Integrating Paxton10 with elevator control systems

Overview

Generally, the best implementation of access control is to secure the doors that lead to and from the elevator floor lobby. This is the simplest method to integrate and by simply restricting access to the elevator lobby, would allow a top level of access to the lobby and therefore the elevators.
In certain building scenarios, this may not be possible and there may be a need for more granular levels of user access to the building's elevators.

Elevator call button control

Treat the elevator door as if it were a normal office door. In its simplest form, this restricts those people allowed to call the elevator and therefore use it to visit other floors.
The call button on each floor can be replaced by a Paxton10 reader. The Paxton10 controller will check the token or PIN for validity and then close the relay to simulate the original call button.

Configuration

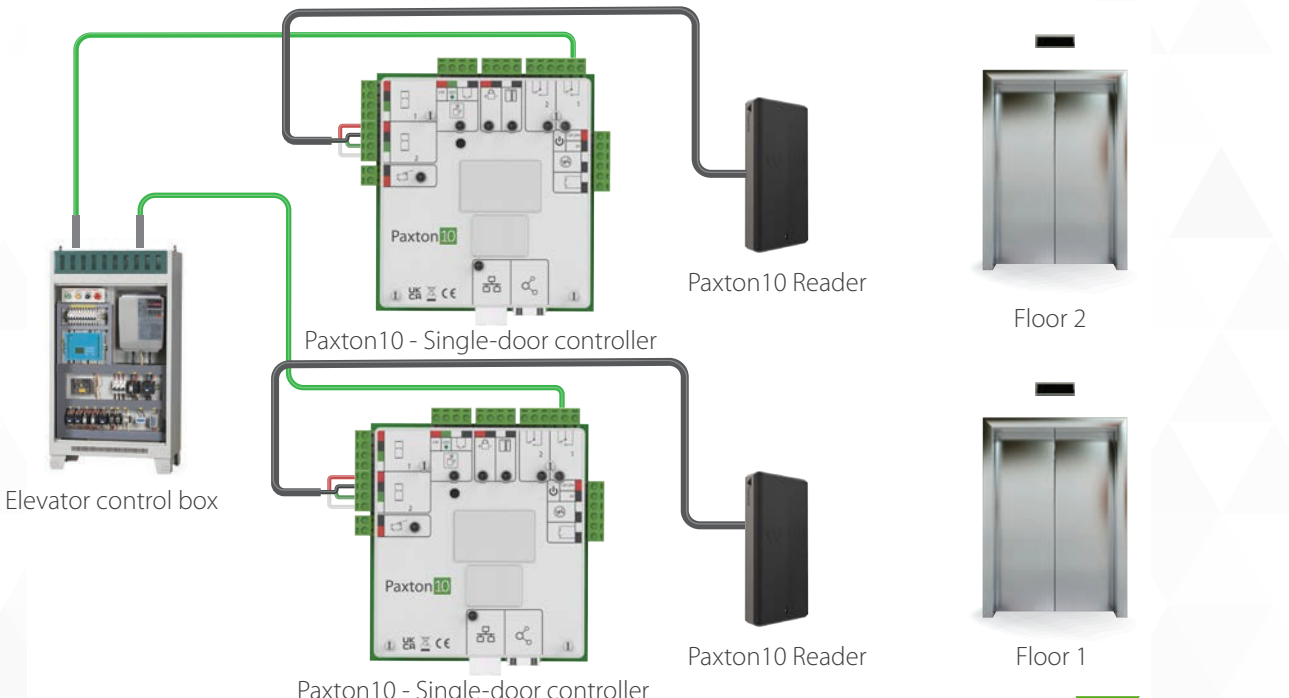
Replace the call button on each floor with a Paxton10 reader, then wire a Paxton10 relay to each associated floor call control input, into the elevator control box.

For the simplest installation, use one Paxton10 controller per elevator floor, wiring a Paxton10 reader to Reader port 1 and the floor's call control input to Relay 2.

