NAYAR

BVA

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Nayar Systems

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1. Manufacturer note

This manual describes **good practices** recommended by Nayar Systems S.L., in order to ensure an optimal performance in safe conditions. Any improper manipulation, damage caused during the installation of the device and, in general, an incorrect use not explained in this document may void the warranty.

The device must be manipulated only by **qualified and skilled professionals** with specific technical knowledge to avoid a failure of the device due to inappropriate manipulation.

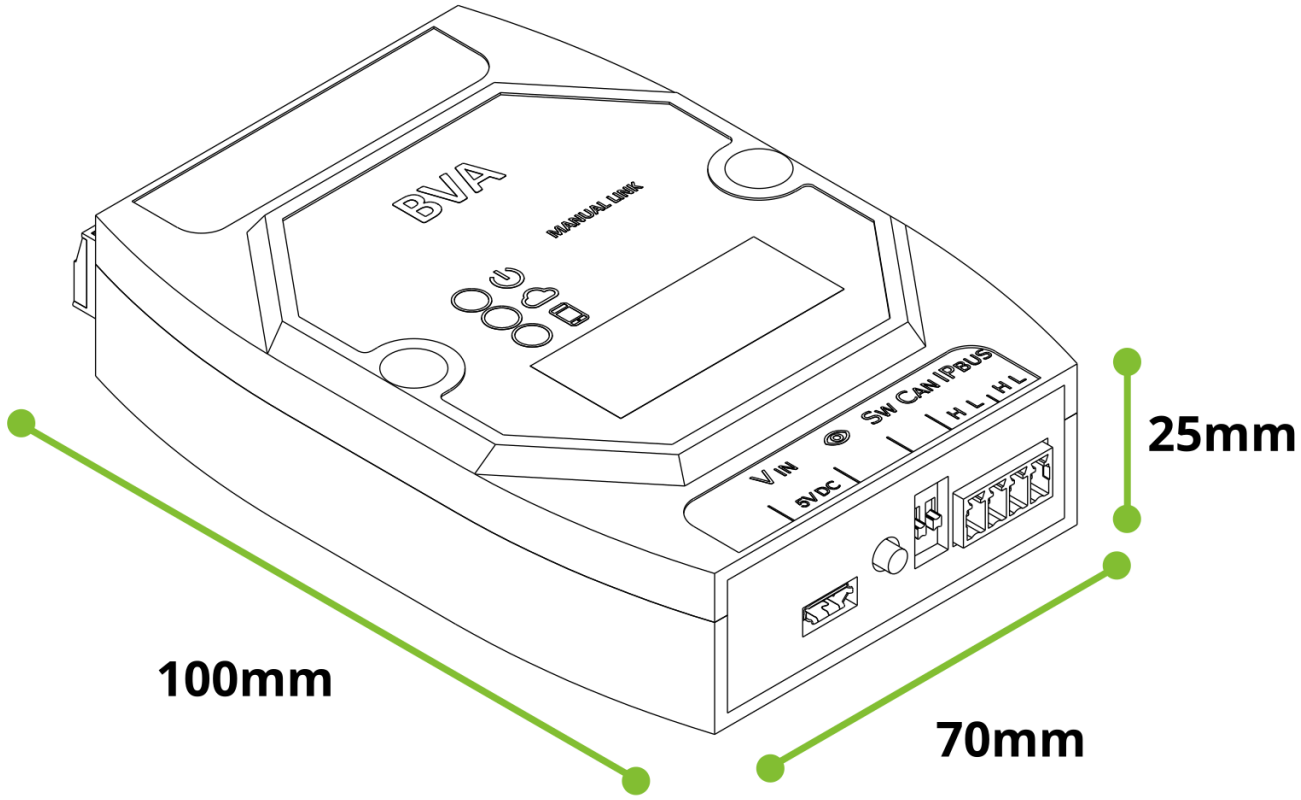
Nayar Systems S.L. is not responsible for damage as a result of ignoring the indications and recommendations included in this manual

The device must not be wet nor installed in **humid places**.

Optimal working **temperatures** are between -20ºC and 70ºC

2. Device description

The **Accessible Virtual Keypad** product (also known as **BVA**) is mainly designed to **remotely** activate buttons on the lift car operating panel through a Smartphone, avoiding its physical manipulation. Moreover, BVA helps universal accessibility of the lift through its **App**. The device can work with or without Internet connectivity. There are two versions of this product depending on the number of relays: **BVA 12 relays** and **BVA 2 relays**. BVA 12 relays is designed to be connected on buttons on lift car and BVA 2 relays, rear external buttons at each floor, even though both products may be swapped.



Electrical characteristics

DC-DC converter:

- Operating range: 7 – 50VDC
- Consumption: 70mA@20VDC

BVA:

- Operating range: 5VDC
- Consumption: 141mA@5VDC

Inside the box

- BVA
- Quick start guide
- DC-DC converter
- Pluggable Terminal Block 10 positions (only on BVA 12 relays)

- Pluggable Terminal Block 4 positions
- Wall bracket
- DIN RAIL Mounting clip
- 2x Screw

Technical specs and connections

- Internal PCB Antenna
- Wi-Fi: 2.4GHz, 802.11 b/g/n
- Wireless connection by proximity (radio link 2.4GHz)
- 2x Relay connections (BVA 2 relays)
- 12x Relay connections (BVA 12 relays)
- Type of contact: Normally open (NO)
- Maximum output current charge: 2A
- Maximum switching Voltage: 220 VDC, 250 VAC
- Operating range: -20 ~ 70ºC
- Dimensions (without complements): 100 × 70 × 25 mm

In order to install BVA devices, it is compulsory to check compatibility by consulting manufacturers device note and installation manual. Buttons or contacts must allow activation by a relay.

2.1. Status indicator LEDs

The BVA devices has three LEDs to indicate its status:

– **Power LED**
It shows whether the device is powered **ON** or **OFF**.

- Device powered OFF –
- Device powered ON –

– **Internet connectivity LED**
It shows whether the device has Internet **connectivity**. Internet connectivity is only required when configuring the BVA.

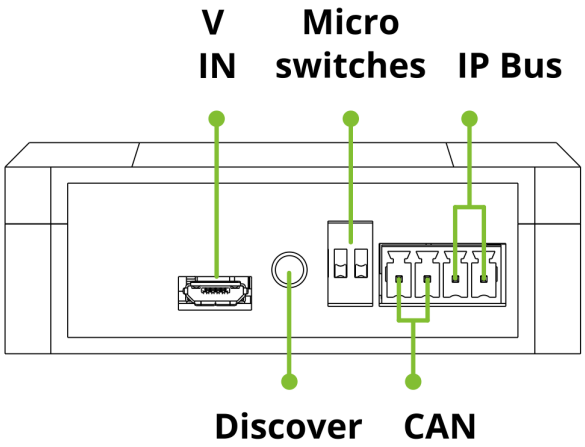
- Device without Internet connectivity –
- Device with Internet connectivity –

– **Active local connection LED**
It shows whether the device is **wireless** connected to a smartphone by **proximity (radio link of 2.4 GHz)**.

