DOMOTI CAM

2-Wire Smart Home Video Intercom SystemsDMC Series

Installation manual

How to install two-wire video intercoms

What did you buy?

These two-wire video intercom systems are the ideal solution for single homes with 1 to 4 bedrooms. independent interiors. They can manage up to 6 monitors/intercoms for each of the 4 interiors (families), and up to 4 general control keyboards. Monitors and keypads are connected with just 2 wires, which They carry both data and power, making installation much easier than to traditional video intercom systems.

These video intercoms are part of our Smart-Home range which includes many other Home automation devices. Simply connect one of the monitors to your WiFi network. and then control your intercom with the Smart Life home automation app, even via the Internet. With The Smart Life app also controls our remote controls and home automation cameras of this kind. DM series that allow you to create your smart home.

This manual explains how to install the DMC Series 2-wire video intercoms from the point of view of hardware installation. For configuration, refer to the configuration manual.

WARNING: CONNECT ONE DEVICE AT A TIME, NEVER ALL AT THE SAME TIME
Although they are self-configuring, these systems are an IP network where each element has its own network address. For this reason, at the first installation, IT IS NECESSARY TO SET RUN ONE COMPONENT AT A TIME so the system can assign the IP address of each element without creating conflicts.
It's good**connect a main monitor to the bus initially**which will take automatically: Plan 1 / Device ID 1,**then, one by one, all the other monitors**That will automatically assume Plan 1 / Device ID 2..3 etc.. At a later time You can assign monitors to other Plans (families) 2,3,4 in the monitor setup menu.
Lastly, the keypads must be connected, one by one, starting with the one you want indicate as Port 1

System components

The DMC Series video intercom systems are made up of various elements that you can purchase in based on your needs

INTERNAL MONITORS

These are devices to be installed inside the house to see who is ringing the bell.
intercom, speak hands-free and open the door. The system can manage up to 6 monitors for each of the 4 interiors (floors/families). You can easily match a monitor to its right extension number (floor) by acting in the monitor settings with the on-screen buttons.
If you want to be able to manage your intercom system via app, even via the Internet, you need to connect one monitor for each extension to the WiFi network.



PUSHBUTTON PANELS

These are the devices that are installed outside the home, near the door that must open. They are equipped with 1, 2, 3 or 4 buttons, depending on the number of internal units you want to manage, and a camera. They also have audio devices for two-way dialogue between those who are at the door and who answers from the internal monitor.
The system can manage up to 4 keypads and each keypad can control up to 2 locks (one powered by the keypad and one to be powered separately).
keypads assume the keypad number 1,2,3 and 4 automatically based on the order in where the first connection to the system occurs. Furthermore, the buttons are always associated with the interiors (Floors/Families) 1,2,3,4 in sequence starting from the bottom.
Some keypads also have an IC badge reader to open the connected locks bringing the badge closer.

KEYBOARDS

They are external devices, like push-button panels, but equipped with only one call button, linked to Floor 1, and a code keypad. Each keypad can control a lock connected (powered by keyboard).

The keypads also have an IC badge reader to open the connected lock by approaching the badge.

IC BADGE

Each keypad or push-button panel equipped with a badge reader is supplied with 5 door opener IC badges. Additional pieces can be purchased separately

Bus wiring

All the components of a DMC Series video intercom system are connected via a twisted pair, that is, just two cables, which carry both data and power. The twisted pair constitutes the so-called BUS that connects all the devices together.
You can connect the devices either in cascade, or in series, or in a star by making multiple branches.
We will look at the bus connection in more detail later in the manual.
The cable to be used to create the BUS depends on the length of the cable or rather on the distance of the component from the power supply.

2X0.55mmq in pure copper up to 50 meters
2x0.75mmq of pure copper up to 150 meters

The UTP network cable**CAT5 or CAT6**It is not the most recommended for making the BUS, however it can be used use as long as it is made of pure copper and with a cross-section for each conductor of at least 0.45 mmq. Yes It uses only one pair of UTP cable, among the 4 contained in the sheath, and can be covered in this so the distance from the power supply is about 40 meters. To increase this distance it is possible pair more pairs to increase the copper cross-section.

To connect these devices you must not use thin cables, under 0.5 mmq or non-insulated cables. pure copper, because they would introduce a high voltage drop and might not allow the connected equipment to function properly.

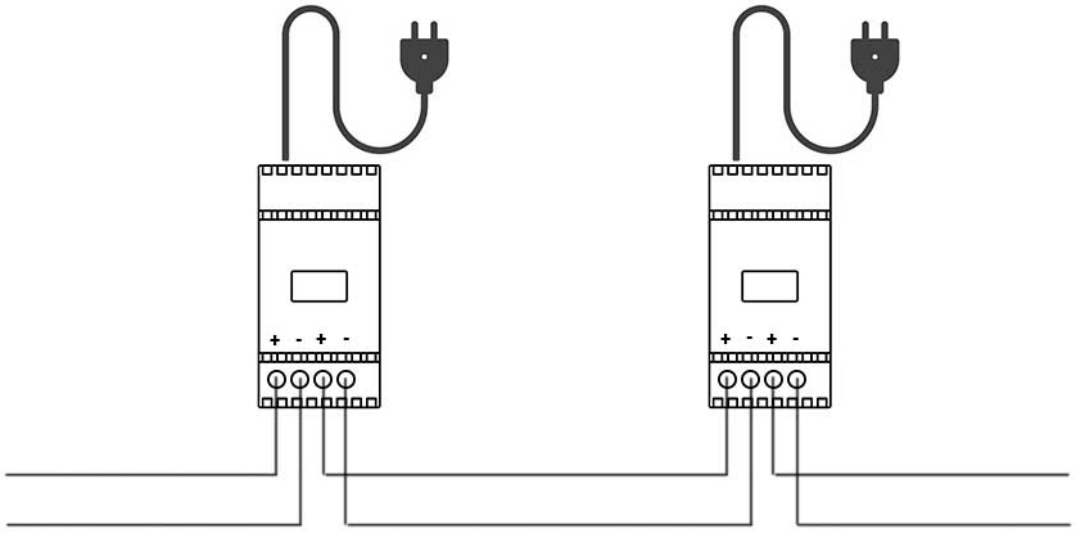
Bus power supply

All the devices of these video intercom systems are powered at 24VDC through the twisted pair connection (BUS).
All monitors are supplied with a 220VAC/24VDC 3A power supply that connects to the bus and will provide power to all the elements of the system which in this way will not need to be fed locally.

You can connect the power supply anywhere on the bus, but ideally, it would be convenient connect it in a more or less central position so as to minimize the distance between the power supply and the furthest component.
The power supply has two 24VDC (+/-) outputs, you can use them interchangeably, just one or both to start with two branches in two different directions, and you can also start two or more bus branches from the same exit.

