

# NAYAR Switch

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Nayar Systems

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# 1. Manufacturer note

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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 0°C and 70°C

## 2. Device description

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Nayar Switch is a device whose main function consists of the transmission of data from IP frames either through an interface of two standard copper cables or wireless. Therefore, Nayar Switch is the perfect mechanism to guarantee IP connectivity everywhere at lift cars.

The device is compatible with all Nayar Systems products, and it is highly recommended to supply Internet connectivity to Advertisim from a GSM Smart Router (GSR).

### Electrical properties

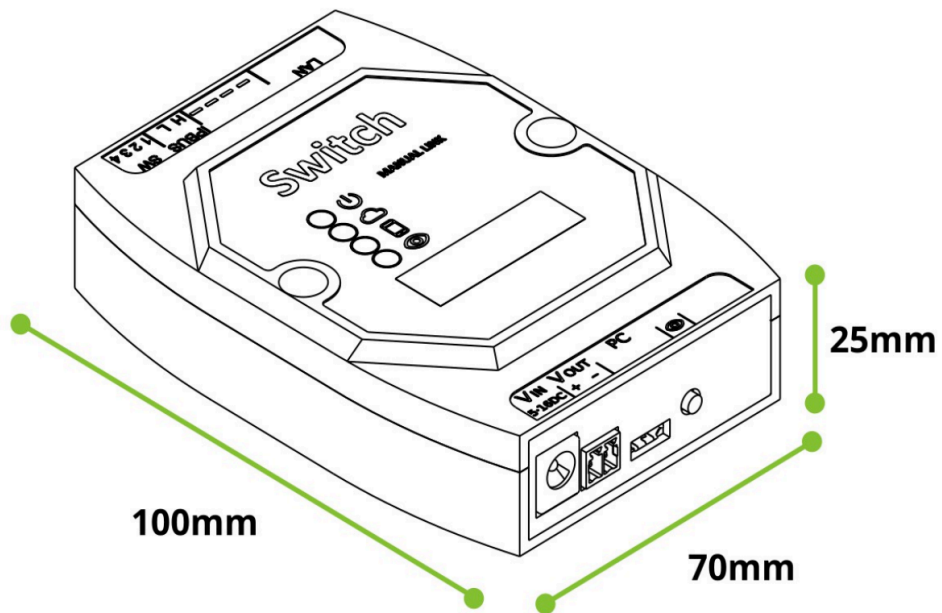
- Operating range (Vin): 5-30VDC (\*)

### Technical specs and connections

- SRAM: 520 kiB
- Flash: 4 MiB
- Antenna PCB
- Wi-Fi: 2.4 – 2.5 GHz, 802.11 b/g/n
- RJ45 Ethernet 10/100 Mbps
- MiniUSB Host (Tipo B)
- IPBus
- Output voltage: 5 – 30VDC (\*) (2A max@12V)
- Thermal range: -40°C – 85°C
- Possibility of interconnecting up to 8 lift cars

### Inside the box

- Nayar Switch
- Quick Start Guide
- DC power supply connector
- RJ45 cable
- 2x Pluggable Terminal Block 2 positions
- Wall bracket
- DIN RAIL mounting clip
- 2 x Screws



(\*) For product versions v5.0 and older, the operating range is 5 – 16 VDC.



## 2.1. Status indicator LEDs

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Nayar Switch has 4 LEDs for showing its status to the user:



### – 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**.

- 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 – 

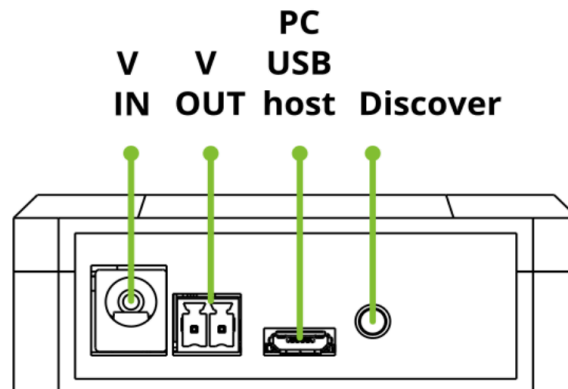
### – Discover LED

It lights up only 1 minute after pressing the **Discover** button of the device.

- Device without pressing the button – 
- Device after pressing for 1 minute – 

## 2.2. Device front panel

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



### VIN

Input for the **power supply**. The device must be connected to a **5 – 30VDC (\*)** power line. It is recommended to use a stable power line.