- Device without local connection –
- Device with local connection –

2.2. Device front panel

At the **front panel** of the device can be found the following information:



MicroUSB – VIN
Input for the **power supply**. So as to provide an input voltage of 5VDC through a microUSB connector, a DC-DC converter with the input range 7 – 50VDC is supplied.

Discover button
This button carries out two actions:

- **Linking the device to the App**: This action is fully explained on 3.- Configuration, installation and start-up.
- **Linking to a Wi-Fi network created by another Nayar Systems device**: For example, if there is a Nayar Switch installed, it is possible to connect to its Wi-Fi network, by pressing the Nayar Switch Discover button and then, the one of BVA.

SW
Two microswitches with the following functionalities:

1	Activation / deactivation of CAN terminating resistors
2	Activation / deactivation of IPBus terminating resistors

CAN (*) / IPBus (*)

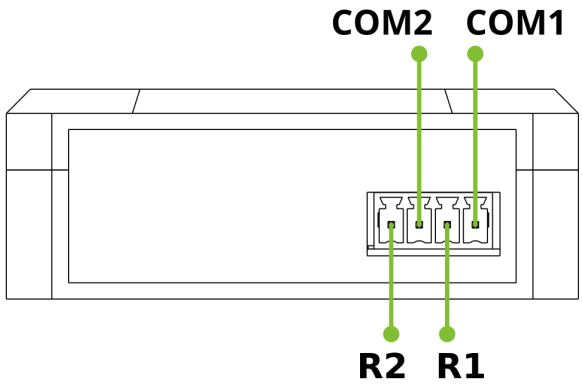
- **CAN H and L**: Reception of CAN frames from lift controller
- **IPBus H y L**: Processing IPBus frames to transmit data through two electrical wires.

(*) On current product versions, these functionalities are not available.

2.3. Device rear panel

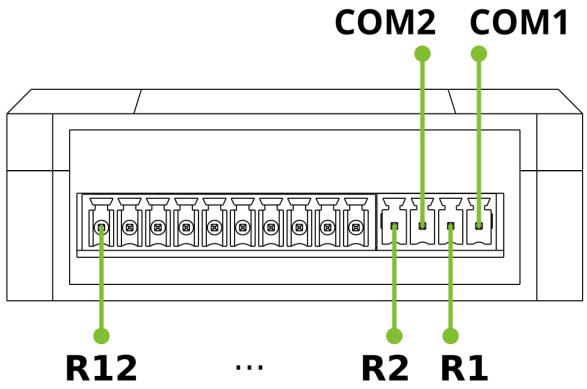
Rear panel distribution is different depending on the versions of the product chosen:

BVA 2 relays



4 position connector
4 position connector, including 2 relay connections (relay 1 and 2) and two independent common contacts.

BVA 12 relays



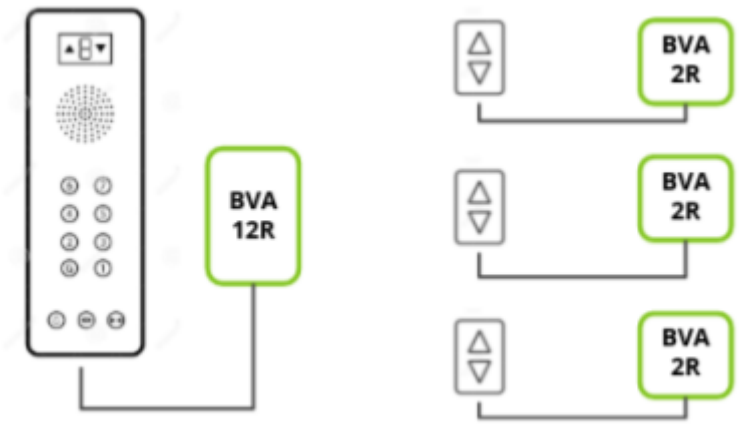
4 position connector
4 position connector, including 2 relay connections (relay 1 and 2) and two independent common contacts (COM1 and COM2). In such a way that COM1 contact corresponds to relay 1 and COM2, to relay 2.

10 position connector
10 position connector, which corresponds to relay connections (from relay 3 to 12). These connections share the same common contact COM2.

3. Configuration, installation and start-up

A complete installation with BVA devices requires the following elements:

- 1 Device per cabin: BVA 12 relays
- 1 Device per floor (compatible with 1 or 2 buttons): BVA 2 relays



In the following example the installation consists of 1 cabin and 3 floors, so the following elements are required:

- 1x BVA 12 relays
- 3x BVA 2 relays

Hereinafter, the procedure to optimally install BVA devices is described.

3.1. Installation of BVA

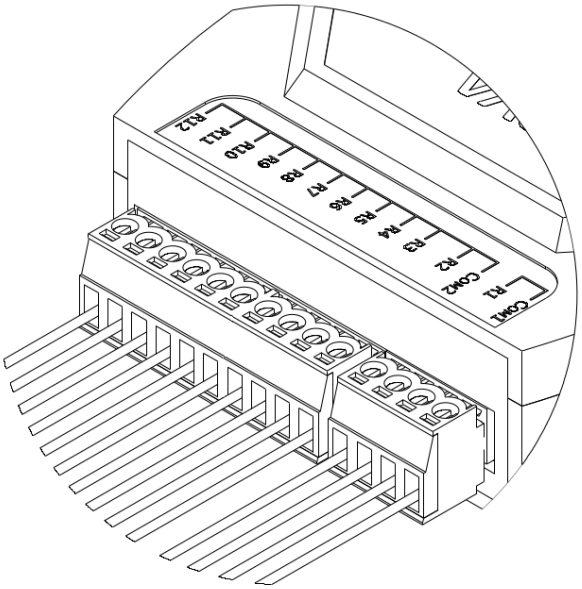
Installation of BVA devices must be implemented near buttons, to make its installation easier and to have good access to connectors from both sides. Moreover, it is highly recommended the installation of the devices at half of the height of the floor, in order to avoid any interference with any devices located at upper and/or lower floors.
Furthermore, switching off the power supply of the facility is recommended to be sure that the working environment is safe.
It may be necessary to disassemble the lift car operating panel or external buttons for accessing at its rear part, where the BVA device will be installed, in a way that the device will not be accessible by the user of the lift.

