Quick Start Guide

Armatura Elevator Control System

Doc: Dec 2024

Version: 1.0.0

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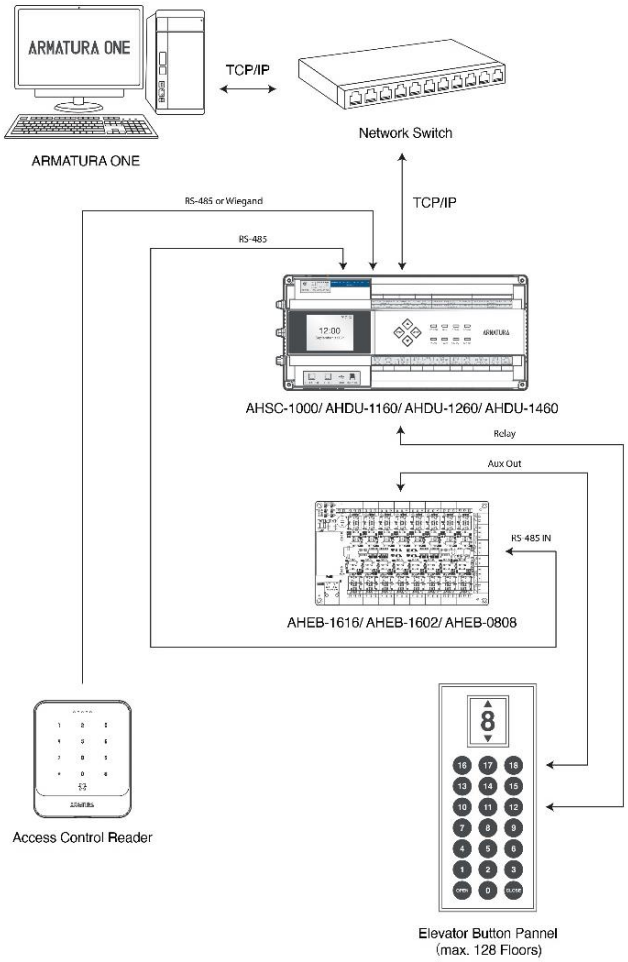
1. System Overview and Wiring

1.1. System Overview

1. The Armatura Horizon series controllers and I/O boards are designed to be used not only for access control, but also for elevator control applications. Although a single controller supports both application modes, it can only be selected for either elevator control or access control at a time.
2. The Armatura One software can manage both access control and elevator control simultaneously. By utilizing Armatura One, along with the compatible AH series controllers and I/O boards, as well as Armatura readers, a complete one-stop solution can be provided to customers.



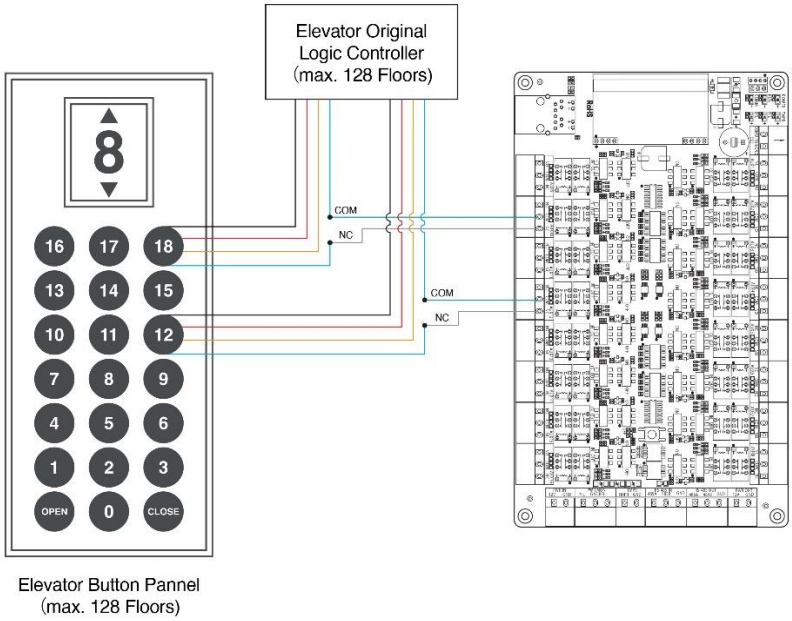
Note:

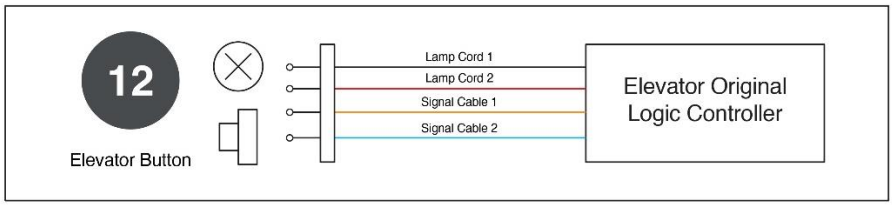
1) One controller can support up to 128 floors.

2) AHEB-0808/AHEB-1602 are available to support connecting to AHSC/AHDU panels for elevator control purpose now by upgrading the firmware. AHEB-1616 is coming soon.

3) The AHSC/AHDU controller must be running the MCU firmware version 6.3.2.5 or higher to utilize the onboard relay for floor control. If the controller is not updated to this version, floor control must be achieved through the auxiliary outputs of the I/O board. Should you require assistance, please contact the headquarters for technical support.

1.2. AHEB-0808/1602 I/O Board Connect with Elevator Panel Wiring





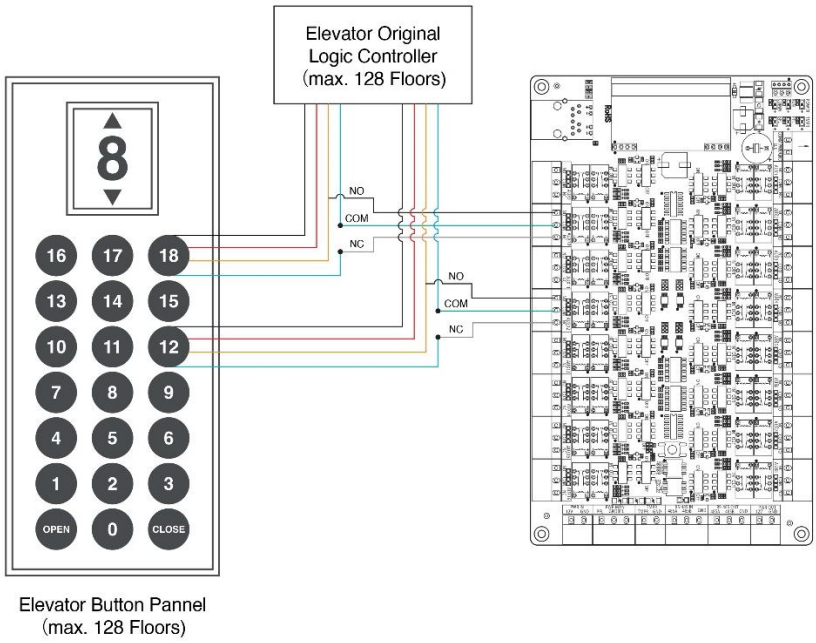
Note:

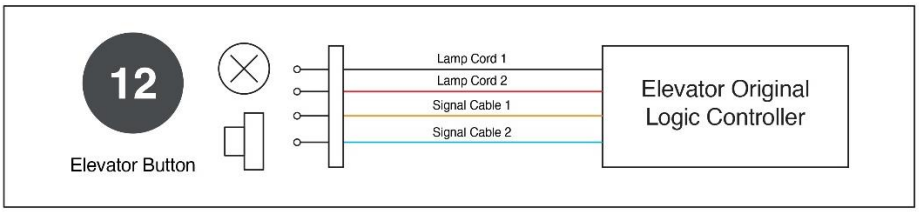
1) *To access the elevator buttons, it is necessary to remove the elevator button panel. The manufacturer should provide the control circuits for the corresponding floor buttons. If the manufacturer cannot provide them, it will be necessary to check each wire individually to ensure that the circuits are functioning properly.*

2) *AHEB-0808 and AHEB-1602 do not support **Direct Floor Selection** and **Button Feedback** functions. In this case, you only need to connect the normally closed (NC) terminals and common (COM) terminals of the auxiliary output ports in series to the signal lines of the elevator buttons.*

3) *Refer to Appendix 1 Elevator Control and Elevator Button Wiring for detailed wiring.*

1.3. AHEB-1616 I/O Board Connect with Elevator Panel Wiring





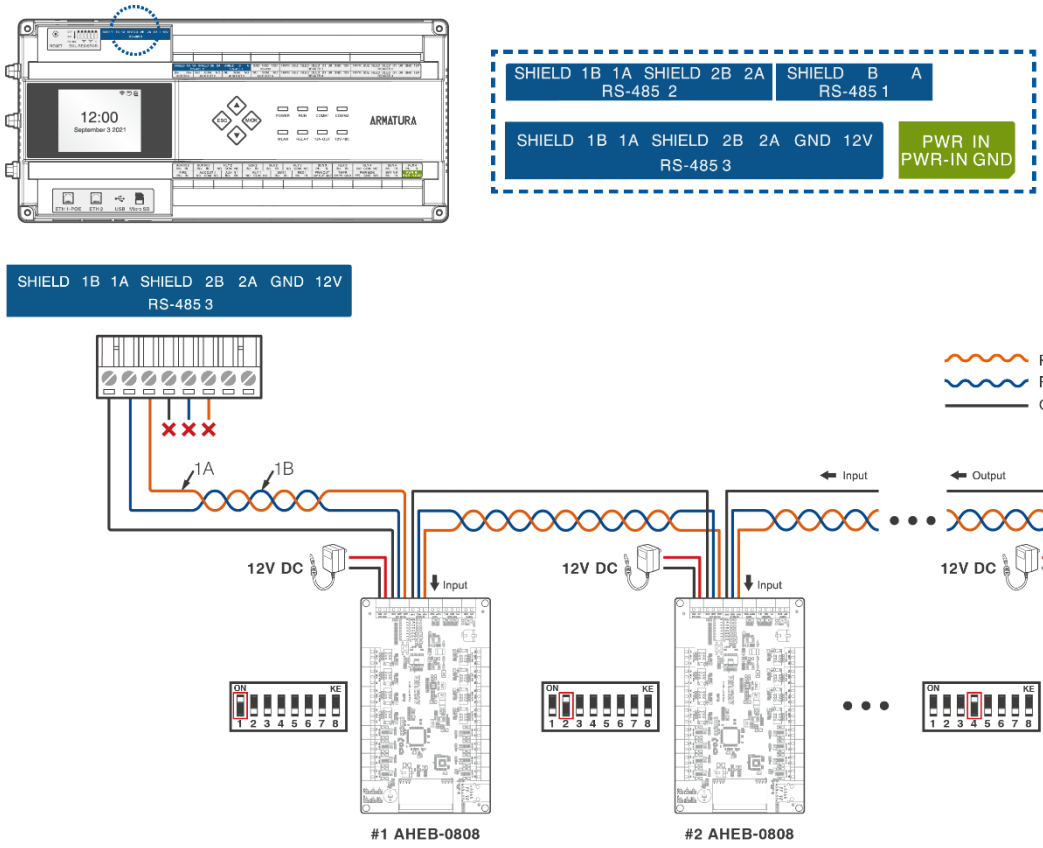
Note:

1) *To access the elevator buttons, it is necessary to remove the elevator button panel. The manufacturer should provide the control circuits for the corresponding floor buttons. If the manufacturer cannot provide them, it will be necessary to check each wire individually to ensure that the circuits are functioning properly.*

2) *AHEB-1616 supports **Direct Floor Selection** and **Button Feedback** functions. To ensure the proper functioning of these features, the normally open (NO), normally closed (NC), and common (COM) terminals of each auxiliary output port must be connected to the signal lines of the floor buttons.*

3) *Refer to Appendix 1 Elevator Control and Elevator Button Wiring for detailed wiring.*

1.4. Multiple I/O Boards Wiring



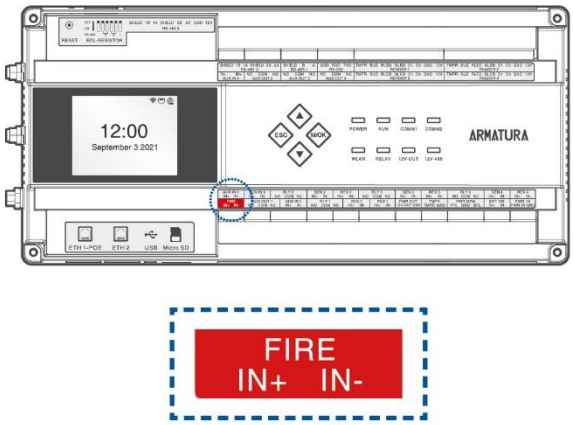
Note:

1) *The RS-485 interface of the controller is first connected to the RS-485 IN port of the first I/O board, and then the RS-485 OUT port of the first I/O board is sequentially connected to the RS-485 IN port of the next I/O board, and so on.*

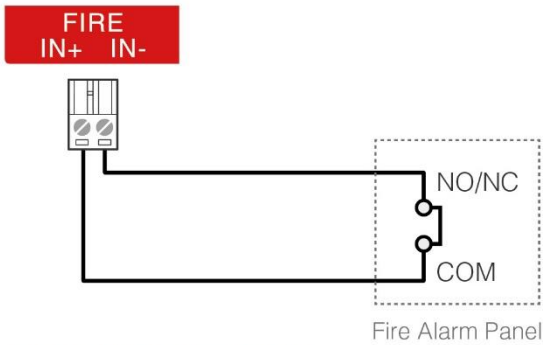
2) *Please set the DIP switches on each I/O board to allocate unique RS-485 addresses, ensuring there are no overlaps among the boards.*

3) *Please supply power to the I/O board with an independent 12V 3A DC power to ensure its stable operation. A single 12V 3A DC power can power up to 8 I/O boards.*

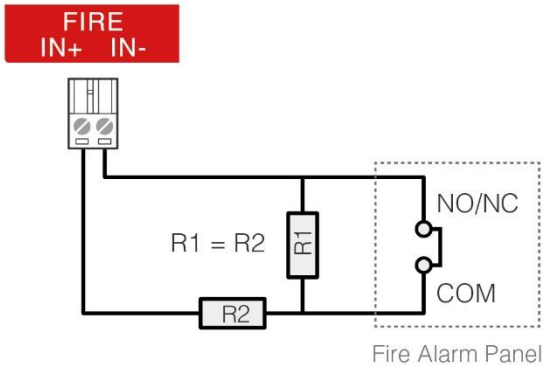
1.5. Fire Alarm Interface Wiring



No Supervision



Default Supervision



Note:

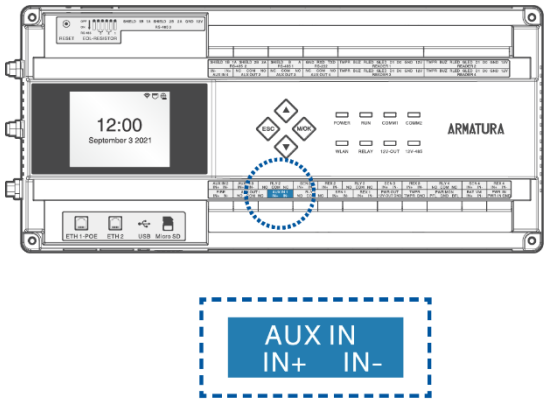
1) *Once a fire alarm is triggered, all elevator buttons will become unusable. The fire alarm condition can only be cleared by either restarting the device or by a power cycle.*

2) *The Fire Alarm is an optional feature and is not required to be connected. Please connect it according to your specific needs.*

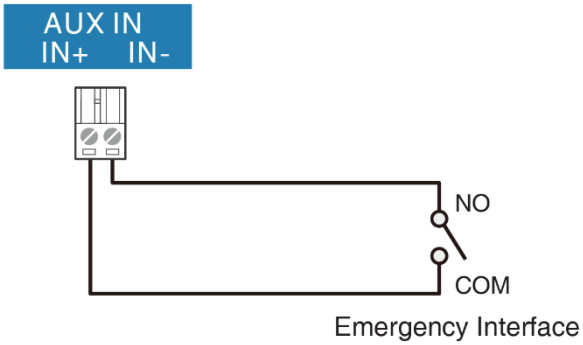
3) *To activate this feature, the controller's MCU must be upgraded to **version 6.3.2.5** or above.*

4) *In this elevator control system, the fire alarm interface has the highest priority, followed by the emergency interface, with the manual interface being the lowest in the hierarchy.*

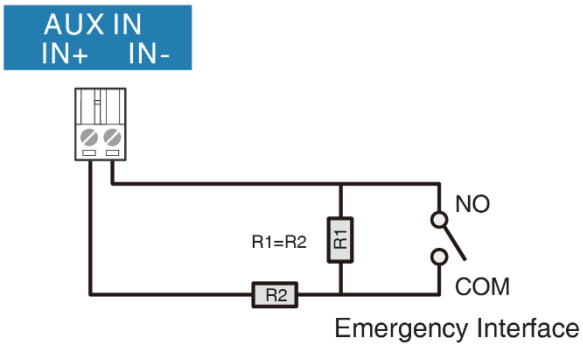
1.6. Emergency Interface Wiring



No Supervision



Default Supervision

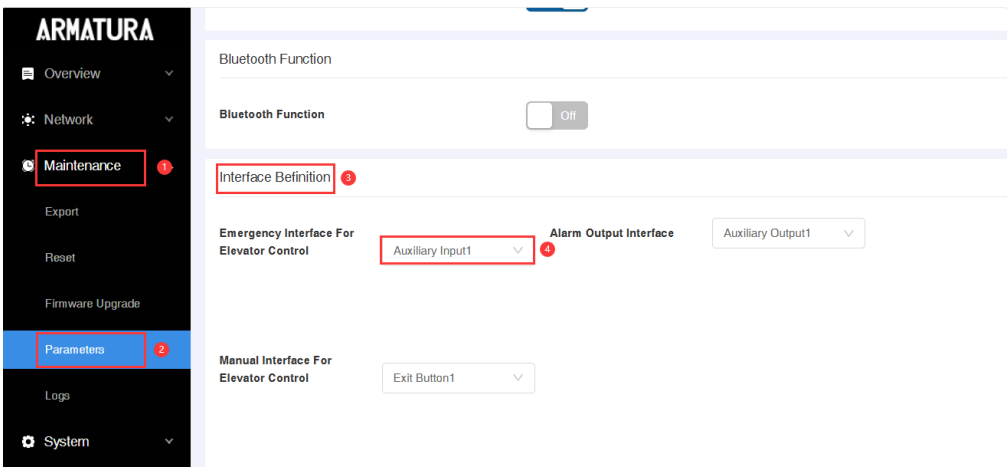


Note:

1) *In an emergency, upon receiving a short circuit signal by the emergency interface, the elevator control system will cease to govern the elevator buttons, releasing all floor buttons for free operation. The control system can only be restored by either a power-off restart of the device or through software settings adjustments.*

2) *The Emergency Interface is an optional feature and is not required to be connected. Please connect it according to your specific needs.*

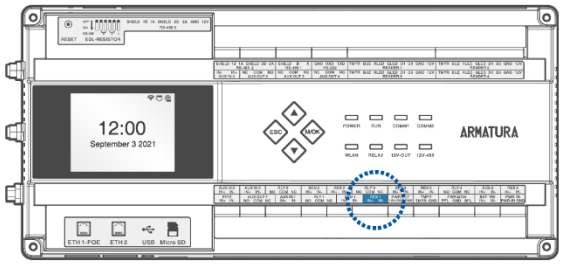
3) *The system's default interface is Auxiliary Input 1. You can also modify it in the controller's* ***Web Server*** *under* ***[Maintenance] > [Parameters] > [Interface Definition].***



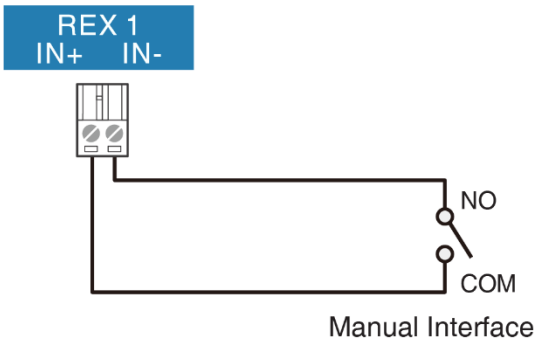
4) *To activate this feature, the controller's MCU must be upgraded to **version 6.3.2.5** or above.*

5) *In this elevator control system, the fire alarm interface has the highest priority, followed by the emergency interface, with the manual interface being the lowest in the hierarchy.*

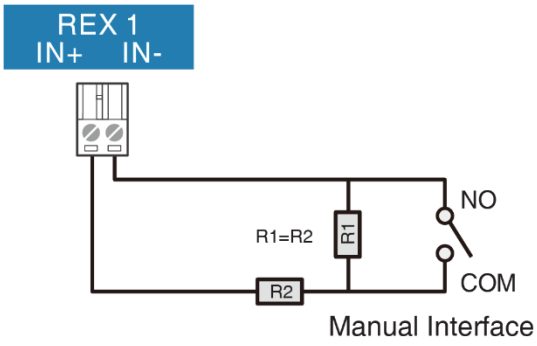
1.7. Manual Interface Wiring



No Supervision



Default Supervision

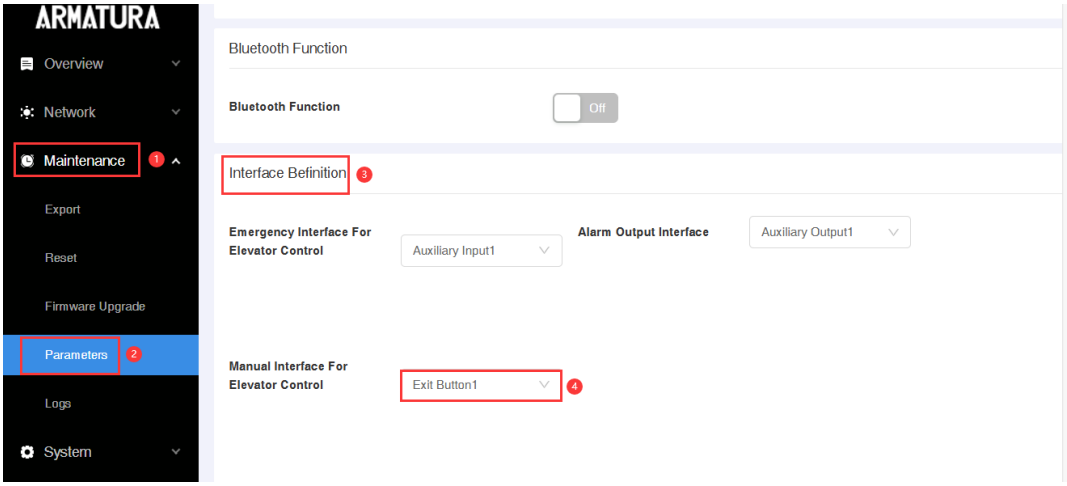


Note:

1) *In the event of a short circuit at the manual interface, the elevator control system will relinquish control over the elevator buttons, allowing all floor buttons to be freely pressed. Once the manual interface is restored, the elevator will automatically resume its controlled status.*

2) *The Manual Interface is an optional feature and is not required to be connected. Please connect it according to your specific needs.*

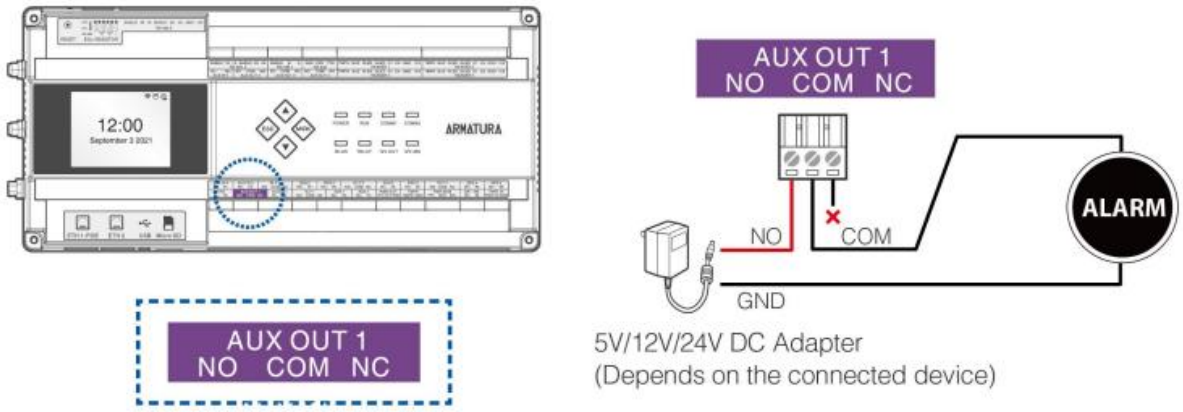
3) *The system's default interface is REX 1. You can also modify it in the controller's* ***Web Server*** *under* ***[Maintenance] > [Parameters] > [Interface Definition].***



4) *To activate this feature, the controller's MCU must be upgraded to **version 6.3.2.5** or above.*

5) *In this elevator control system, the fire alarm interface has the highest priority, followed by the emergency interface, with the manual interface being the lowest in the hierarchy.*

1.8. Alarm Output Interface Wiring



Note：

1) *The Alarm Output is an optional feature and is not required to be connected. Please connect it according to your specific needs.*

2) *Use the Alarm Output Interface to connect an alarm.*

2. Controller Configuration Details

1. Please confirm that your controller's firmware is at least **version 10.0.15** to enable the elevator control function.
2. If the current version is lower than this requirement, please contact your local branch or the headquarters' technical support for assistance.

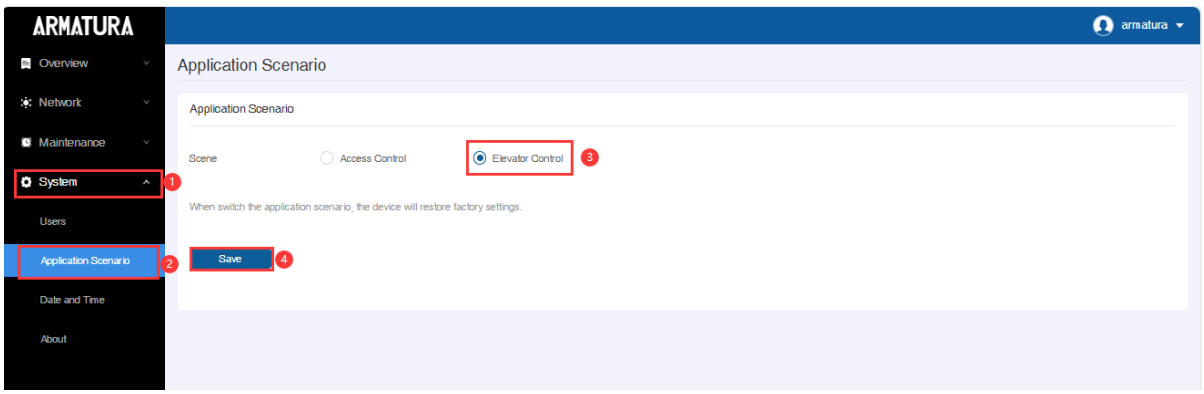
2.1. Switching Controller to Elevator Control

1. Open your web browser and enter the IP address of the controller to access its webserver.
2. Log in to the controller's webserver.

3. Navigate to **[System] > [Application Scenario].**
4. Please check if the **[Scene]** setting is at **[Elevator Control].** If it is, you can use it directly. If not, please switch to **[Elevator Control].**
5. Click **[Save]** to apply the changes.