✿ For product versions v5.0 and older, the operating range is **5 – 16 VDC**.

### VOUT

Output voltage from the input one. By means of this connector, it is possible to feed another device with the same voltage as connected to VIN. It is highly recommended to feed an Advertisim device.

### PC – MicroUSB

Programming input of the device if connected to a PC. It can also be used as an input power supply, when not using the VIN connector.

### Discover Button

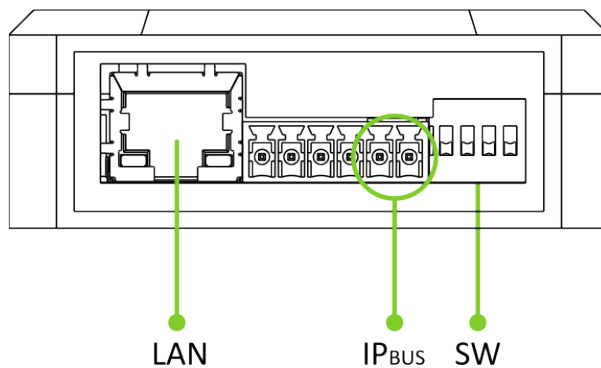
This button is configured to complete two actions:

- **Nayar Switch's identification on app:** A single press on this button helps identify in the app the device among all the other available products.
- **Link to Wi-Fi network created by Nayar Switch:** A single press on this button allows a different Nayar Systems' product to link to the Wi-Fi network created by the Nayar Switch.

A touch on the **Discover** button causes the Discover LED of Nayar Switch to light up.

## 2.3. Device rear panel

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

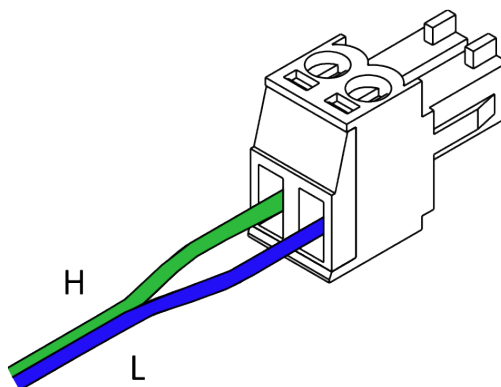


### LAN

RJ45 connector to receive or supply data transmission throughout an ethernet cable.

### IPBus

Nayar Switch is able to transmit IP frames through an IPBUS interface. The device includes a pluggable connector for that purpose, which has to be connected according to the positions indicated hereinafter:



### SW

Four microswitches with the following functionalities:

1	No functionality
2	Activation / deactivation of IPBus termination resistors
3	No functionality
4	No functionality



## 3. Installation and start-up

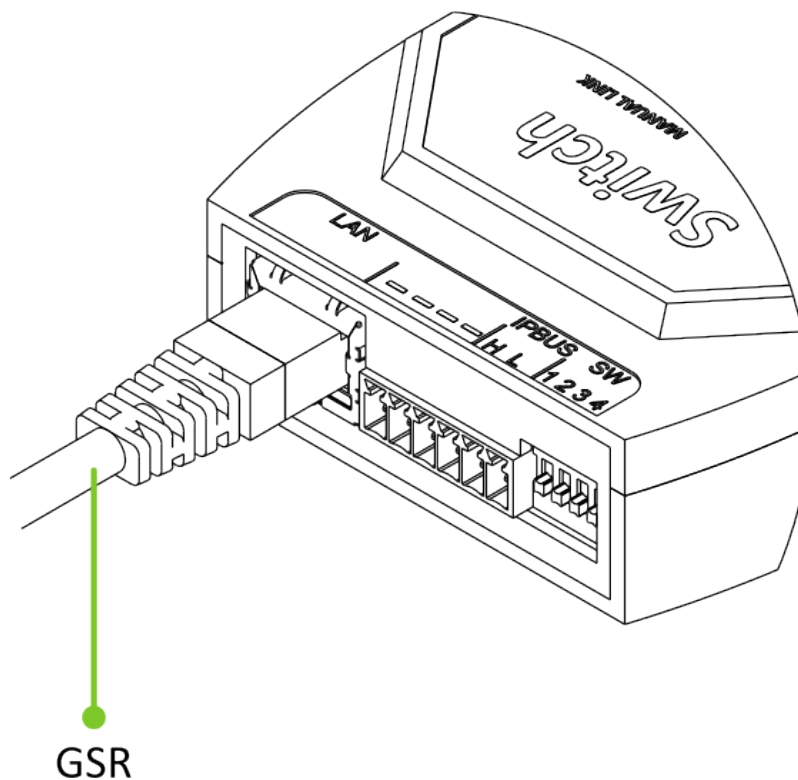
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Normally, it is required to have one Nayar Switch more than the total number of lift cars in the installation. As an example, at an installation with a single lift car, two Nayar Switches are necessary; at an installation with two lift cars, three Nayar Switch are required. The location of Nayar Switch must be one near the GSM Smart Router and the other ones, at each lift car of the installation.