Recommended material

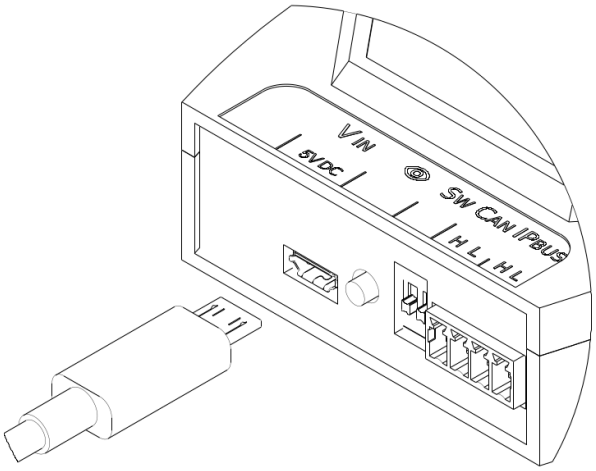
- Wire diameter: 28 – 16 AWG (0.5 – 1.5mm²)
- Ties (Optional)
- Screwdriver for screws of 5.3mm diameter head
- Drill with a 6mm diameter bit
- 6mm plastic straddling dowel

3.1.1. Installation of BVA 12 relays at lift car/s

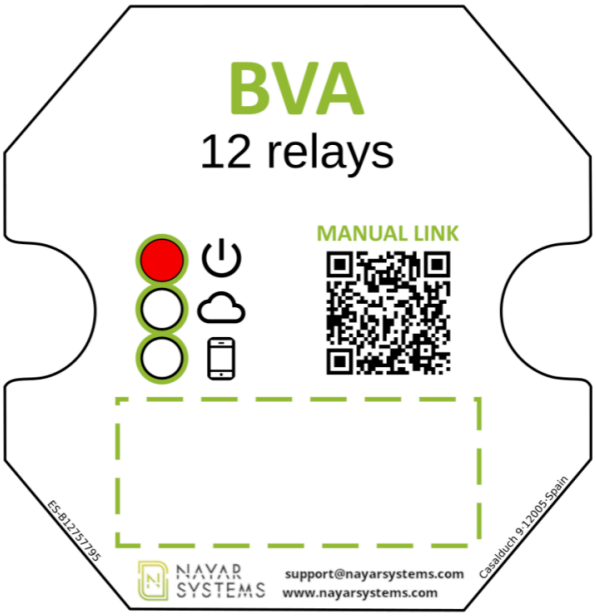
1. Identify the buttons and the wiring that activates each button and its common contact.
2. Prepare the necessary wiring for installing the device: power, relay connection and common contact wiring.
3. Identify the connection wires of buttons to the device, depending on relay configuration at *Net4Machines Smart Control* App. Relay 1 common contact is independent from that of relay 2.
4. Wire the corresponding contacts of the button to the pluggable terminal of 14 positions and connect to the BVA.



5. Prepare the wiring for the power supply of the device. For productos versions v3.0 and older, it is necessary to supply power to BVA thanks to a DC-DC converter with a type B microUSB connector. The converter must be connected to an electrical line with a voltage between 7 – 50 VDC. Plug the converter microUSB to the BVA.

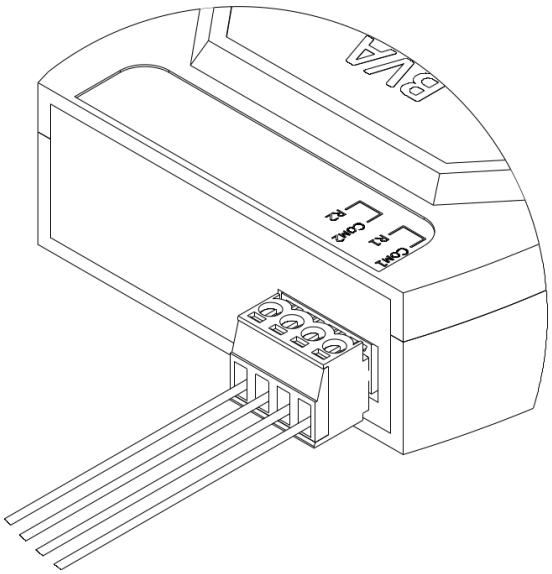


6. Place the device at an isolated location from water and humidity.
7. Use the complements supplied to fix the product if necessary.
8. Connect the power supply of the facility and check that the power LED is powered on.

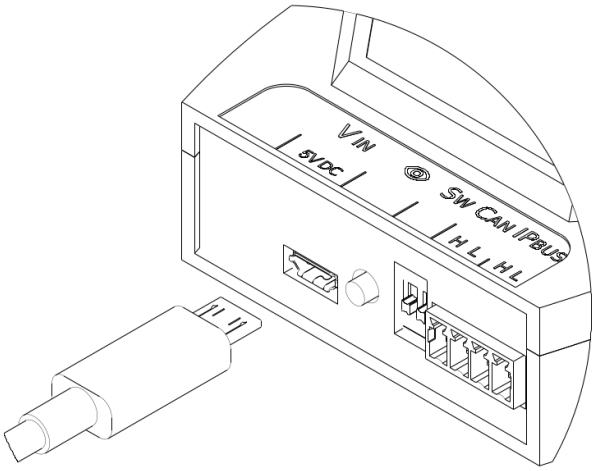

BVA
12 relays
MANUAL LINK
ES-B12757795
NAYAR SYSTEMS
support@nayarsystems.com
www.nayarsystems.com
Casalduch 9 12005 Spain

3.1.2. Installation of BVA 2 relays at lift stops

1. Identify the buttons and the wiring that activates each button and its common contact.
2. Prepare the necessary wiring for installing the device: power, relay connection and common contact wiring.
3. Identify the connection wires of buttons to the device, depending on relay configuration at *Net4Machines Smart Control* App. Relay 1 common contact is independent from that of relay 2.
4. Wire the corresponding contacts of the button to the pluggable terminal of 4 positions and connect to the BVA



5. Prepare the wiring for the power supply of the device. For productos versions v3.0 and older, it is necessary to supply power to BVA thanks to a DC-DC converter with a type B microUSB connector. The converter must be connected to an electrical line with a voltage between 7 – 50 VDC. Plug the converter microUSB to the BVA.



6. Place the device at an isolated location from water and humidity.
7. Use the complements supplied to fix the product if necessary.
8. Connect the power supply of the facility and check that the power LED is powered on.

BVA
2 relays
MANUAL LINK
ES-81757795
NAYAR SYSTEMS
support@nayarsystems.com
www.nayarsystems.com
Casalduch 9 12005 Spain

3.2. Configuration

It is highly recommended to configure the devices before installing them so as to assure Internet connectivity of the Smartphone. After configuring the BVAs, it is important to properly identify the devices with its location on the installation as well as the relays to be used in order to make easier its later installation.

Devices can be fully configured through the App Nayar Systems *Net4Machines Smart Control* and partially from the web platform. However, it is always necessary to complete the link the use of the App from a Smartphone. Moreover, an online environment is required to correctly apply the configuration of devices. BVA and Smartphone are connected through wireless connection by proximity using a 2.4GHz radio link.
Any later modification of configuration may be done presentially and on an online environment.