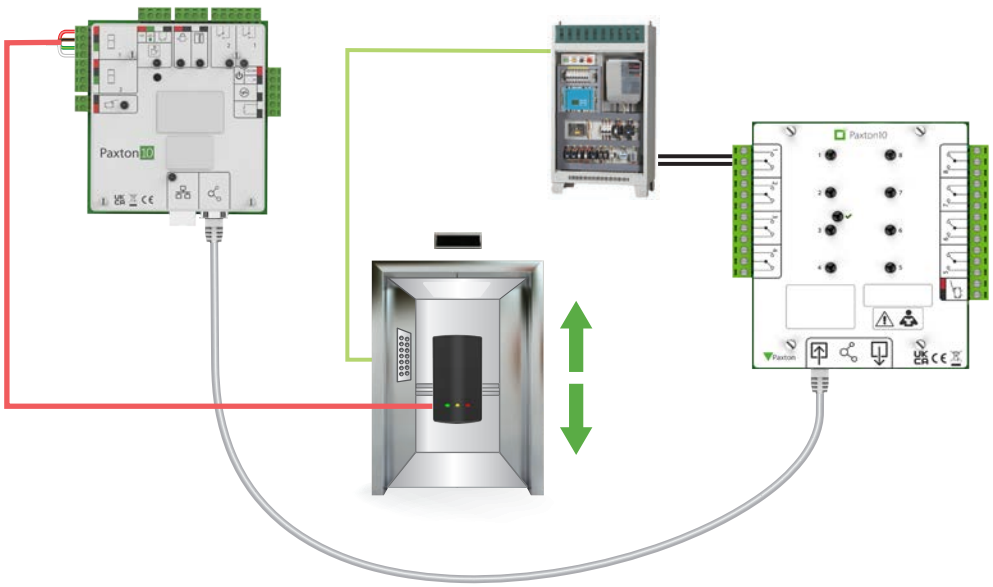
In the Paxton10 software:

1. In **'Devices'**, locate a controller in the Device Panel (right-hand side) that is being used for the elevator
2. Click and drag the **'Door'** component into the main area to create a new device
3. Give the device a name (e.g. Office Elevator – Floor 2)
4. Set the **'Door open time'** to 1 second
5. Click **'Create'**
6. Repeat the above steps for each elevator floor

The elevator doors are now set up. Give users Building permissions to the doors as you do other devices to control who has access at each floor.



Alternatively, where additional relay capacity is required, Paxton10 I/O Connectors can be used to control multiple elevator floors from a single controller.

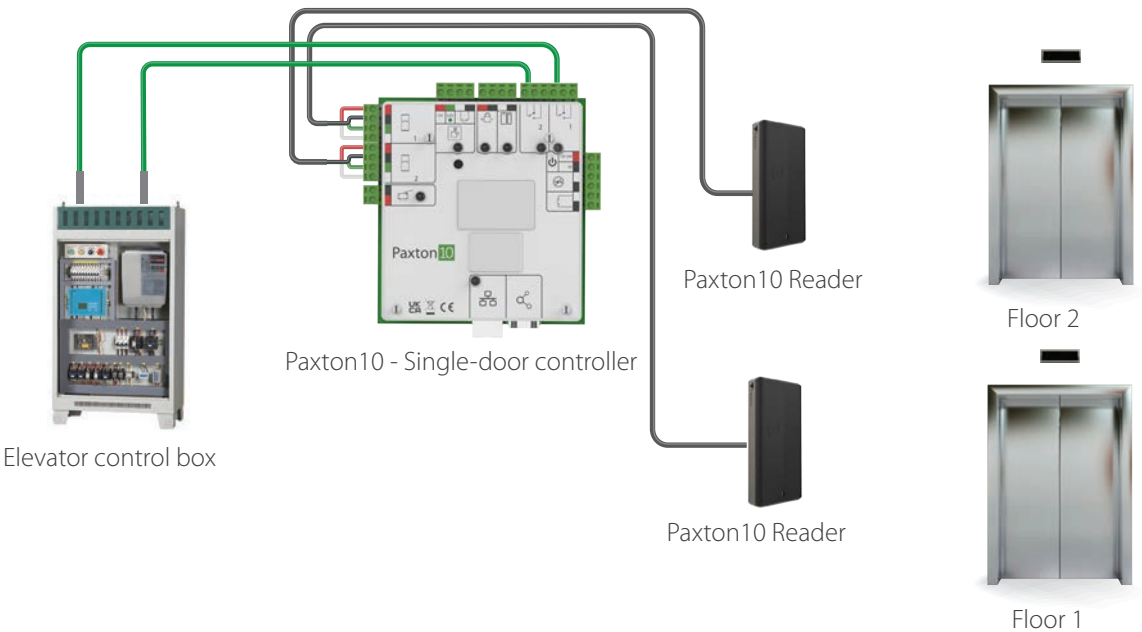


Paxton10 I/O Connectors provide a scalable method of implementing elevator floor button control where a large number of floors or outputs are required.
Instead of relying solely on the relays available on Paxton10 door controllers, additional relays can be provided using Paxton10 I/O Connectors. Each relay output can be wired to an individual elevator floor button input within the elevator control panel, allowing Paxton10 to selectively enable floor buttons after a valid credential is presented.