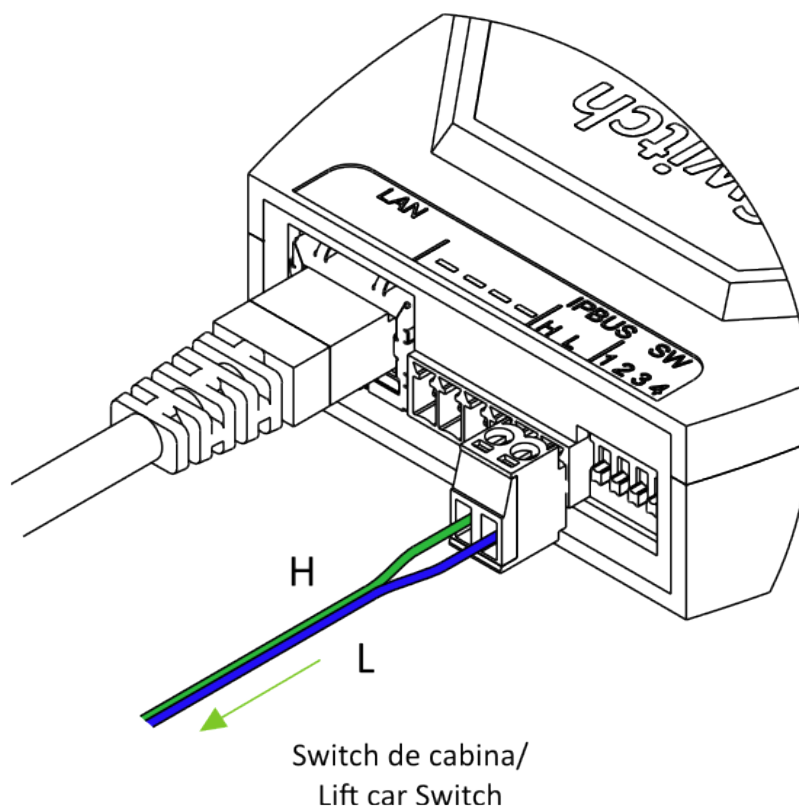
## 3.1. Nayar Switch installation at the machine room

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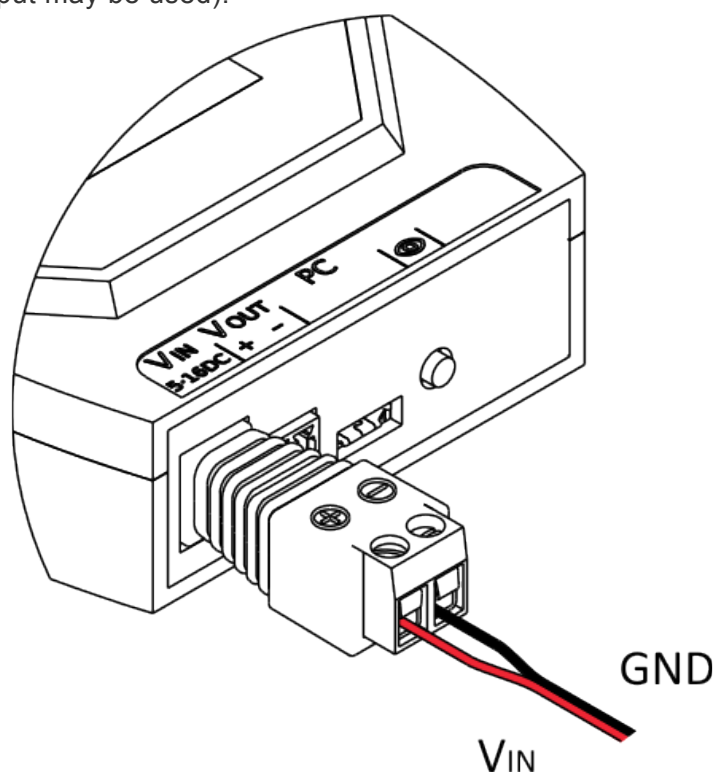
1. Place the device close to the GSR, so as to be easily accessible to all the connectors of the Nayar Switch by the installer.
2. Connect the **RJ45 cable** from the LAN connector of the GSR to the LAN connector of the Nayar Switch.



