, right-click on your desired product in the tree view, and select **Copy**.



3. Return to the current project, right-click on the desired line, and select **Paste**. The product will then be displayed in the list.





Once devices are added onto the lines, you can configure their parameters and proceed to perform a download to transfer the configurations to the devices.

Configure KNX Devices Parameters

After creating a KNX project and adding devices to it, you can configure the parameters of all devices to set up their functionalities.

Here, we'll use a blind actuator and a dimmer actuator as examples. Please note that the configuration requirements and steps for KNX devices may vary by manufacturer.

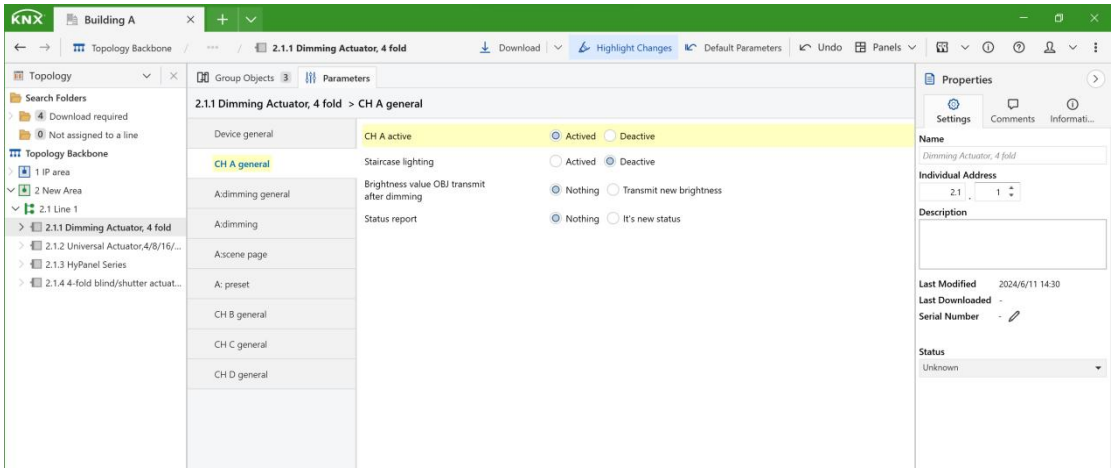
Set basic functions of KNX devices

NOTE:

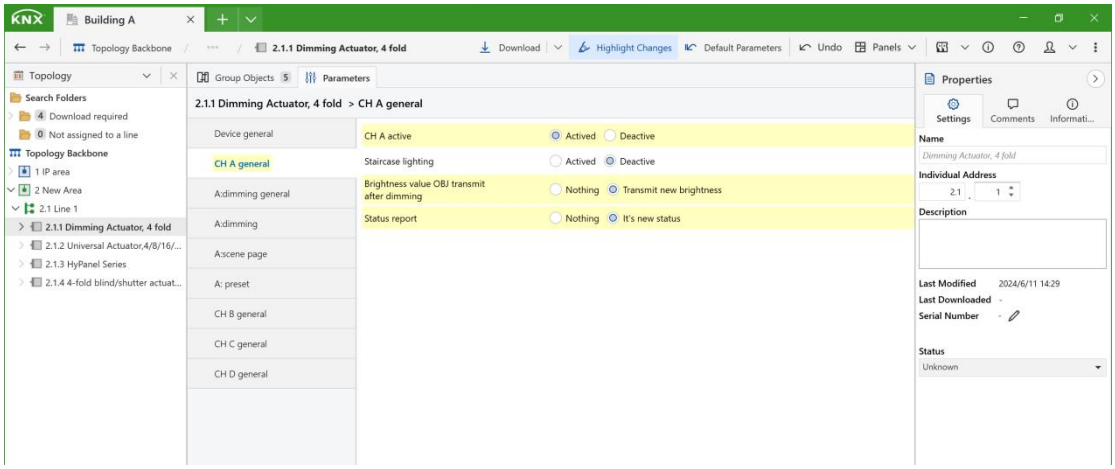
The parameters of KNX devices from various manufacturers differ. For instructions on configuring other products, please contact the respective manufacturer's technical support.

Dimmer actuator

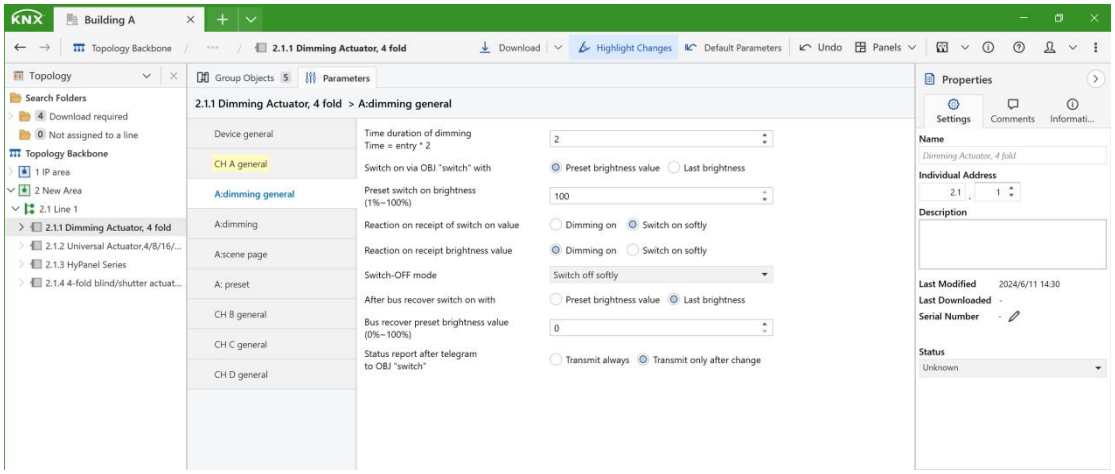
1. Select the dimmer, click its Parameters tab, and activate the Channel A.



2. Enable the sync of brightness value and switch status with other devices.



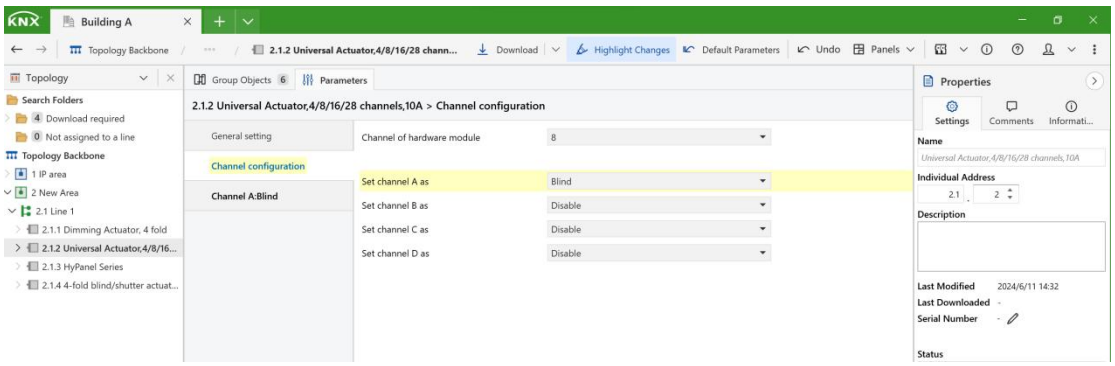
3. For other settings such as brightness value and so on, go to A: dimming general or A: dimming section.