CONNECTING MULTIPLE POWER SUPPLIES

A single power supply is sufficient to power up to 4 keypads and 6 monitors. In a video intercom system, however, the elements that have by far the greatest absorption are the powered electric locks, possibly connected to the push-button panels (DOOR 2). If you connect a powered electric lock, a single power supply will be sufficient for A maximum of a couple of monitors. If you connect too many devices to a single power supply, the symptom the more frequently the system will restart every time you activate the powered electric lock.
When one power supply is not enough, no problem, you can install a second or even more, simply by connecting them to the bus in series with the main power supply.
You can install the power supplies close to each other, as in the example below, or in spots different from the bus.



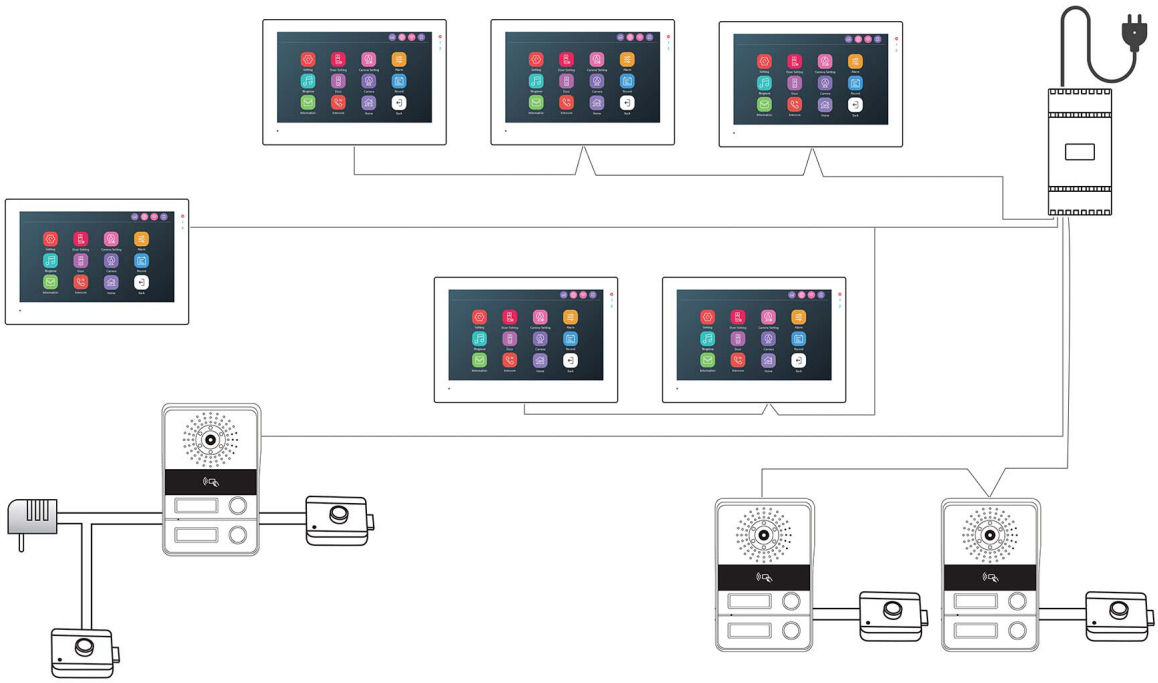
NO POLARITY

Although they are powered by 24VDC the devices do NOT require you to respect the + and – polarity for where there is no need to distinguish between the + and – bus cables. This makes it much simpler wiring and prevents connection errors. The power supply terminals

are distinguished by the + sign and the - sign, but only to identify the two terminals to be used for each bus. Actually you can reverse the wiring without any problems and you can even use two cables of the same same color to make the bus.

Bus connection

The twisted pair that connects all the elements of the system is commonly called a bus. You are free to make it as you like, depending on how you find it most convenient for passing the cables.
Look at this bus connection example.

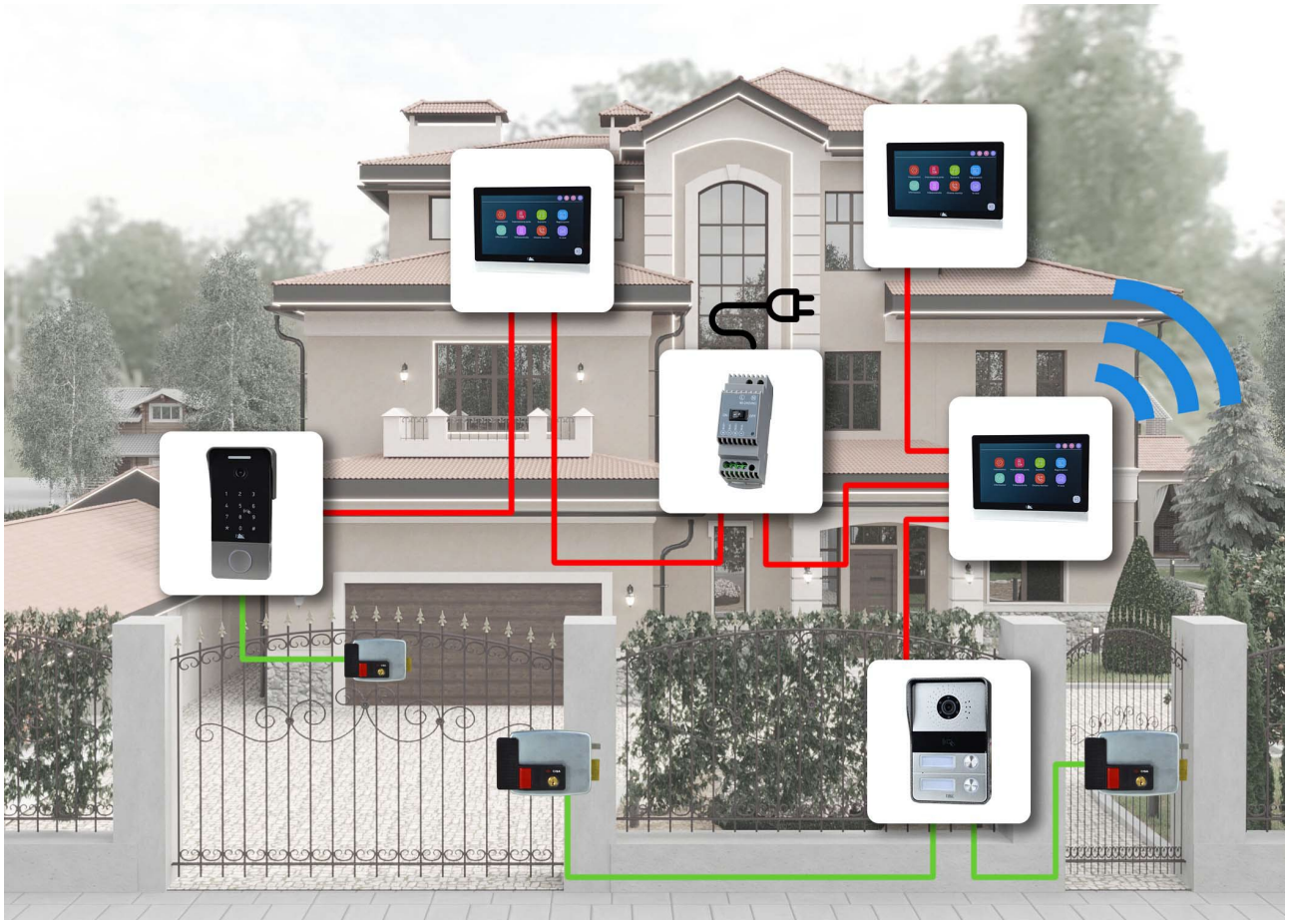


You can start from the power supply with a single twisted pair, or create several more branches directions. In the example above, 4 twisted pairs were connected to the power supply output for proceed in different directions.

