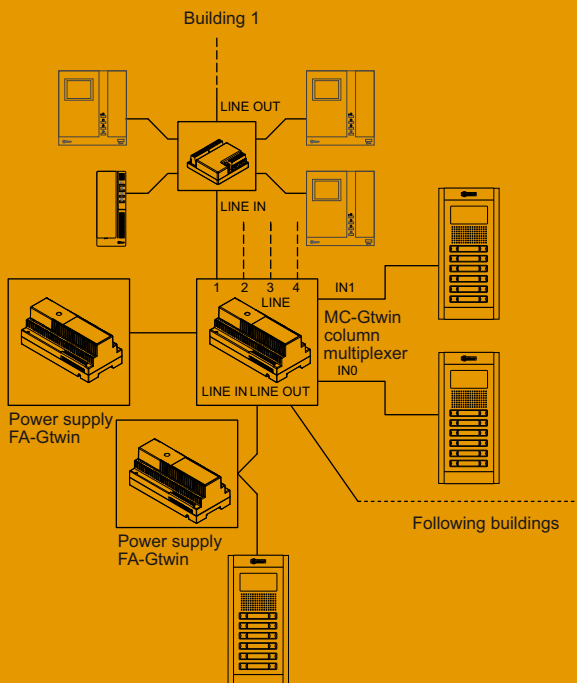




SYSTEM MANUAL



GTWIN 2-wire installation system manual



CONTENTS

GENERAL CHARACTERISTICS AND STANDARDS.....	3-4
TYPES OF SYSTEM.....	4-8
SYSTEM OPERATION.....	9
Control of calls and busy state.....	9
Door panel functions.....	9-10
Monitor/telephone functions.....	11-12
SYSTEM INSTALLATION.....	13
Safety precautions.....	13
Minimum and maximum number of devices.....	13-14
System power supply.....	15-16
Types of usable cable.....	16
Distances and maximum sums.....	17-27
Connection of the main lock release.....	28
Connection of the secondary lock release.....	28
Connection of the auxiliary signals of the door panel.....	28
Connection of the signals of the monitors/telephones.....	28
Wiring and end of line.....	28-29
ACTIVATION OF THE SYSTEM.....	30
1 Configuration of the ends of line (z)	30
2 Configuration of the devices.....	30-35
3 Turning on and checking the supply voltage.....	36
4 System check.....	36-37
5 Association of door panel buttons with apartments.....	37-39
6 Basic functional check.....	39
7 Optional programming for additional functions.....	40-43
TECHNICAL CHARACTERISTICS OF THE DEVICES.....	44
NOTES RELATED TO THE WIRING DIAGRAMS.....	44-45
WIRING DIAGRAMS.....	46-51
OPTIONAL CONNECTIONS.....	52-53
EL569 IN/OUT UNIT.....	54
EL566 IN/OUT UNIT.....	55
COMPLIANCE.....	56

Gtwin video door entry system with simplified wiring (non-polarised 2-wire bus).

Its modular structure enables the forming of small systems of 1 or 2 apartments and also large systems of different types and dimensions: dwe audio, video or mixed, offering suitable solutions to all requirements.

GENERAL CHARACTERISTICS AND TYPES OF SYSTEM

With the Gtwin system, it is possible to form video door entry installations of up to 127 users per MC-Gtwin multiplexer, with a maximum of 32 MC-Gtwin multiplexers, each with a maximum of 2 secondary panels (interior) and up to 4 main panels (general) and a guard unit.

The characteristics of the Gtwin video door entry system are the following:

System

- Up to 4 main door panels (general).
- Up to 32 MC-Gtwin multiplexers, each with a maximum of 2 secondary panels (interior).
- Up to 127 monitors/telephones and apartments per column/riser (building) with a single power supply.
- Up to 127 monitors/telephones and apartments per MC-Gtwin multiplexer with a single power supply.
- Up to 4 monitors/telephones in parallel per apartment.
- Possibility of connecting a guard unit with traditional functions in the system: day/night function, memorisation of missed calls, etc.
- Non-polarised 2-wire bus.
- No local power supply needed in access panels or monitors/telephones.
- Bypass wiring through a D4L-Gtwin distributor with 4 outputs (users) or IN/OUT directly on the terminals of the monitors/telephones.
- Protection against short circuits in the bypass (D4L-Gtwin distributor).
- Programming: simplified, with DIP switches for monitors/telephones and button panels.
- Activation of the electric lock from all monitors/telephones, with activation time and mode (free/with secret) programmable.
- Activation by relay of a second lock release (on door panel) from all monitors/telephones.
- Indication of open entrance door by means of an LED on the monitors/telephones.

Access panels

- These can be door panel with pushbuttons or coded panels.
- Colour camera.
- Entrance door sensor (indicating open door on monitors/telephones).

Monitors/telephones

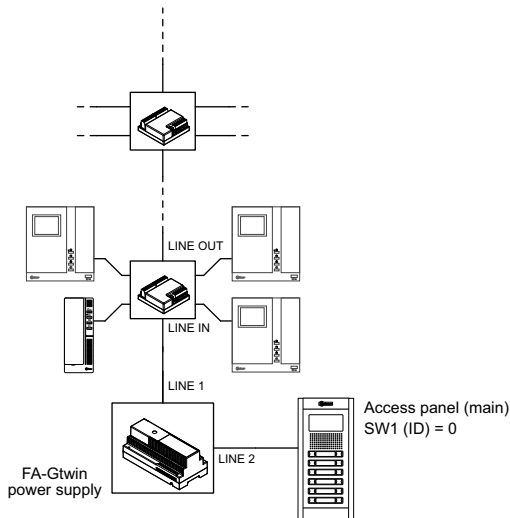
- Colour monitor with Tekna Gtwin 3.5" handset.
- Colour monitor with Tekna S Gtwin 4.3" handset.
- Hands-free Tekna HF Gtwin 4.3" colour monitor.
- T-5924 telephone.
- Different ringtones to identify call origin (selectable from 5 possible melodies).
- Different ringtones to identify call origin: main panel, secondary panel, intercom, guard unit and interior door of the apartment.
- Call to guard unit.
- Programmable intercom call to a monitor or telephone in the same vertical or apartment.
- Input for calls from the interior door of the apartment.
- Auxiliary call repeater output for the repetition of all calls, an additional self-powered call repeater or a call repeater relay.
- Display of the opening state of the entrance door.

Standards

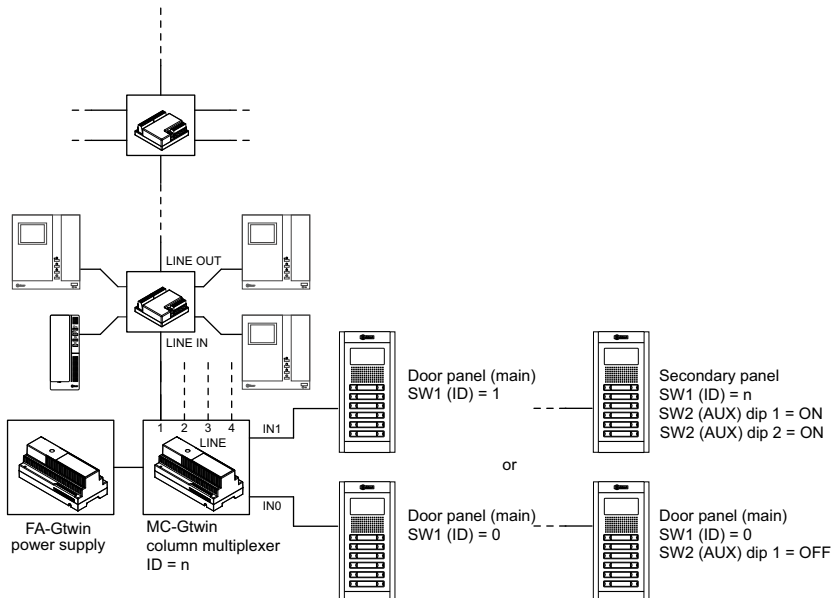
- IMQ and VDE certified system power supply.
- All devices comply with CE electromagnetic compatibility and low-voltage standards.
- The system is intrinsically protected against static electromagnetic interference and impulses.

TYPES OF SYSTEM

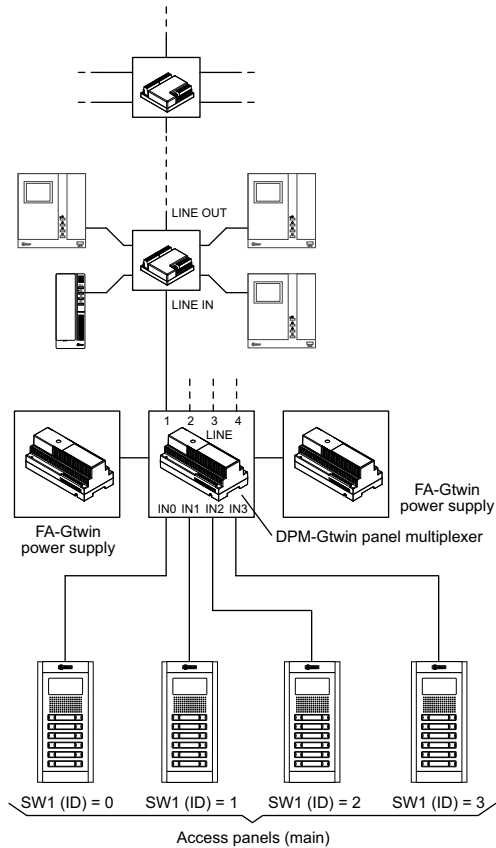
Building with 1 main access and 1 column (without multiplexer)



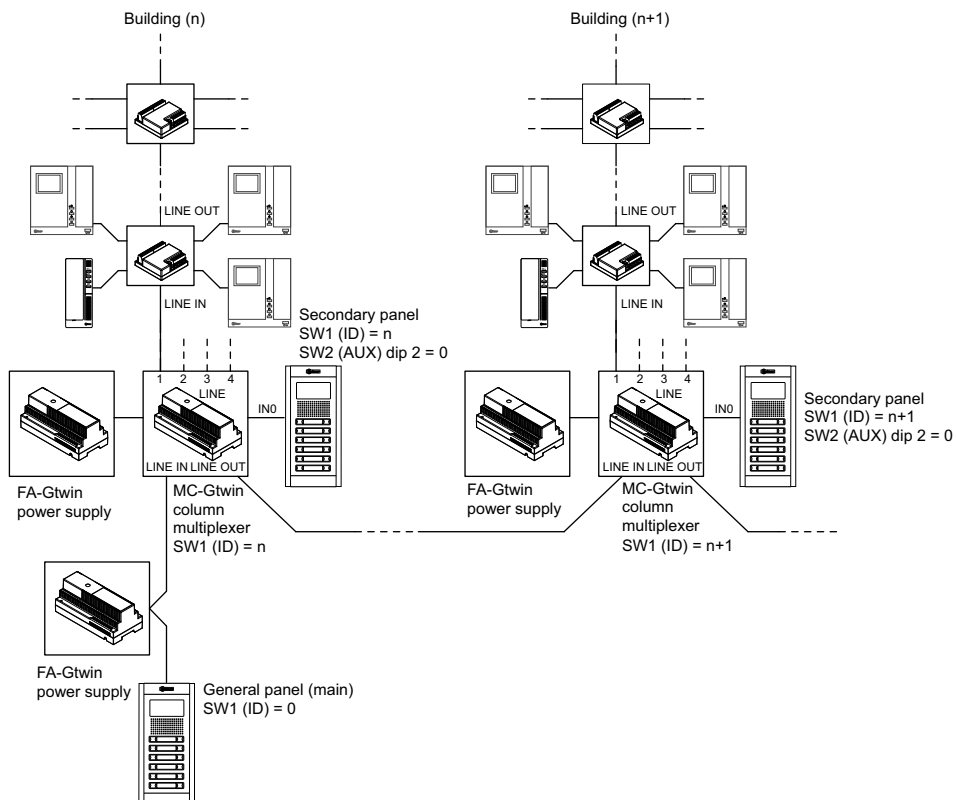
Building with 2 main accesses or 1 main and 1 secondary, maximum 4 columns (1 MC-Gtwin column multiplexer)