In order to access the Nayar Systems *Net4Machines Smart Control* App, it is compulsory to own the corresponding permissions. If you are a Nayar Systems client and are not in possession of your credentials, please contact: support@nayarsystems.com. If you are not a Nayar Systems client, there is a way of self-creating a user so as to configure the devices.

To log in on *Net4Machines Smart Control*:

- Web platform
- App:
  - Google Play
  - App Store

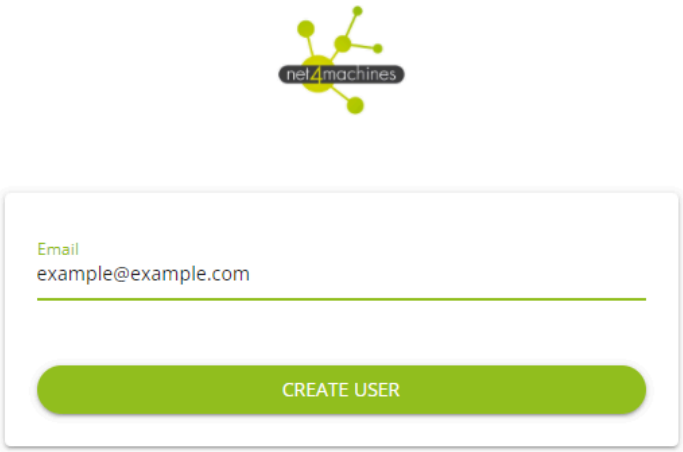
Configuration guide is based on the previous example concerning an installation with a single cabin and three floors.

3.2.1. Account Management

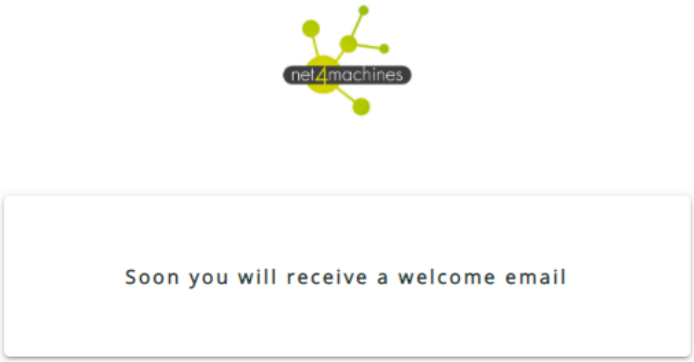
To configure BVA on the N4M platform (Net4Machines), it is necessary to create an account. Below are the steps that new users must follow.

1. Access the following link: https://sso.nayarsystems.com/#/sign-up

2. Enter your e-mail address which will later become your user and click on the **Create user** button.

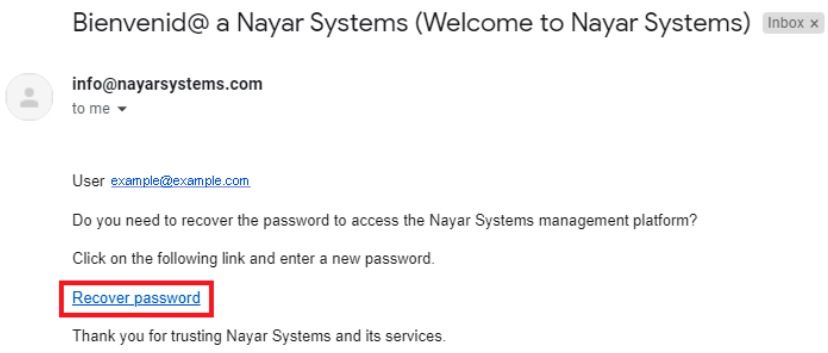


3. When you enter your e-mail address and click on this button, you will receive a welcome e-mail shortly.

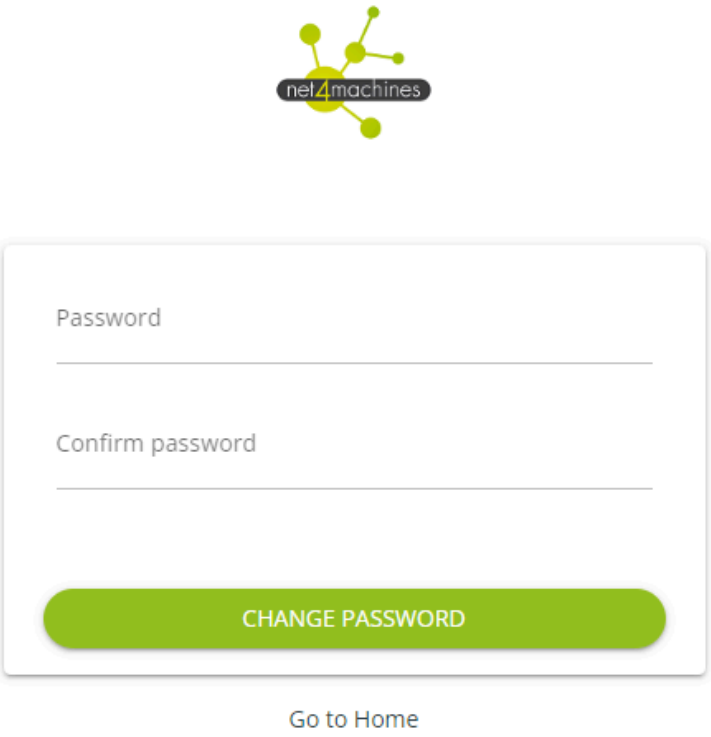


4. Then go to your inbox where you will receive an email from info@nayarsystems.com, if you do not see this email, please remember to check your SPAM / junk mail folders.