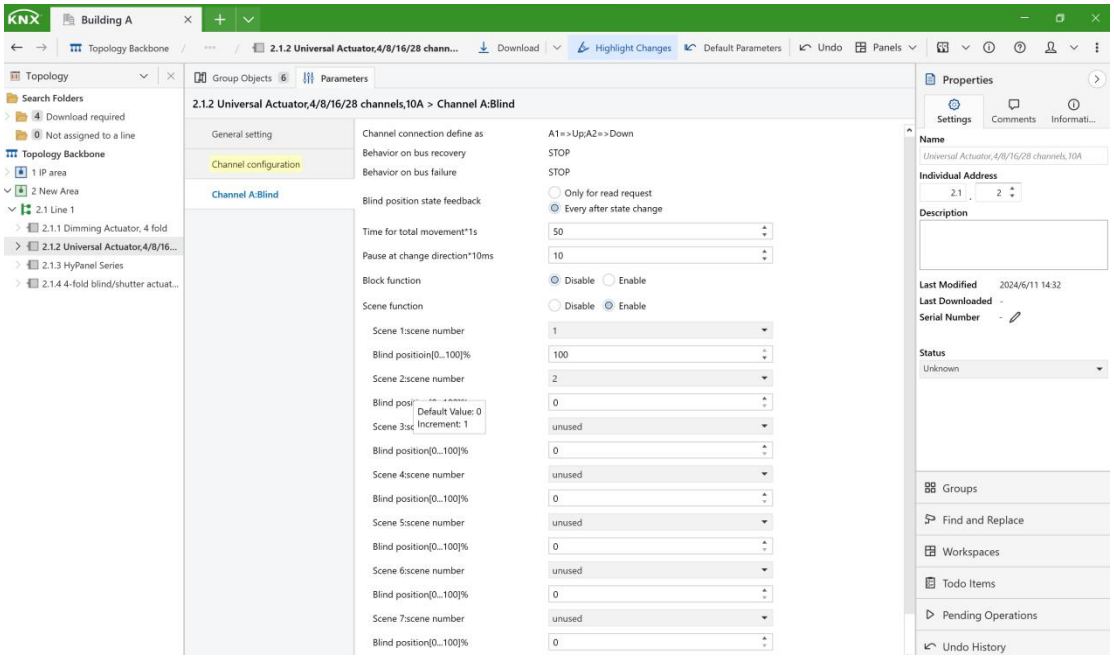
4. Repeat the previous steps until you complete the settings for your desired channels.

Blind actuator

1. Select the actuator, click its Parameters tab, and set channel A as Blind.



2. For other settings, go to Channel A: Blind section.



3. Repeat the previous steps until you complete the settings for your desired channels.

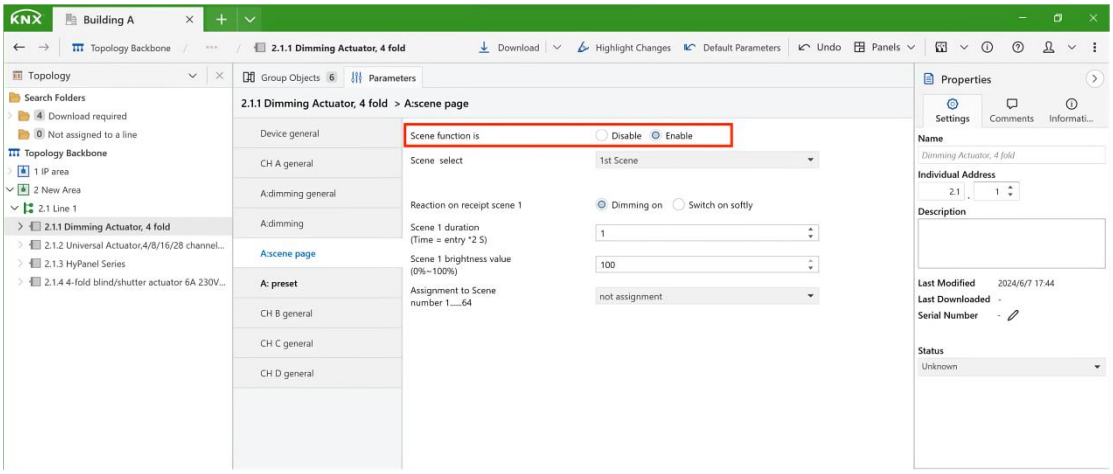
Configure device tasks in scenes

We'll create a scene called “Welcome” that turns on the dimmer and opens the curtain, and set a “Leave” scene that turns off the dimmer and closes the curtain.

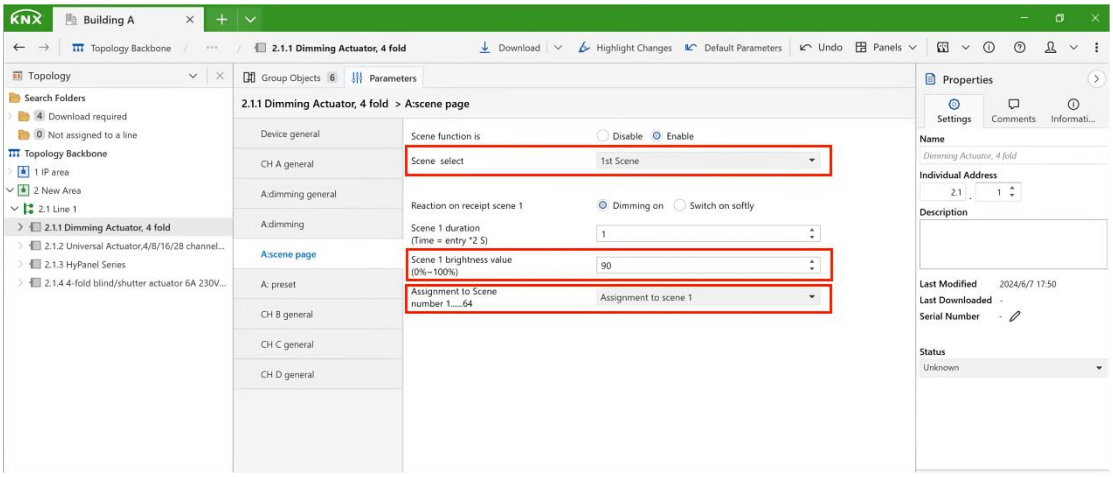
To do so, we need to configure the scene parameters, which are the tasks, of the respective devices.