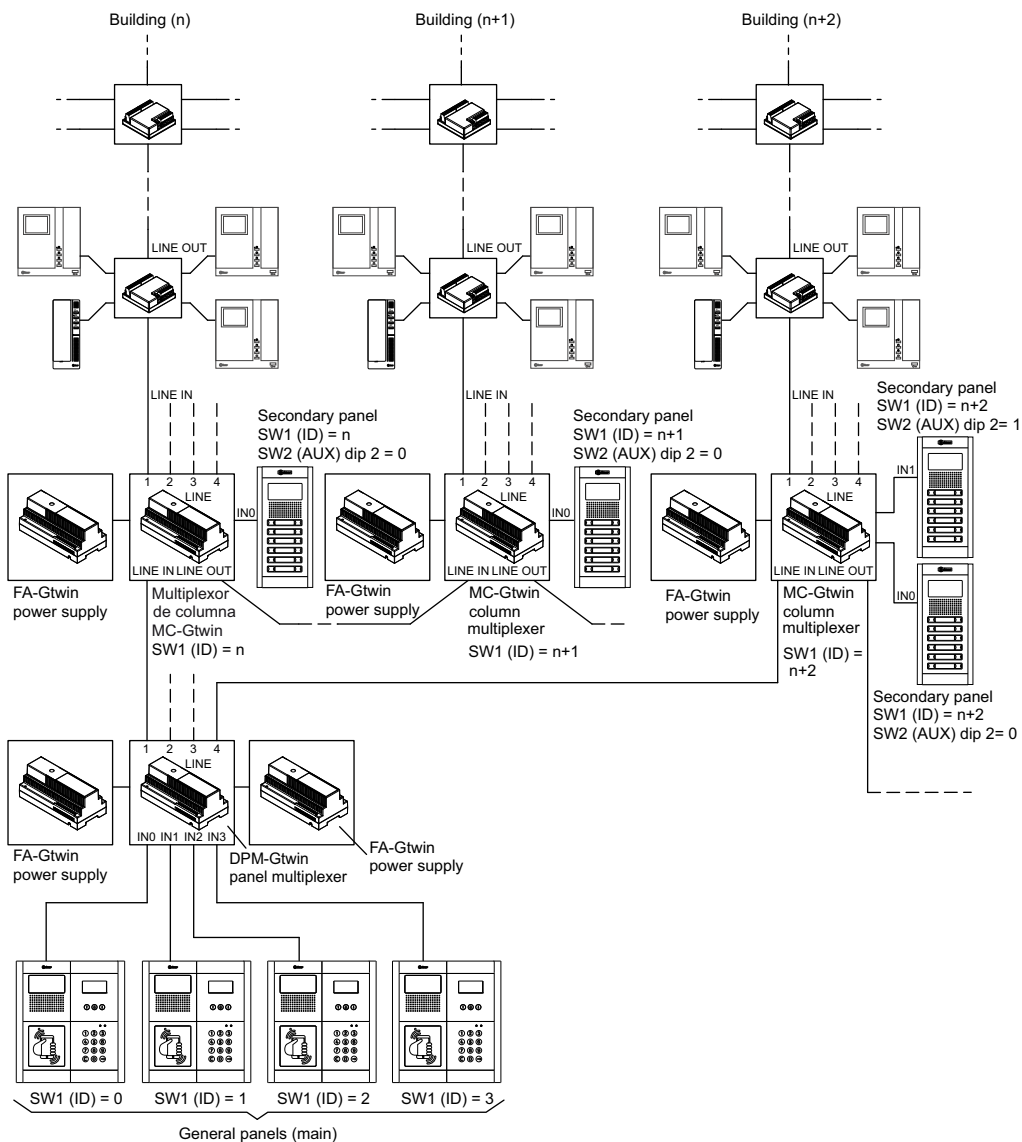
Building with 4 main accesses and maximum 4 columns (1 DPM-Gtwin panel multiplexer)



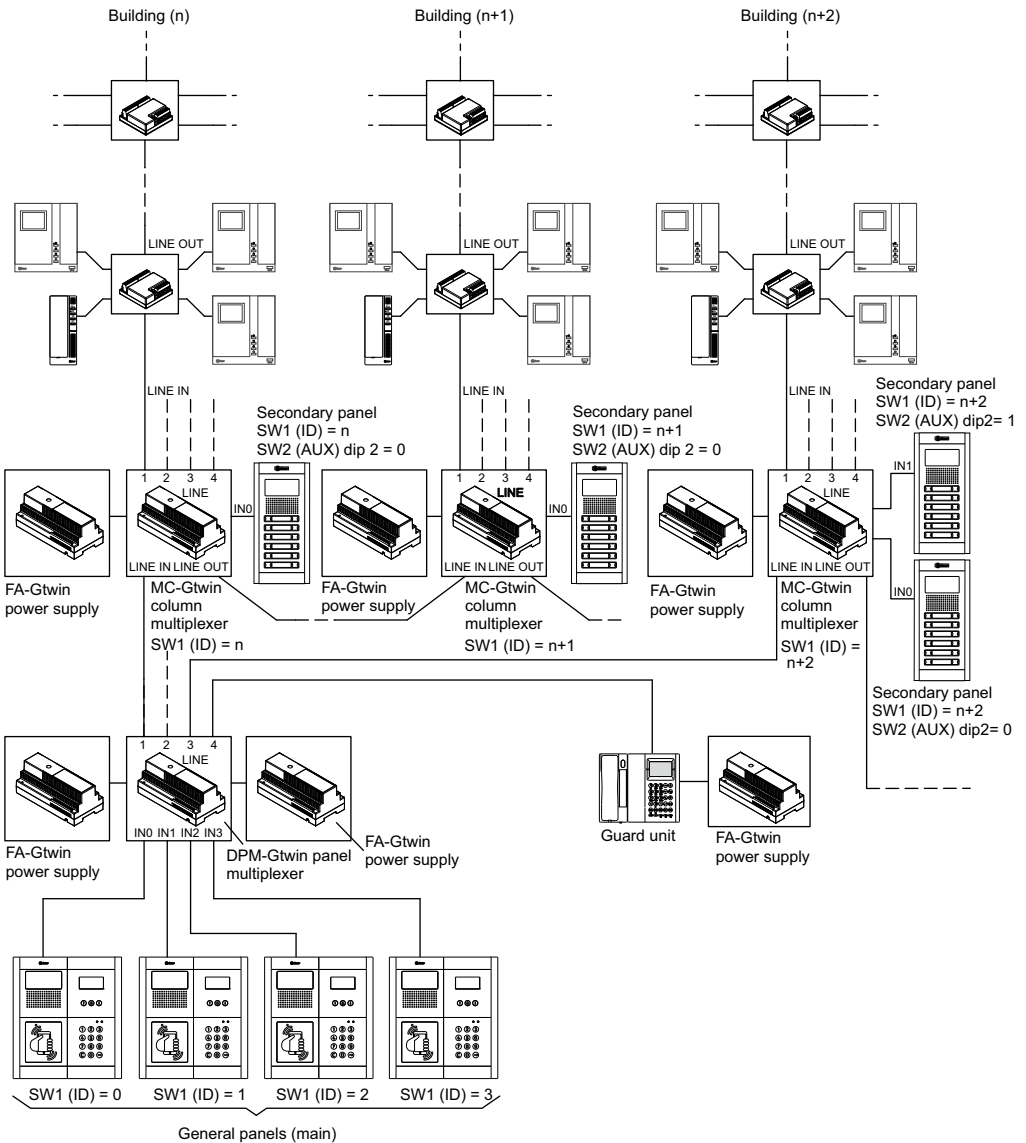
1 main general access and 1 secondary access in each building, maximum 64 columns, 16 buildings (16 MC-Gtwin multiplexers)



4 general accesses as main and 1 or 2 secondary accesses in each building, maximum 128 columns, 32 buildings (32 MC-Gtwin multiplexers)



4 general accesses as main, 1 or 2 secondary accesses in each building and a guard unit, maximum 128 columns, 32 buildings (32 MC-Gtwin multiplexers)



SYSTEM OPERATION

CONTROL OF CALLS AND BUSY CHANNEL

The Gtwin system enables several simultaneous conversations to take place in the different interior buildings, in addition to another conversation between a main general panel and a monitor/telephone in an interior building that is not in a busy channel.

The behaviour of the system after a call is the following:

- A call from a general panel places the other general panels and the building of the monitor/telephone called in a busy channel during response waiting time (max. 60 seconds). During the wait for a response, the system (general and secondary panels of the building called) is in a busy channel state. When the user responds and enters into conversation, the busy state is extended for the guaranteed talk time: this time can be set during installation and ranges from 1 to 70 seconds. When the guaranteed conversation time elapses, another call can interrupt the conversation. The maximum conversation time is 10 minutes. At the end of the conversation, as a result of the user hanging up or the waiting time being fulfilled, the system returns to the standby state.
- A call from a secondary panel behaves in the same way, but only occupies the channel of that building, even if there is a second secondary access panel, but not door panels of other buildings, whether general or secondary. At the end of the conversation, as a result of the user hanging up or the waiting time being fulfilled, the system returns to the standby state.
- The display image function of the door panels/cameras in the monitor places all of the main panels and the entire channel of the interior building in a busy state during the response waiting time (max. 60 seconds), but not the secondary panels corresponding to the other buildings. If the monitor establishes communication (when the handset is picked up or the corresponding button is pressed on hands-free monitors), the busy channel state can be prolonged, lasting for a time equivalent to the guaranteed conversation time (which is set during installation and ranges from 1 to 70 seconds). During busy channel time, no system monitor can perform the display image function. At the end of the conversation, as a result of the user hanging up or the waiting time being fulfilled, the system returns to the standby state.
- An intercom call places all of the monitors/telephones and secondary panels of the building in a busy state during the response waiting time (max. 60 seconds). When the user answers, the busy channel state can be prolonged for a guaranteed conversation time (which is set during installation and ranges from 1 to 70 seconds). During the busy time generated by an intercom call, door panel calls may or may not interrupt the intercom call and the intercom communication process, as programmed on the door panel (interruption parameter).
The maximum conversation time is 10 minutes.
At the end of the conversation, as a result of the user hanging up or the waiting time being fulfilled, the system returns to the standby state.
- A call to the apartment from the interior door of the apartment does not influence the busy state of the system.


DOOR PANEL FUNCTIONS



For the particular features of each door panel, refer to the corresponding instruction manual.

MAKING A CALL

When a door panel call is made to an apartment, the following situations may occur, depending on the state of the door panel and the column/riser of the building called:

- Door panel with free channel: the door panel emits a ringtone (1 beep).
- Door panel with busy channel: the door panel emits a busy channel tone (3 beeps in a row) and LED  of the door panel blinks for 3 seconds. At the end of the busy channel, it is necessary to make the call again.

CONTROL OF MAIN DOOR OPENING

The door panel's terminals (SE-, SE+) enable the connection of a 12V DC electric lock (Golmar), without the need for an additional power supply.

Activation of the electric lock:

- Each time the entrance hall button is activated (PA terminals).
- When the command to open the door of a monitor/telephone is received, according to the configuration of the 'free' or 'with secret' operating mode:
 - 'With secret': the activation of the door release button of a monitor/telephone can activate the electric lock of the door panel only if it is in a call, communication or auto switch-on process.
 - 'Free': the activation of the door release button of a monitor/telephone can activate the electric lock of the door panel (without the need for a call, communication or auto switch-on process) if the monitor/telephone of the apartment is in the same building (channel) as the door panel.

CONTROL OF SECONDARY DOOR OPENING

The SE2 terminals (relay C and NO contacts) of the door panel enable the connection of a 12V AC (máx. 1A) electric lock (Golmar), without the need for an additional TF-104 power supply. When the command to open a secondary door is received from a monitor/telephone by pressing button **B**, the relay is activated for 1 second (not configurable), according to the configuration of the 'free' or 'with secret' operating mode, as in the control of main door opening (see the 'Control of main door opening' section).

CONTROL OF THE DOOR SENSOR FOR THE 'OPEN DOOR' FUNCTION

The SP terminals of the door panel are an input for the control of an NC open door sensor. The monitors/telephones have a status LED (two-colour). The red LED will indicate the status of the door of the last panel that called the apartment and from which the door opening button was activated. In the case of an open door on the main panel, the LED is illuminated red and, in the case of an open door on a secondary panel, it is intermittent.

MONITOR/TELEPHONE FUNCTIONS



For the particular features of the monitor/telephone, see the corresponding manual.

RECEIVING CALLS

When a call is received in the apartment, the monitor/telephone rings with the melody set (one of 5 options) with these intervals:

Call origin	Time	Total bell duration
Call from main panel	3 seconds ON	3 seconds
Call from secondary panel	0.4 seconds ON 0.2 seconds OFF 5 times	2.8 seconds
Call from guard unit	0.1 seconds ON 0.05 seconds OFF 3 times pause 0.2 seconds repeated 5 times	2.8 seconds
Intercom call	0.5 seconds ON 0.5 seconds OFF 3 times	2.5 seconds

A call from the doorbell of the apartment (CP terminals of the monitor to connect a front door bell) is the same as a call from the main panel as far as the duration is concerned, but uses a different melody:

Doorbell call apartment front door	3 seconds ON	3 seconds
------------------------------------	--------------	-----------

From the moment a call from the video door entry or electronic door entry is received, it is possible to control the activation of the lock release without establishing communication.

If the apartment has several monitors/telephones in parallel, these sound in succession.

The main monitor displays the door panel image when receiving a call from the video door entry system. During the call time (60 seconds) and before establishing communication, a slave monitor can capture the door panel image if button **C** is pressed, causing the image on the monitor that was displaying it to disappear. After hanging up, the image will only be present on the monitor that established communication.