Note:

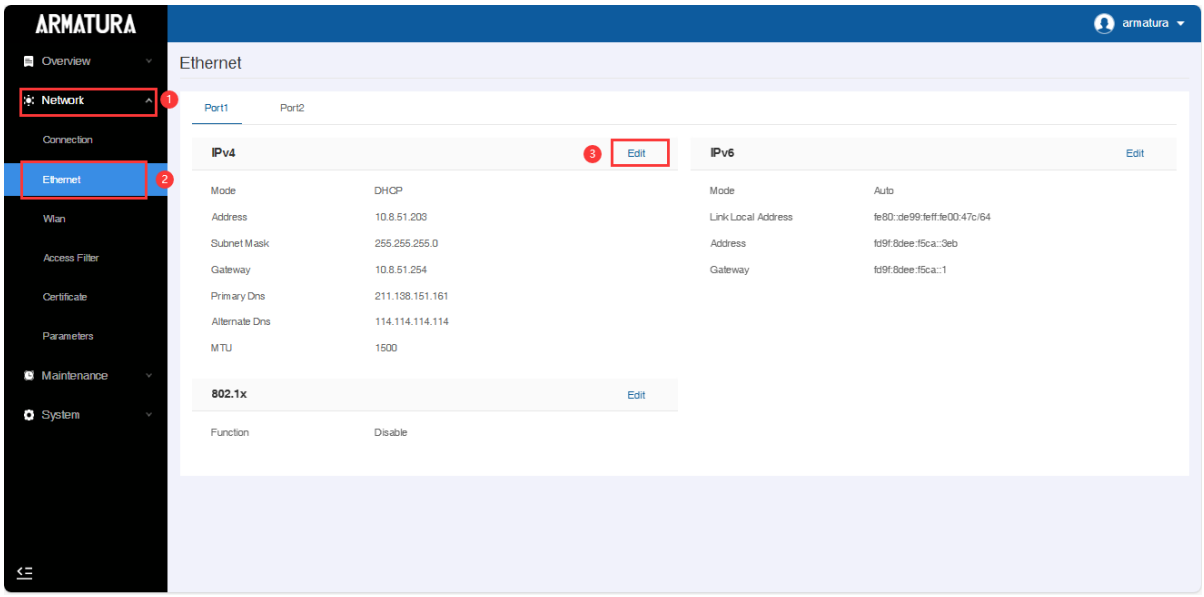
*1) If you are unable to find the **[Application Scenario]** option under **[System],** you will need to contact technical support or headquarters for assistance.*



2.2. Modifying Controller Network Parameters

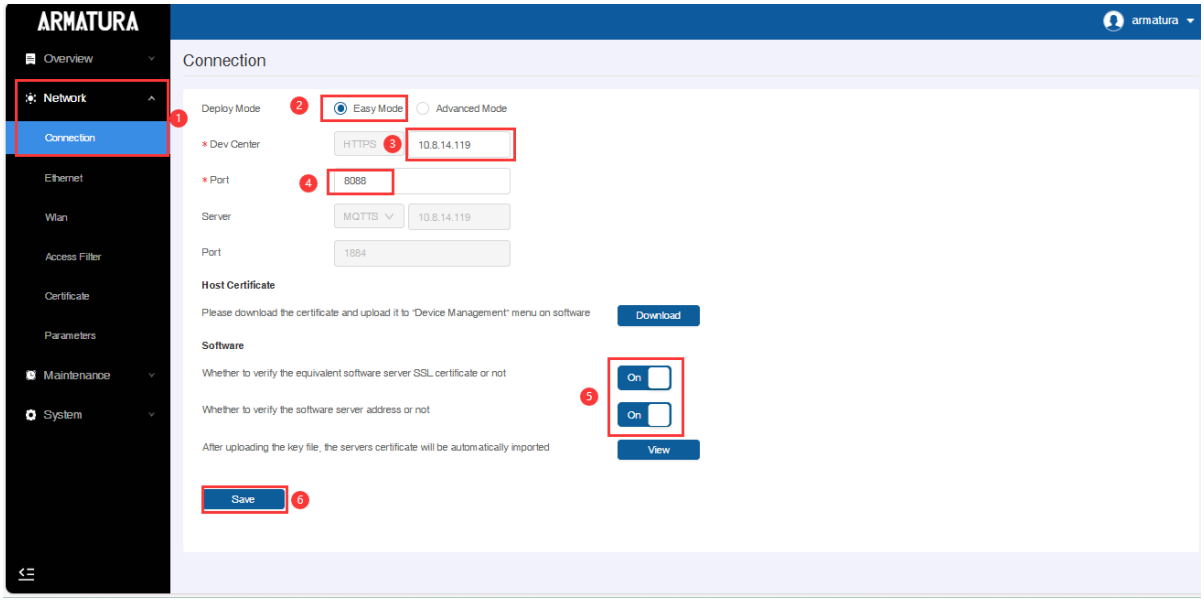
1. After switching to elevator control mode, the controller will revert to factory settings and automatically restart.
2. The controller's IP will reset to the default IP address.
3. You can connect to the controller's Eth1 (default IP 192.168.1.201) or Eth2 (default IP 192.168.2.202).
4. The webserver password for the controller has also been reset.
5. Please use the default username (armatura) and default password (armatura) to log in to the controller's webserver.

6. Modify the network parameters of the controller in **[Network] > [Ethernet].**
7. The settings in the image below are for reference only.



2.3. Configuring Controller Connection to Platform Parameters

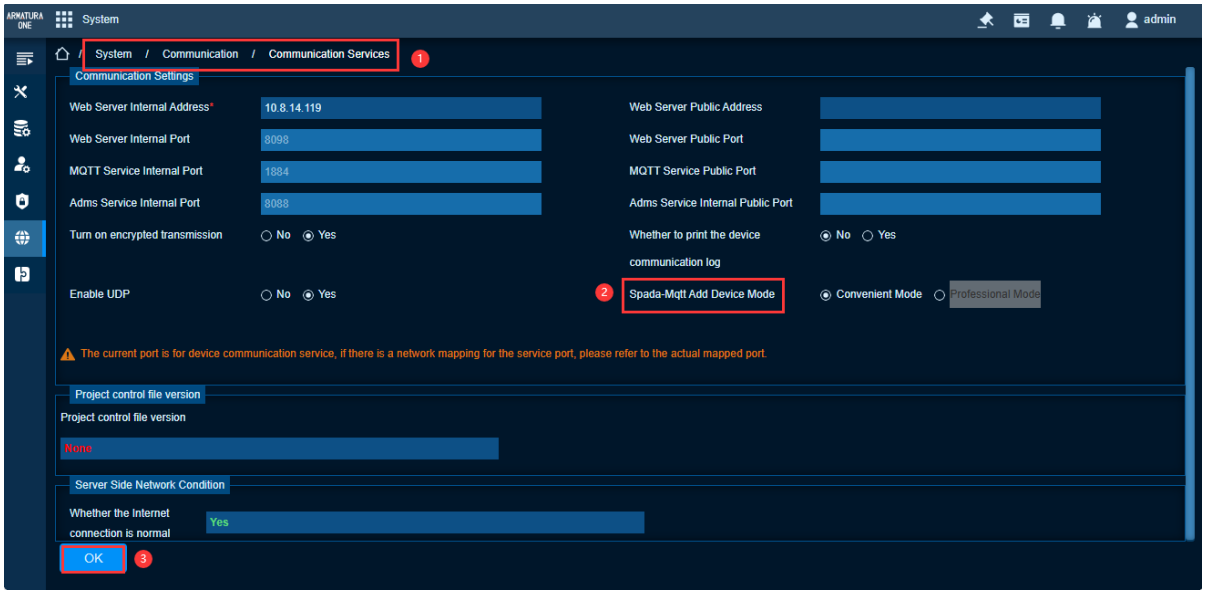
1. The latest firmware for the controller supports both Easy Mode and Advanced Mode for adding it to the software.
2. The following image is a reference for Easy Mode.
3. In the controller's webserver page, navigate to **[Network] > [Connect],** and select **[Easy Mode]** in the **[Deploy Mode].**
4. Enter the IP address or domain name of the Armatura ONE software, with the default port set to 8088.
5. Enable both options in **[Software].**
6. Finally, click **[Save]** to save the settings.



3. Armatura One Configuration Details

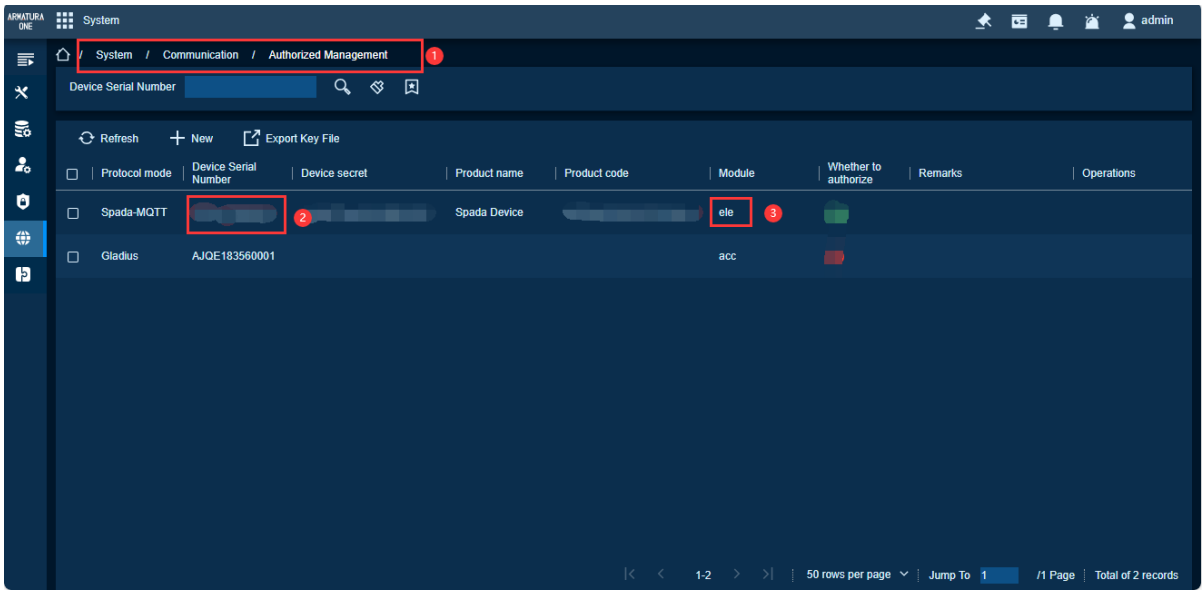
3.1. Modifying Spada-MQTT Add Device Mode

1. Log in to the Armatura ONE software.
2. Click on **[System] > [Communication] > [Communication Services]** and locate item **[Spada-Mqtt Add Device Mode].**
3. If the controller is set to Easy Mode, select **[Convenient Mode].**
4. If the controller is set to Advanced Mode, select **[Professional Mode].**
5. Click the **[OK]** button to save and exit.



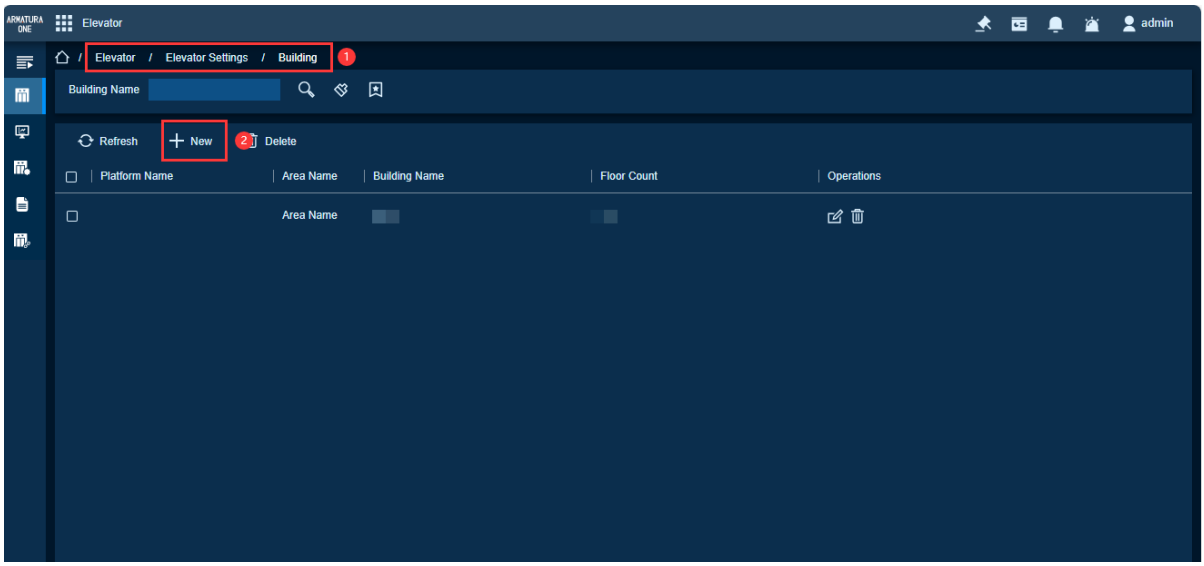
3.2. Checking Controller Authorization

1. On the **[System] > [Communication] > [Authorized Management]** page, check if the **[module]** column for the corresponding serial number's controller displays **[ele].**
2. If **[ele]** is displayed, it indicates that the device is authorized.
3. If **[ele]** cannot be displayed, please check the controller's connection settings.



3.3. Adding Buildings, Floors, Elevator Groups, and Elevators

1. Click on **[Elevator] > [Elevator Settings] > [Building] > [New]** to start adding a building.



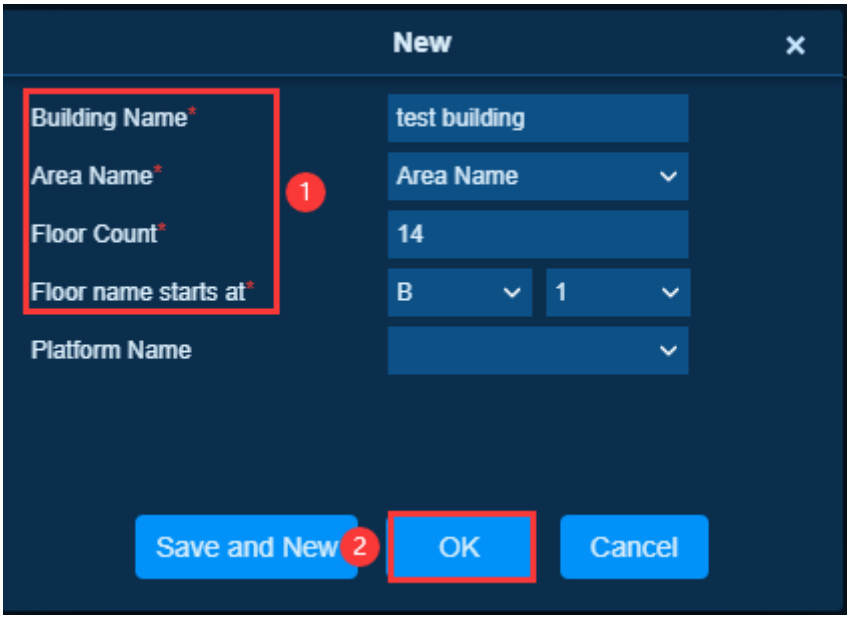
2. In the pop-up page, set the building information according to the actual situation.
3. For example, using the test building in the image below, there are 13 floors above ground and 1 below ground, making a total of 14 floors.
4. Therefore, set **[Floor Count]** to 14 and [**Floor name starts at]** to B1.