Dimmer actuator

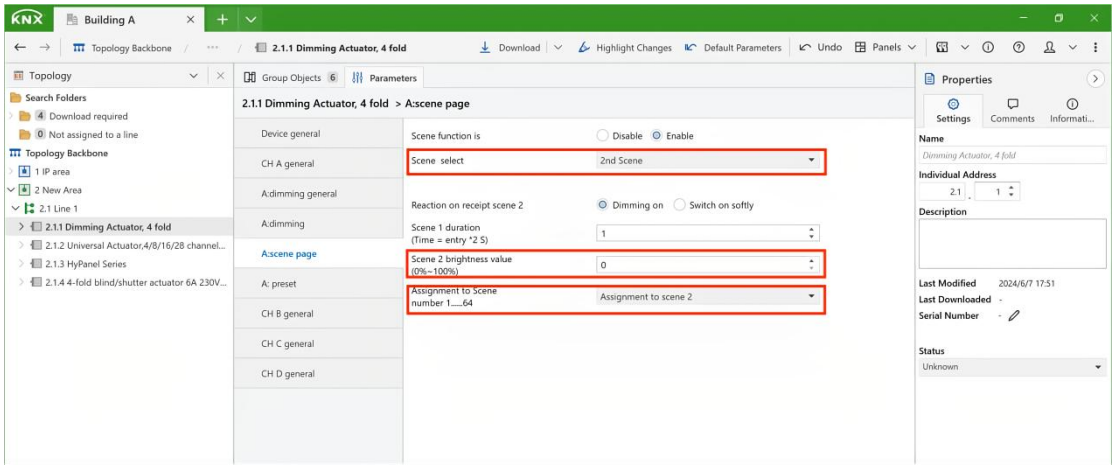
1. Click the dimmer's Parameters tab > A: scene page, and enable the Scene function.



2. To configure the dimmer to be on in the scene 1, do as the following:
   a. Select the 1st Scene in the Scene select field.
   b. Set the dimmer's brightness as any value other than 0 (> 0 means it is on).
   c. Assign the settings to scene 1.

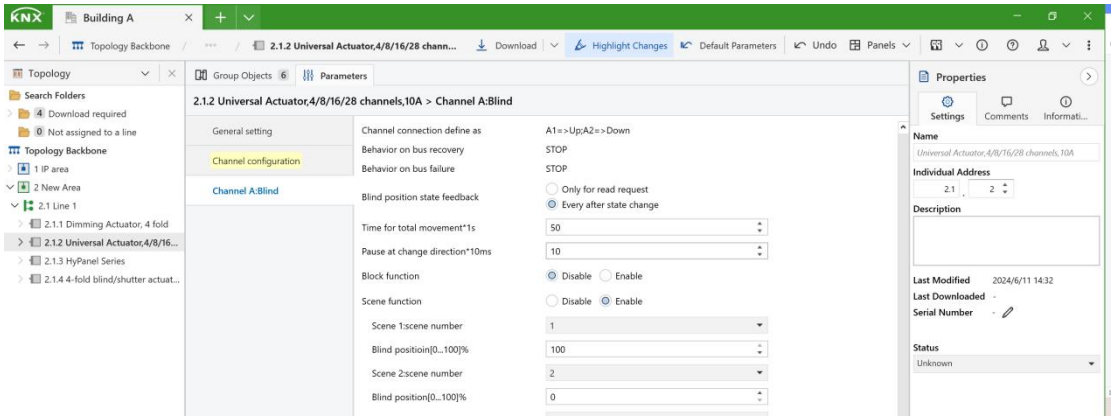


3. To configure the dimmer to be off in the scene 2, do as the following:
   a. Change the scene number to 2nd.
   b. Set the dimmer's brightness value to be 0 (which means it is off).
   c. Assign the settings to scene 2.



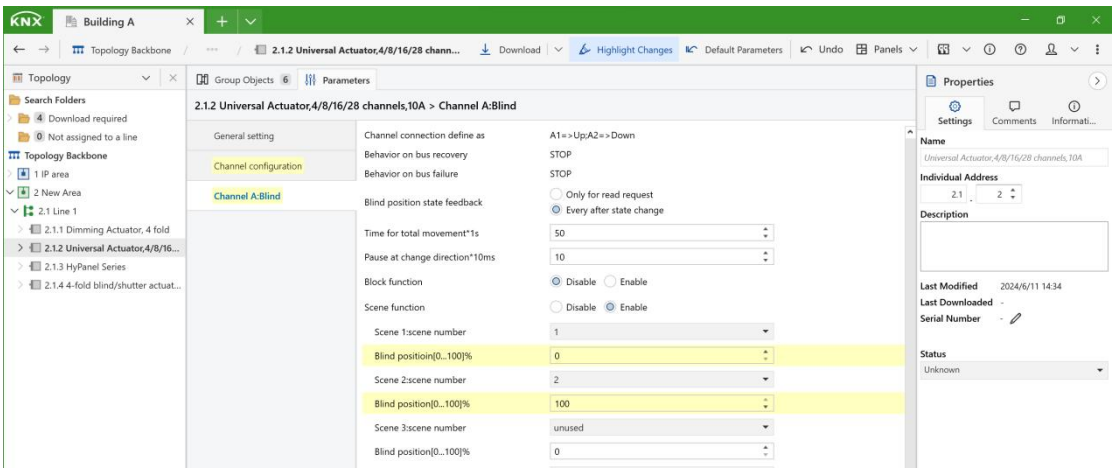
Blind actuator

1. Click the blind actuator's **Parameters tab > Channel A: Blind**, and enable the **Scene function**.



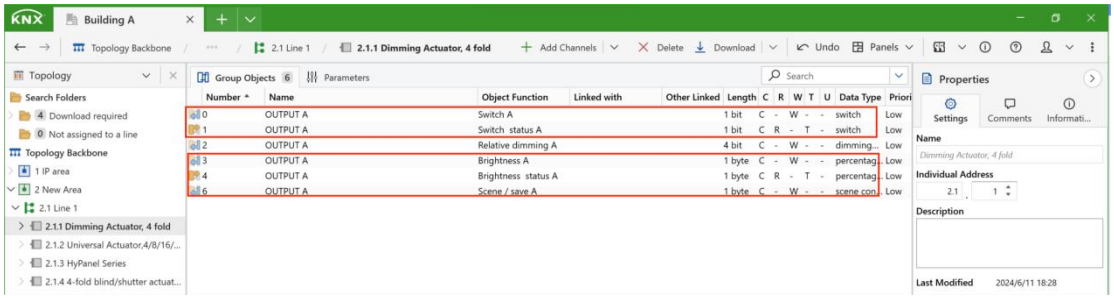
2. Set the Blind position value to 0 (which means the blind is on) in Scene 1 settings.