5. After opening the email, click on **Access manager** to manage the account password.



6. Enter and confirm the new password and click the **Change Password** button.



7. Finally, click on **Go to Home** to log in with your credentials.

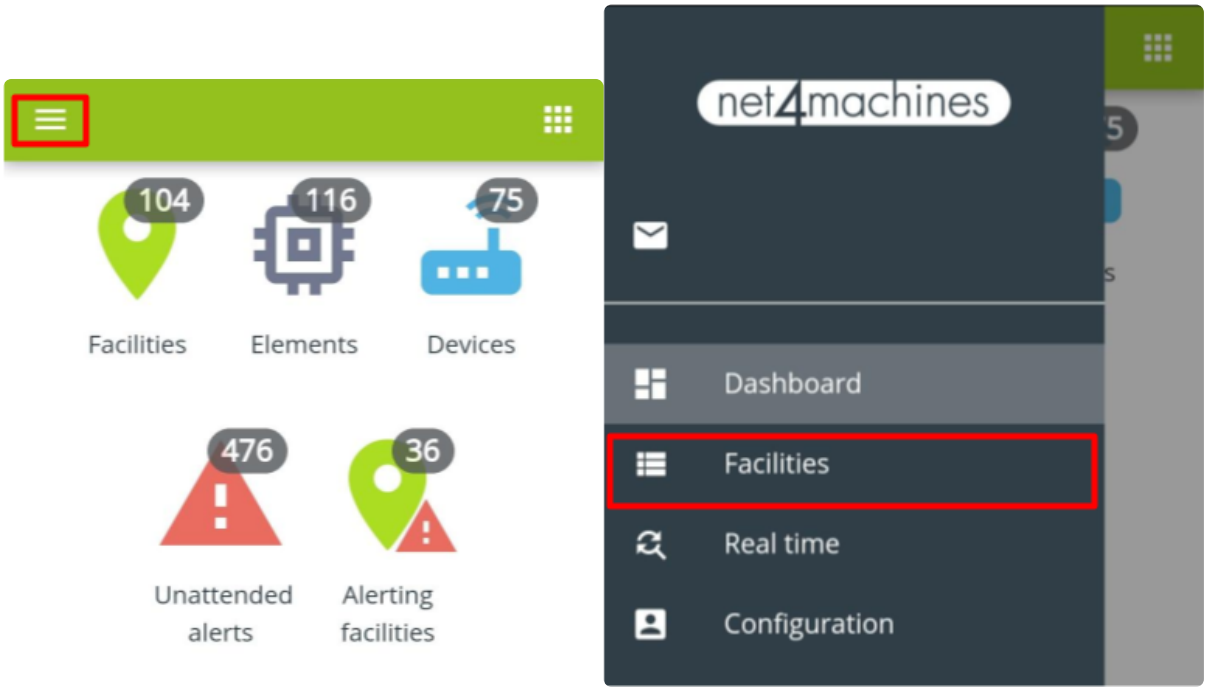
Done

Password has been changed successfully.

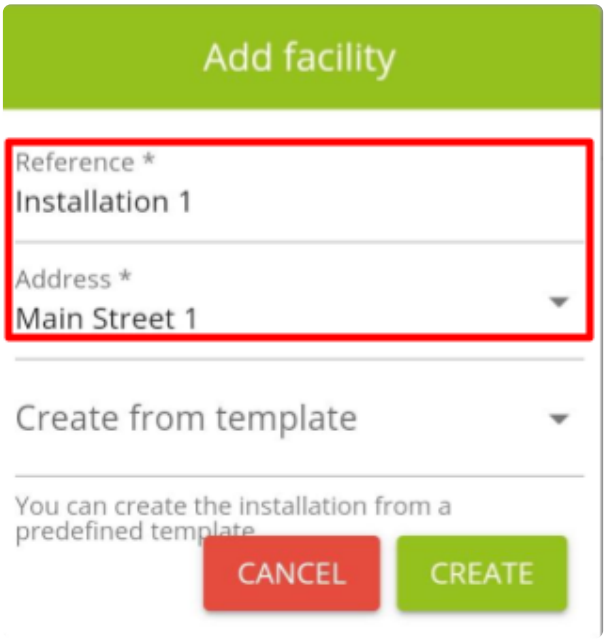
Go to Home

3.2.2. Creating new installation and adding BVA devices

1. Access into **Facilities** on the left side menu

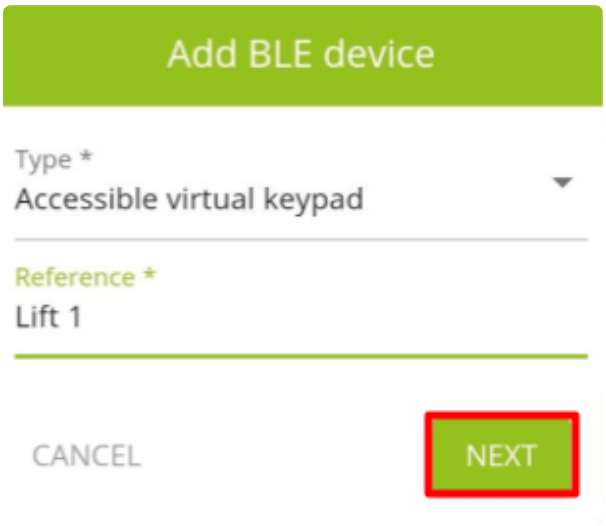


2. If there is an existing facility in which it is desired to configure BVA devices, please skip until the next step. Create an installation by clicking on the button located at the bottom on the right of the application. Hereinafter, it is necessary to complete the following information:

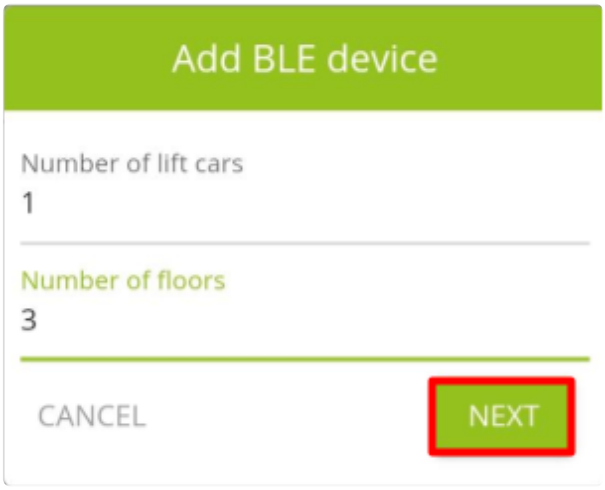


3. Add BVA devices at the desired installation following these instructions:

4. Complete the following information:
   - **Type**: Accessible Virtual Keypad
   - **Reference**: Reference given to the facility. It is recommended to give a descriptive name to the facility.

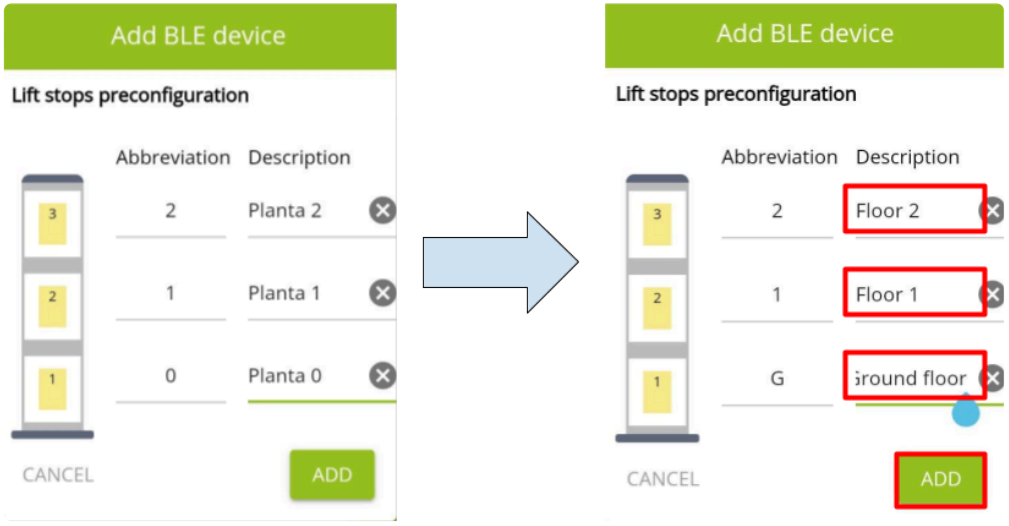


   Click on **NEXT**
5. Introduce the number of cabins and floors of the lift. It is necessary to include the total amount of floors, even though it is not planned to install a BVA device on external buttons.