This approach is particularly beneficial in:

- Multi-story buildings requiring a large number of controlled floors
- Installations where multiple elevators require centralized control
- Projects where minimizing the number of door controllers is desirable
- Sites requiring future expansion of elevator control outputs:

1. In the '**Devices'** section, locate your controllers in the Device Panel, then click on the gray link icon next to each to bind the controllers to your system (the link icon will turn green)
2. Select '**Add new**' from the ribbon (top of screen), then select '**Device**' > '**Access point**' > '**Door**' to create a new door. Repeat this to create a door for each of your elevator floors
3. Select '**Manage hardware**' from the ribbon (top of screen), select the '**Door**' component from one of your controllers, and click '**View**'. Paxton10 will display the peripherals that each controller has available
4. Click '**Select**' next to a relay or reader that is being used, then select a door that you have just created in the software. Repeat this for each relay and reader, mapping them to your newly created doors
5. Navigate to each door (in the software), in the Configuration, set the '**Door open time**' to 1 second, and in the Installation tab set the mapped relay to be 'Lock' and the reader to be '**Entry reader'**



Elevator floor button control

This method gives the most control and will cover most situations.

The user has free access to the elevator but must present a token or PIN to the reader inside the elevator before any of the restricted floor buttons are available.

The reader requires a protected reader cable running to the Paxton10 controller (Max 100 meters). The Paxton10 controller then determines whose token has been presented and initiates any matching T&A rules.

A relay output is required for each floor button being controlled. Relay outputs can be provided by Paxton10 controllers, Paxton10 I/O Connectors, or Paxton10 Output Connectors. As one rule can activate more than one relay at the same time, a user will be given a choice of floor buttons available depending on the rule programming.

If the elevator access is in a public area, then a combination of call and floor button methods may be desirable.

Configuration

This method uses Trigger and Action rules to restrict access to a custom selection of floors.
A Paxton10 reader should be installed inside the elevator, and each floor button enabled through a relay output from a Paxton10 controller, I/O Connector, or Output Connector.

In the Paxton10 software:

1. In **'Devices'**, locate your connector in the Device Panel (right-hand side)
2. Click and drag a relay component into the main area to create a new device
3. Give the device a name (e.g. Office Elevator – Floor 2)
4. Select '**Switchable device**' as the device type
5. Click **'Create'**

Repeat the above steps for each elevator floor you are restricting.

6. In '**Devices**', locate your controller in the Device Panel (right hand side) which contains your elevator reader
7. Click and drag the Door component into the main area to create a new device
8. Give the device a name (e.g. Reader – Office Lift)
9. Click '**Create**'
10. Give users Building permissions to the newly created Door device

The devices are now mapped and setup. Now create the Trigger and Action rules to define which users will have access to each floor.

Triggers and actions

Create a T&A (Trigger and Action) rule for the various floor button combinations required, giving them appropriate names.
E.g. Create one rule that gives managers access to floors 2 through 5, and create a second rule that gives cleaners access to floors 1 through 3.

For each T&A rule, create the trigger of presenting a credential to the reader.

1. Set a Trigger type of '**Reader**', and a Trigger of '**Valid credential read**'
2. Give the trigger a name
3. Select the door device created above (the device which contains the elevator reader)
4. Select the people that will be given access to the floors defined in this rule
5. Define a time schedule that this rule will apply for

For each T&A rule, create the action of enabling the selection of floor buttons.

6. Set an Action type of 'Output', and an Action of 'Switch on device'
7. Give the action a name
8. Select the elevator floor devices created above that you want this rule to allow access to
9. Under 'turn on device for', select 'Custom time' and enter the time that the elevator buttons will be enabled for after presentation of a valid credential

Repeat the above for each T&A rule, selecting various combinations of people and the buttons to enable. Add people to multiple rules to give them access to the floors from each rule.

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