SHOW DOOR PANEL/CAMERA IMAGE FUNCTION

With the monitor in standby, it is possible to show the image of the main panel with ID equal to 0 by pressing button **C** of the monitor. As button **C** is pressed, the image of the following main panels will be displayed, followed by the images of the secondary panels and finally the connected cameras (up to 4 cameras) in the D4CAM-Gtwin module installed in the same building as the monitor. At the end, the cycle starts again from the main position 0.

If the handset is picked up or the start/end communication button is pressed (in the case of hands-free monitors), the user enters into audio and video communication with the currently selected door panel. While in communication with the door panel, the user can open the door by pressing the door release button at any time.

If the user does not establish communication, the show door panel image function concludes automatically 60 seconds after the beginning of this function.

CALL TO THE GUARD UNIT

To make a call to the guard unit with the monitor/phone in standby, pick up the handset or press the start/end communication button (in the case of a hands-free monitor) and then press the **B** button.

INTERCOM CALL

After programming a button of a monitor/telephone for the intercom function (see the programming section), pick up the handset or press the start/end communication button (in the case of a hands-free monitor) and then press the intercom call button.

The following situations may occur depending on the state of the building's channel:

- Free channel (monitor/telephone not busy): The monitor/telephone that makes the call emits a confirmation tone (1 beep) and, on the monitor/telephone of the apartment called, a melody will indicate the presence of an intercom call. Pick up the handset or press the start/end communication button.

- **Busy channel (monitor/telephone busy):** The monitor/telephone that makes the call emits 4 fast tones (4 beeps) indicating that the unit called is busy. Hang up and try later.

CALL FROM THE INTERIOR DOOR OF THE APARTMENT FUNCTION

The monitor/telephone has a terminal input (CP) for the connection of a call button (doorbell) of the interior door of the apartment. When the button (bell) is pressed, the monitor/telephone emits a 3-second tone with the melody set (different to the melody of the other calls). If the user has several monitors/telephones in parallel, only connect this button to one unit. The other units will sound in succession.

OUTPUT TO AUXILIARY CALL REPEATER

The monitor/telephone has a terminal output (S+, S-) for the connection of an auxiliary call repeater or call repeater relay (Gtwin). This output is activated simultaneously with any call received on the monitor/telephone.

OPEN DOOR FUNCTION

If a door sensor (contact) is connected to the terminals (SP) of the door panels, the monitor/telephone can control the open and closed status of the doors. If the door of a main panel is open, the LED is illuminated red; if the door of a secondary panel is open, the LED blinks.

The function is only active on the last monitor/telephone called where the door opening button was activated and corresponding to the last panel that made the call.

SYSTEM INSTALLATION

SAFETY PRECAUTIONS

- **Always disconnect the power supply** before installing or making modifications to the devices. The fitting and handling of these devices must be carried out by **authorised personnel**.

All wiring must run at least **40 cm away from any other wiring**.

On the power supply unit:

- Do not overtighten the screws on the connector.
- Install the power supply unit in a dry protected location free from the risk of dripping or splashing water.
- Avoid locations that are humid, dusty or near heat sources.
- Ensure that the air vents are free from obstruction so that air can circulate freely.
- To avoid damage, the power supply unit must be firmly secured in place.
- To prevent electric shock, do not remove the cover or handle the wires connected to the terminals.

On the monitor, telephones and distributors:

- Do not overtighten the screws on the connector.
- Install the devices in a dry protected location free from the risk of dripping or splashing water.
- Do not place in humid, dusty or smoky locations, or near sources of heat.
- Ensure that the air vents are free from obstruction so that air can circulate freely.

Note that the installation and handling of these devices must be performed by authorised personnel and in the absence of electrical current.

Always follow the instructions contained in this manual.

MINIMUM AND MAXIMUM NUMBER OF DEVICES

The minimum configuration of a Gtwin system includes the following: an FA-GTWIN power supply, a door panel and at least one monitor/telephone.

The maximum number of devices and users is as follows:

Device	Maximum number
D4L-GTWIN 4-user distributor	32 x 32 columns
FA-GTWIN power supply	34
MC-GTWIN column multiplexer	32
DPM-GTWIN panel multiplexer	1

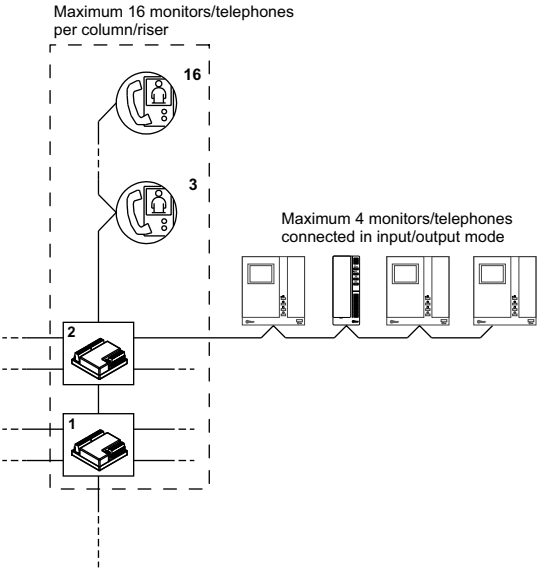
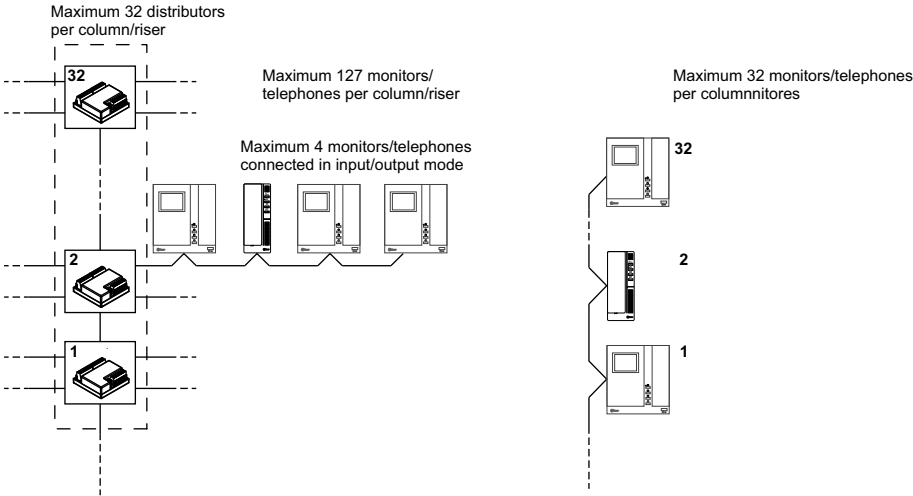
Panels	Maximum number
Main audio and video door entry panel	4
Secondary audio and video door entry panel	64
Total number of panels in the system	68

Monitors/telephones	Maximum number
Number of users (apartments) per MC-GTWIN column multiplexer	127
Number of users (apartments) per column/riser	127
Number of monitors/telephones in parallel (in the same apartment)	4
Total number of monitors/telephones per column/riser (counting the monitors/telephones in parallel)	127
Total number of monitors/telephones in input/output connection per (*) column/riser (counting the monitors/telephones in parallel).	32

(*) If the configuration is mixed (monitors/telephones + distributors connected in input/output in the column/riser), the maximum number of devices is 16. Monitors/telephones connected in bypass from the distributor are not counted.



If the column/riser exclusively has telephones, the maximum number of telephones is 127, even in the case of input/output connection in the column/riser.



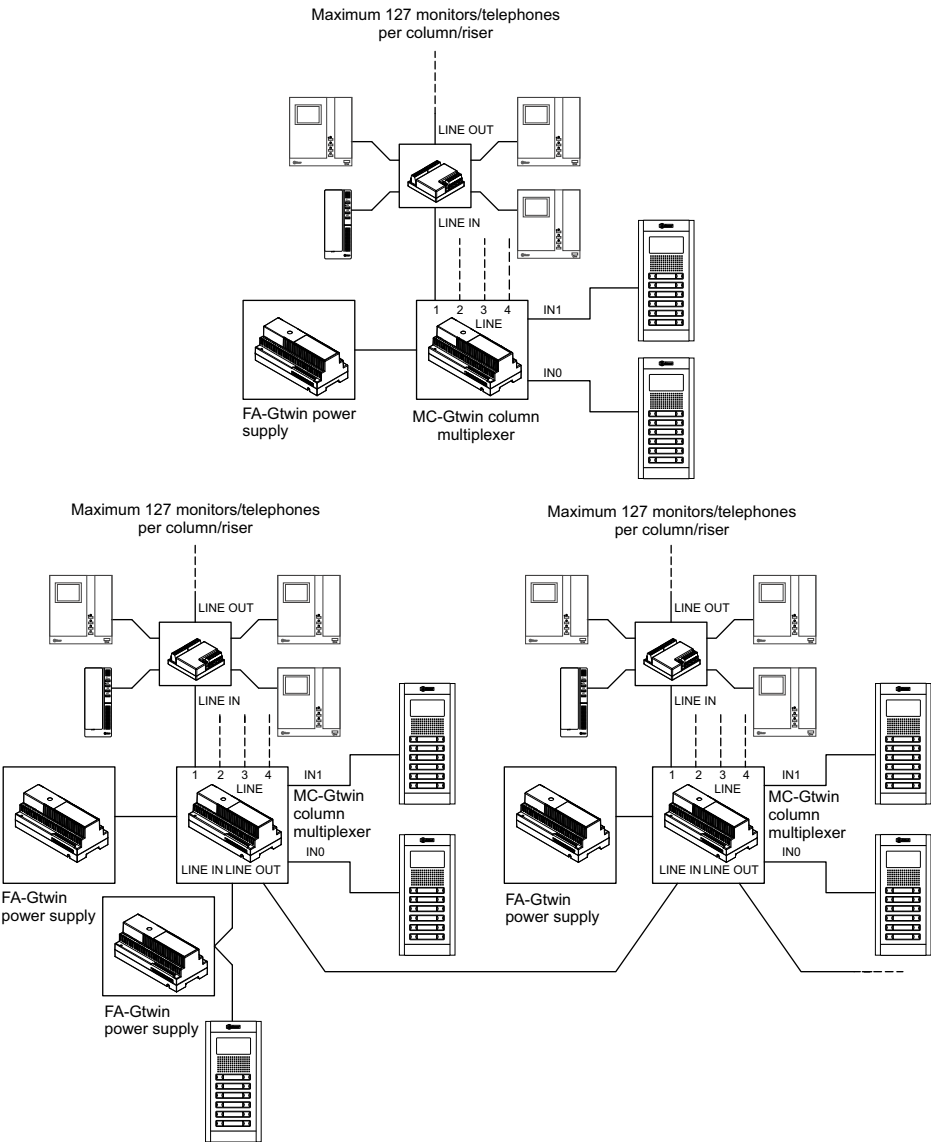
SYSTEM POWER SUPPLY

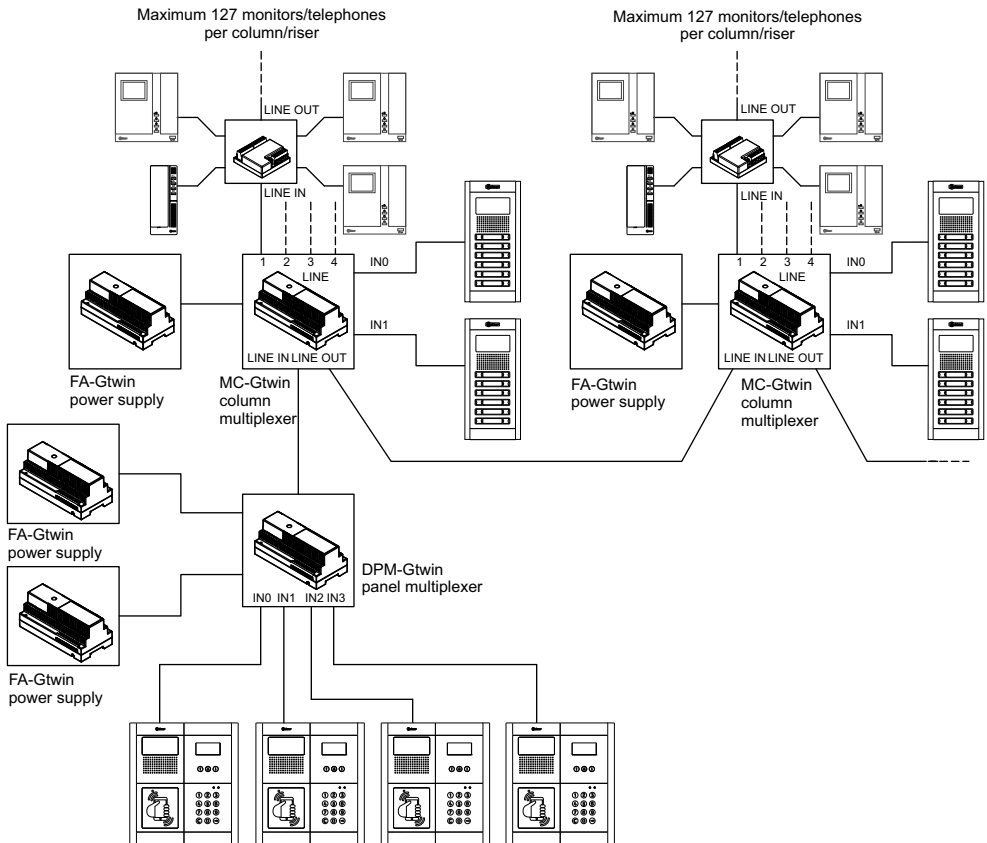
To calculate the number of power supplies required for the system, the following should be considered:

- System with a column/riser with 1 or 2 access panels with 122 buttons (apartments) each, up to 127 monitors/telephones, 1 column multiplexer: 1 FA-Gtwin power supply.