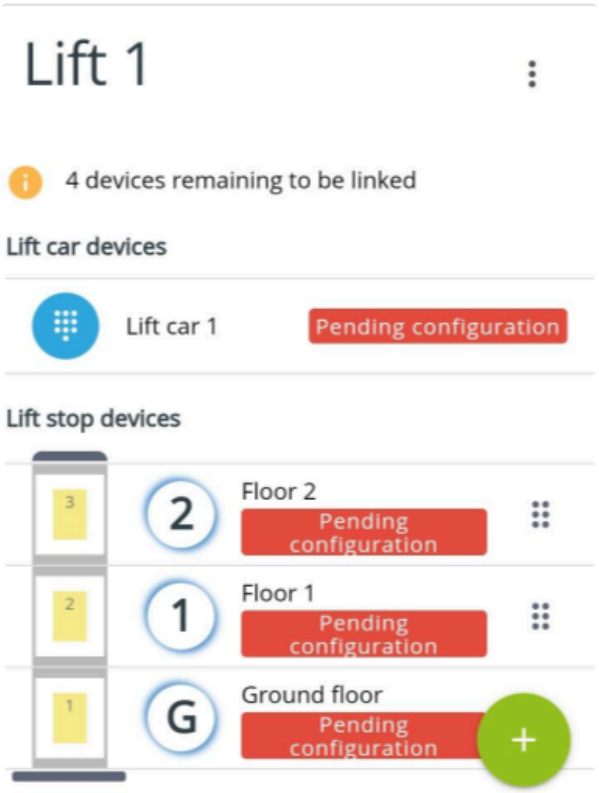


Click on **NEXT**

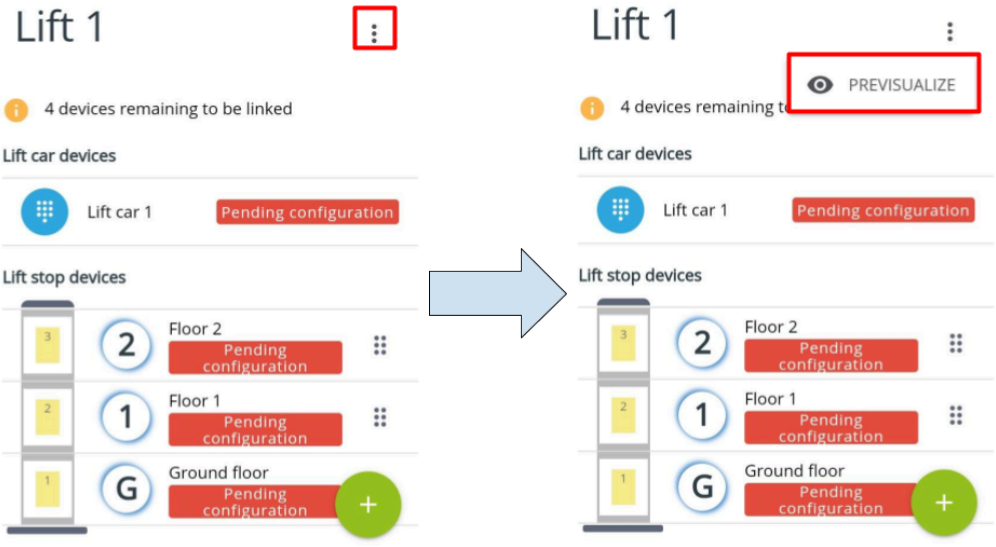
6. Check abbreviations, the name of each floor and modify them if necessary, so as to coincide with abbreviations on touchpad of the lift car (substituting “0” per “G”) and adding precise description of each floor (substituting “Floor 0” per “Ground Floor”).

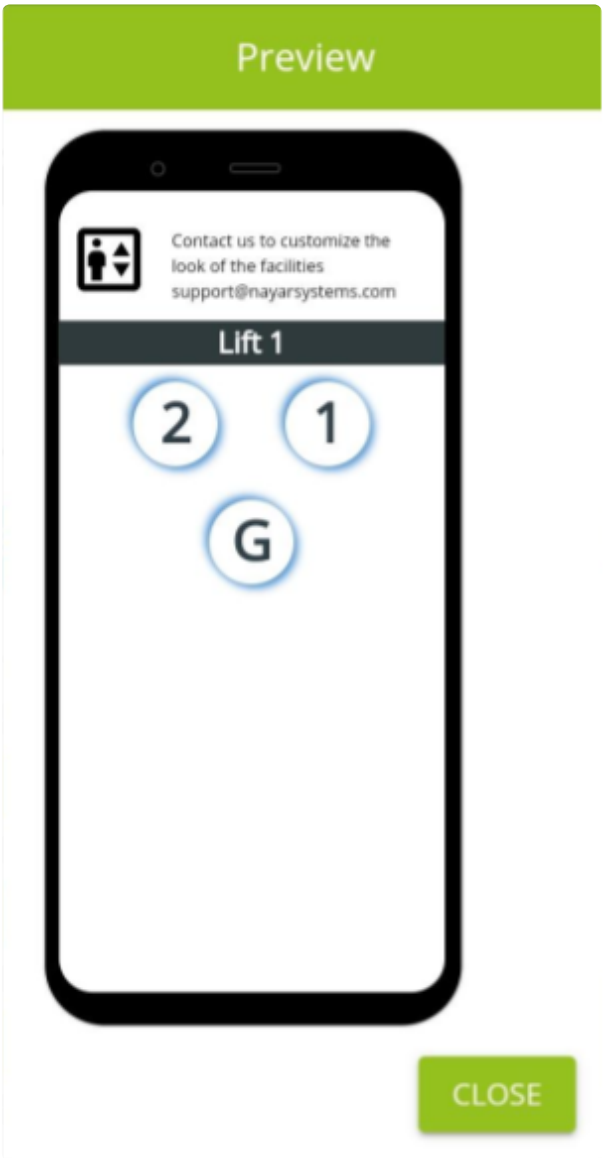


Click on the **ADD** button to create the facility which is not configured. It is necessary to push on **Pending configuration** on every device and configure it, as described in the following steps.