3. Set the Blind position value to 100 (which means the blind is off) in Scene 2 settings.

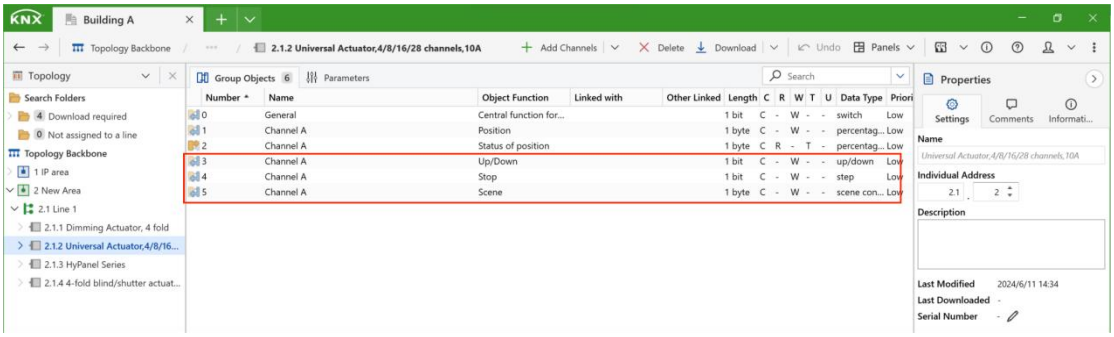


After the basic and scene configurations, the required group objects for the dimmer and blind are available. They can be found on the device's Group Objects tab:

Dimmer:



Blind:



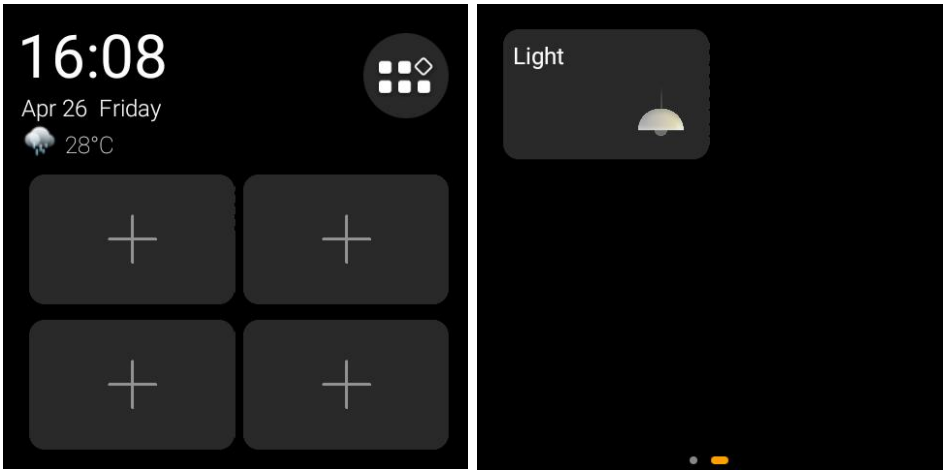
Configure parameters of HyPanel

TIP:

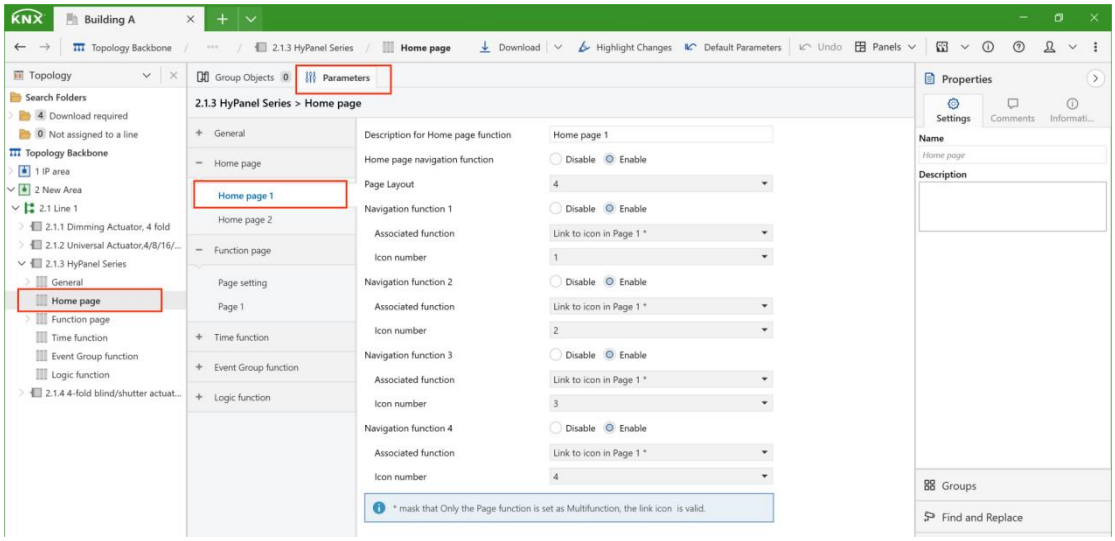
For more and detailed HyPanel parameters explanation, please see Akubela Programming Guide - HyPanel Series.

Home page buttons

The Home page in ETS refers to the HyPanel's Button Control screen (as shown in the figures below). You can configure buttons for quick control of KNX devices and scenes.



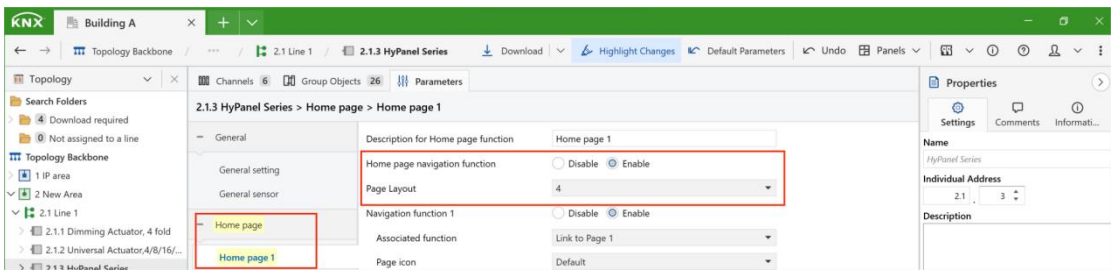
1. In ETS, select HyPanel's Parameter tab and click **Home page > Home page 1**, ensure the Home page navigation function is enabled. Once enabled, you can add control shortcuts of KNX devices onto Home page 1.



2. Set the number of buttons by selecting an option in the Page Layout field.

NOTE:

Home page 1 supports up to 4 buttons, while Home page 2 supports 6 buttons at most.



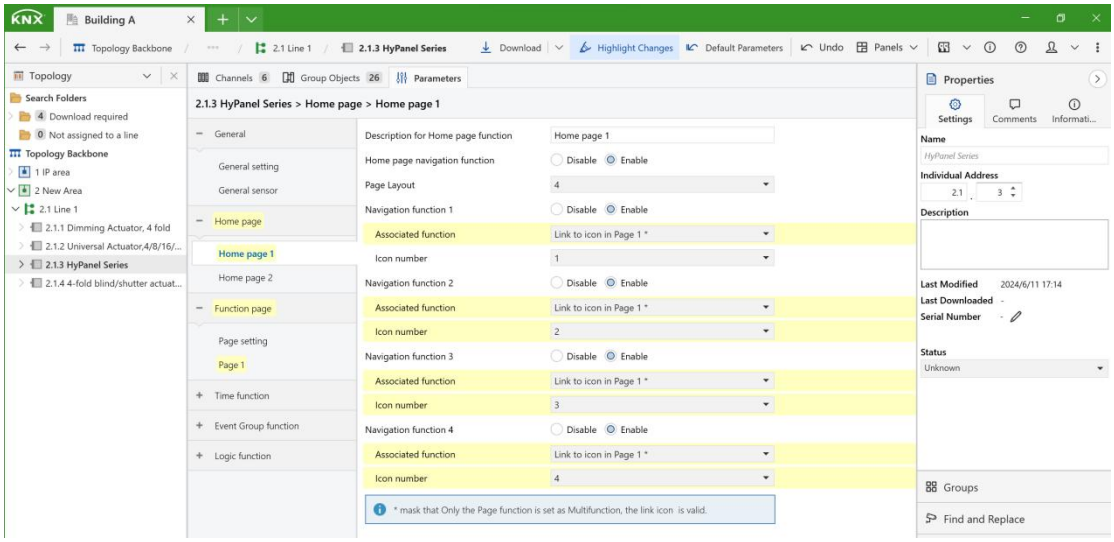
3. Ensure the Navigation function of each icon is enabled.