3. Connect two unused wires of the travelling cable to the **IPBus** connector of the Nayar Switch.



4. Connect the **power supply cables** to the **VIN** connector by means of the DC power connector. The polarity of the DC connector must be respected. (In order to supply power to the Nayar Switch, GSR 12V output may be used).



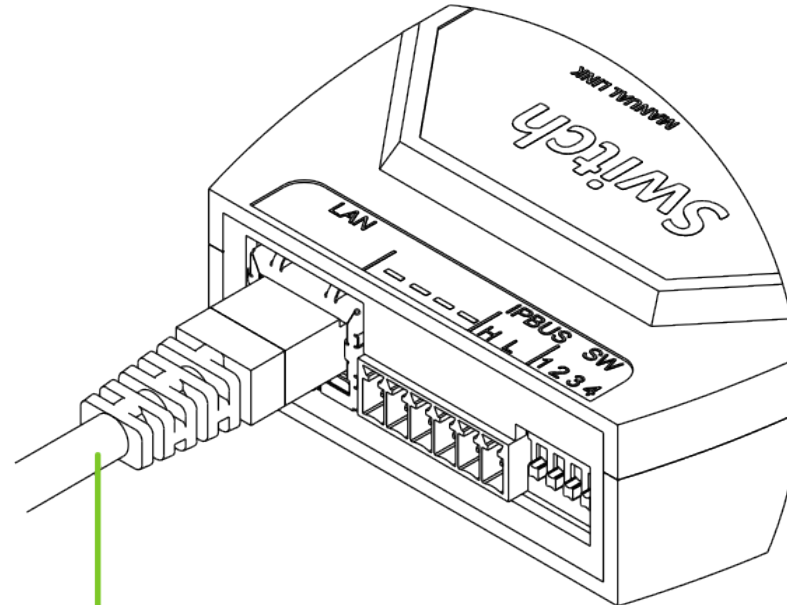
5. Check whether the **power** and **Internet connectivity LEDs** are lit up.

# Switch

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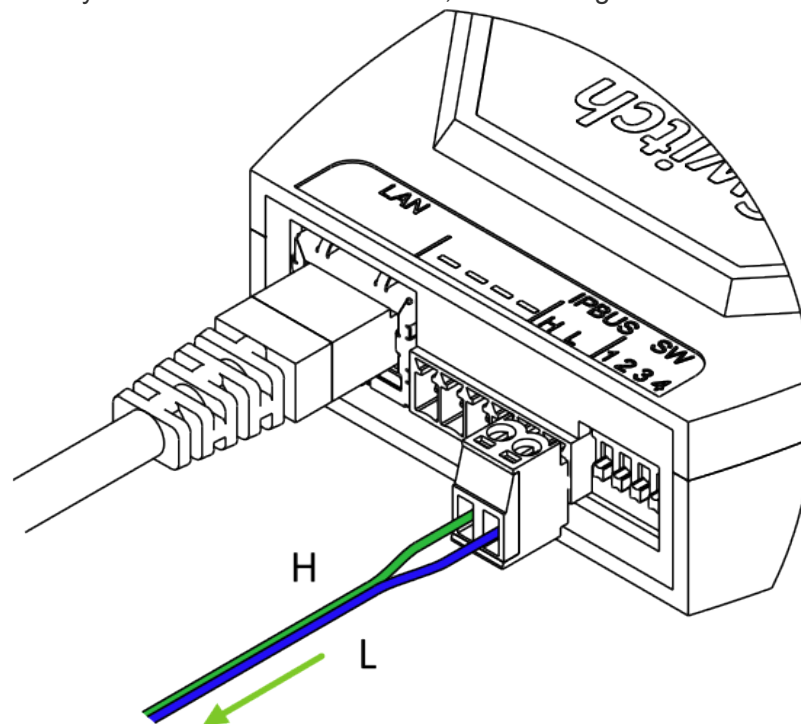
## 3.2. Nayar Switch installation at the lift car

1. Place the device at the lift car, so as to be accessible to all the connectors of the Nayar Switch by the installer. The device must not be able to be manipulated by the elevator user.
2. Connect the **RJ45 cable** from Nayar Switch LAN connector to the device which is desired to be supplied Internet connectivity, such as an Advertisim.