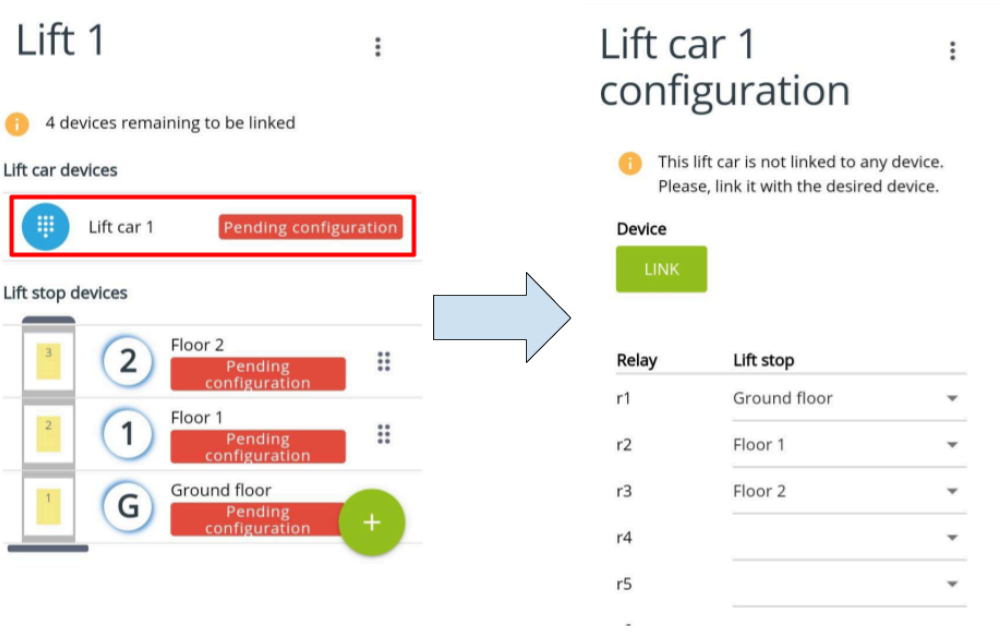
It is possible to preview how the final user App will look like by clicking on the drop-down menu at the top right of the app and then, on **PREVISUALIZE**. If it is desired that the installer company logo is shown, please contact support@nayarsystems.com.



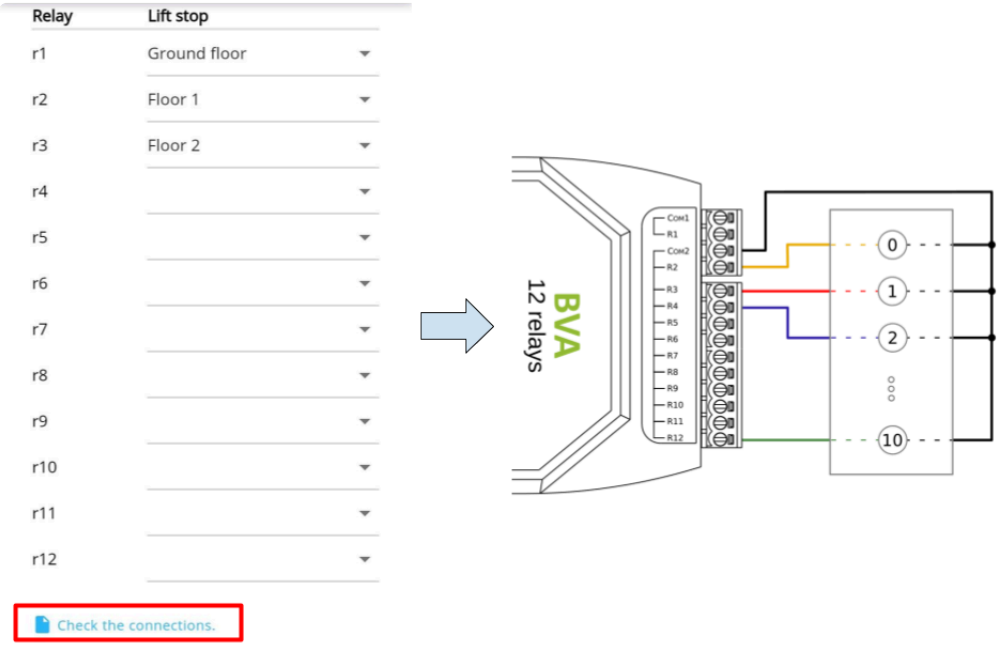

Preview
Contact us to customize the look of the facilities
support@nayarsystems.com
Lift 1
2
1
G
CLOSE

3.2.3. Lift car/s configuration (BVA 12 relays)

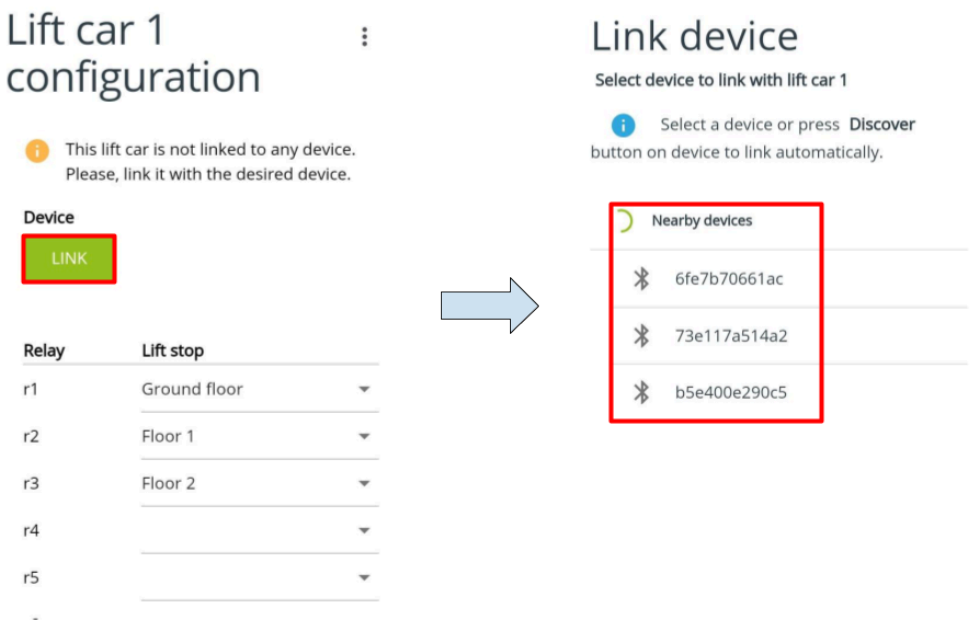
1. Click on the lift car device and adjust the relays and stops depending on how they are going to be connected. In this example, relays 1, 2 and 3 have been used for Ground Floor, Floor 1 and Floor 2, respectively.



Pressing on **Check the connections**, it is possible to observe an example of the connection of the buttons and relays.



2. From this step, it is compulsory to use the Nayar Systems App. Press the **LINK** button. The device that is desired to link must be located near the Smartphone used for configuration.