SERIES CONNECTION-You can connect the system elements (monitors and keyboards) in series with each other, as in the case of the 3 monitors at the top of the figure. To make it easier for you serial connection the monitors are equipped with two bus connectors (bus 0 and bus1) that you can use for input and output. You can use the two connectors, bus 0 and 1, interchangeably, as long as are connected to each other. The keypads have only one connector for the bus, but you can connect them in The keypads are also included in the series, creating an external connection. In the example, the two keypads at the bottom they are connected in series.

STAR CONNECTION-The bus does not have to be a single branch that goes in and out comes out of all the elements of the system, but can also be branched out, creating star connections. As you can see in the example, the first star connection is precisely in the power supply, from which 4 branches depart. Also look at the 3 monitors in the central part of the Our example. The bus starts at the power supply and ends at the monitor on the left. Halfway a branch down was created to connect two monitors in series.

CONNECTING THE LOCKS–The door locks, which are obviously not our supply, they do not connect to the bus, but to the push-button panels or keyboards, which are normally mounted near the door. All push-button panels have a connector (LOCK2) for control a 12VDC lock with 2 wires that can be powered directly. Furthermore they have a second connector (LOCK1) for a possible second lock which will however have to be powered by a local power supply, as seen in the third leftmost keypad of the our example. LOCK2 are therefore two terminals to which the 12VDC voltage is applied in In case of opening, LOCK 1 is only a contact, NO or NC.



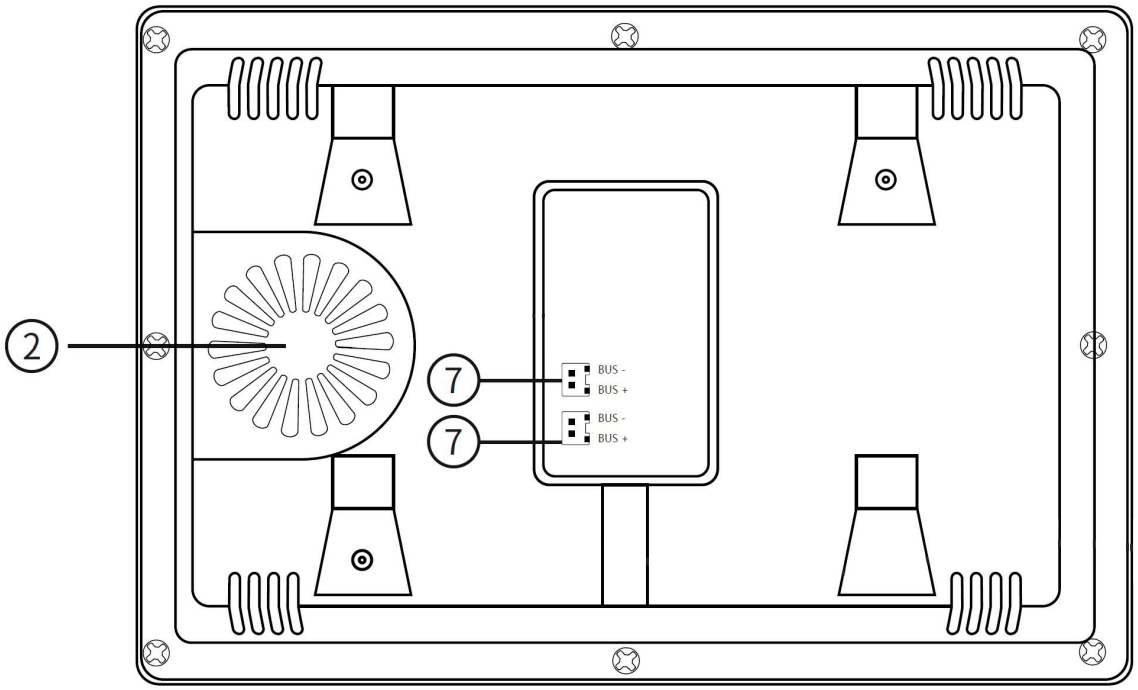
Connecting devices

To connect the bus to the individual devices: monitors, push-button panels and keyboards, a cable is used.
power supply that is supplied with the devices. The cable has a red wire and a black wire, but
The devices are constructed appropriately so that there is no need to respect the polarity and you can
connect the two cables randomly to the two bus wires.

WARNING: CONNECT ONE DEVICE AT A TIME, NEVER ALL AT THE SAME TIME
Although they are self-configuring, these systems are an IP network where each element has its own
network address. For this reason, at the first installation, IT IS NECESSARY TO SET
RUN ONE COMPONENT AT A TIME so the system can assign the IP address
of each element without creating conflicts.
It's good**connect a main monitor to the bus initially**which will take
automatically: Plan 1 / Device ID 1,**then, one by one, all the other monitors**That
will automatically assume Plan 1 / Device ID 2..3 etc.. At a later time
You can assign monitors to other Plans (families) 2,3,4 in the monitor setup menu.
Lastly, the keypads must be connected, one by one, starting with the one you want
indicate as Port 1
If you accidentally turned on all the elements at once, your system will probably
It won't work well because there may be IP conflicts. You might want to consider
perform a factory reset in the monitor menu and a reset of the
keypads with reset button as explained later in the manual.Then you can again
perform a correct installation.

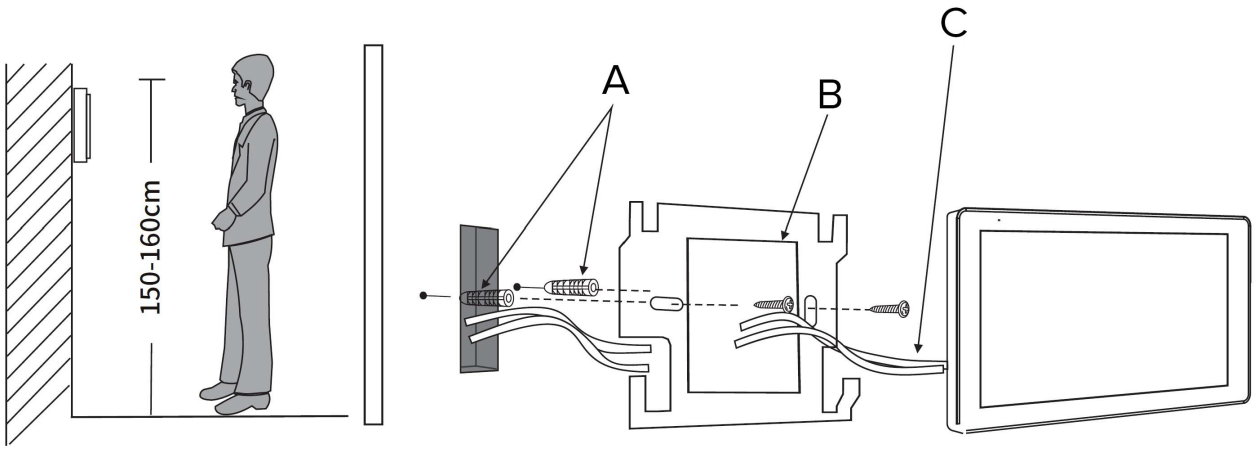
Connecting monitors

Each monitor has two bus connectors on the back (7)



The two connectors are internally connected to each other, so there is no difference between use one or the other. There are 2 connectors to make it easier to connect a second downstream monitor, without having to set up an external terminal.