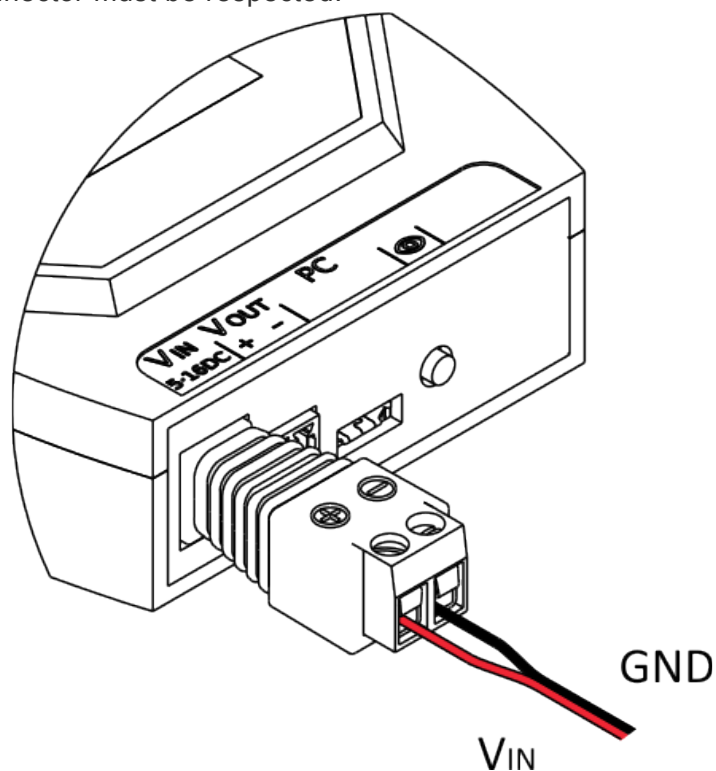
Advertisim

3. Connect the two previously used wires of the travelling cable, where the machine room device was connected, to lift car Nayar Switch **IPBus** connector, considering the order of H and L cables.



Switch de sala de máquinas/  
Machine room Switch

4. If it is desired to use the Nayar Switch in order to feed an electronic device, **VOUT** connector must be used. The polarity of the DC connector must be respected. It is highly recommended to use it to feed Advertisim devices.
5. Connect the **power supply** cables to the **VIN** connector by means of the DC power connector. The polarity of the DC connector must be respected.

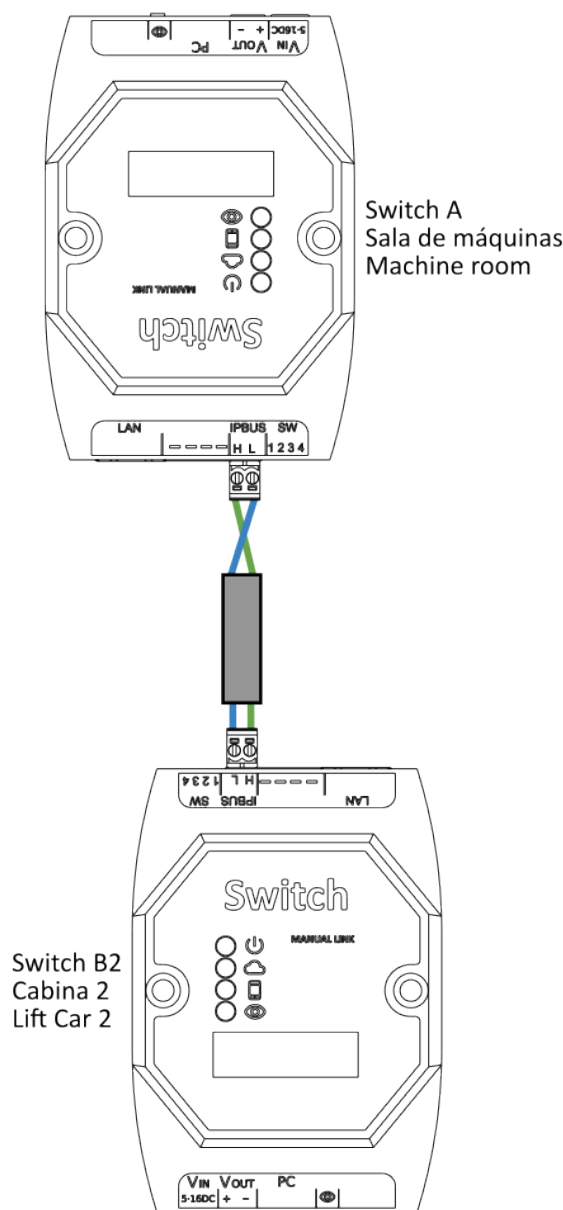


### 3.3. Configuration of bus termination resistors

Depending on the installation, a specific configuration of bus termination resistors has to be applied. Bus terminating resistors are configured by using the microswitch 2 at the device rear panel.