The [Floor name starts at] field description is as follows:

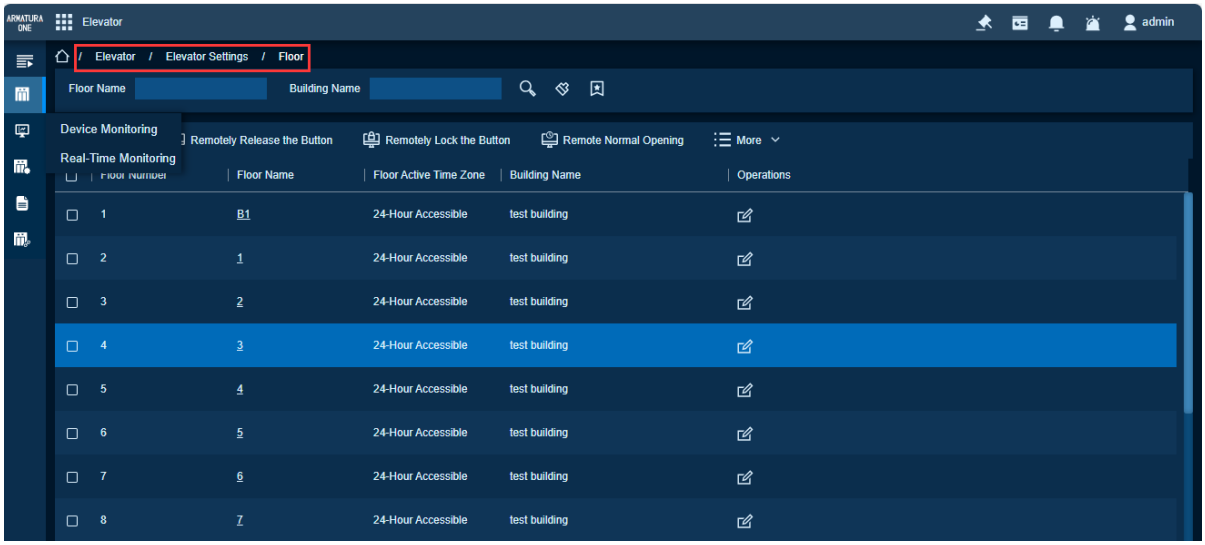
1) ***[B] and [-]:*** *Indicates basement floors; for example, the second basement level is commonly denoted as* ***[B2]*** *or* ***[-2].***

2) ***[1] and [L]:*** *Represents the first floor or lobby, usually indicated by* ***[1]*** *or* ***[L].***

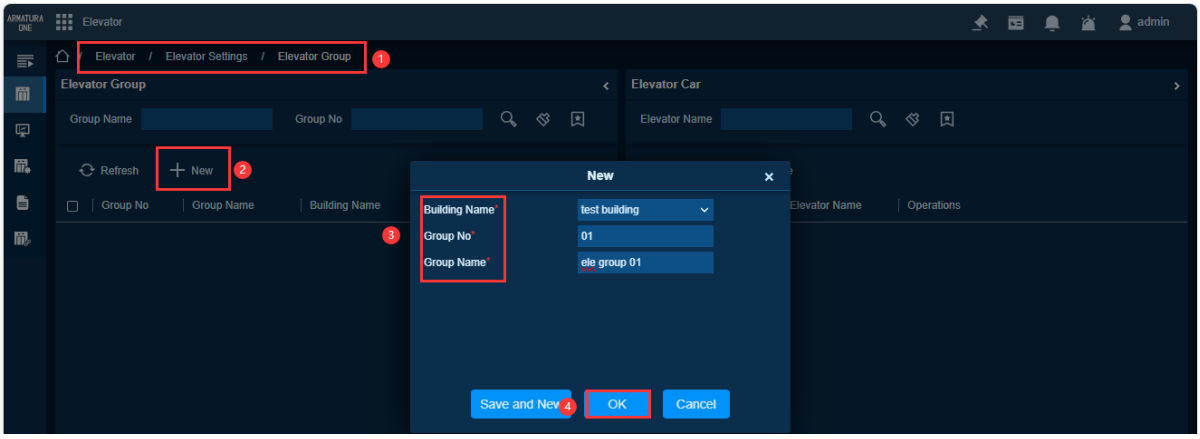
5. Finally, click **[OK]** to save and exit.



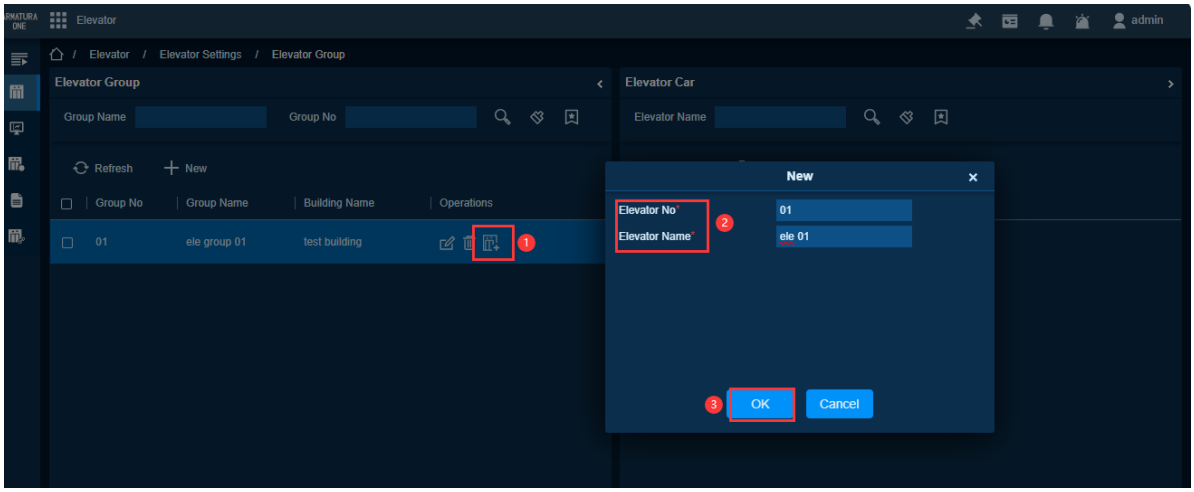
6. After adding, you can view the generated floors on the **[Floor]** page.



7. Click on **[Elevator] > [Elevator Settings] > [Elevator Group] > [New]** to add a new elevator group to the building.
8. In the pop-up page, select a building, fill in the No and name of the elevator group.
9. Click **[OK]** to save and exit.

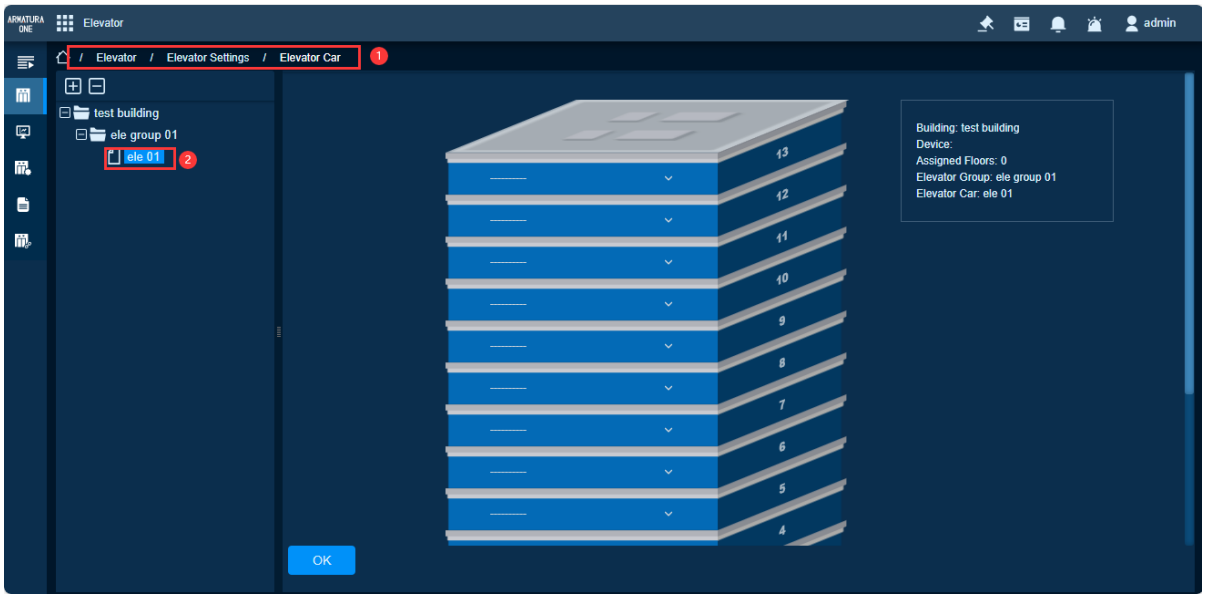


10. Click the button to add elevators to the elevator group.
11. Add and name the elevators according to the actual number of elevators.



12. After adding, you can view the generated elevator car on the **[Elevator Car]** page.

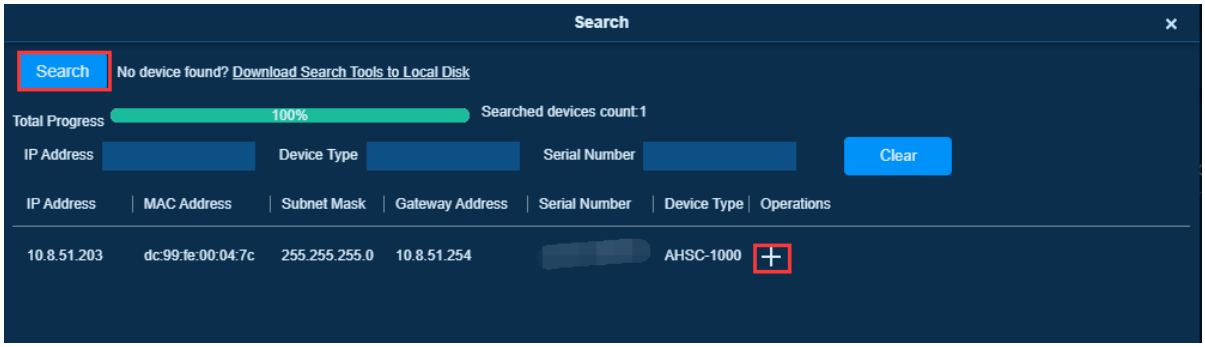
13. However, the auxiliary outputs have not yet been assigned to **[Elevator Car],** and it is currently not operational.



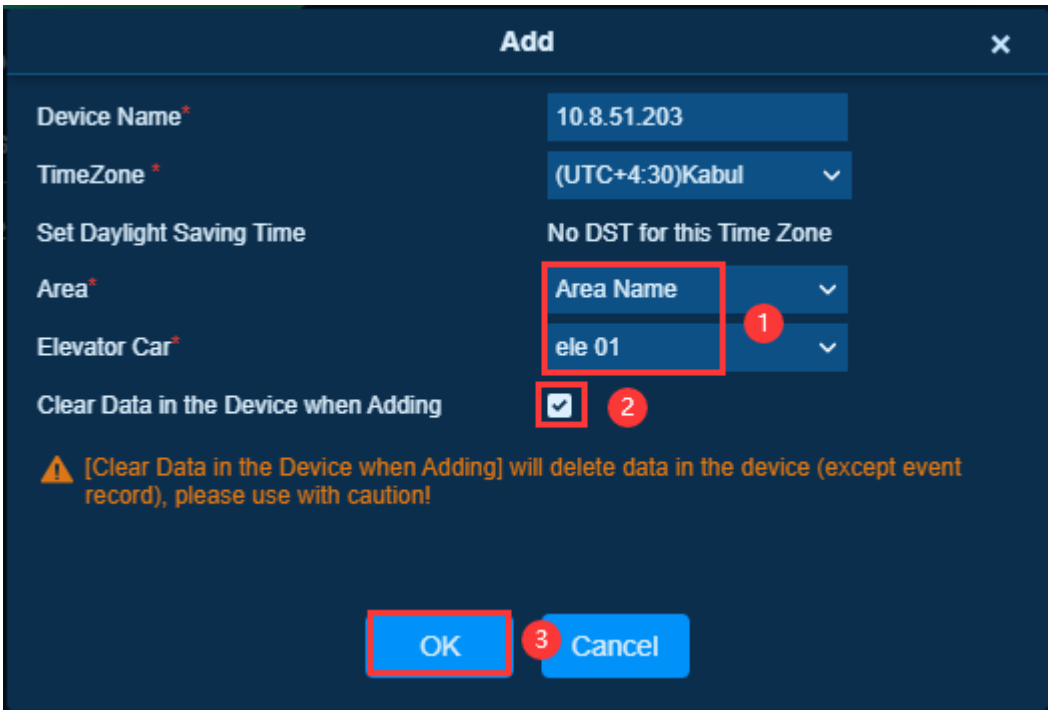
3.4. Add Elevator Controller

1. Taking adding in Simple Mode as an example.
2. Click on **[Elevator] > [Elevator Settings] > [Device] > [Search]** to start searching for devices.

3. Click the **[Search]** button, and after the search is complete, click the **[+]** icon next to the target device to add it.

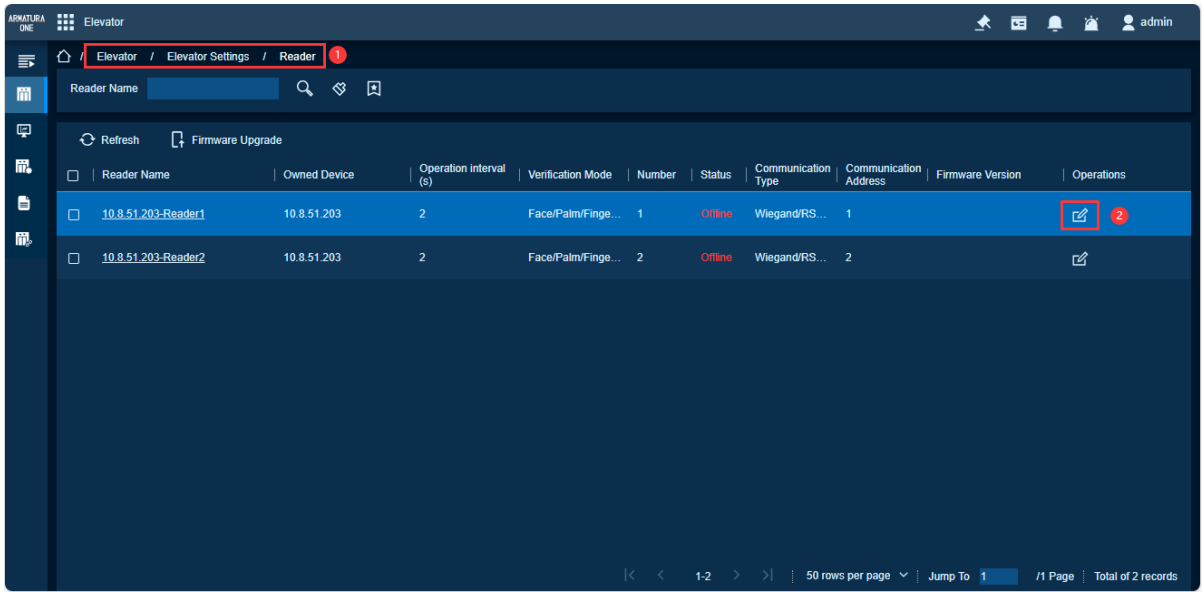


4. In the newly opened page, assign an area and elevator car to the device, and check the box for **[Clear Data in the Device when Adding].**
5. Finally, click **[OK]** to save and exit.