4. Select “Link to icon in Function page 1*” in **Associated function** field.

- Link to icon in Function page X*: When selected, pressing this button on the HyPanel will control a specific feature on Function page X.

- Link to Page X: When selected, pressing this button on the HyPanel will navigate to the preset Function page.

5. Set the **icon number**. Note that this parameter is only available when “Link to icon in Function page 1*” is selected.



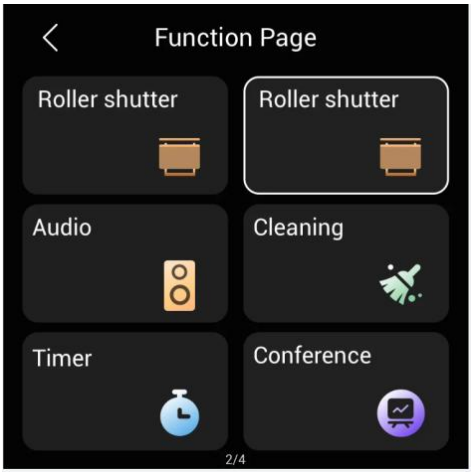
Function page

Function pages of the HyPanel are the screens accessed by pressing a quick control button. There are two types: Multi-function page and Single-function page.

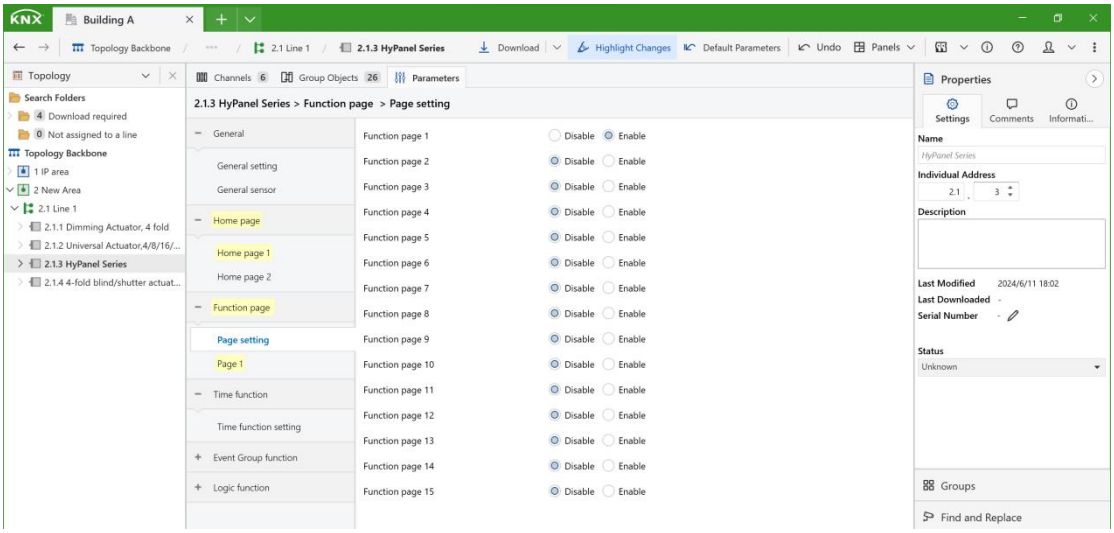
In this guide, we only need to configure a multi-function page.

NOTE:

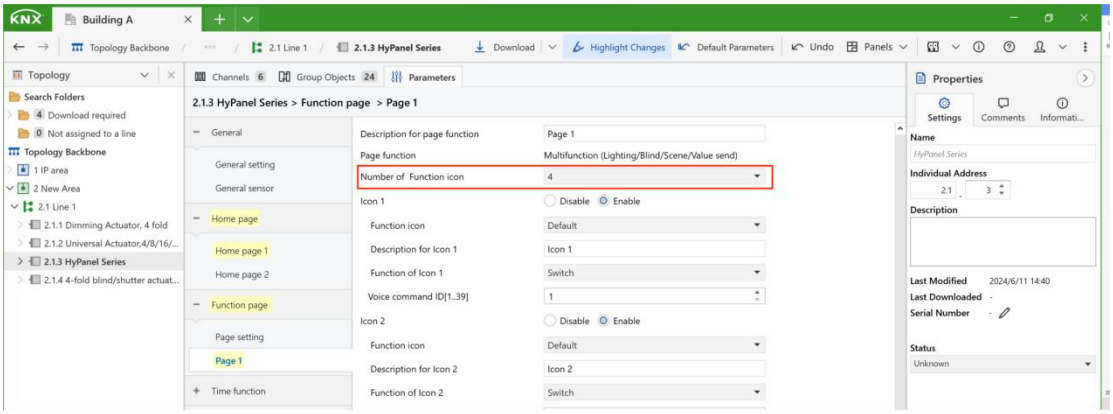
For HyPanel, the first 5 function pages are multi-function ones as the below figure shown.