Note: In the case of more than 122 apartments, a coded panel is necessary.

- System with 32 columns/risers (32 column multiplexers): add 1 FA-Gtwin power supply for each MC-Gtwin column multiplexer.
- System with more than one main panel and panel multiplexer: add 1 FA-Gtwin power supply.





TYPES OF USABLE CABLE

The bus is NOT polarised. The Golmar RAP-GTWIN cable has been specially designed to ensure the system's maximum distance and extension. The twisting of the cable also ensures good immunity from interference.




For information about maximum distances and types of system achievable with the different kinds of cable, see the following paragraphs.

ATTENTION!: Installation with multipair cables in order to join conductors and increase the cross-section of the cable IS ABSOLUTELY PROHIBITED.

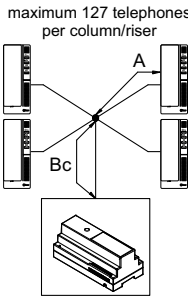
DISTANCES AND MAXIMUM SUMS

CONNECTION OF COLUMNS/RISERS WITH TELEPHONES ONLY

This chapter describes the different modes of connection of a column/riser with telephones only, regardless of whether the column or riser is connected to a FA-Gtwin power supply, MC-Gtwin column multiplexer or DPM-Gtwin panel multiplexer.


 The instructions described below are valid only for fully audio systems.

Connection of a column/riser with telephones only (audio system) in star connection

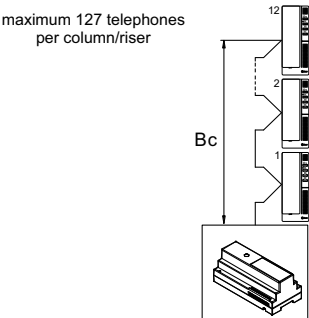


A = distance between the star connection and telephone.
Bc = distance between the device where the column/riser is connected.

Compatibility of cables and cross-sections	No. of users	Distance		
		A	Bc	A+Bc
RAP-GTWIN cable (for new installations)	127	50m	600m	600m
Telephone cable Ø 0.6 mm without cover	64	50m	300m	300m
CAT5 UTP (twisted pair)	64	50m	200m	200m
HVV05-F cable hose 1.5 mm ²	127	50m	300m	300m
Cable cross-section 1 mm ²	32	50m	300m	300m

 For information about the maximum length of all of the Bus wiring in the installation (sum) and connection of the door panel(s), see the following paragraphs.

Connection of a column/riser with telephones only (audio system) in input/output mode



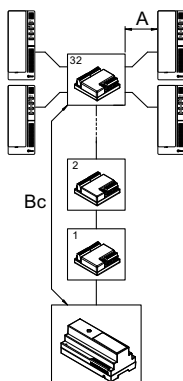
Bc = distancia entre el dispositivo desde donde está conectada la columna / troncal y el teléfono más alejado.

Compatibility of cables and cross-sections	No. of users	distance
		Bc
RAP-GTWIN cable (for new installations)	127	600m
Telephone cable Ø 0.6 mm without cover	64	300m
CAT5 UTP (twisted pair)	64	200m
HVV05-F cable hose 1.5 mm ²	127	300m
Cable cross-section 1 mm ²	32	300m



For information about the maximum length of all of the Bus wiring in the installation (sum) and connection of the door panel(s), see the following paragraphs.

Connection of a column/riser with telephones only (audio system) with distributors



A = distancia between the D4L-Gtwin distributor and telephone.

Bc = distancia between the device where the column/riser is connected and the furthest D4L-Gtwin distributor.


Compatibility of cables and cross-sections	No. of users	distance		
		A	Bc	A+Bc
RAP-GTWIN cable (for new installations)	127	50m	200m	200m
Telephone cable Ø 0.6 mm without cover	64	50m	150m	150m
CAT5 UTP (twisted pair)	64	50m	125m	125m
HVV05-F cable hose 1.5 mm ²	127	50m	125m	125m
Cable cross-section 1 mm ²	32	50m	50m	75m



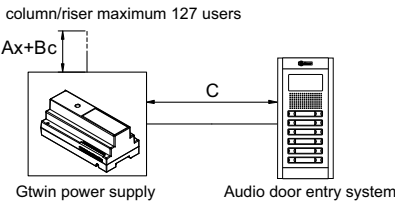
For information about the maximum length of all of the Bus wiring in the installation (sum) and connection of the door panel(s), see the following paragraphs.

CONNECTION OF THE AUDIO DOOR ENTRY SYSTEM WITH TELEPHONES ONLY (1 BUILDING)


This chapter describes the different connection modes of the door panels in systems with telephones only (1 building).

 The instructions described below are valid only for fully audio systems.

1 column/riser with an access panel and 1 power supply



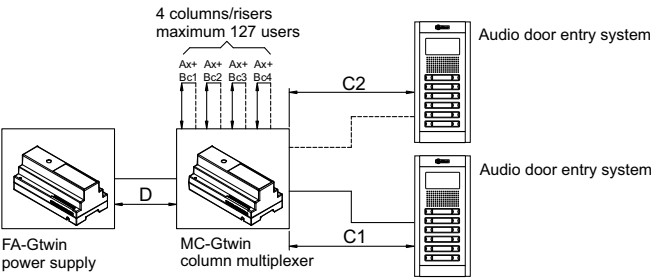
C = distance between the power supply and access panel.

 For information about the connection and distances of the column/riser, see the paragraph 'Connection of columns/risers with telephones only.'

Compatibility of cables and cross-sections	Distance	Sum (*)
	c	
RAP-GTWIN cable (for new installations)	600m	800m
Telephone cable Ø 0.6 mm without cover	300m	600m
CAT5 UTP (twisted pair)	200m	800m
HVV05-F cable hose 1.5 mm ²	300m	300m
Cable cross-section 1 mm ²	300m	300m


(*) The sum of all of the Bus wiring in the installation is obtained with the sum of all of the component parts: C+Bc+A1+A2+...+An.

4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels



Cx = distance between the column multiplexer and access panel.

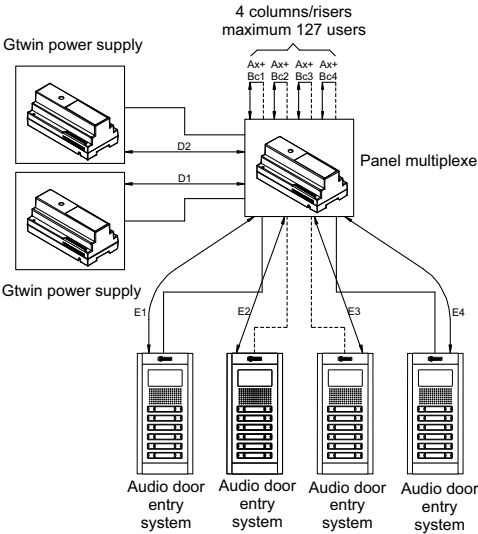
D = distance between the column multiplexer and power supply.

 For information about the connection and distances of the column/riser, see the paragraph 'Connection of columns/risers with telephones only.'


Compatibility of cables and cross-sections	Distance		Sum (*)
	cx	D	
RAP-GTWIN cable (for new installations)	400m	5m	800m
Telephone cable Ø 0.6 mm without cover	100m	5m	600m
CAT5 UTP (twisted pair)	100m	5m	800m
HVV05-F cable hose 1.5 mm ²	50m	5m	300m
Cable cross-section 1 mm ²	50m	5m	150m

(*) The sum of all of the Bus wiring in the installation is obtained with the sum of all of the component parts:
C1+C2+D+Bc1+Bc2+Bc3+Bc4 +A1+A2+...+An.

4 columns/risers with 1 panel multiplexer, 2 power supplies and up to 4 main panels



Ex = distance between the panel multiplexer and access panel.
Dx = distance between the panel multiplexer and power supply.

 For information about the connection and distances of the column/riser, see the paragraph 'Connection of columns/risers with telephones only.'

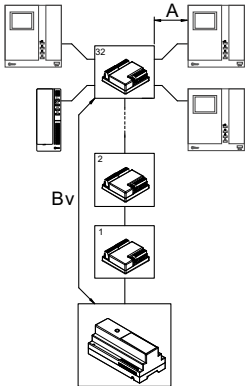
Compatibility of cables and cross-sections	Distance		Sum	
	Ex	Dx	Panels	Columns/ risers
RAP-GTWIN cable (for new installations)	400m	5m	1600m	800m
Telephone cable Ø 0.6 mm without cover	200m	5m	800m	600m
CAT5 UTP (twisted pair)	100m	5m	400m	800m

The sum of all of the wiring of the Bus of door panels is obtained by the sum of parts E1+E2+E3+E4+D1, while the sum of all of the wiring of the column/riser Bus is obtained by the sum of parts Bc1+Bc2+Bc3+Bc4+A1+A2+...+An+D2.

CONNECTION OF COLUMNS/RISERS WITH MONITORS/TELEPHONES


This chapter describes the different modes of connection of a column/riser regardless of whether the column/riser is connected to an FA-Gtwin power supply, MC-Gtwin column multiplexer or DPM-Gtwin panel multiplexer.

Connection of a column/riser with monitors/telephones and distributors

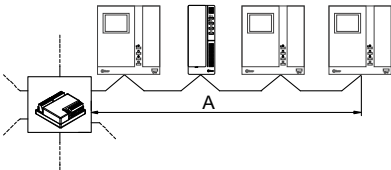


A = distance between the D4L-Gtwin distributor and monitor/telephone.
Bv = distance between the device where the column/riser is connected and the furthest D4L-Gtwin distributor.

Compatibility of cables and cross-sections	No. of users	distance		
		A	Bv	A+Bv
RAP-GTWIN cable (for new installations)	127	50m	200m	200m
Telephone cable Ø 0.6 mm without cover	64	50m	150m	150m
CAT5 UTP (twisted pair)	64	50m	125m	125m
HVV05-F cable hose 1.5 mm ²	127	50m	125m	125m
Cable cross-section 1 mm ²	32	50m	50m	75m

 For information about the maximum length of all of the Bus wiring in the installation (sum) and connection of the door panel(s), see the following paragraphs.

Bypass output from the D4L-Gtwin distributor to an apartment with monitors/telephones

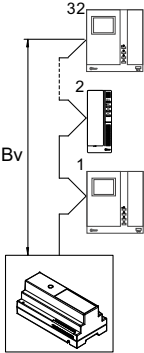


A = distance between the D4L-Gtwin distributor and the furthest monitor/telephone.

Compatibility of cables and cross-sections	No. of users	Distance
		A
RAP-GTWIN cable (for new installations)	Max 4	50m
Telephone cable Ø 0.6 mm without cover		
CAT5 UTP (twisted pair)		
HVV05-F cable hose 1.5 mm ²		
Cable cross-section 1 mm ²		


Connection of a column/riser with monitors/telephones in input/output mode

maximum 32 monitors/telephones
per column/riser



Bv = distance between the device where the column/riser is connected and the furthest monitor/telephone.

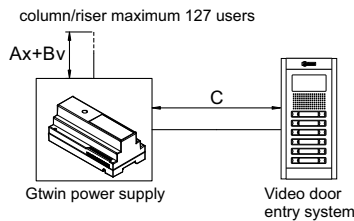
Compatibility of cables and cross-sections	No. of users	Distance
		Bv
RAP-GTWIN cable (for new installations)	32	200m
Telephone cable Ø 0.6 mm without cover	32	190m
CAT5 UTP (twisted pair)	32	190m
HVV05-F cable hose 1.5 mm ²	32	150m
Cable cross-section 1 mm ²	32	100m

 For information about the maximum length of all of the Bus wiring in the installation (sum) and connection of the door panel(s), see the following paragraphs.


CONNECTION OF THE AUDIO DOOR ENTRY SYSTEM (1 BUILDING)

This chapter describes the different connection modes of the door panels in systems with monitors (1 building).