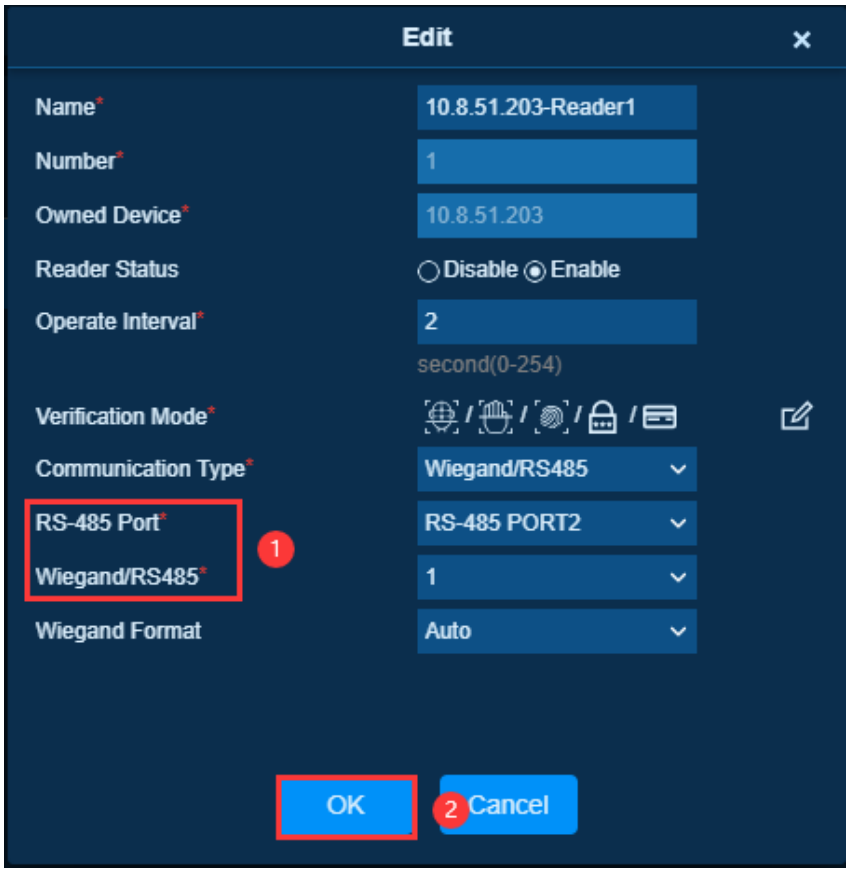
3.5. Configuring Reader Parameters

1. After adding the device, the corresponding number of readers will be generated automatically based on the different controllers: 2 for an AHSC-1000 or AHDU1160 controller, 4 for an AHDU-1260 controller, and 8 for an AHDU-1460 controller.

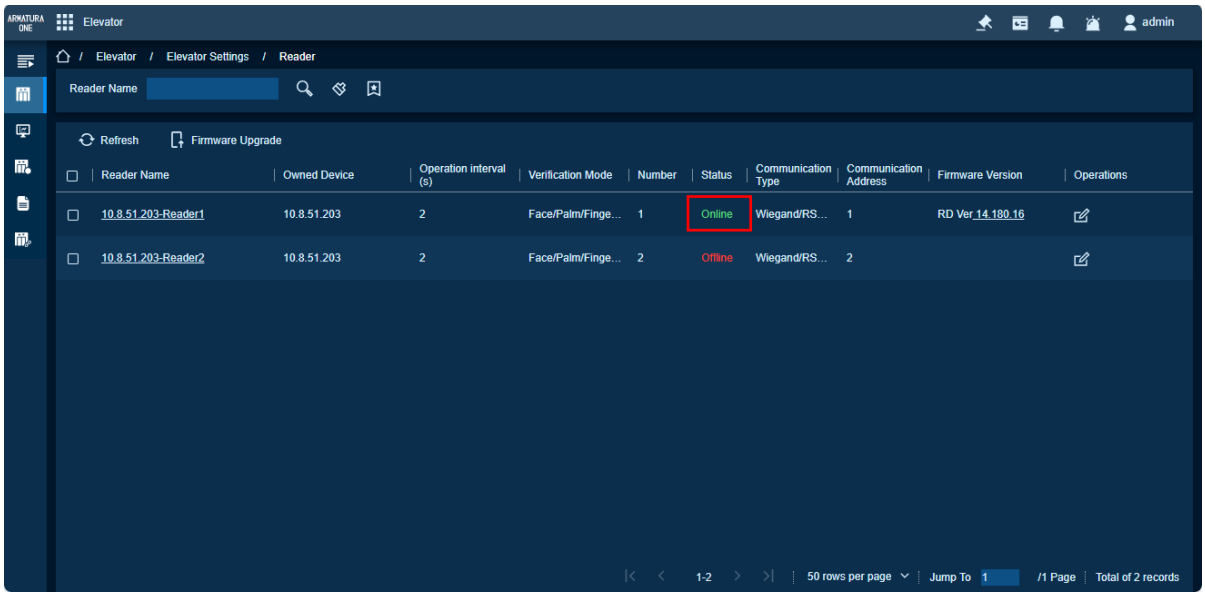


2. Click the  icon on the right side of the target reader to modify the reader's configuration information.

3. The images below are for reference only. Please make modifications according to the actual wiring and settings of the readers.

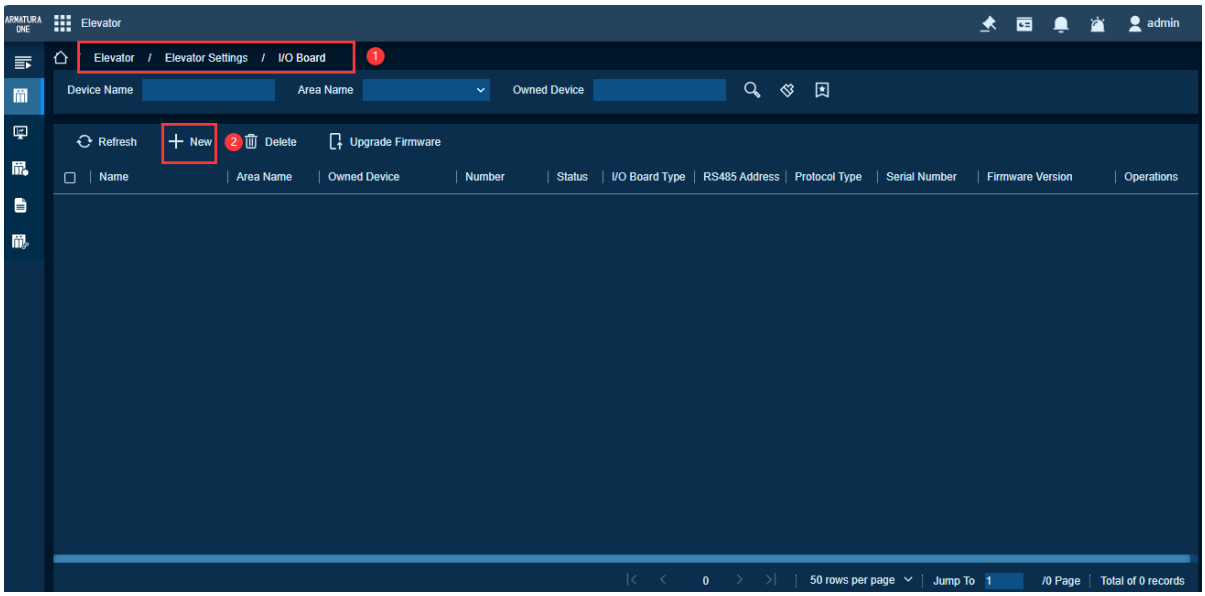


4. After modification, the status of the reader will be displayed as online.

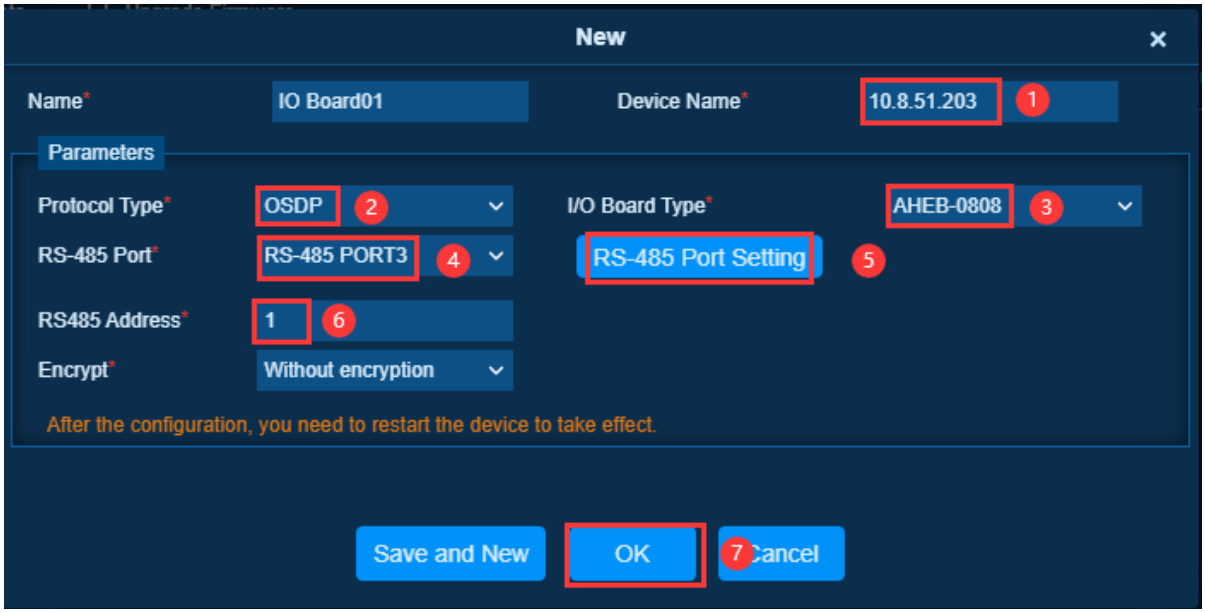


3.6. Adding I/O Boards

1. Click on **[Elevator]** > **[Elevator Settings]** > **[I/O Board]** > **[New]** to begin adding I/O Boards.



2. In the [New] page, name the I/O board and select the target controller.
3. After configuring the parameters, click **[OK]** to save and exit.

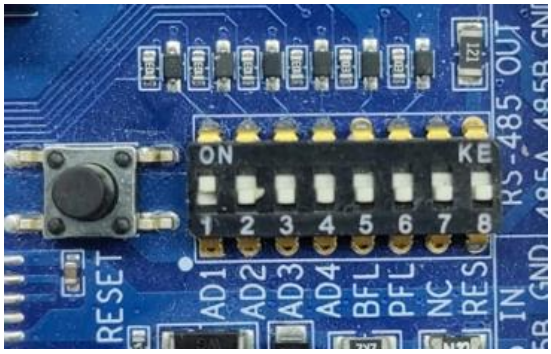


The key field description is as follows:

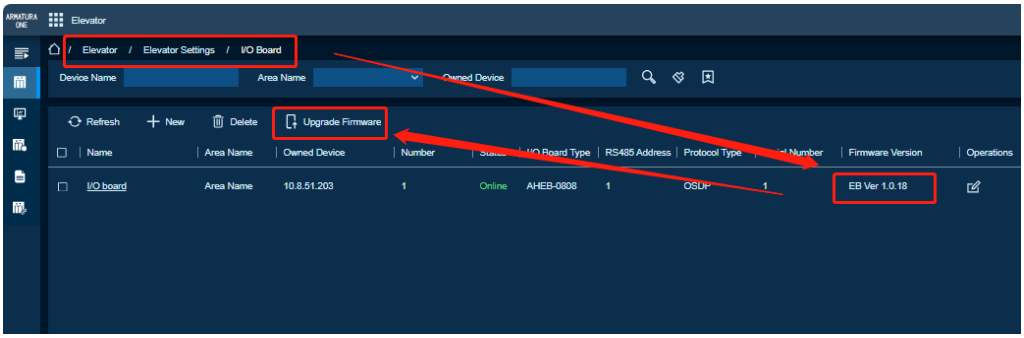
1) ***[Protocol Type]:*** *Select* ***[OSDP].***
2) ***[I/O Board Type]:*** *Please select according to the actual model of the I/O board.*
3) ***[RS-485 Port]:*** *Please select based on the actual wiring ports of the I/O board.*
4) ***[RS-485 Port Setting]:*** *Please change the baudrate of the port connecting to the I/O board to 115200.*

5) ***[RS-485 Address]:*** *Please fill in according to the DIP*

6) *switches on the I/O board. The DIP switches are in binary format, read from left to right.*



7) *Please ensure that your I/O board's firmware is at least* ***version 1.0.18*** *to support the elevator control function. If the current version is below this requirement, please contact your local branch or the headquarters' technical support for assistance.*