The monitor is mounted on the wall by first fixing the mounting base B to the wall with the plugs A, then connecting the bus to the C monitor which is finally attached to the base.



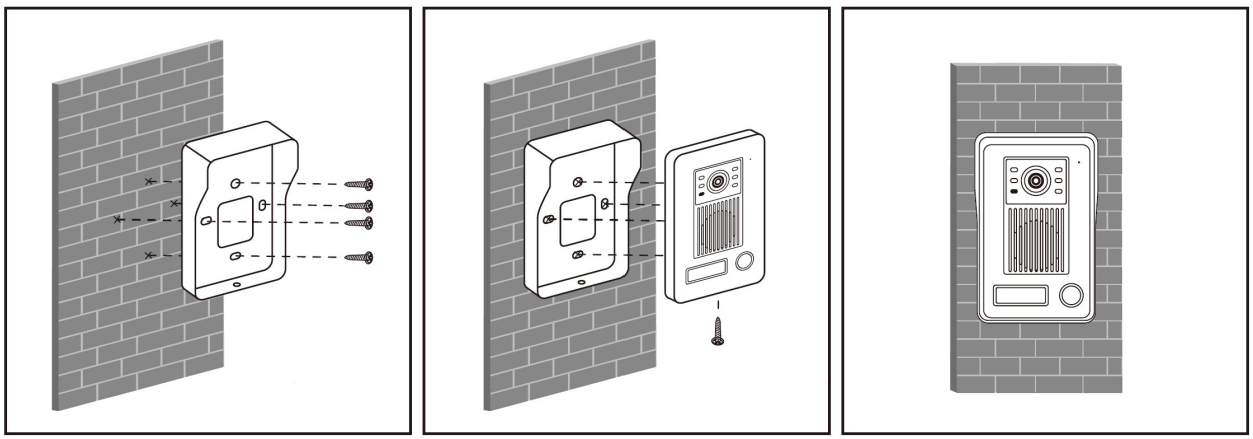
WiFi connection to router

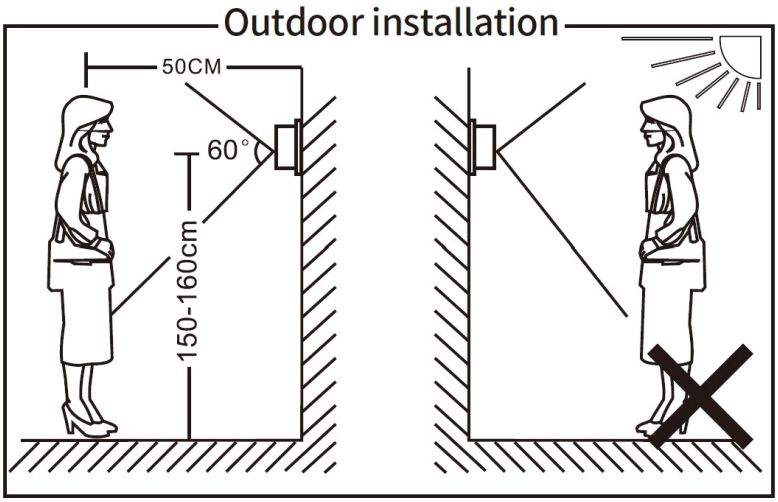
If you want to be able to control your video intercom from your mobile phone you need to connect the main monitor (Device ID 1) of each plan (family) to your Internet router. This connection is
It works via WiFi, without wires.
Before deciding where to place the monitors on a (family) floor, check that the monitor main receives a good wifi signal from the router.
You can connect the main monitor of the floor to wifi in the configuration menu, Network section, as explained in the setup manual. After you have connected the monitor to the Wi-Fi you can upload it to the Tuya SmartLife app as explained in the app manual.

Connecting button panels

The keypad is made up of two elements: the keypad and a mounting shell. We proceed first fix the shell to the wall and then connect the keyboard and clip it into the shell.

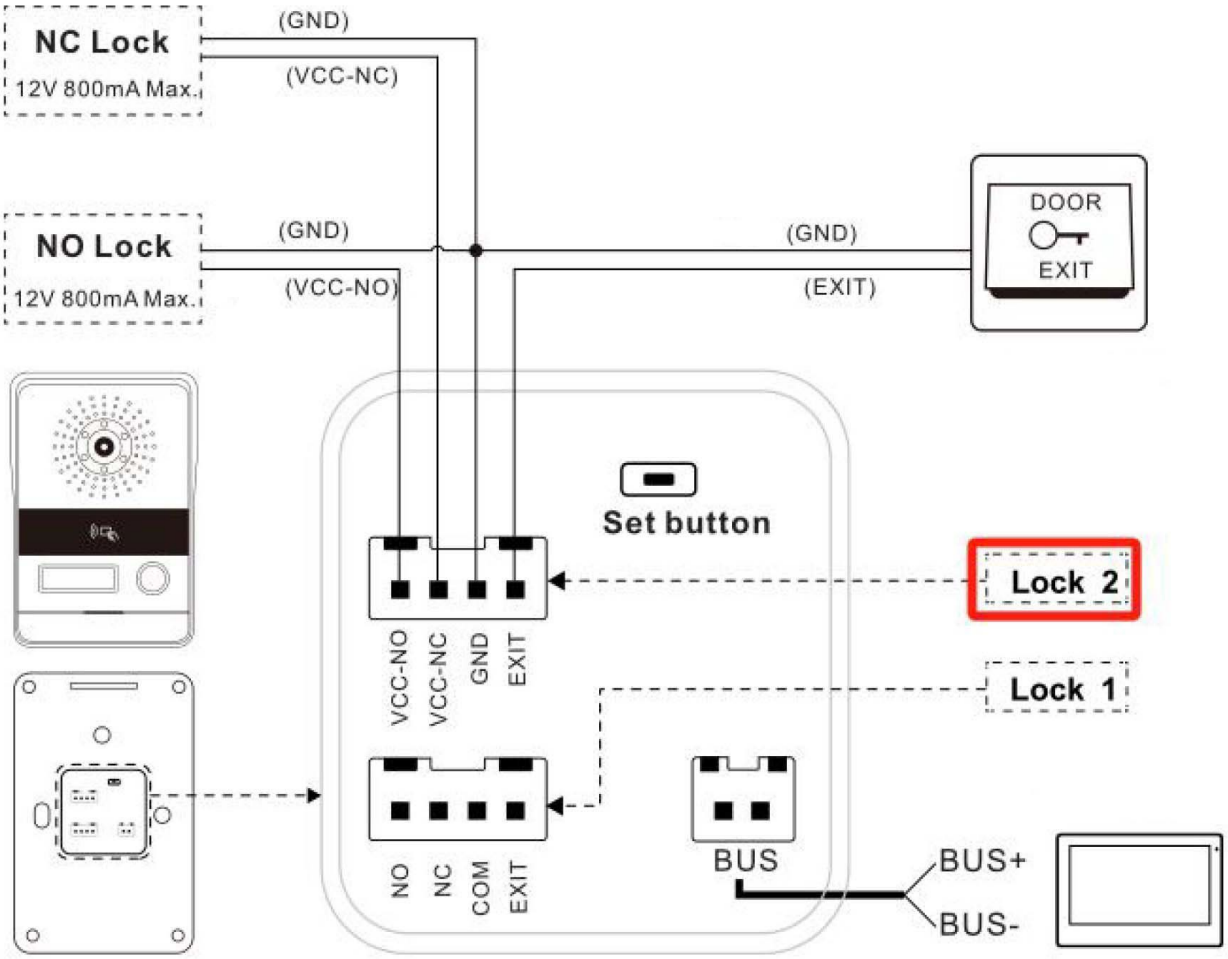
NOTE: Don't connect all the keyboards at once. You must power them one at a time initially. time so that they address each other correctly.