1 column/riser with an access panel and 1 power supply



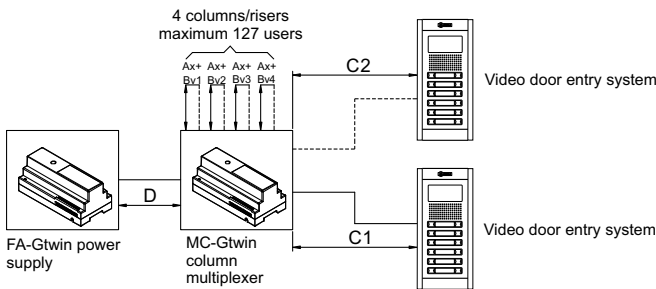
C = distance between the power supply and door panel.

 For information about the connection and distances of the column/riser, see the paragraph 'Connection of columns/risers with monitors/telephones.'


Compatibility of cables and cross-sections	Distance	Sum (*)
	c	
RAP-GTWIN cable (for new installations)	200m	800m
Telephone cable Ø 0.6 mm without cover	100m	600m
CAT5 UTP (twisted pair)	100m	800m
HVV05-F cable hose 1.5 mm ²	50m	300m
Cable cross-section 1 mm ²	50m	150m

(*) The sum of all of the Bus wiring in the installation is obtained with the sum of all of the component parts:
 $C+Bv+A1+A2+...+An$.

4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels.




Cx = distance between the column multiplexer and access panel.
D = distance between the column multiplexer and power supply.

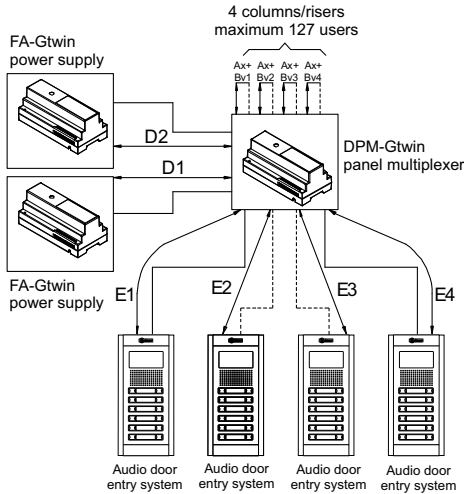
 For information about the connection and distances of the column/riser, see the paragraph 'Connection of columns/risers with monitors/telephones.'

Compatibility of cables and cross-sections	Distance		Sum (*)
	cx	D	
RAP-GTWIN cable (for new installations)	200m	5m	800m
Telephone cable Ø 0.6 mm without cover	100m	5m	600m
CAT5 UTP (twisted pair)	100m	5m	800m
HVV05-F cable hose 1.5 mm ²	50m	5m	300m
Cable cross-section 1 mm ²	50m	5m	150m

(*) The sum of all of the Bus wiring in the installation is obtained with the sum of all of the component parts:
 $C1+C2+D+Bv1+Bv2+Bv3+Bv4+A1+A2+...+An$.


 The instructions described above must also be considered when the column multiplexer is connected to the channel of the street panels in systems with more than 1 building.

4 columns/risers with 1 panel multiplexer, 2 power supplies and up to 4 main panels



Ex = distance between the panel multiplexer and access panel

Dx = distance between the panel multiplexer and power supply

 For information about the connection and distances of the column/riser, see the paragraph 'Connection of columns/risers with monitors/telephones.'

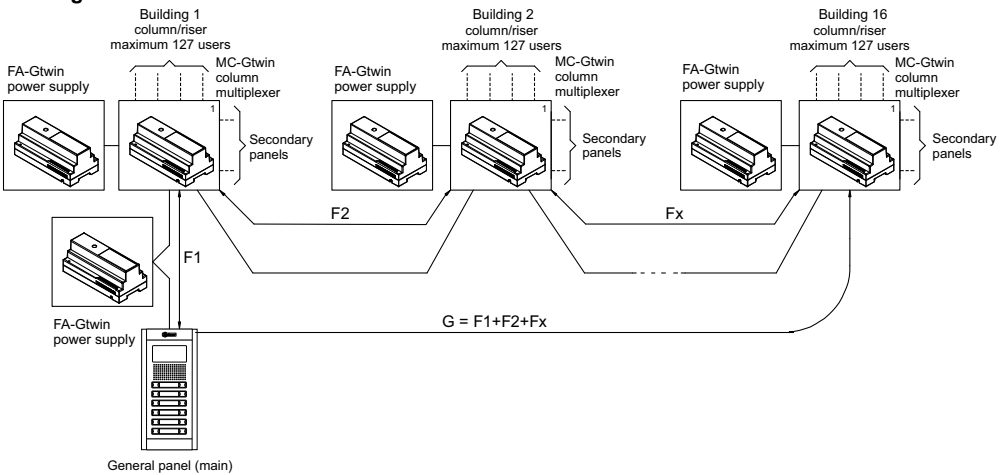
Compatibility of cables and cross-sections	Distance		Sum	
	Ex	Dx	Panels	Columns/ risers
RAP-GTWIN cable (for new installations)	200m	5m	800m	800m
Telephone cable Ø 0.6 mm without cover	200m	5m	800m	600m
CAT5 UTP (twisted pair)	100m	5m	400m	800m

The sum of all of the wiring of the Bus of door panels is obtained by the sum of parts $E1+E2+E3+E4+D1$, while the sum of all of the wiring of the column/riser Bus is obtained by the sum of parts $Bv1+Bv2+Bv3+Bv4+A1+A2+...+An+D2$.

CONNECTION OF THE GENERAL PANEL SYSTEM WITH INTERIOR BUILDINGS

This chapter describes the different connection modes of the general panel channel with interior buildings (each interior building a column multiplexer).

System with 1 general panel (main) with up to 16 interior buildings with 2 secondary panels in each building.

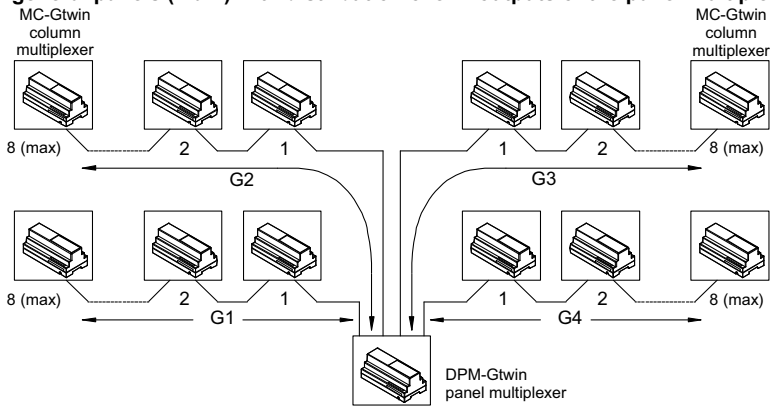


G = distance between the general panel (main) and the furthest column multiplexer

Cable	Distance
	G
RAP-GTWIN cable	200m

For information about distances and the sum of all of the wiring of the installation Bus of each column multiplexer, see the paragraph "4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels."

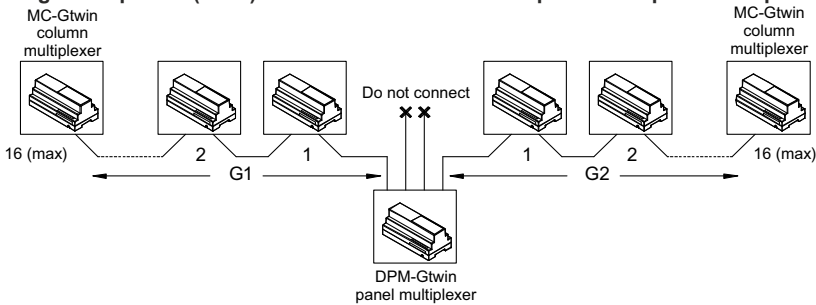
System with general panels (main) with distribution over 4 outputs of the panel multiplexer



Cable	No. of column multiplexers for each line	Distance	Sum of the 4 distribution outputs of the DPM-Gtwin
		Gx	G1+G2+G3+G4
RAP-GTWIN cable	Max 8	600m	2400m

For information about distances and the sum of all of the wiring of the installation Bus of each column multiplexer, see the paragraph '4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels.'

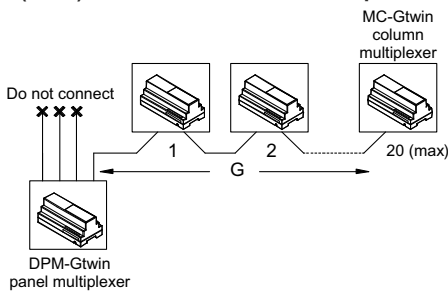
System with general panels (main) with distribution over 2 outputs of the panel multiplexer



Cable	No. of column multiplexers for each line	Distance	Sum of the 2 distribution outputs of the DPM-Gtwin
		Gx	G1+G2
RAP-GTWIN cable	Max 16	400m	800m

For information about distances and the sum of all of the wiring of the installation Bus of each column multiplexer, see the paragraph '4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels.'

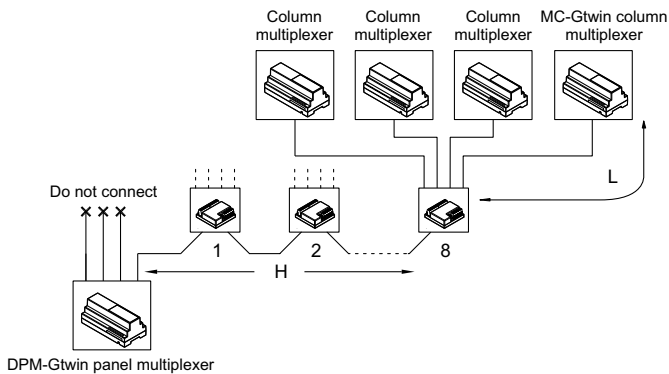
System with general panels (main) with distribution over 1 output of the panel multiplexer



Cable	No. of column multiplexers for each line	Distance
		G
RAP-GTWIN cable	Max 20	400m

For information about distances and the sum of all of the wiring of the installation Bus of each column multiplexer, see the paragraph '4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels.'

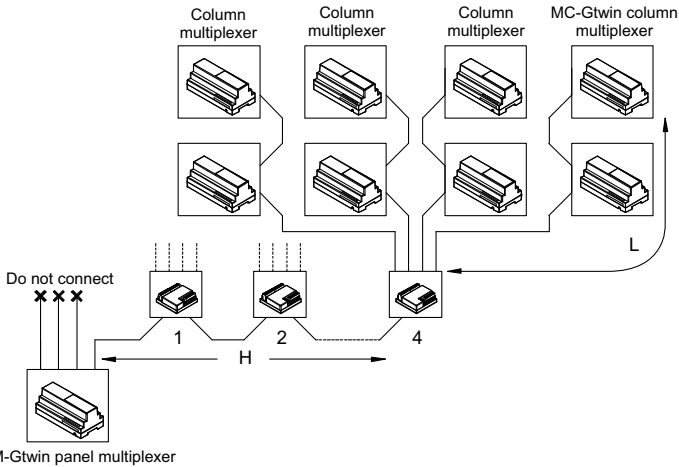
System with general panels (main) with distribution over 1 single output of the panel multiplexer using 8 D4L-Gtwin 4-user distributors.



Cable					
			H	L	H+L1+L2+...+L32
RAP-GTWIN cable	Max 8	Max 32	200m	50m	1800m

For information about distances and the sum of all of the wiring of the installation Bus of each column multiplexer, see the paragraph '4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels.'

System with general panels (main) with distribution over 1 single output of the panel multiplexer using 4 D4L-Gtwin 4-user distributors.



Cable	No. of 4-user distributors	No. of column multiplexers for each line	Distance		Sum
			H	L	H+L1+L2+...+L16
RAP-GTWIN cable	Max 4	Max 32	200m	50m	1000m

For information about distances and the sum of all of the wiring of the installation Bus of each column multiplexer, see the paragraph '4 columns/risers with 1 column multiplexer, 1 power supply and 1 or 2 access panels.'