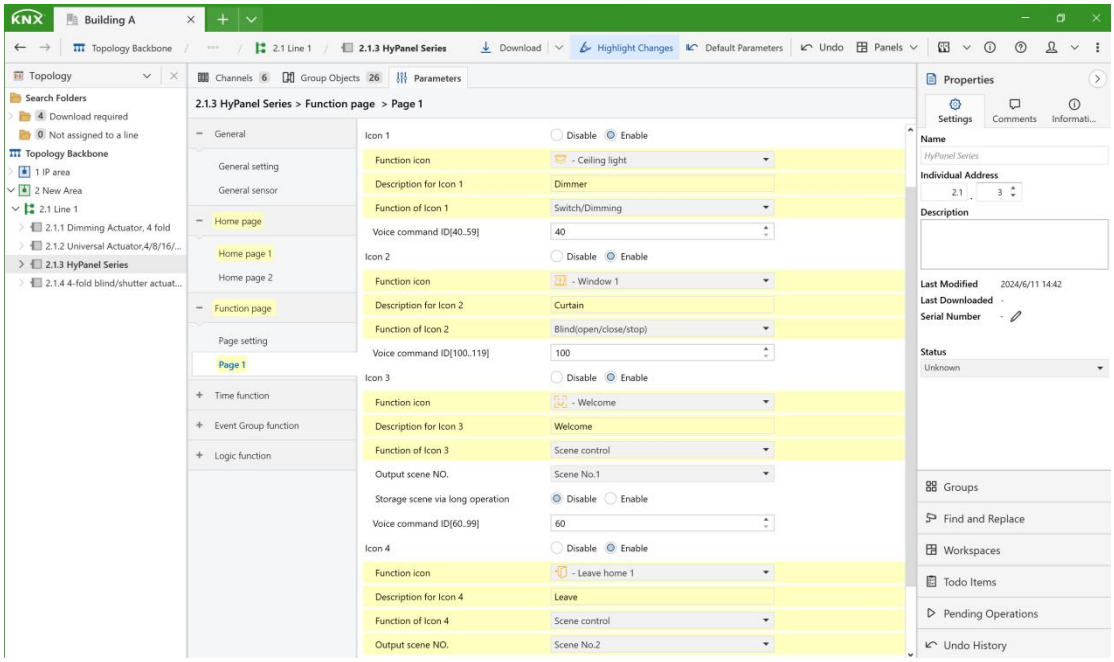
1. Go to **Function page > Page setting**, and enable the desired page(1-5).



2. Go to the specific page, and set the number of function icons, which can be up to 6.



3. Set up the preset 4 buttons' displayed names, icons and their functionalities as the below figure shown.

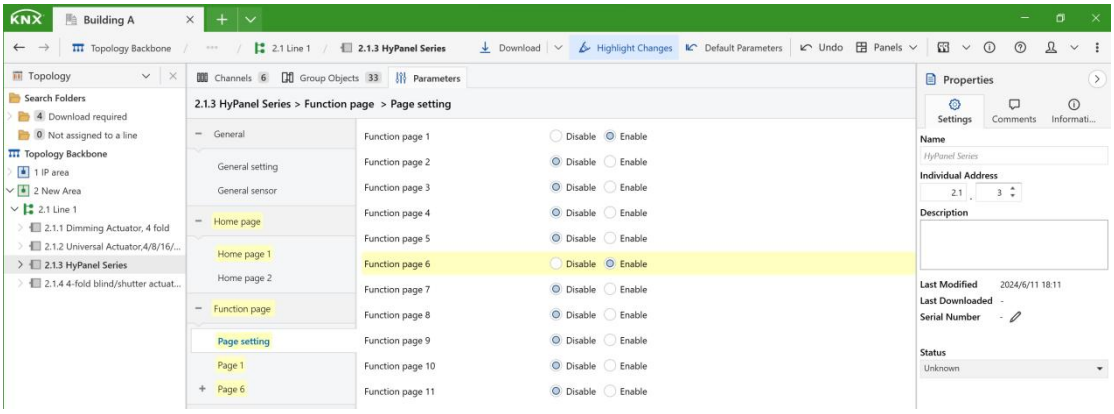


TIP:

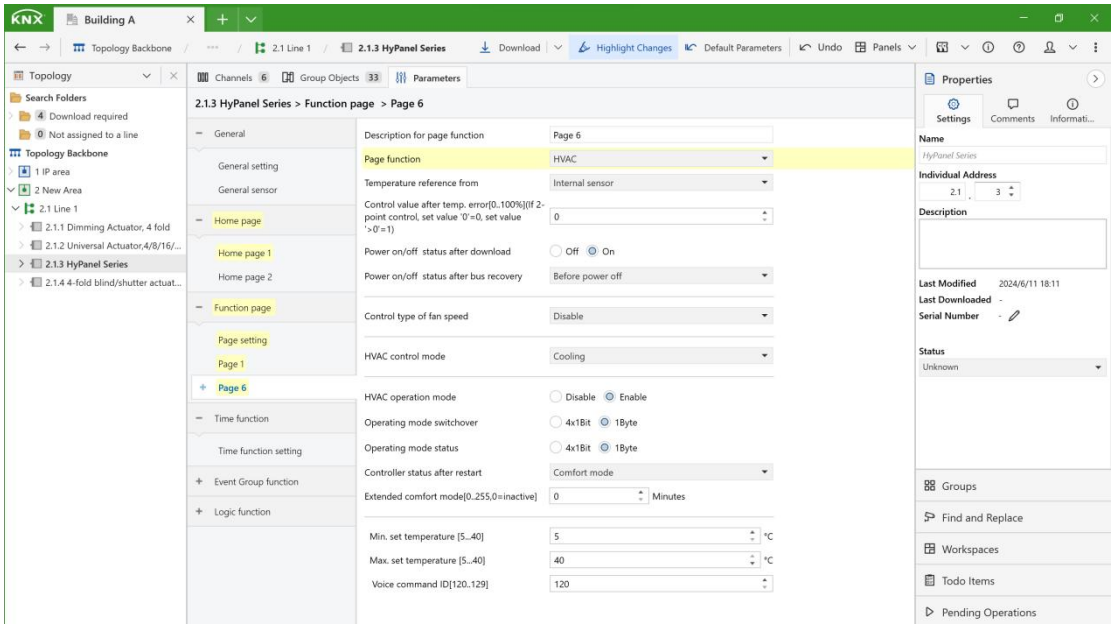
For HyPanel, the sixth function page and later are single-function ones(as the picture shown). If you want to configure single-function pages, do as the following：



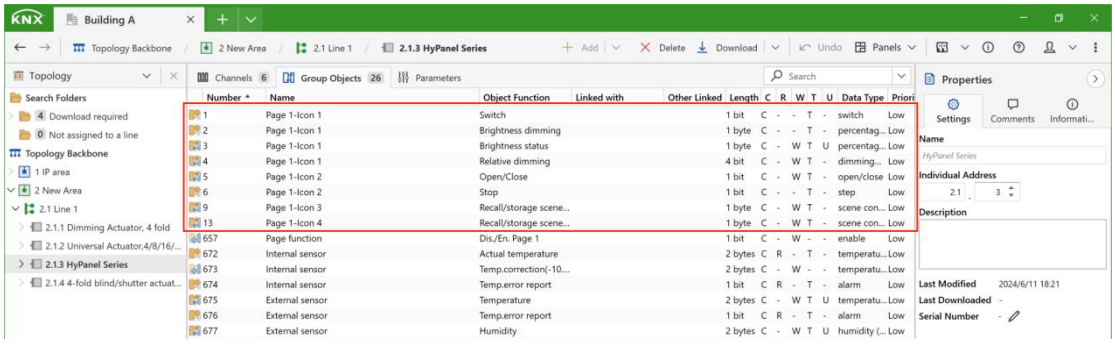
1. Go to **Function page > Page setting**, and enable the desired page(6-15).



2. Go to the specific page, and select the Page function, and configure the settings.



Once the configurations of the Multi-function page completed, all necessary group objects are available.



Link Group Objects with Group Addresses

Group addresses are used in the communication between devices in the KNX network, and these addresses connect group objects to each other. The addresses assigned to a given group in which the group objects should work together so that the given functionalities can be activated and used.