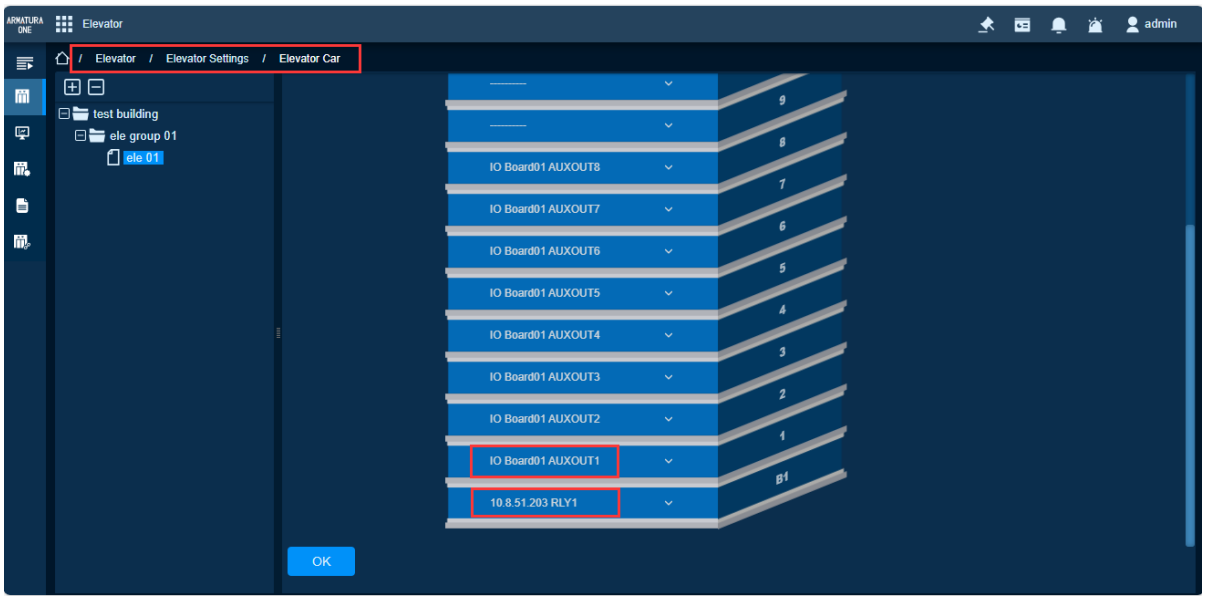
3.7. Modifying Auxiliary Output Points for Floor Assignment

1. After successfully adding the elevator controller and I/O boards and bringing them online, the system will automatically assign all auxiliary output points to the respective floors.
2. You can navigate to the **[Elevator] > [Elevator Settings] > [Elevator Car]** page, and based on the actual wiring, click the icon on the right side of the floor to modify it to the correct auxiliary output point.

Note：

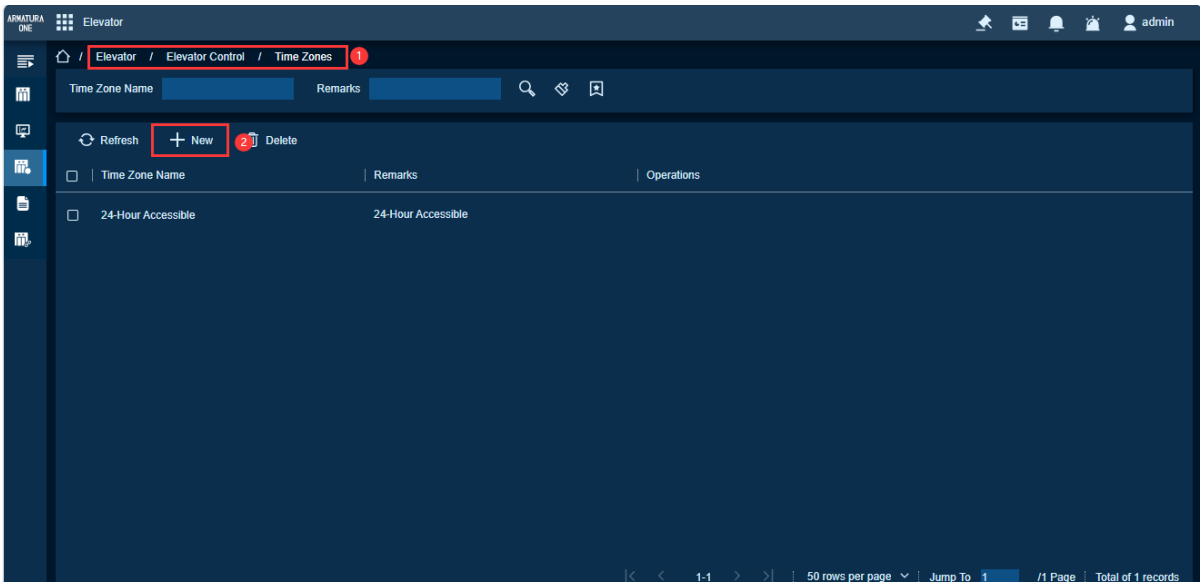
1) The I/O board uses auxiliary output ports to connect to the elevator's button signal lines.

*2) the controller connects to the elevator's button signal line using relay ports instead of auxiliary outputs. The controller must be running the MCU firmware **version 6.3.2.5** or higher to utilize the onboard relay for floor control. If the controller is not updated to this version, floor control must be achieved through the auxiliary outputs of the I/O board. Should you require assistance, please contact the headquarters for technical support.*

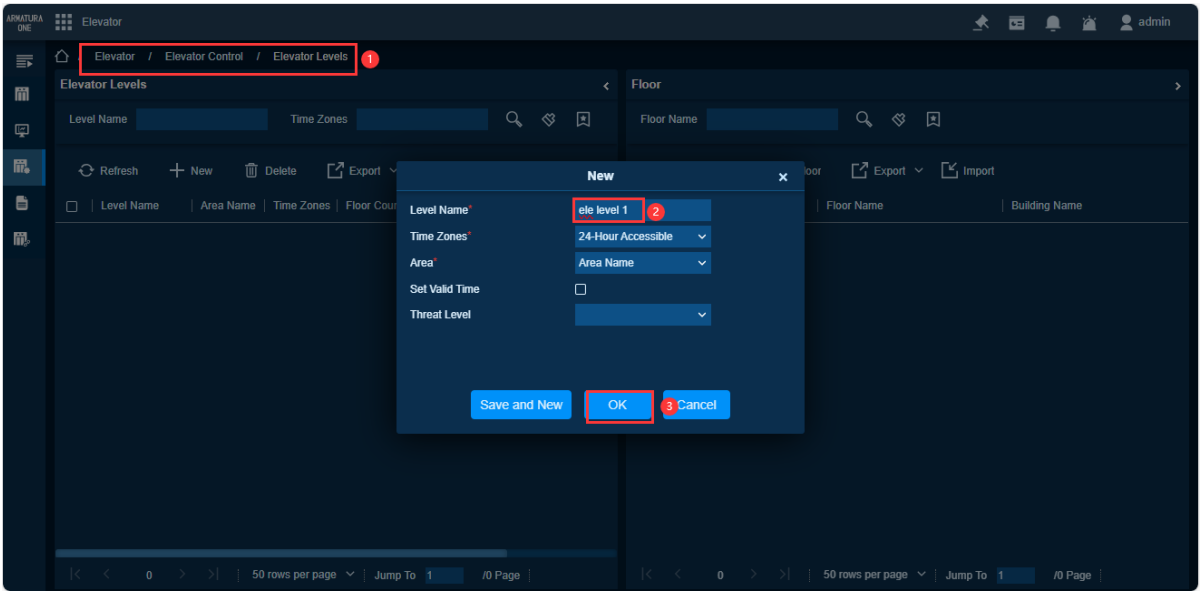


3.8. Adding Time Zones and Elevator Levels

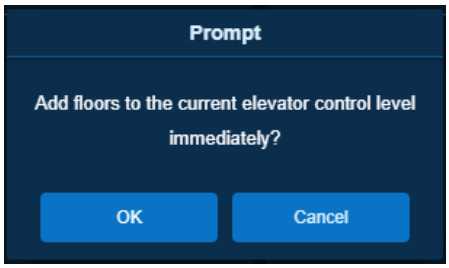
1. The system already has a default time zone named **[24-hour Accessible]** that can be used directly.
2. You can add new time zones according to your needs.



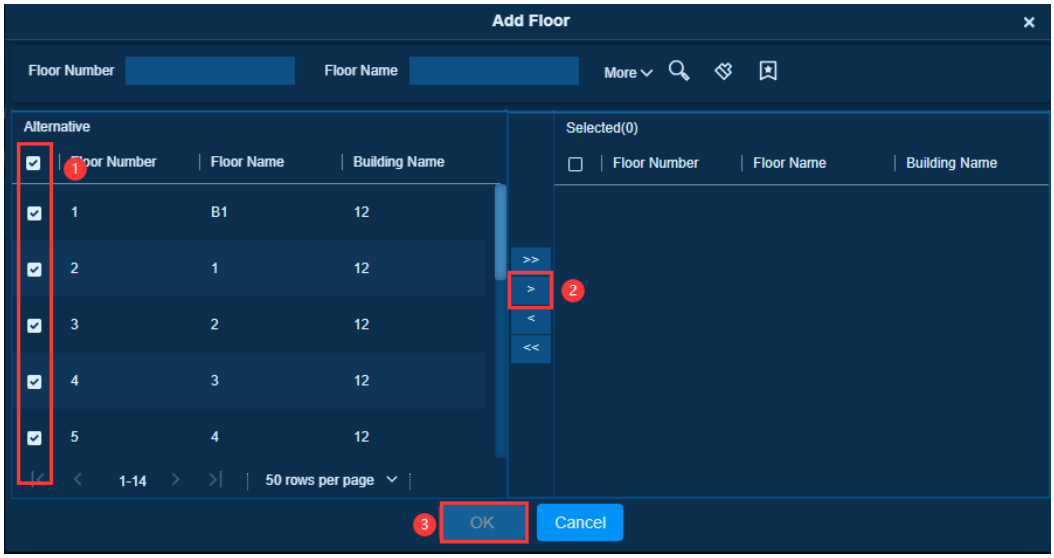
3. Click **[Elevator]** > **[Elevator Control]** > **[Elevator Levels]**] > **[New]** to add an elevator level.
4. In the pop-up window, name the elevator level, select the area, and perform other operations.
5. Click the **[OK]** button to save and exit.



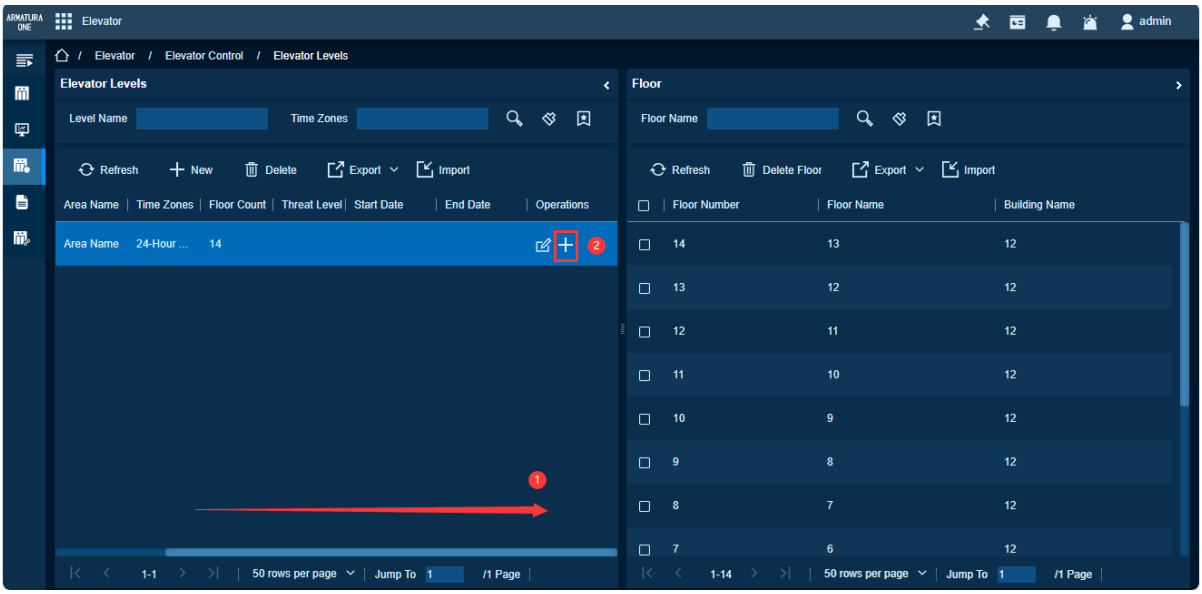
6. After adding the elevator level, the system will display the following prompt.
7. Click the [**OK**] button to continue.



8. Select the floors you want to add to this level by checking the appropriate boxes, then click the > button to add them.
9. Finally, click the **[OK]** button to exit and save.

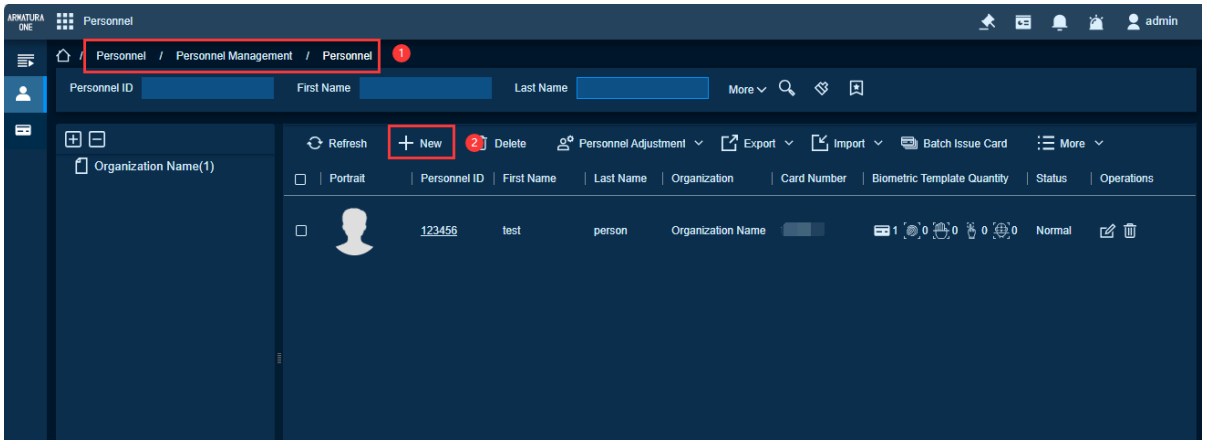


10. If you missed this prompt, you could drag the scrollbar to the far right on the **[Elevator Levels]** page and then click the + button to re-enter the page.