CONNECTION OF THE MAIN LOCK RELEASE (TERMINALS SE-, SE+)

	Cable cross-section	0.28 mm ²	0.5 mm ²	1 mm ²
Maximum distance				
Access panel and lock release.		10 m	20 m	30 m

CONNECTION OF THE SECONDARY LOCK RELEASE (TERMINALS SE2, SE2 'C and NO')

	Cable cross-section	0.28 mm ²	0.5 mm ²	1 mm ²
Maximum distance				
Access panel and AC lock release (max 18Vac/1A)		10 m	20 m	30 m

CONNECTION OF THE AUXILIARY SIGNALS OF THE ACCESS PANEL

	Cable cross-section	0.28 mm ²
Maximum distance		
External 'entrance hall' button of the lock release (PA, PA)		25 m
Door sensor (SP, SP)		25 m

CONNECTION OF THE SIGNALS OF THE MONITORS/TELEPHONES

	Cable cross-section	0.28 mm ²
Maximum distance		
Floor call button (CP, CP)		10 m
Auxiliary call repeater (S+, S-)		10 m

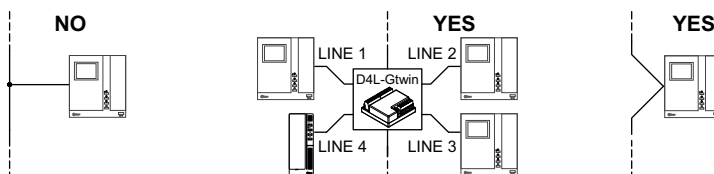
WIRING AND END OF LINE

- Only use the Golmar RAP-GTWIN cable.
- Do not alter the characteristics of the cable: the minimum bending radius must not be less than 10 times the outer diameter of the cable (about 7 cm).
- The cable sheath must only be cut in the indispensable section to minimise the separation of the 2 wires.
- **Making connections between the modules (power supply, column multiplexer, etc.) outside their connection terminals is not permitted.**

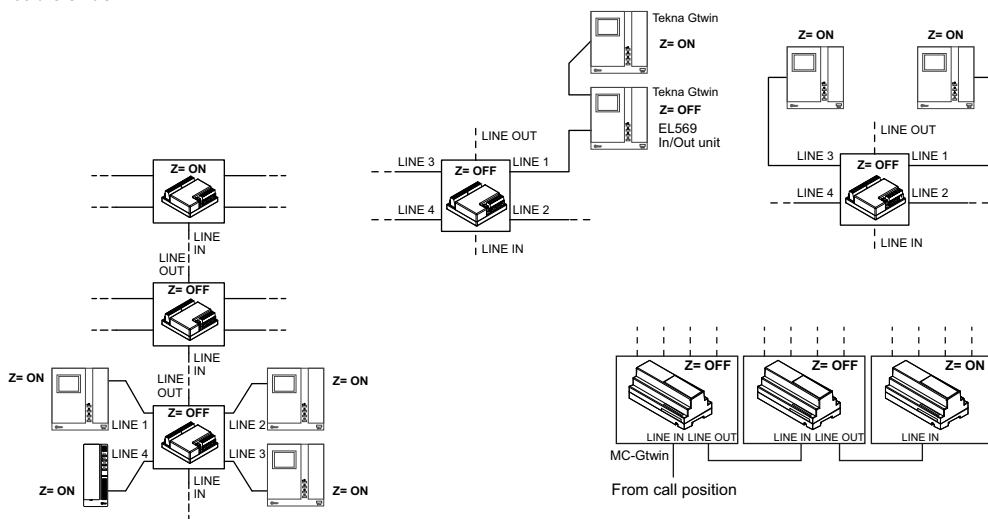
To connect a monitor/telephone in bypass in the column/riser outside its connection terminals, it is necessary to connect the D4L-Gtwin 4-user distributor.

Exception: If the column/riser has telephones only, it is possible to make electrical nodes.

The use of other types of cable requires the prior approval of Golmar, according to the type of cables and distances of the project.



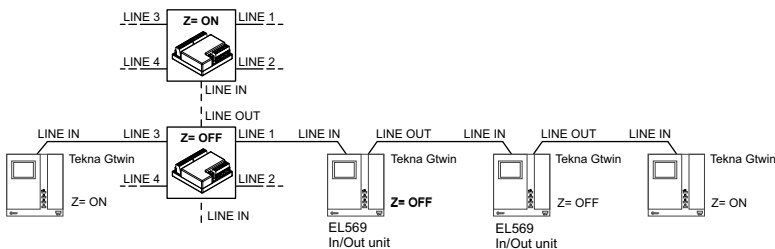
- In the monitors/telephones, distributors and column multiplexer modules, there is a jumper that enables the end of line (Z) to be activated. It is necessary to activate the end of line in all of the devices where the Bus cable ends:



To configure the position of the end of line jumper, see the quick guide enclosed with the corresponding device.

Attention:

The input/output connection of the monitors can only be made by adding the EL569 unit to the 'Tekna Gtwin' intermediate monitors and the EL566 unit to the 'Tekna-HF Gtwin' or 'Tekna-S Gtwin' intermediate monitors (in the housing at the back of the monitors).



ACTIVATION OF THE SYSTEM

After wiring all of the devices of the site, carry out the following operations:

1. Configuration of devices with end of line.
2. Configuration of devices with DIP switch.
3. Turning on and checking the supply voltage.
4. Checking the system.
5. Associating door panel buttons with users or programming the residents' list on the coded panel.
6. Basic functional check.
7. After performing all of these operations, when the additional functions require it, programming operations must be carried out on the monitors/telephones.

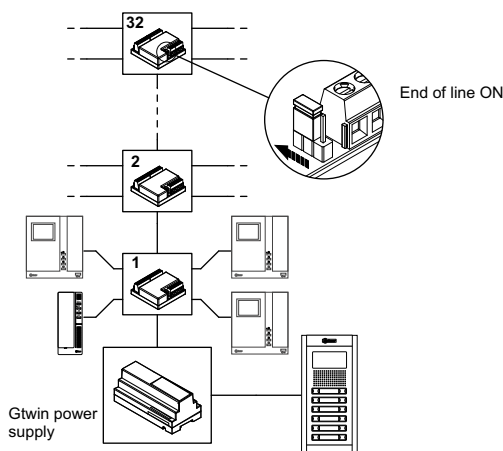
1 CONFIGURATION OF THE ENDS OF LINE (Z)

See the previous chapter to correctly configure ends of line Z.

Default settings.

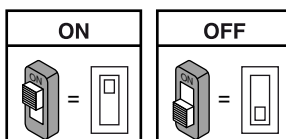
- All monitors/telephones leave the factory set with the end of line activated.
- All distributors leave the factory set with the end of line deactivated.
- All column multiplexers leave the factory with the end of line activated (jumper between the Z terminals present).

In this way, in the classic case of a system with a door panel connected directly to the power supply and monitors/telephones connected in bypass to the apartments in a column/riser, it is necessary to set the jumper at the end of line to ON only in the last distributor.



2 CONFIGURATION OF THE DEVICES

Configuration can also be carried out with the system without power supply, since it consists of configuring the DIP switches present on the door panels, monitors/telephones and column multiplexer.



Special attention must be paid to the configuration of the device codes. For the correct functioning of the system, take into account that:

- Each door panel of the system must have a different code (called ID or Identification), which is set with the SW1 DIP switch using values from 0 to 3 if they are main, or from 0 to 31 if they are secondary. In the same column/riser, there may be secondary panels with the same ID but with a different address (see below the configuration of the address of a secondary panel, which can only have the values 0 and 1).
- In the case of a secondary panel, the ID must match the ID code set in the column multiplexer.
- Each monitor/telephone must be set with an ID code (apartment call) using the SW1 DIP switch with a code from 0 to 126, and the monitor/telephone set as master, slave 1, slave 2 or slave 3 using the SW2 DIP switch with a code from 0 to 3 respectively.
- In the case of a single monitor/telephone in the apartment, the SW2 DIP switch will be set as master and always with code 0.
- In apartments, up to 4 monitors/telephones can be connected in parallel, all with the same ID code (apartment call), and each monitor/telephone set as master and slave 1-3.
- In the same building or column multiplexer, there should not be apartments with the same call code.
- Each column multiplexer must be set with a different ID code (building/channel) using the DIP switches with values from 0 to 31. Secondary panels present in the column multiplexer must have the same ID code (building/channel). All monitors/telephones in a column multiplexer acquire the ID code (building/channel) of the column multiplexer.
- If the system has a building with only one column/riser, it is not necessary to use a column multiplexer and the monitors/telephones have the ID code (building/channel) with value 0; but, if the building has up to 4 columns/risers, it will be necessary to use a column multiplexer. If the system has more than one building (channel), a column multiplexer will be necessary for each building (channel).
- All ID codes of the panel and column multiplexor must begin from 0 and **be consecutive**.

CONFIGURATION OF THE DOOR PANELS

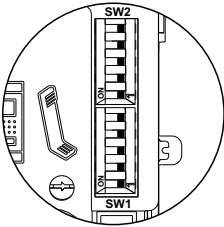
Depending on the type of installation used, the door panels must be set with a different ID code in the system.
ID: Door panel code.

- Set a code from 0 to 3 if the door panel is main, or from 0 to 31 if it is secondary, as shown in the table below.
- There should not be 2 main panels with the same ID, 2 secondary panels with the same ID but with different address (0 or 1) may coexist, see the **AUX** table in the next section.
 - The ID of the secondary panel must match the ID of the column multiplexer where it is connected, if it is present.

DIP SWITCH SW1:



(*) ID=0	ID=1	ID=2	ID=3	ID=4	ID=5	ID=6	ID=7
ID=8	ID=9	ID=10	ID=11	ID=12	ID=13	ID=14	ID=15
ID=16	ID=17	ID=18	ID=19	ID=20	ID=21	ID=22	ID=23
ID=24	ID=25	ID=26	ID=27	ID=28	ID=29	ID=30	ID=31



(*) Factory setting.

AUX: Auxiliary settings.


Type of door panel: The door panel can be set as main (General) or secondary. From the main panel, you can call all of the apartments in the system; from the secondary panel, you can only call the apartments in the building (channel) to which it belongs. The apartment that receives the call can distinguish its origin by the type of bell.

Secondary panel: In the same column multiplexer, there may be 2 secondary panels, but they must have a different address (0 or 1).

Door opening: The electric lock can be controlled in 'with secret' or 'free' mode. The behaviour of the door panel in the two cases is as follows:

- 'With secret': The activation of the door opening button of a monitor/telephone can activate the electric lock of the door panel if it is in a communication, call or auto switch-on process with the door panel (it does not allow the activation of the electric lock in an auto-spy process).
- 'Free': The activation of the door opening button of a monitor/telephone can activate the electric lock of the door panel if it is set as main, or if it is set as secondary and the apartment belongs to the same building (channel) as the door panel. The function is normally used in secondary panels.

Interruption: During an intercom, auto-spy or auto switch-on process, in the building (channel) or, more generally, the parts of the system in a busy channel state (depending on the configuration of this switch), it is possible to interrupt or not with a call from a door panel.

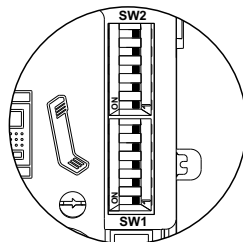
 The 'interruption' parameter has to be set the same in all of the door panels present in the system.

Door panel lighting LEDs: It is possible to deactivate the turning on of the lighting LEDs of the camera when the night lighting of the environment is considered sufficient.

SW2: DIP SWITCH:

AUX

Type of door panel	ON DIP (*) 1 2 3 4 5 Main	ON DIP 1 2 3 4 5 Secondary
Address of secondary panel	ON DIP (*) 1 2 3 4 5 Secondary 0	ON DIP 1 2 3 4 5 Secondary 1
Door opening	ON DIP 1 2 3 4 5 Door opening 'free'	ON DIP (*) 1 2 3 4 5 Door opening 'with secret'
Interruption	ON DIP 1 2 3 4 5 Activated	ON DIP (*) 1 2 3 4 5 Not activated
Door panel lighting LEDs	ON DIP (*) 1 2 3 4 5 Door panel lighting LEDs deactivated	ON DIP 1 2 3 4 5 Door panel lighting LEDs activated

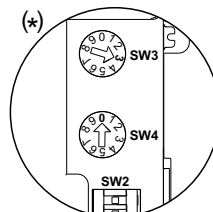


GUARANTEED COMMUNICATION TIME: The position of the **SW3** rotary switch determines the minimum guaranteed communication time keeping the channel busy. The busy channel time is present during the call time (max. 60 seconds) and communication time.

Pos. 0 = 1 s Pos. 1 = 10 s Pos. 2 = 20 s Pos. 3 = 30 s (*)
Pos. 4 = 40 s Pos. 5 = 50 s Pos. 6 = 60 s Pos. 7 and 8 = 70 s
Pos. 9 = NOT PERMITTED.

ACTIVATION TIME OF THE MAIN LOCK RELEASE: The position of the **SW4** rotary switch determines the activation time of the main lock release (terminals SE+, SE-).

Pos. 0 = 1 s (*) Pos. 1 = 10 s Pos. 2 = 20 s Pos. 3 = 30 s
Pos. 4 = 40 s Pos. 5 = 50 s Pos. 6 = 60 s Pos. 7 = 70 s
Pos. 8 = 80 s Pos. 9 = 90 s



(*) Factory setting.



The guaranteed communication time has to be set the same on all of the system's door panels.

CONFIGURATION OF THE MONITORS/TELEPHONES

CODE: User code.

Set a number from 0 to 126, respecting the following rules:

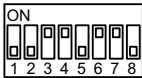
- In the column/riser, there should not be different apartments with the same user code.
- In the case of monitors/telephones in parallel in the same apartment, these must have the same user code.



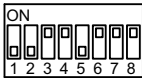
To set the desired code, use the **CODE DIP switches** from 2 to 8 (2 = most significant bit and 8 = least significant bit); DIP switch 1 must be OFF.