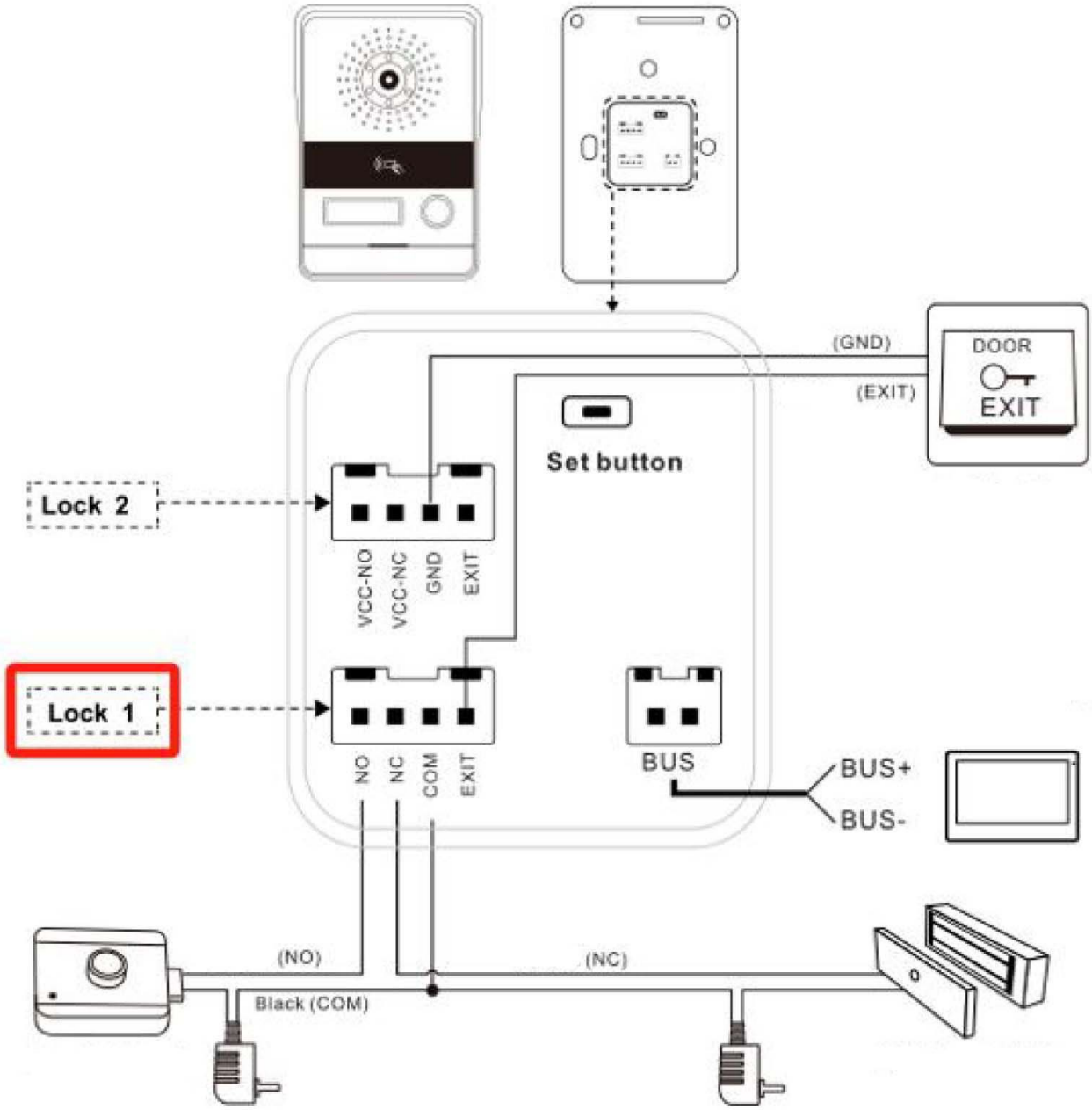
Each keypad has a two-seater connector for the bus, which is connected as just seen for the monitors, and two 4-way connectors to control two electronic locks, one powered directly from the keypad (LOCK2) and one to be powered separately (LOCK1).

CONNECTION OF 12VDC LOCK POWERED BY THE PUSHBUTTON PANEL (LOCK2)



If your lock is powered by 12VDC you can connect it with two wires to the keypad and it will work without the need for further connections because the keypad will provide it directly the power required for opening. In this case, you will use the LOCK2 connector. connecting it as shown in the figure. Normally the electric locks work in NO (normally open), so you will use the VCC-NO and GND terminals. The VCC-NC terminals are used. (normally closed) and GND for magnetic locks, used in security doors, which They always work when powered and are turned off when opened.
A local door opener button is connected between the EXIT and GND terminals, as shown. in the figure (DOOR EXIT)

LOCK CONNECTION WITH EXTERNAL POWER SUPPLY (LOCK1)