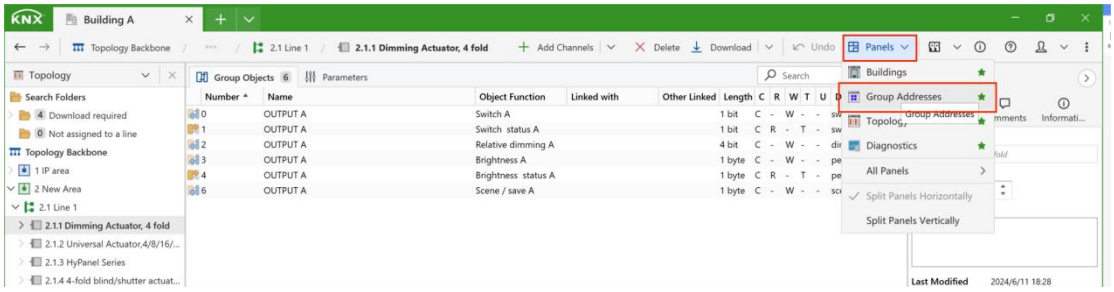
After configuring the parameters of KNX devices, you can link group addresses to group objects to define functions.

Create group addresses

The KNX network supports several group address structures: 3-level, 2-level, and freely defined. Typically, the 3-level structure is used for its flexibility.

To create group addresses, do as the following:

1. Open the Group Addresses panel by clicking **Panels > Group Addresses**.

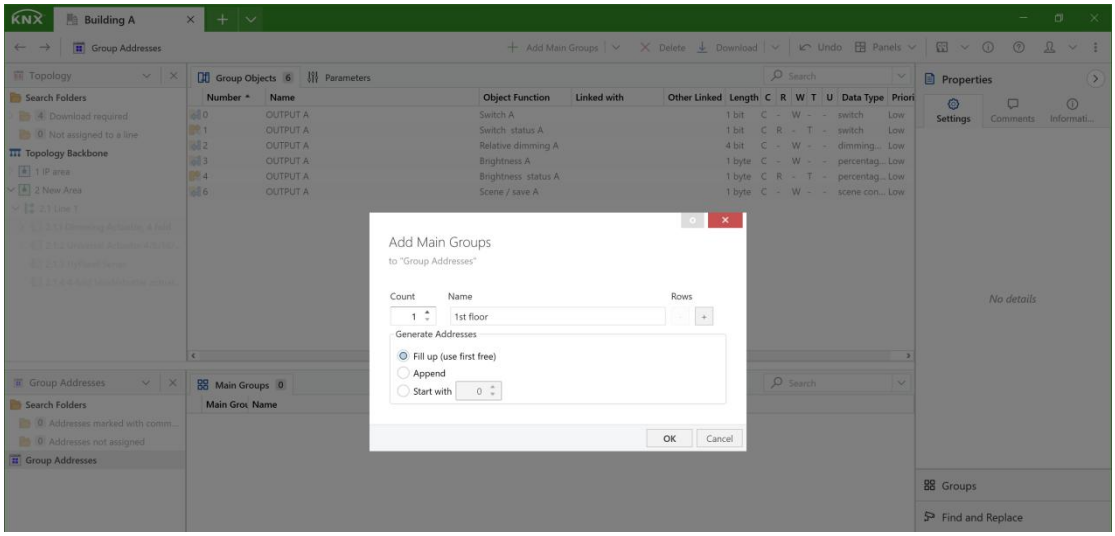


2. Right-click the Group Addresses, add corresponding level groups, and name them.

TIP:

You can customize the structure to suit different types of KNX projects. In this guide, we'll use the following structure:

- Main group: Building part (1st floor, living room...)
- Middle group: Function (Curtain control, dimming...)
- Subgroup: Specific function of a device (Open/close, on/off...). Refer to a device's Object Functions to define its group addresses.



3. Repeat the previous step until all the group addresses are added.

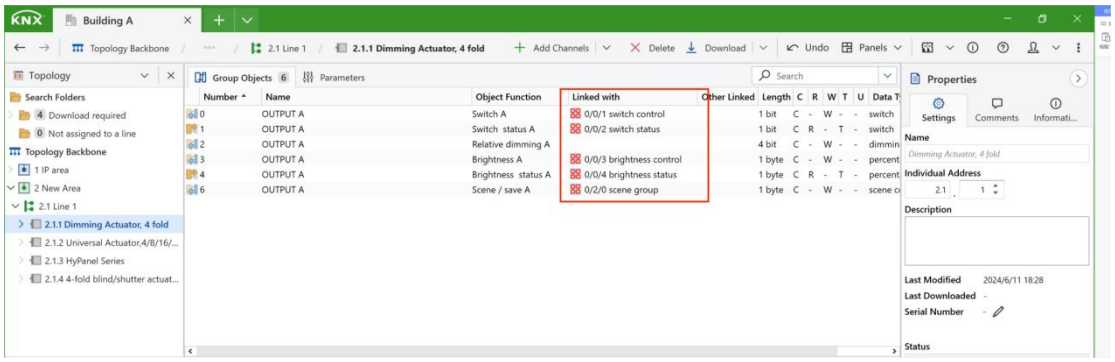


Link group address to group objects

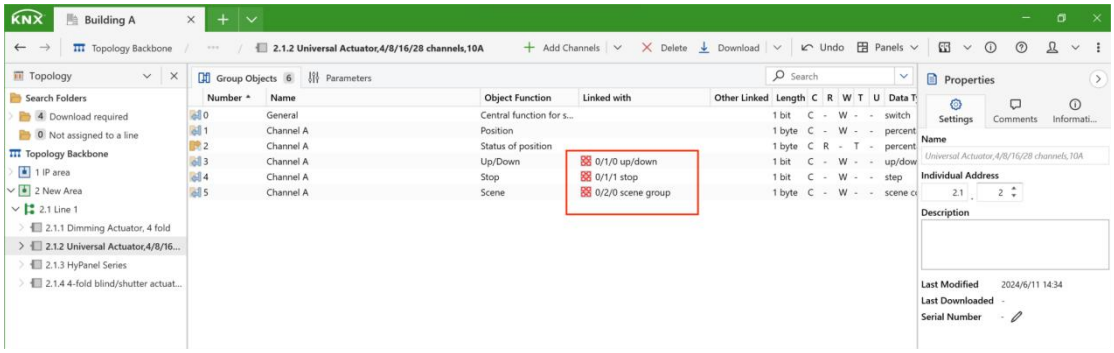
Simply drag and drop the group address to the corresponding group objects.