(See the instruction manual supplied with the product).

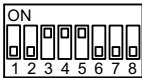
USER 0	USER 1	USER 2	USER 3	USER 4	USER 5
USER 6	USER 7	USER 8	USER 9	USER 10	USER 11
USER 12	USER 13	USER 14	USER 15	USER 16	USER 17
USER 18	USER 19	USER 20	USER 21	USER 22	USER 23
USER 24	USER 25	USER 26	USER 27	USER 28	USER 29
USER 30	USER 31	USER 32	USER 33	USER 34	USER 35
USER 36	USER 37	USER 38	USER 39	USER 40	USER 41
USER 42	USER 43	USER 44	USER 45	USER 46	USER 47
USER 48	USER 49	USER 50	USER 51	USER 52	USER 53



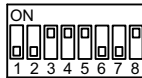
USER 54



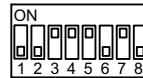
USER 55



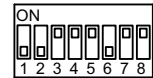
USER 56



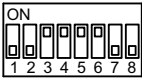
USER 57



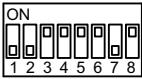
USER 58



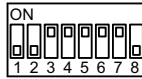
USER 59



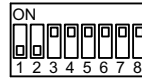
USER 60



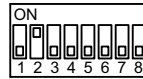
USER 61



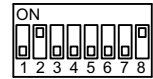
USER 62



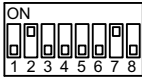
USER 63



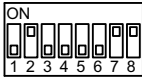
USER 64



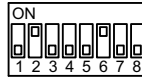
USER 65



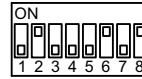
USER 66



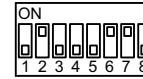
USER 67



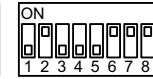
USER 68



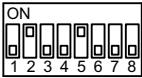
USER 69



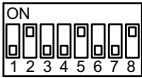
USER 70



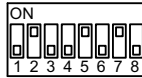
USER 71



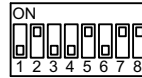
USER 72



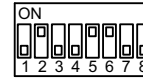
USER 73



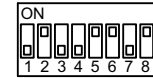
USER 74



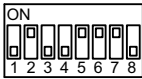
USER 75



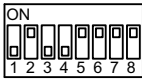
USER 76



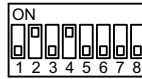
USER 77



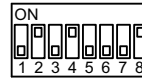
USER 78



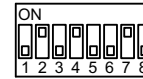
USER 79



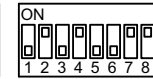
USER 80



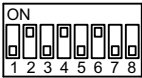
USER 81



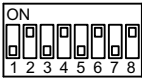
USER 82



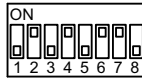
USER 83



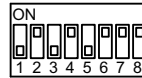
USER 84



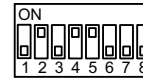
USER 85



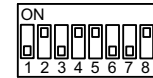
USER 86



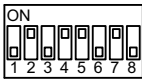
USER 87



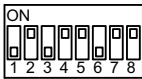
USER 88



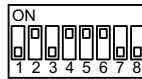
USER 89



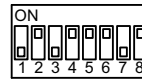
USER 90



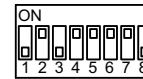
USER 91



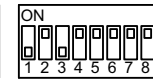
USER 92



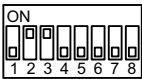
USER 93



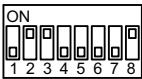
USER 94



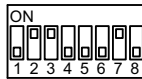
USER 95



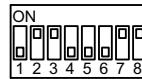
USER 96



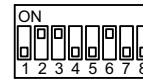
USER 97



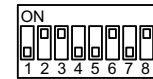
USER 98



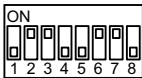
USER 99



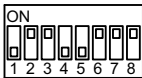
USER 100



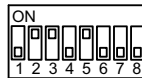
USER 101



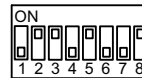
USER 102



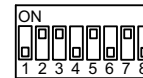
USER 103



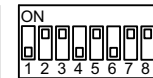
USER 104



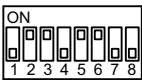
USER 105



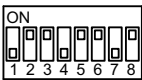
USER 106



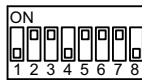
USER 107



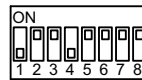
USER 108



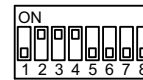
USER 109



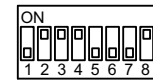
USER 110



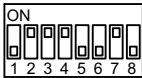
USER 111



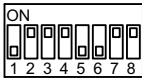
USER 112



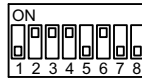
USER 113



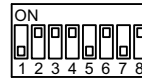
USER 114



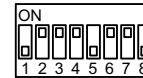
USER 115



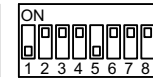
USER 116



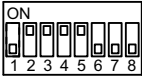
USER 117



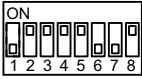
USER 118



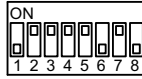
USER 119



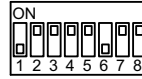
USER 120



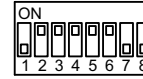
USER 121



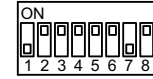
USER 122



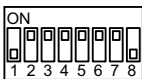
USER 123



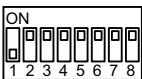
USER 124



USER 125



USER 126



(*)USER 126

(*) This user code also has code address 126.

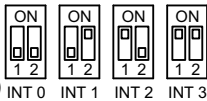
INT: Internal code of the monitor/telephone to set as master/slave.
Set the monitor/telephone as master, slave 1, slave 2 or slave 3 using the SW2 DIP switch with a code from 0 to 3 respectively. Taking into account the following points:

- In the case of a single monitor/telephone in the apartment, the code to be set will always be 0.
- In apartments, up to 4 monitors/telephones can be connected in parallel, all with the same user code but with different internal monitor/telephone code.

The internal code serves to identify each of the monitors/telephones in the same apartment. This enables intercom calls to be made to a specific monitor/telephone in the same apartment. In the case of intercom calls to different apartments, and in the case of calls coming from door panels and from apartment front doors, all of the monitors/telephones in the apartment always sound. The following considerations must also be borne in mind:

- When master monitor/telephone 0 receives a call, it sounds immediately and slave monitors/telephones 1, 2 and 3 sound in succession, one after the other.
- If a call is made from a video door entry panel, master monitor/telephone 0 shows the image of the door panel. During the call time (60 seconds) and before establishing communication, the other slave monitors in the same apartment can capture the image of the door panel if button **C** is pressed, causing the image on the monitor that was displaying it to disappear.

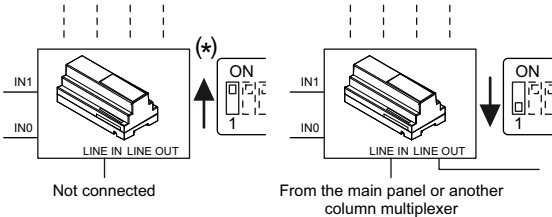
Sw2 DIP SWITCH:



(*) Factory setting.

CONFIGURATION OF THE COLUMN MULTIPLEXER

DIP 1: This switch allows the system to be notified as to whether or not the column multiplexer has a device connected to the LINE IN terminals; if no device is connected to the LINE IN (the case of a simple system with only one or two door panels connected directly to inputs IN1 and IN0 of the column multiplexer), it must be set to ON.



(*) Factory setting.

DIP 2 - 6: These enable an ID code (building/channel) to be set according to the table shown below. Secondary panels present in the column multiplexer must have the same ID code (building/channel).

BUILDING 0	BUILDING 1	BUILDING 2	BUILDING 3	BUILDING 4	BUILDING 5	BUILDING 6	BUILDING 7
BUILDING 8	BUILDING 9	BUILDING 10	BUILDING 11	BUILDING 12	BUILDING 13	BUILDING 14	BUILDING 15
BUILDING 16	BUILDING 17	BUILDING 18	BUILDING 19	BUILDING 20	BUILDING 21	BUILDING 22	BUILDING 23
BUILDING 24	BUILDING 25	BUILDING 26	BUILDING 27	BUILDING 28	BUILDING 29	BUILDING 30	BUILDING 31

3 TURNING ON AND CHECKING THE SUPPLY VOLTAGE

Once adjustment of the ends of line (Z) and configuration of all of the devices have been completed, before mounting the monitors/telephones on the connectors, the system can be powered and the following checks carried out with the system in standby:

FA-GTWIN power supply

Check that each pair of LINE1 and LINE2 terminals have a direct voltage of 44 Vdc to 48 Vdc.

Panels

Check that the LINE terminals have a direct voltage of 38 V to 48 V.

D4L-GTWIN video distributors

Check that the LINE (IN/OUT) and LINE1-4 terminals have a direct voltage of 38 Vdc to 48 Vdc.

Monitors/telephones

Check that the LINE terminals have a direct voltage of 38 Vdc to 48 Vdc.

MC-GTWIN column multiplexers

Check that the POWER, LINE IN and LINE OUT terminals, if they are connected, have a direct voltage of 38 Vdc to 48 Vdc.

DPM-GTWIN panel multiplexer

Check that the POWER IN and POWER LINE terminals have a direct voltage of 38 Vdc to 48 Vdc.

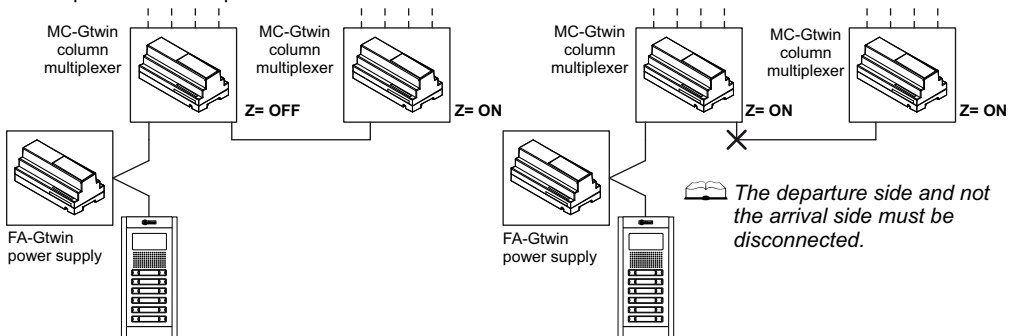
4 CHECKING THE SYSTEM

HOW TO SECTION THE SYSTEM

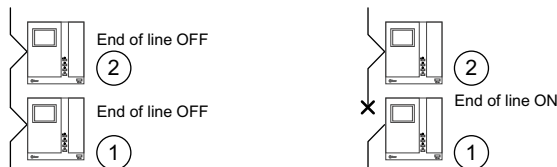
In the event of troubleshooting for faults or incorrect wiring, it may be useful to section the system to isolate the affected doors.

Note that the interconnection of devices forms an adapted transmission network. It is therefore not possible to disconnect parts of the system without taking into account the alteration created. It is necessary to respect the following rules:

- 1 If a branch of a line connected to the column multiplexer is connected, only leave the end of line (Z) in the last multiplexer in the ON position.



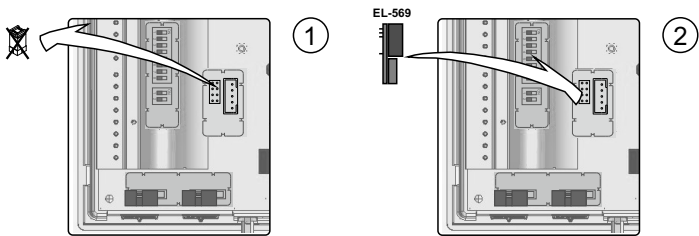
- 2 If a part of the connected section is disconnected in the input/output, activate the end of line (Z in the ON position) in the last device connected in the cable column/riser:



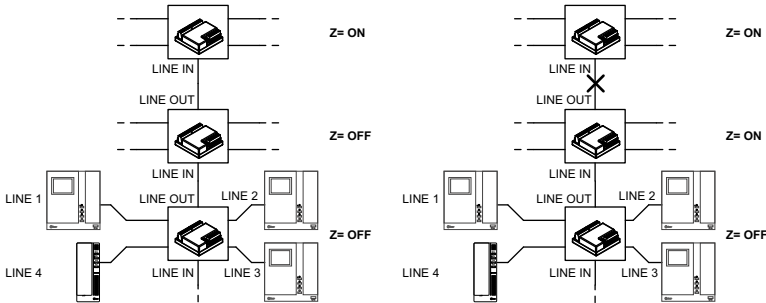
Monitor 2 is isolated, meaning that monitor 1 becomes the last in the line and must have the end of line activated. In this case, the departure side and not the arrival side must also be disconnected.



In the last monitor of the line, connect the end of line (Z) and remove the end of line jumper from the intermediate monitors and insert the EL569 in/out unit into the Tekna Gtwin monitor and the EL566 in/out unit into the Tekna-HF/Tekna-S Gtwin monitor. See the corresponding monitor manual.