There are two possibilities to link the device:

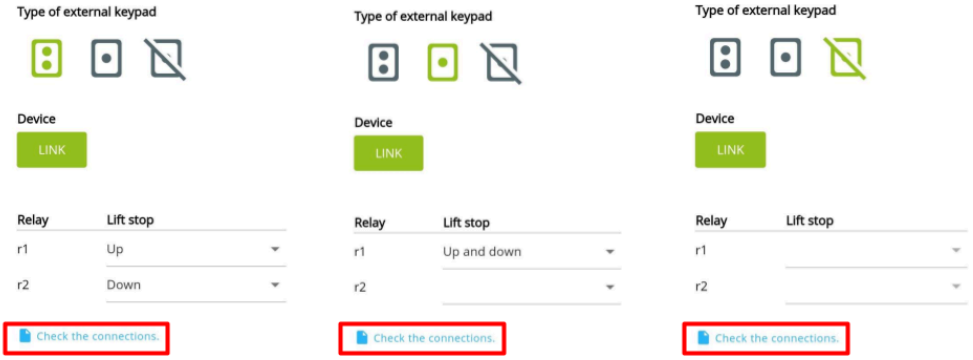
- Click on the ID of the device (see previous image) which corresponds to the device to configure.
- Click on the **Discover** button of the device to link.
  If the device has not been configured before, it would be necessary to wait for 10 seconds until it is configured, otherwise an alert message will be shown: **“The lift car’s device is configured”.**

3. Repeat the process on every lift car’s device remaining.

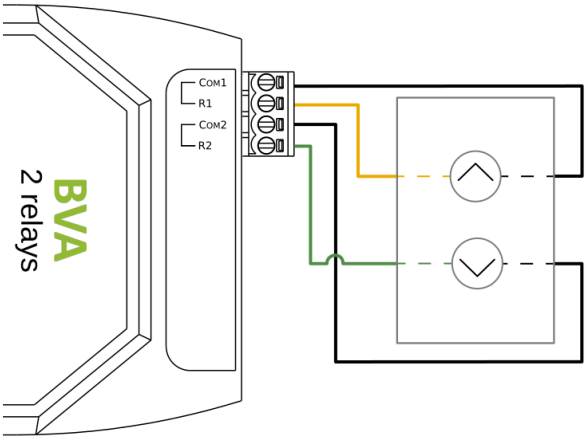
3.2.4. Lift stop/s configuration (BVA 2 relays)

1. Click on the lift stop to configure and choose the kind of button of the lift stop. There are three possible choices:
   - **Double**: For buttons with up and down touch
   - **Simple**: A single button for both purposes
   - **Without device**: For installations where it is not desired to install a BVA device

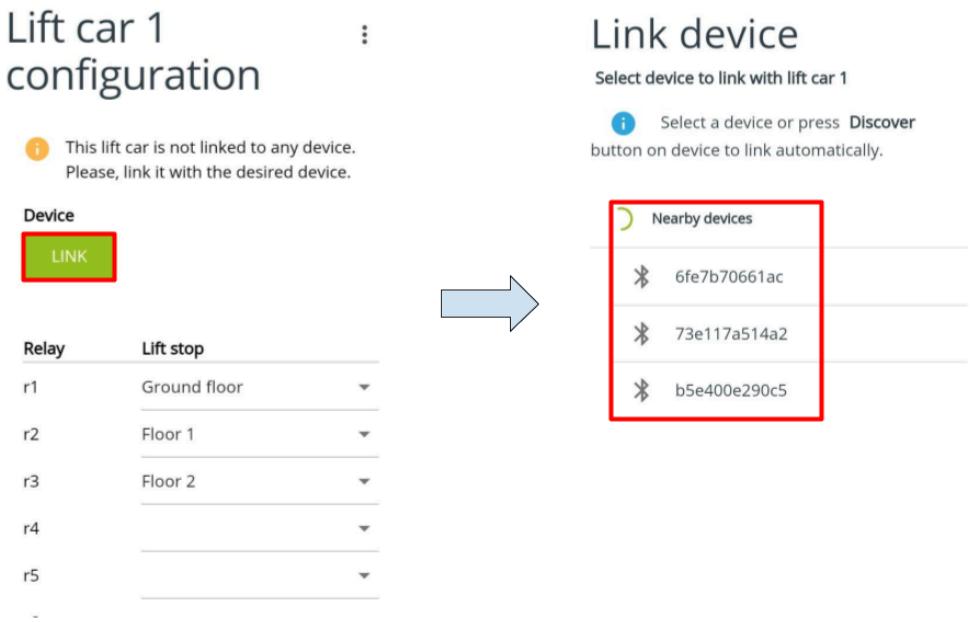
Configure the relays as they are going to be connected later at the installation.



Pressing on **Check the connections**, it is possible to observe an example of the connection of the buttons and relays.



2. From this step, it is compulsory to use the Nayar Systems App. Press the **LINK** button. The device that is desired to link must be located near the Smartphone used for configuration.



There are two ways of linking the device:

- Click on the ID of the device (see previous image) which corresponds to the device to configure.
- Click on the **Discover** button of the device to link.
  If the device has not been configured before, it would be necessary to wait for 10 seconds until it is configured, otherwise an alert message will be shown: **“The lift stop’s device is configured”.**

3. Repeat the process on every lift stop’s device remaining.

When configuration is finished it is necessary to wait at the facility screen until devices are updated. If BVAs are not in a near range, the installer must approach the devices to update them.

3.3. Use of Accessible Virtual Keypad (BVA)

It consists of a public App which can be downloaded and used by anyone, moreover, the App does not need an Internet connection to work. It is an accessible App which fulfils WCAG 2.0 standards.
It presents the following additional functionality:

- Screen reading assistant
- Voice assistant
- External keyboard

To download the App:

- Google Play
- App Store

4. Technical support

In case of any incident with your BVA device when needed technical support, please contact Nayar Systems after-sales services: **(+34) 964 06 69 95 / support@nayarsystems.com**.

5. Troubleshooting

State	Cause	Solution
All LEDs are switched off after connecting power line	Power input line is not active	Check power line voltage connected to the converter of BVA.
Buttons on user's app are not working as expected	Facility is not updated	Check at Nayar Systems' *Net4Machines Smart Control* App whether any element is shown as "Pending configuration". In that case, approach the Smartphone to the device to configure and repeat the first step described in *Lift car configuration* and/or *Lift stop configuration*.
	Physical wiring of relays does not correspond to configuration on Nayar Systems *Net4Machines Smart Control* App.	Verify that the relays used for wiring are the same as configured on the Nayar Systems *Net4Machines Smart Control* App.
	The wiring of relay connections is incorrect	Check the relay wiring. It is possible to look up a connection guide on the *Net4Machines Smart Control* App.
A device from an upper or lower floor is detected with a higher intensity	Devices are not placed at half of the height of the floor	Review that the involved devices are placed at half of the height of their corresponding floor.
Updating takes too much time	Communication between App and the device is not appropriate	Come back to Facilities on the App menu and then, search again the installation to configure.
		Close and open again *Net4Machines Smart Control* App.