#### Installation with a single lift car

##### Installation schematic



##### Configuration of bus termination resistors

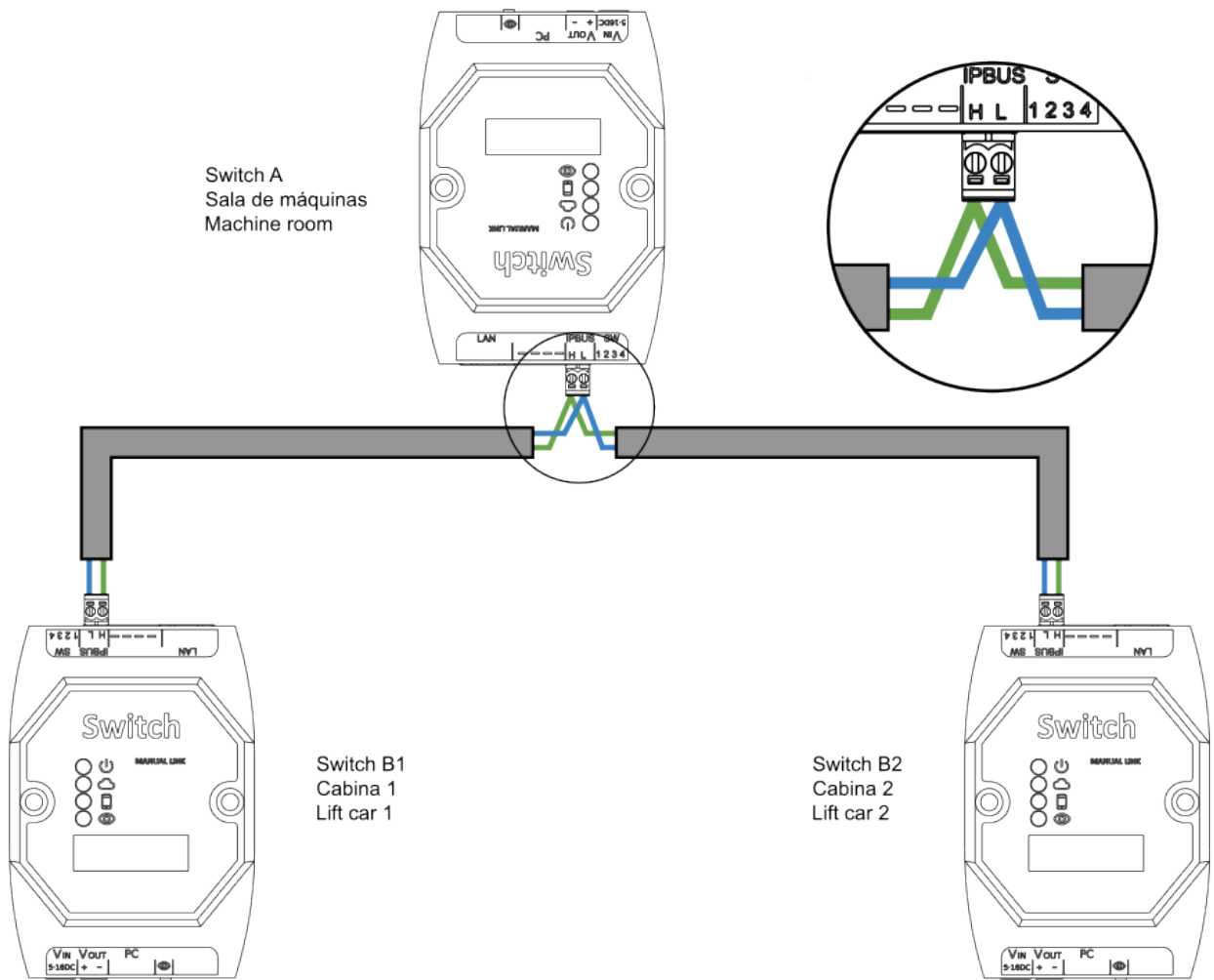
	Microswitch 2 position
Switch A	ON

Switch B

ON

# Installation with two lift cars

Installation schematic



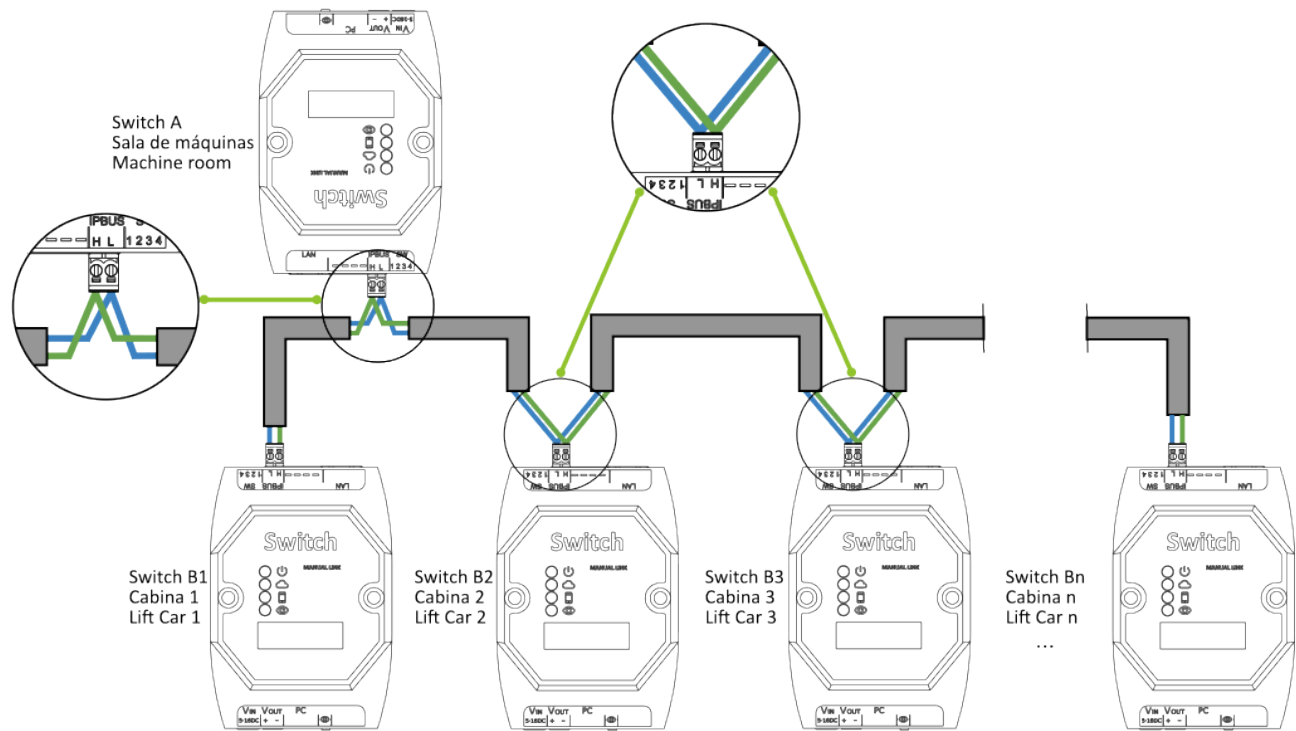
Configuration of bus termination resistors

	Microswitch 2 position
Switch A	OFF
Switch B1	ON
Switch B2	ON

# Installation with three or more lift cars

Installation schematic





Configuration of bus termination resistors

	Microswitch 2 position
Switch A	OFF
Switch B1	ON
Switch B2	OFF
Switch Bn	ON

Where Bn corresponds to the Nayar Switch placed at the last lift car of the installation (it is not recommended to connect more than 8 lift cars). Therefore, the Nayar Switch whose microswitch 2 must be at **ON** position are those corresponding to the first and last lift car. Hereinafter, two examples of how microswitch 2 should be configured at an installation with three and four cabins are shown:

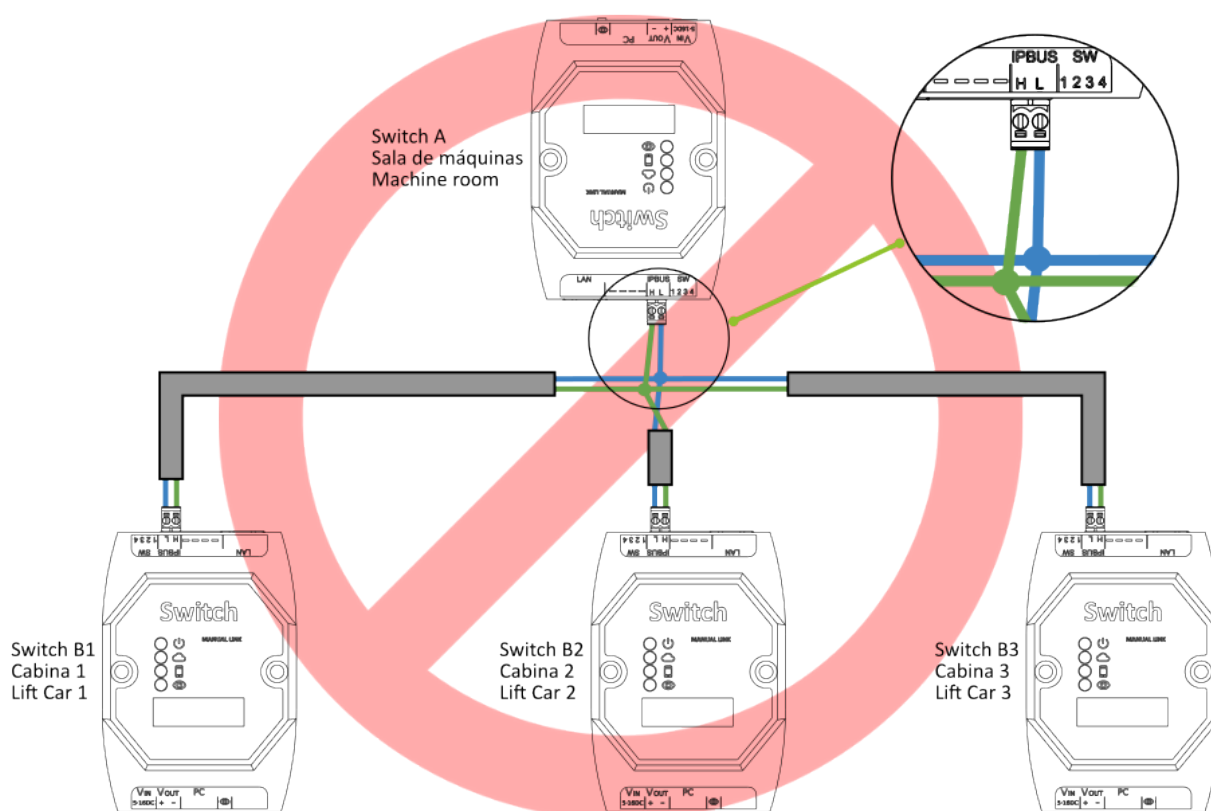
Three lift cars

	Microswitch 2 position
Switch A	OFF
Switch B1	ON
Switch B2	OFF
Switch B3	ON

Four lift cars

	Microswitch 2 position
Switch A	OFF
Switch B1	ON
Switch B2	OFF
Switch B3	OFF
Switch B4	ON

! In case of an installation with three or more lift cars, the following star-wired installation schematic must NOT be reproduced.



When installation and start-up is completed correctly, all lift car Nayar Switch **power** and **Internet connectivity LEDs** should be lit up.

# Switch



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## 4. Technical support

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

## 5. Troubleshooting

State	Cause	Solution
<b>All LED indicators are OFF after power supply is connected</b>	The power line is not operational	Check the voltage of the power line connected to Nayar Switch
		In case of using the 12V Output of the GSR, verify that GSR is powered on
	Wiring of DC connector is incorrect	Check the wiring of the DC connector
<b>Internet connectivity LED is not lit up (Machine room Nayar Switch)</b>	GSR is not providing Internet connectivity	Check that GSR is powered on
		Confirm RJ45 cable is on LAN connector
	RJ45 cable is not working correctly	Substitute RJ45 cable
<b>Internet connectivity LED is not lit up (Lift car Nayar Switch)</b>	Microswitch configuration is incorrect	Verify that the configuration of bus termination resistors at <a href="#">3.3.- Configuration of bus termination resistors</a>
	IPBUS wiring is incorrect	Check IPBUS wiring from installation schematic shown at <a href="#">3.3.- Configuration of bus termination resistors</a>