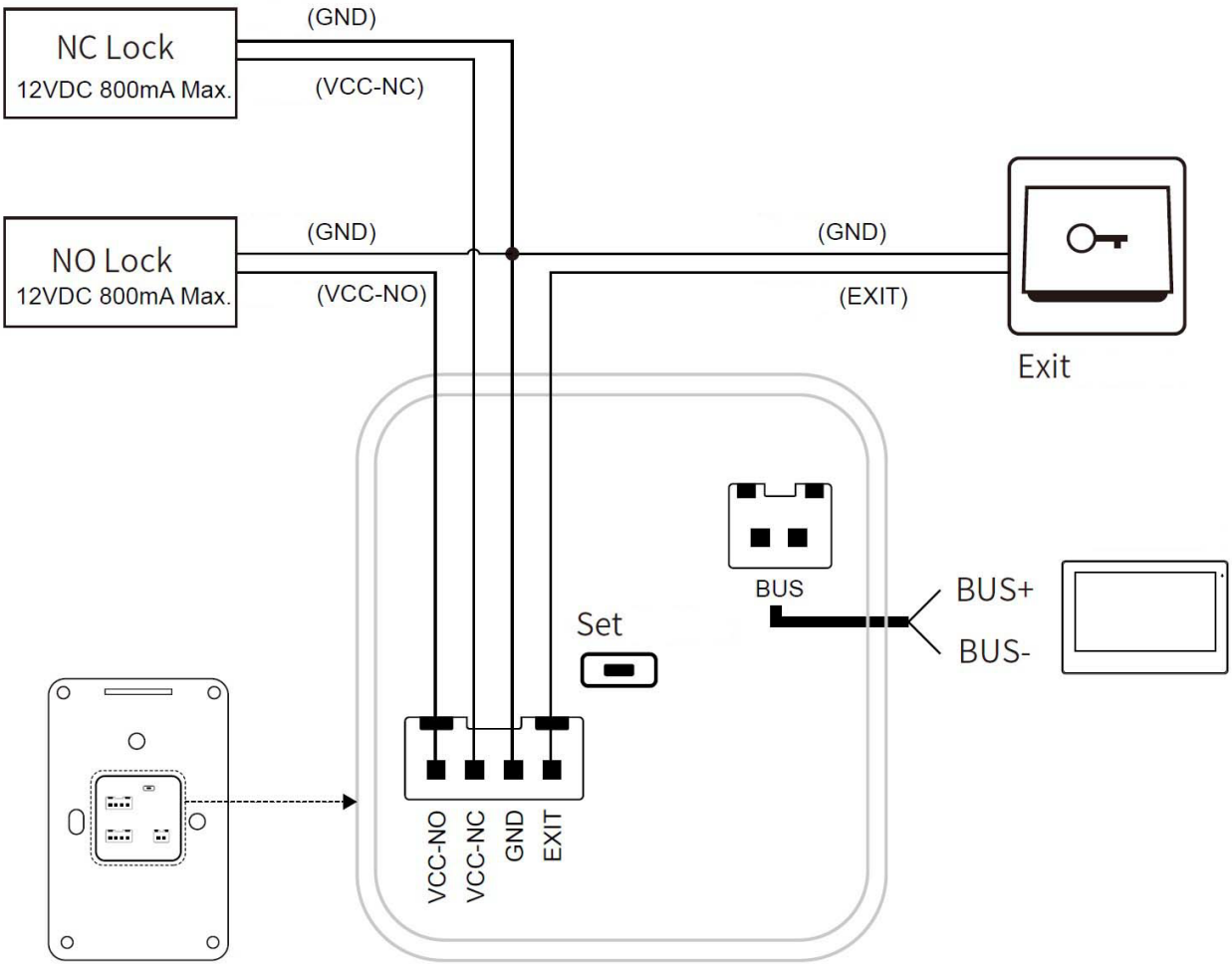


In addition to the powered lock, LOCK2, each keypad can control another lock, LOCK1, with separate power supply. You can use this other connection to control a second door (from the monitor you can choose whether to open lock 1 or 2) or if you have to control a lock that is not powered by 12VDC. The LOCK1 connector does not power supply, but only one clean contact to be connected between COM and NO (normally open) for normal electric locks and between COM and NC (normally closed) for locks magnetic. In both cases, it is necessary to supply power to the lock by connecting a power supply as shown in the figure.

A local door opener button is connected between the EXIT and GND terminals (in the connector LOCK2), as shown in the figure (DOOR EXIT)

CONNECTING KEYBOARDS

The keyboards are connected exactly like the keypads just described above but can control a single port. In fact, they have a bus connector and a single connector for a LOCK2 powered lock.



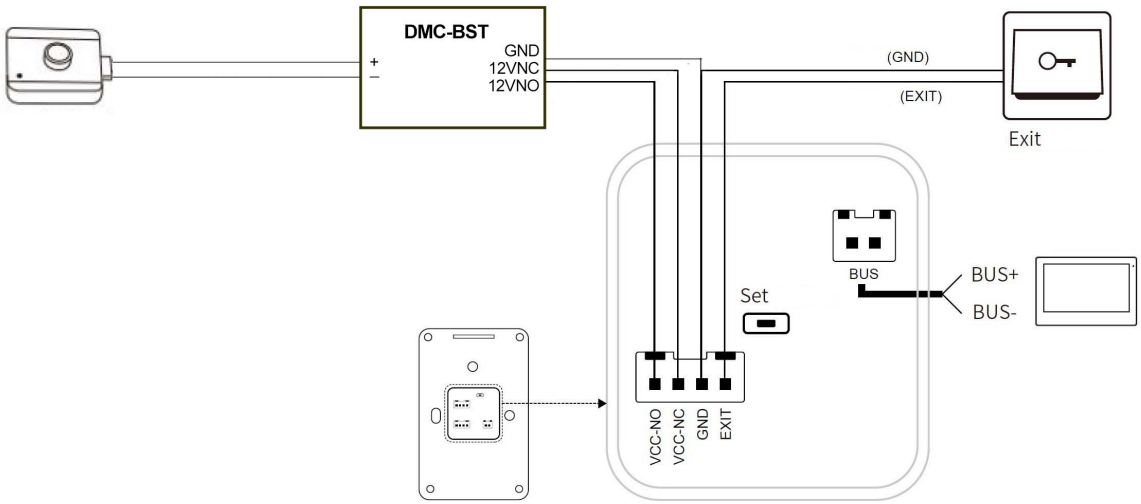
ATTENTION: INITIALLY CONNECT ONE KEYPAD AT A TIME

The push-button panels and keyboards must be connected to the system for the first time. one at a time, starting with the main one, which you want to name as Port 1. The The keypads are automatically named by the system as Door 1,2,3,4 based on in the order in which they are first connected to the bus.

USING THE DMC-BST BOOSTER FOR HIGH-CURRENT LOCKS

Domoticam button panels are able to directly control 12V electric locks
connected to the LOCK2 output, with a maximum absorption of 800mA.
Some electric locks may require a current higher than this value, especially
if they are old electric locks, which have been in operation for a long time. In these cases you will notice that
the keypad tends to open the latch with difficulty, instead of with a nice decisive sound. With
as time goes by you may notice that sometimes the lock starts to not work sporadically
to open up, until it no longer opens at all.
To solve these situations you can purchase our booster, which connects between the keypad
and the lock and allows the keypad to control any lock.
The DMC-BST booster is a small waterproof module that can be mounted behind the keypad
and contains a capacitor. The capacitor is charged with the 12V of the keypad, during the
rest period, and discharges at the moment of opening, by operating the latch.
Few electric locks require the use of a booster. If your lock has been in operation for many years,
years, it's best to buy the booster right away, along with the system. If you're unsure, you can also
Insert it later if you notice any problems opening it.