3.9. Adding Personnel and Setting Elevator Control

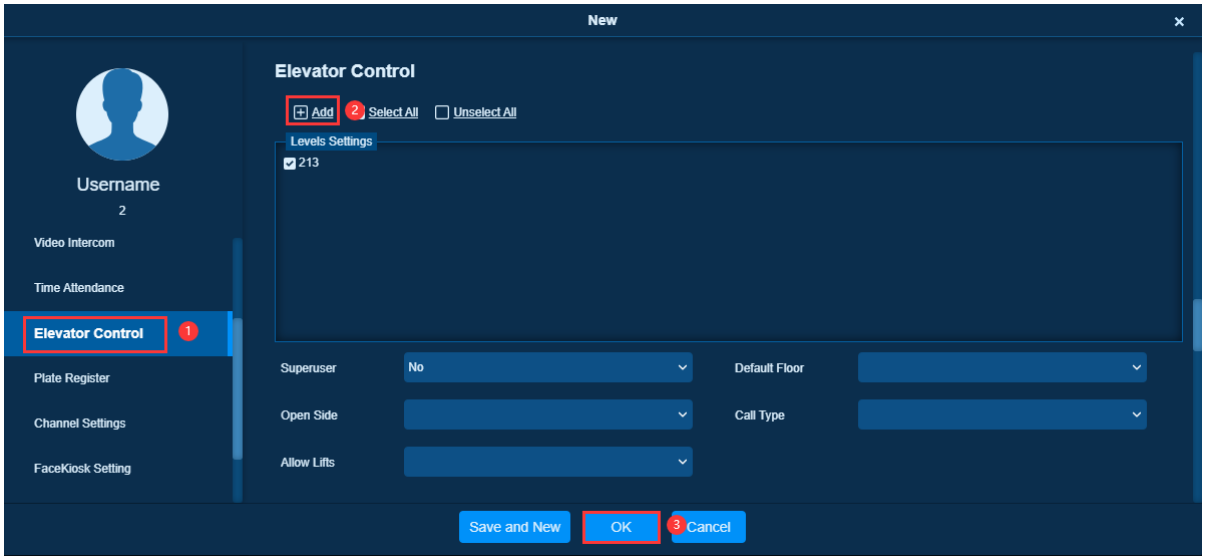
1. On the **[Personnel] > [Personnel Management] > [Personnel]** page, click the **[New]** button to add new personnel.



2. In the newly opened page, start by filling out the basic information of the person.
3. Then, scroll down to the section labeled **[Elevator Control]** and click the **[Add]** button to assign the appropriate permissions to the person.
4. Once done, click the **[OK]** button to save the settings and exit.

Note:

1) ***[Superuser]:*** *Hold the authority to access every floor.*
2) ***[Default Floor]:*** *Only one default flood is available for one building. Only AHEB-1616 or DCS elevators support this feature; AHEB-0808 and AHEB-1602 do not support this feature.*
3) ***[Open Side]:*** *Do not operate, only DCS elevators support this feature.*
4) ***[Call Type]:*** *Do not operate, only DCS elevators support this feature.*
5) ***[Allow Lifts]:*** *Do not operate, only DCS elevators support this feature.*

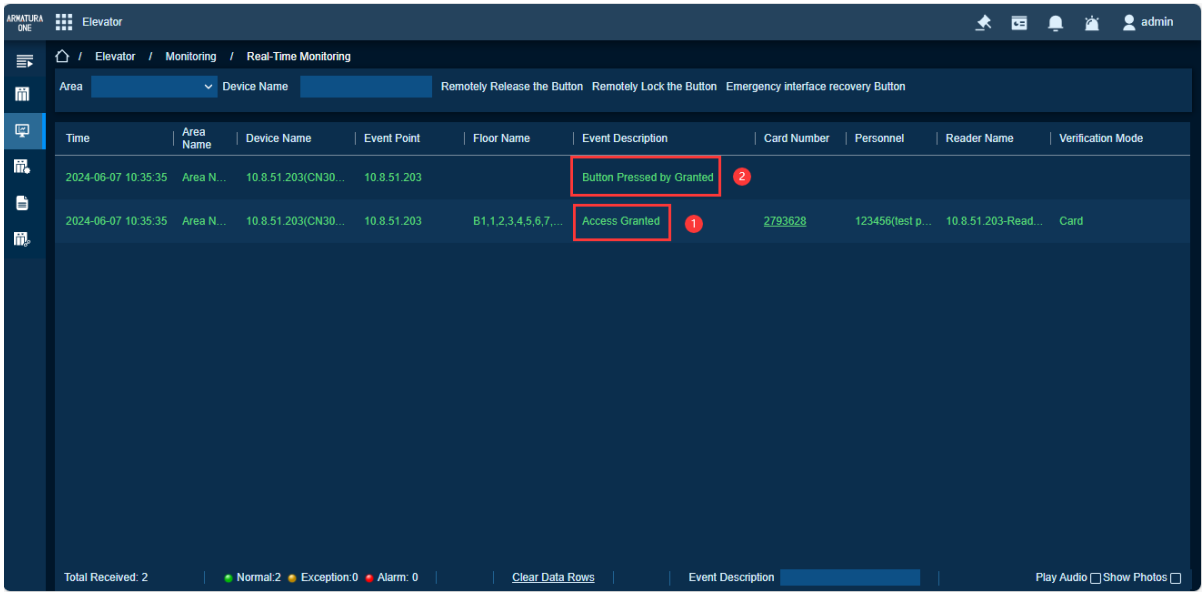


4. Verifying Elevator Control

1. After completing the steps above, you can use a card on the reader connected to the elevator controller for verification.
2. Once verified, the elevator system will illuminate the buttons for the floors the user has access to.
3. The software will then receive an event record **[Access Granted]** in **[Elevator] > [Monitoring] > [Real-Time Monitoring].**
4. When the user presses the button for a target floor, the software will receive another event record **[Button Pressed by Granted].**

Note:

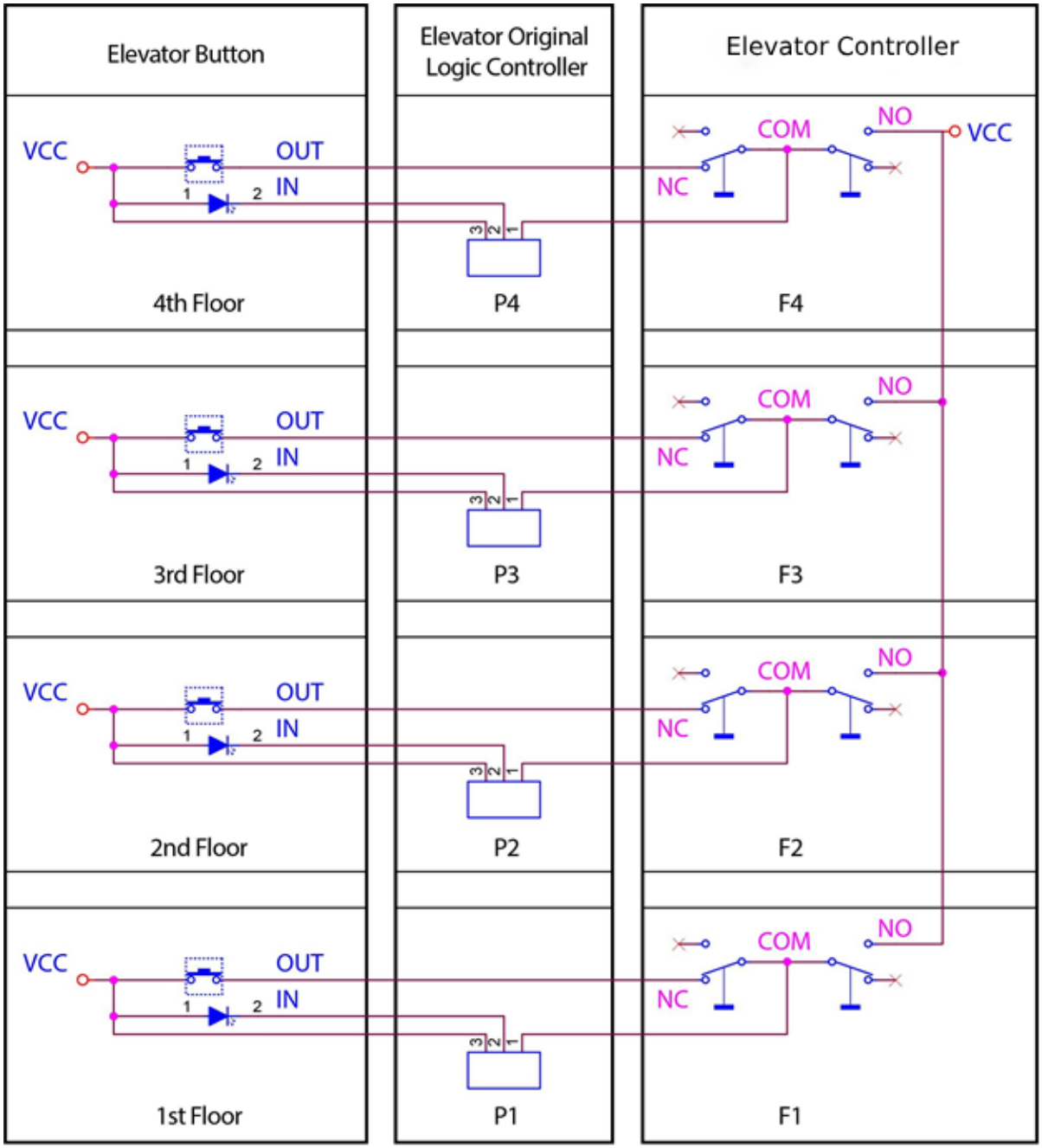
1) The record **[Button Pressed by Granted]** can only be accurately captured when using the AHEB-1616 I/O board.



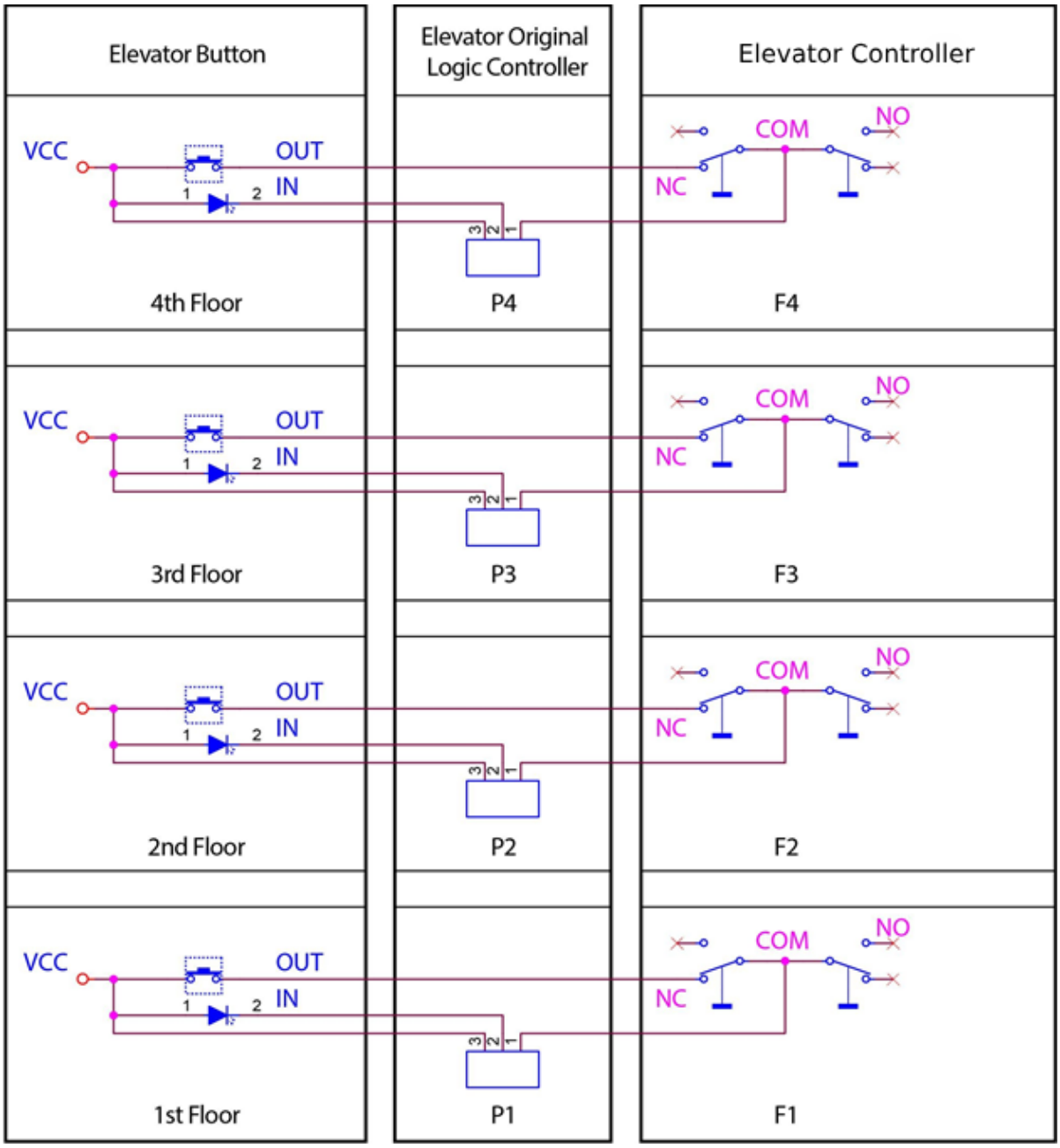
5. Appendix 1 Elevator Control and Elevator Button Wiring