Here are the results:

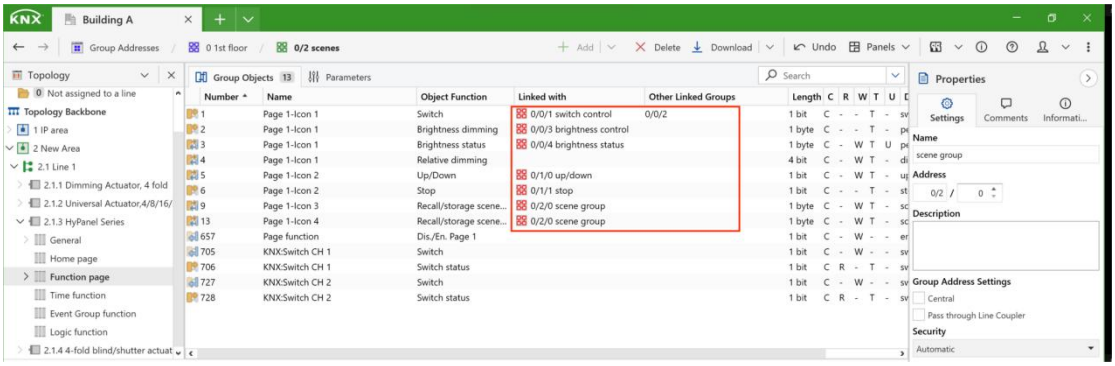
- **Dimmer**



- **Curtain**



- **HyPanel**



Once the group addresses are assigned, the communication pathway between HyPanel and the KNX devices is established.

Download Project Data to HyPanel-KNX

To transfer the configured parameters to the KNX devices, you need to configure a connection between PC and HyPanel-KNX, and then perform a download.

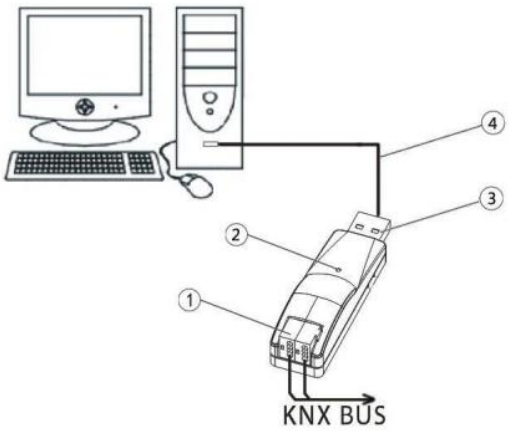
Before getting started

1. Have a KNX USB Interface prepared for the local USB connection.

NOTE:

At this time, HyPanel-KNX does not support direct connection to KNX bus over IP and can not function as a KNX IP router.

2. Connect the USB Interface to both your PC and KNX bus (as shown in the figure below).



① KNX bus connectors

② Indicator light

③ USB connector

④ USB extension cable

Perform a download

1. Put the device in programming mode.

- The KNX version of HyPanel

a. Swipe down from the top of any screen.

b. Select **> System Settings > KNX Programming**, and toggle it on.

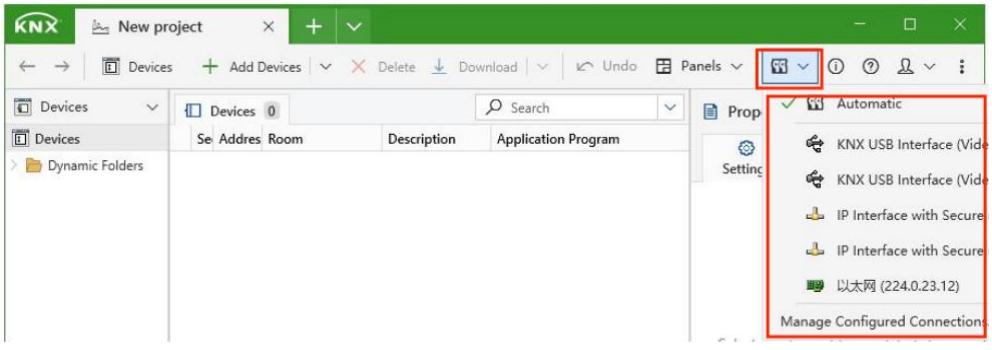


- The KNX devices such as blind actuators, curtain actuators, and more

Press the programming button on the device.

2. In ETS, click to set the bus interface settings.

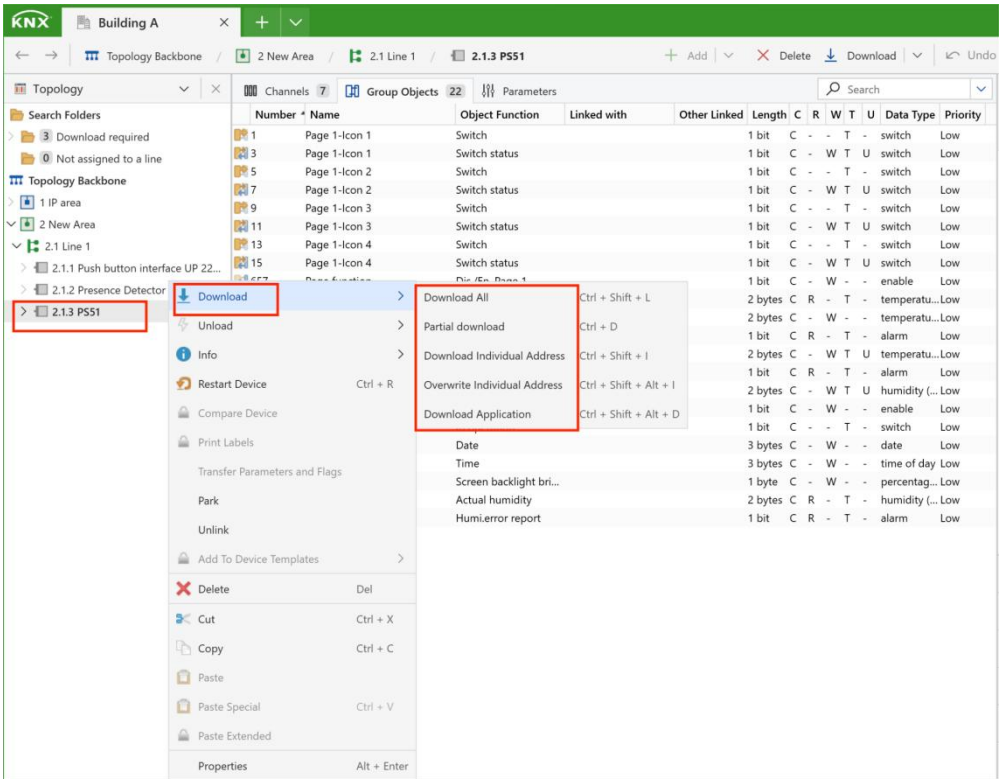
- Automatic: The default option. ETS will determine the most suitable bus interface to connect to the devices.
- Currently discovered interfaces: USB, IP-routing, and IP-tunneling interfaces that are recognized and displayed automatically by ETS.



3. Right-click on the desired device on the left tree view, and select a suitable download option.

Download Options	Description	Programming Mode Required
Download All	Download all project data in ETS to the corresponding device.	Yes

Partial Download	Download only the parts that were changed in ETS and have not been downloaded before.	No
Download Individual Address	Assign individual address to KNX device.	Yes
Overwrite Individual Address	Assign individual address to KNX device by overwriting known address.	No
Download Application	Download application program into the device.	No



4. Wait for the download to be completed.

If there is a download error, please refer to [this guide] for the solution.