The module has an input side, with 3 wires that connects to the LOCK2 connector of the keypad
and an output side, with 2 wires, towards the electric lock.
The connection is made as in the following diagram.



CONNECTING AN EXTERNAL RELAY TO THE LOCK2 POWERED DOOR OPENER

As described above, the Lock1 door opener is typically used to operate an external relay and the Lock2 door opener to operate an electric lock powered directly from the keypad.

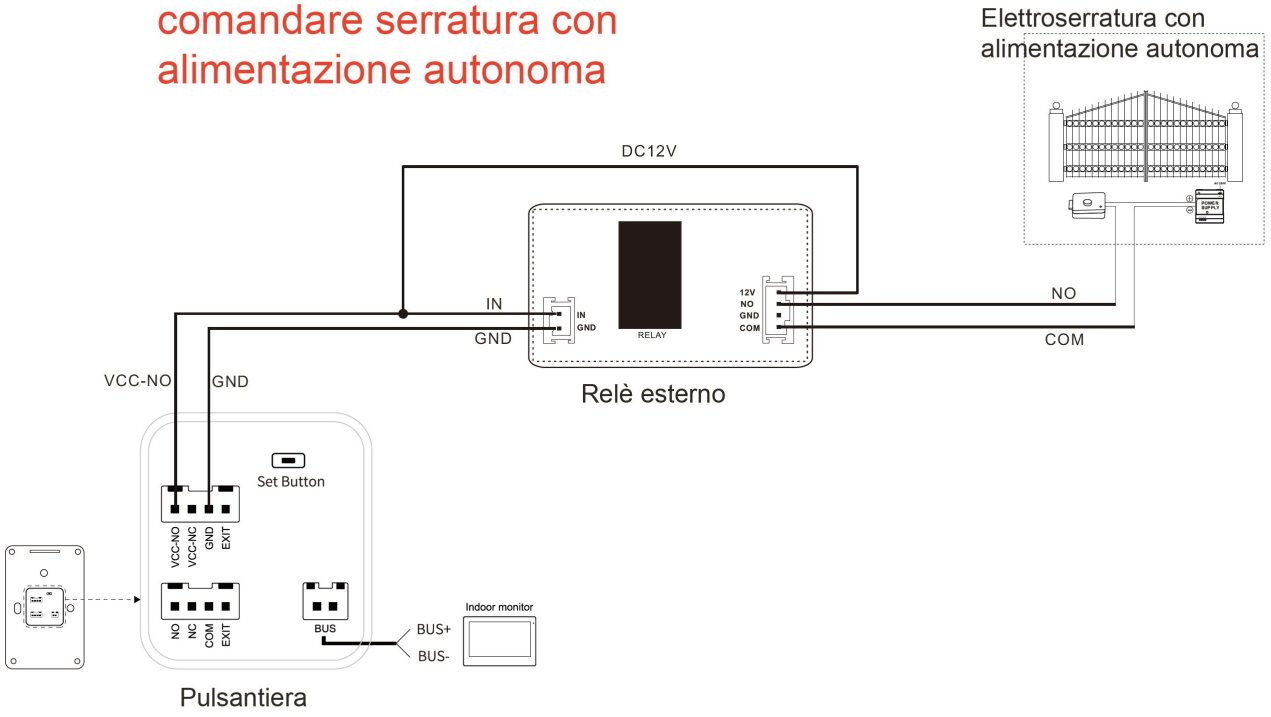
The typical scenario for this use is when the button panel needs to open a driveway door (Lock1 relay) and a pedestrian gate (Lock2 12V).

If in your application you need to open two doors with independent power supply and no

For a powered lock, you would need two Lock1 outputs. In this case, you can use the Lock2 output.

to drive an external relay. The following diagram shows how to control a door opener with self-powered from Lock2 output using an external relay.

Collegare relè esterno su Lock2 per comandare serratura con alimentazione autonoma



Inserting labels on the keypad

To enter names on the keypads it is NOT necessary to dismantle the keypad from behind.
Simply remove the clear plastic protection covering the label by prying
gently at the point indicated in the figure with a small flat screwdriver.

Under the transparent protection there is a flexible support on which you can write
directly or apply a small label

Storing badges on the keypad

Several keypads and keyboards have an IC badge reader that allows you to open the LOCK2 locks simply by bringing the badge close to the reader. Each keypad with a badge reader It features the reader symbol on the front and comes with 5 badges included. The badges supplied with the keyboards are ALREADY CONFIGURED in the keypad so you normally don't need to memorize them.
In this section we show you how to pair a badge to a keyboard in case you have purchased additional badges or if you want to reconfigure them.

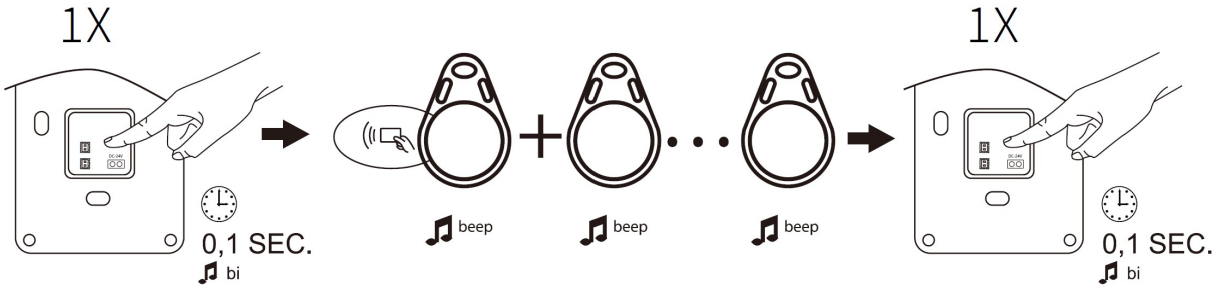
STORAGE OF BADGES ON KEYPADS (WITHOUT KEYBOARD)

1 – Press the rear SET button for 1 second. The LED next to the button flashes.

2 - Swipe the first badge in front of the sensor. You will hear a confirmation beep.

3 – Swipe the other badges one after the other. Each scan produces a confirmation beep.