5.1. Method 1 Common Anode Button Connection

1. Supports for floor selection and direct floor selection.



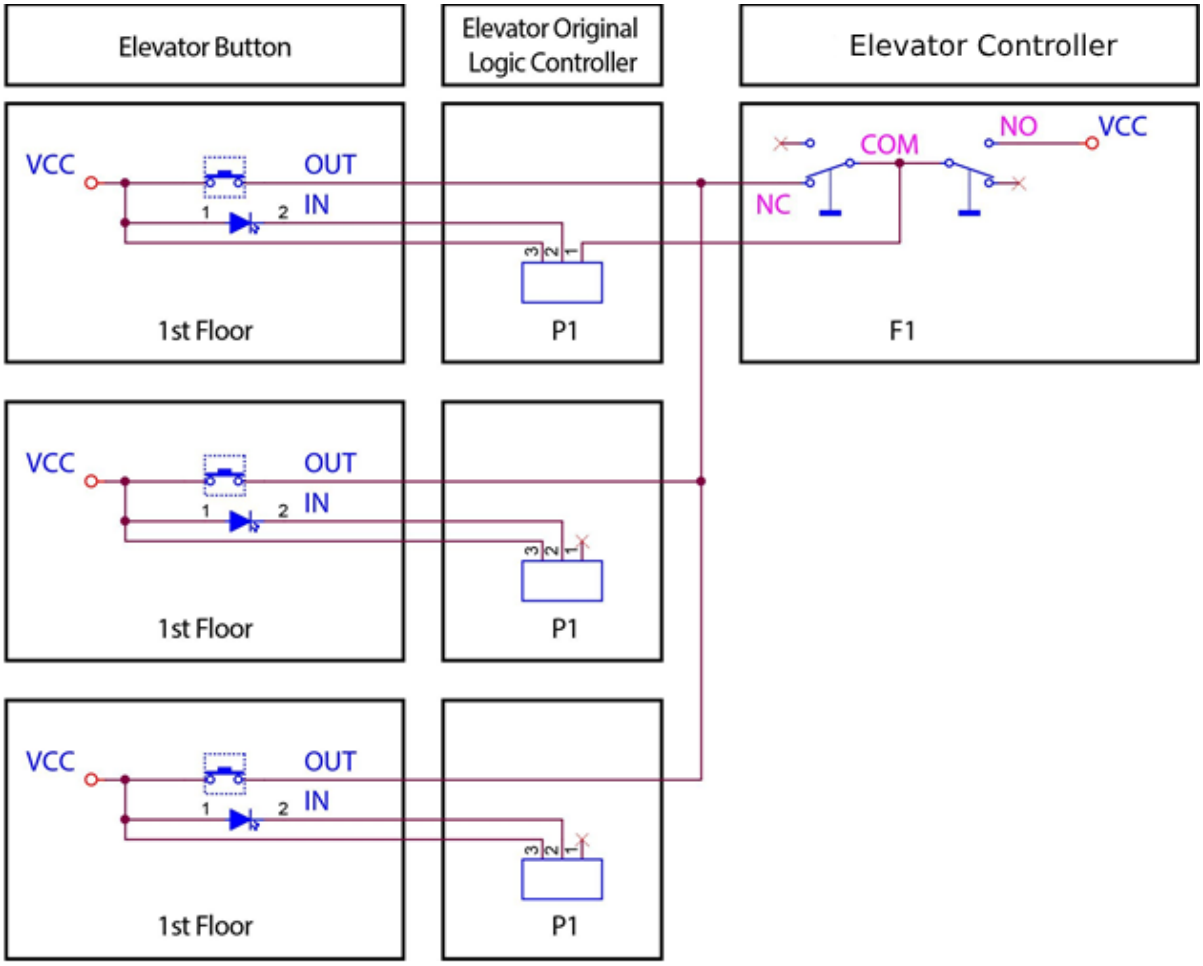
2. Supports floor selection only.



3. Wiring method when there are multiple identical buttons on the same floor.

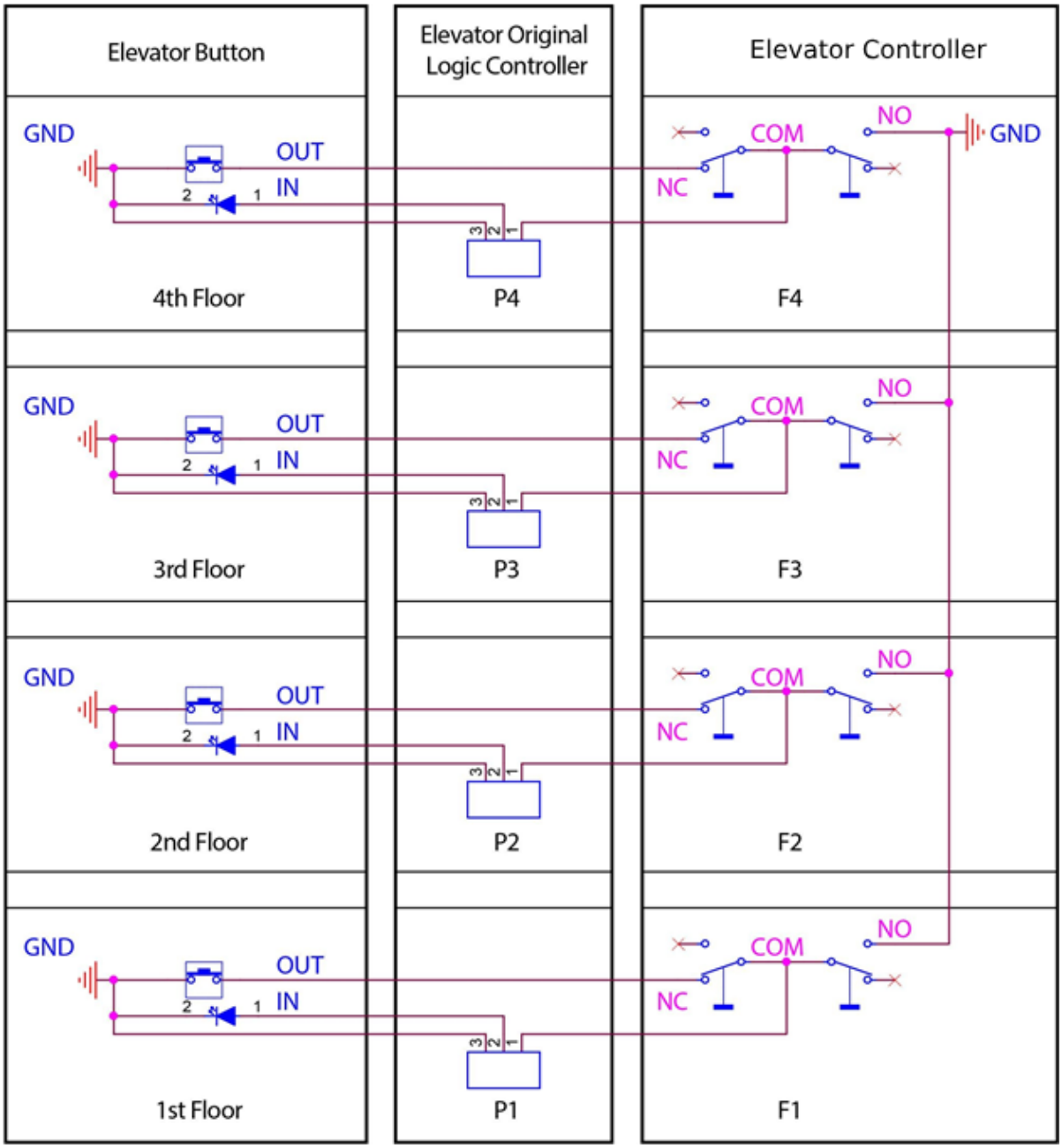
Note：

1) The following figure shows the wiring method for an elevator with three button boards, and this connection method avoids button cancellation exceptions.

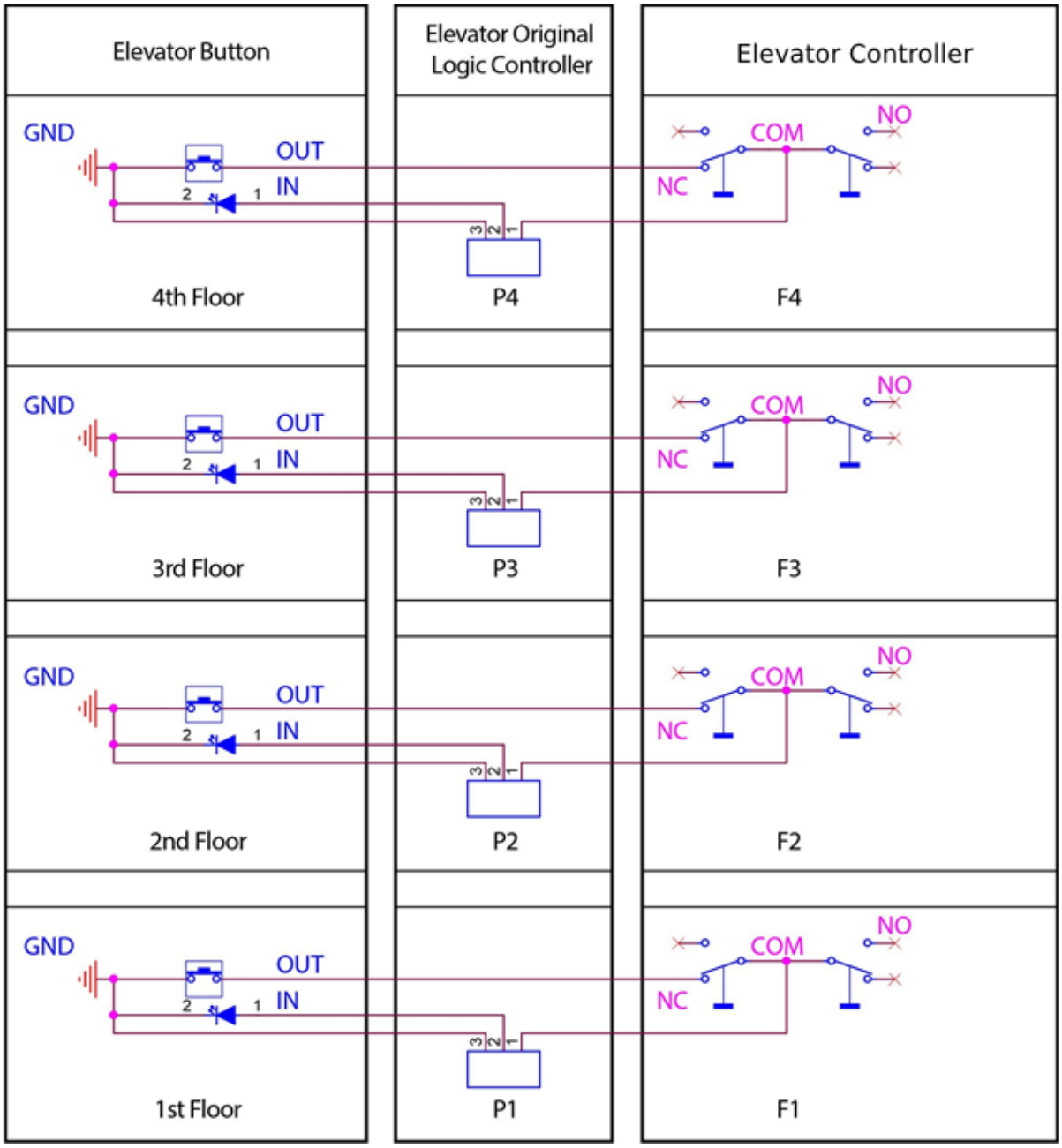


5.2. Method 2 Common Cathode Button Connection

1. Supports for floor selection and direct floor selection.



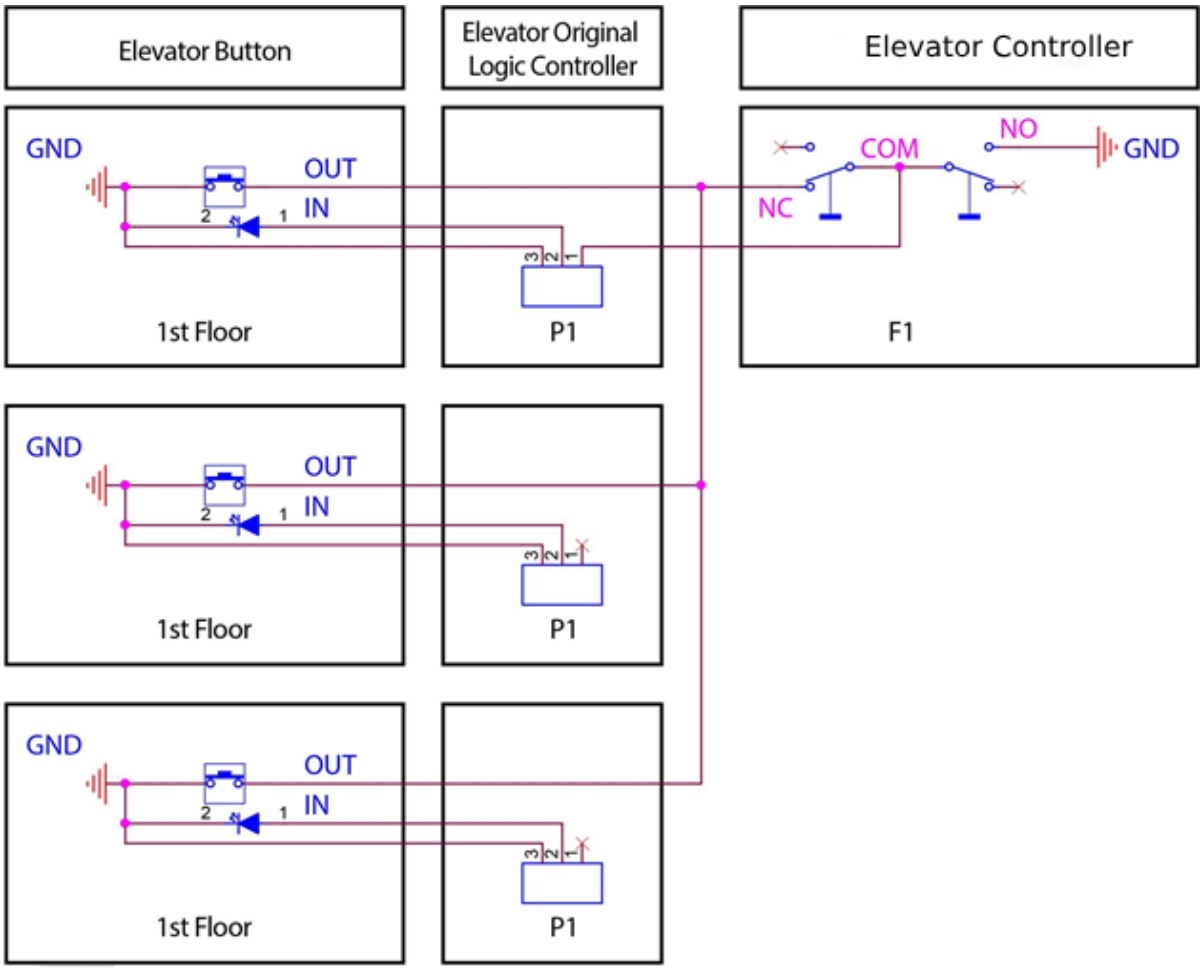
2. Supports for floor selection and direct floor selection.



3. Wiring method when there are multiple identical buttons on the same floor.

Note：

2) The following figure shows the wiring method for an elevator with three button boards, and this connection method avoids button cancellation exceptions.



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