4 – Press the rear SET button for 1 second to exit programming mode

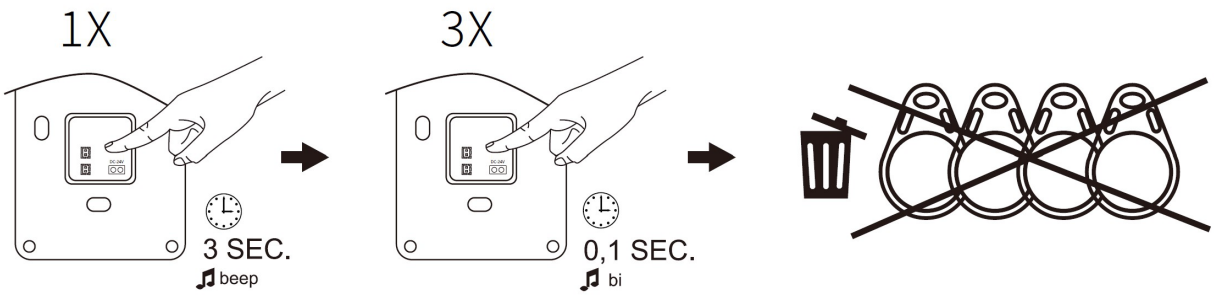


To delete all stored badges

1 - Press the SET button for 3 seconds - The LED next to the button flashes

2 – Press the SET button twice briefly. You will hear 3 confirmation beeps.

3 – All previously stored badges have been deleted



In keyboards, badge storage is different and is part of the configuration that is performs as illustrated below.

ATTENTION – Each keypad equipped with a badge reader is supplied complete with 5 badges door openers already configured. A badge can only be paired with one keypad. of the system. You cannot pair the same badge with more than one keypad/keypad.

Configuring keyboards

The keyboards have only one call button, always linked to floor 1, and a keyboard that can be configured by following these instructions.

ACCESS TO CONFIGURATION

1 – Enter the factory ADMINISTRATOR code 123456

2 – Press #. You will hear a long double beep indicating access to programming.

Once you are in programming you can perform these functions

SHORT GUIDE

Operation	**Step 1**	**Step 2**	**Step 3**
Change password administrator	0#	Enter password xxxxxx #	
Add door opener password	1#	Enter position 1-199 Xxx #	Enter password xxxxxx #
Clear door opener password	2#	Enter position 1-199 Xxx #	
Add badge	3#	Enter position 1-199 Xxx #	Bring badge closer
Delete badge	4#	Enter position 1-199 Xxx #	
Backlight	7#	00# always on 01# always off 02#touch-activated	

CHANGE ADMINISTRATOR PASSWORD

1 – Enter the factory ADMINISTRATOR code 123456

2 – Press #. You will hear a long double beep indicating access to programming.

3 –**Press 0**and then #. You will hear a single long beep

4 – Enter a new 6-digit code, then press #. You will hear a single long beep.

5 – Press * to exit programming. You will hear a double beep.

ADD DOOR OPENER PASSWORD

1 – Enter the factory ADMINISTRATOR code 123456

2 – Press #. You will hear a long double beep indicating access to programming.
3 –**Press 1**and then #. You will hear a single long beep
4 – Enter the 3-digit progressive number that will identify this password, then press #. Yes
You will hear a long confirmation beep. Each password must have its own unique identification number.
progressive from 001 to 199, you will presumably start from 001.
5 – Enter the 6-digit access code, then press #. You will hear a single long beep. If the
If the 3-digit progressive number is already busy, you will hear a double beep and you will need to repeat the operation.
6 – After hearing the long beep, you can enter other access passwords and confirm with
. You will hear another long beep and the new password will be saved in the progressive number
next.
7 – Press * twice to exit programming. You will hear a short double beep.

NOTE: Enter the door opener code followed by the # key to open the door

DELETE DOOR OPENER PASSWORD

1 – Enter the factory ADMINISTRATOR code 123456
2 – Press #. You will hear a long double beep indicating access to programming.
3 –**Press 2**and then #. You will hear a single long beep
4 – Enter the progressive number of the 3-digit password you want to delete, or enter
99 if you want to delete all passwords, then press #. You will hear a long confirmation beep (3 beeps
long if you have deleted all passwords).
5 – After hearing the long beep, you can delete other subsequent access passwords
by pressing #. You will hear another long beep and the next password will be deleted.
6 – Press * twice to exit programming. You will hear a short double beep.

ADD IC BADGE

1 – Enter the factory ADMINISTRATOR code 123456
2 – Press #. You will hear a long double beep indicating access to programming.
3 –**Press 3**and then #. You will hear a single long beep
4 – – Enter the 3-digit progressive number that will identify this badge, then press #. Yes
You will hear a long confirmation beep. Each badge must have its own identification number.
progressive from 001 to 199, you will presumably start from 001.
5 – Hold the badge close to the reader. You will hear a single long beep. If the badge is already present,
you will hear a double beep and you will need to repeat the operation.
6 – After hearing the long beep, you can register more badges. You will hear another long beep.
and the new badge will be saved in the next progressive number.
7 – Press * twice to exit programming. You will hear a short double beep.

ATTENTION – Each keypad equipped with a badge reader is supplied complete with 5 door opener badges already configured. A badge can be PAIRED WITH ONLY ONE PUSHBUTTON PANEL in the system. Not you can pair the same badge with more than one keypad/keyboard.

DELETE IC BADGE

1 – Enter the factory ADMINISTRATOR code 123456

2 – Press #. You will hear a long double beep indicating access to programming.

3 –**Press 4**and then #. You will hear a single long beep

4 – – Enter the 3-digit progressive number of the badge to be deleted, if you want to delete all the badge type 99, then press #. You will hear a long confirmation beep. Each badge must have a its progressive identification number from 001 to 199.

5 – After hearing the long beep, you can delete other badges. You will hear another long beep and the next badge will be deleted.

6 – Press * twice to exit programming. You will hear a short double beep.

SET BACKLIGHT

1 – Enter the factory ADMINISTRATOR code 123456

2 – Press #. You will hear a long double beep indicating access to programming.

3 –**Awards 7**and then #. You will hear a single long beep

4 – Type:

- 00 – Backlight always off
- 01 – Backlight always on
- 02 – Backlight off that turns on when touched

5 - Press #. You will hear a long beep.

6 – Press * to exit programming. You will hear a short double beep.

Reset keypads/keyboards

The push-button panels and keyboards must be connected to the bus initially ONE AT A TIME and never all together. The keypads are numbered Door 1,2,3,4 automatically based on in the order in which they are first connected to the bus. If you are not satisfied with the numbering obtained, or you connected all the cameras together creating IP conflicts, you can do a factory reset of the keypads/keyboards.
This reset clears the keyboard's IP address and allows you to reconfigure it in the system.

To reset, proceed as follows:
1 – Disconnect the keypad from the bus. The keypad turns off.
2 – Connect the keypad to the bus
3 - Press the call button within 20 seconds of turning on and hold it for 5 seconds until you hear a double beep, then release the button.
4 - The reset takes 30 seconds, once complete you will hear a single beep.

After the reset, the keypad is deleted from the system, even if it is connected to the bus.
The IP address that was previously assigned to it has been deleted.
Disconnect and reconnect the keypad to the bus so that it self-configures again assuming the first available port number (1,2,3,4)

NOTE: The reset does not delete any badges associated with the keypad/keyboard, which remain stored and deleted with the appropriate command in the configuration as seen in precedence.