3 If a part of the connected section is disconnected by distributors, it is necessary to activate the end of line (Z) of the last distributor:



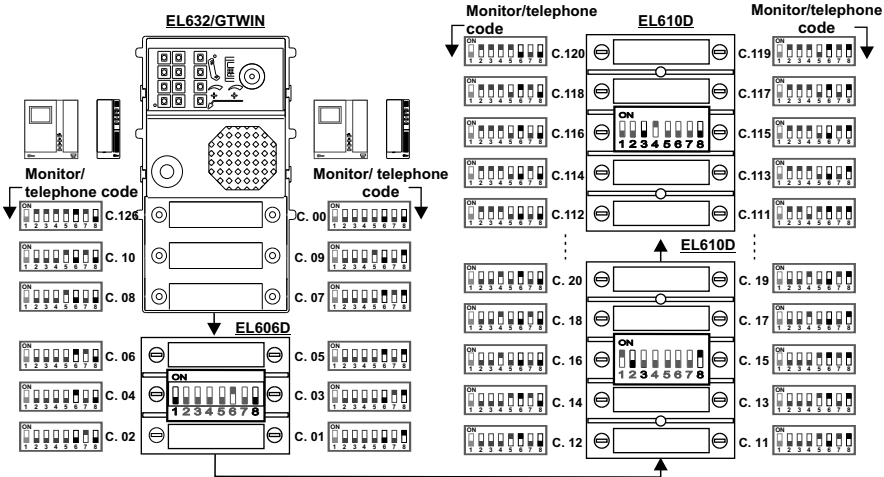
The D4L-Gtwin 4-user distributor must have at least 1 device connected. Always disconnect the departure side and not the arrival side.

5 ASSOCIATION OF DOOR PANEL BUTTONS WITH APARTMENTS

If there are several column multiplexers (buildings/channels) in the system, it is necessary to associate the call buttons of the main panels with the apartments of the different buildings (channels).

CODING THE BUTTONS

Up to 116 buttons can be connected to the door panel (in addition to the 6 buttons of the EL632 Gtwin module), using 11 EL610D modules and 1 EL606D button expansion module. The buttons are associated (default setting) with the users (apartments) from 0 to 120 and 126 of the column multiplexer to which they belong, in the case of a door panel configured as secondary. Conversely, if the door panel is configured as main, the buttons are automatically associated with Building (channel) 0, which facilitates the installation of main (general) panels in one column/riser systems.

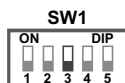


But if the door panel is configured as main general and there are several column multiplexers (buildings/channels) in the system, it is necessary to programme the buttons to enable calls to be made to the apartments of the different buildings/channels of the site. Follow these steps:

1. Set the SW3 and SW4 rotary DIPs on the EL632 Gtwin module to position 9.



2. To configure the building/channel code on the button to be programmed, set DIP 3 of the SW1 switch on the EL632 Gtwin module to the OFF position.

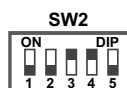


3. With the DIPs of the SW2 switch on the EL632 Gtwin module, we will indicate the ID code of the building/channel (ID codes from 0 to 31).

The switches set to the OFF position have a code value of Building (channel) 0.

The values of the switches set to ON are shown in the table below. The Building (channel) code will be equal to the sum of the values of the switches set to ON.

Switch number:	1	2	3	4	5
Value when ON:	16	8	4	2	1



Example: $0+0+4+2+0 = 6$

Then press the call button that you wish to assign the configured building code.

4. To configure the monitor code on the button to be programmed, set DIP 3 of the SW1 switch on the EL632 Gtwin module to the ON position.

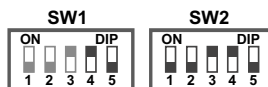


5. With the DIPs of the SW2 switch on the EL632 Gtwin module, we will indicate the monitor code (user) ('user' monitor codes from 0 to 126).

The switches set to the OFF position have a monitor (user) code value 0.

The values of the switches set to ON are shown in the table below. The monitor (user) code will be equal to the sum of the values of the switches set to ON.

	SW1		SW2				
Switch number:	4	5	1	2	3	4	5
Value when ON:	64	32	16	8	4	2	1



Example: $X \ X \ X \ 64+0 + 0+0+4+2+0 = 70$

Then press the call button that you wish to assign the configured monitor code.

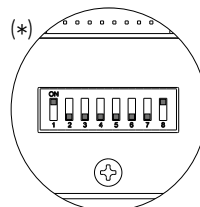
6. To exit button programming mode, set the rotary DIPs and switches to their previous values.

The buttons on the main general panel are factory set with Building (channel) code 0.

Repeat the operation with all of the main general panels present.

CODING THE BUTTON CODE (EL610D and EL606D MODULES)

The EL610D and EL606D button modules must be configured in order to assign a call code to the buttons. Carry out this configuration with the DIP switch located at the back of the module. Depending on the configuration option selected, the buttons will be assigned with a certain call code.



(*) Factory setting.

		DIP switch								Button code										(1)
		Dip1	Dip2	Dip3	Dip4	Dip5	Dip6	Dip7	Dip8	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	
Module configuration option	1	On	Off	Off	Off	Off	Off	Off	On	11	12	13	14	15	16	17	18	19	20	(*)
	2	Off	On	Off	Off	Off	Off	Off	On	21	22	23	24	25	26	27	28	29	30	
	3	Off	Off	On	Off	Off	Off	Off	On	31	32	33	34	35	36	37	38	39	40	
	4	Off	Off	Off	On	Off	Off	Off	On	41	42	43	44	45	46	47	48	49	50	
	5	Off	Off	Off	Off	On	Off	Off	On	51	52	53	54	55	56	57	58	59	60	
	6	Off	Off	Off	Off	Off	On	Off	On	61	62	63	64	65	66	67	68	69	70	
	7	Off	Off	Off	Off	Off	Off	On	On	71	72	73	74	75	76	77	78	79	80	
	8	On	Off	Off	Off	Off	Off	Off	Off	81	82	83	84	85	86	87	88	89	90	
	9	Off	On	Off	Off	Off	Off	Off	Off	91	92	93	94	95	96	97	98	99	100	
	10	Off	Off	On	Off	Off	Off	Off	Off	101	102	103	104	105	106	107	108	109	110	
	11	Off	Off	Off	On	Off	Off	Off	Off	111	112	113	114	115	116	117	118	119	120	
	12	Off	Off	Off	Off	Off	On	Off	Off	1	2	3	4	5	6	-	-	-	-	→ EL606D (6 buttons).







(1) P1- P10: Button 1 - button 10.

Important: Select a different configuration option for each EL610D module.

(*) Factory setting.

6 BASIC FUNCTIONAL CHECK

After checking that all supplies are correct and that the ends of line are properly activated, a system operation test can be started. This test consists of calling the apartments from the door panels, checking the ringtones of all of the monitors/telephones in the apartment called, verifying the presence of the image when the call is from a video door entry system, and testing communication, activation of the main lock release and opening of the secondary lock release.

- From a main call panel, press a call button.
 - The door panel emits a tone to indicate that the call is being made and LED  of the door panel lights up.
- When the call is received, check the following points:
 - Master monitor 0 in the apartment sounds and the image of the caller appears on the screen. The user has 60 seconds to answer by lifting the handset or pressing the start/end communication button (on hands-free monitors).
 - During the call time (60 seconds) and before establishing communication, the other slave monitors in the same apartment can capture the image of the door panel if button  is pressed, causing the image on the monitor that was displaying it to disappear.
 - To establish communication, lift the handset of the monitor/telephone, and the monitor's status LED (green) and the door panel's LED  will illuminate. (LED  on the door panel turns off).
 - To open the door, press the door release button during the call or communication processes: one press will activate the door release for 1 second (configurable time) and LED  will also illuminate for 1 second.
- Communication will have a maximum duration of 10 minutes or until the handset is replaced or the start/end communication button is pressed again (on hands-free monitors). After communication, the monitor's status LED will illuminate (red), the door panel's LED  will turn off and the channel will be free.
- Repeat all of the indicated operations with all of the apartments in the system.
- If there are other door panels in the system, repeat all operations from point 1 with the other door panels.

7 OPTIONAL PROGRAMMING FOR ADDITIONAL FUNCTIONS

After checking the basic operation of the system, **only if the following functions are required**, it is necessary to carry out the corresponding programming operations.

1. Intercom function in the same apartment or between apartments: the user (apartment) code to be called or the internal code of the monitor (same apartment) to be called must be associated with the buttons.
2. Call melody: It is possible to choose from 5 melodies.
3. Apartment front door call melody. It is possible to choose from 5 melodies.

INTERCOM FUNCTION

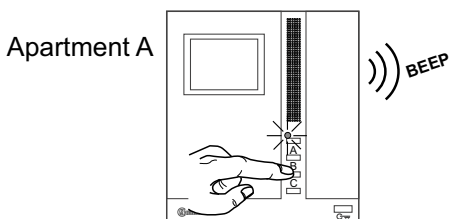
In the Gtwin system, a monitor/telephone button can be programmed to call another apartment in the same Building (channel) or to call another monitor/telephone in the same apartment. In the first case, all of the monitors/telephones of the apartment called sound; in the second case, only the monitor/telephone in the same apartment specified in the programming sounds.

INTERCOM FUNCTION BETWEEN DIFFERENT APARTMENTS

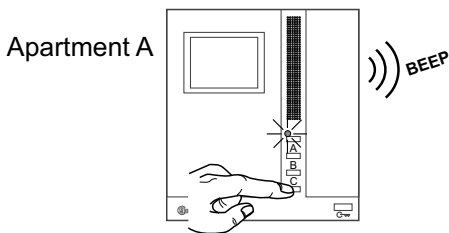
To programme a monitor/telephone in one apartment (apartment A) to call another apartment (apartment B):

Without picking up the handset.

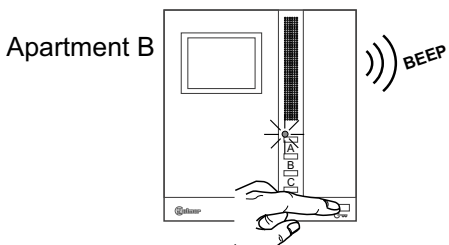
1. Press and hold key B for more than 5 seconds: It emits 3 short tones and the slow blinking of the status LED (yellow) confirms entry into programming mode. In all cases, after 10 minutes elapse, the device exits programming mode and the modified parameters are saved.



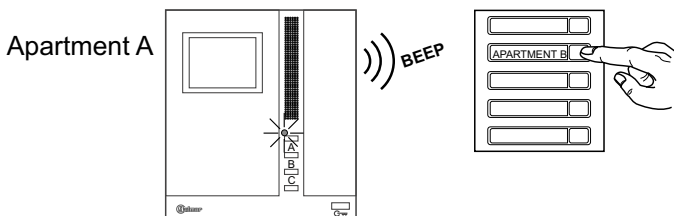
2. Press the button (A, B or C) to be programmed for at least 3 seconds until the confirmation tone sounds.



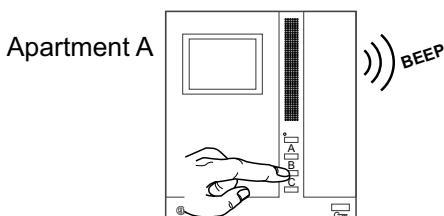
3. Go to the monitor/telephone of apartment B that has to call the button to be programmed in Step 2 and press the door release button. The monitors/telephones emit a completed programming beep.




4. Or go to a door panel and press the call button of apartment B; the monitor/telephone in programming (apartment A) emits a completed programming beep. While this operation is being carried out, the monitors/telephones in apartment B sound. Ignore this call.



5. To exit programming mode, press and hold key **B** for more than 5 seconds, 2 long tones are emitted and the status LED will turn off confirming exit from programming.



6. Check the programmed function: lift the handset of the monitor/telephone (apartment A) and press the programmed button. In apartment B, a ringtone on all monitors/telephones in the apartment will be heard, pick up the handset of one of the monitors/telephones called and check communication.
7. If you also wish to programme the reverse call, it is necessary to programme the monitor/telephone in apartment B for the call to the monitors/telephones in apartment A.

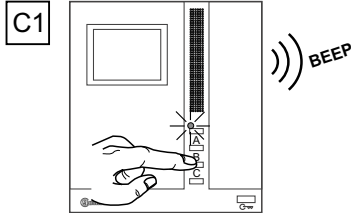
 *If the buttons are programmed for this function, the other functions are maintained.*

INTERCOM FUNCTION WITHIN THE SAME APARTMENT

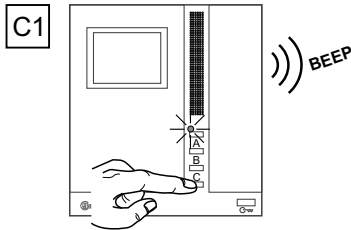
To programme a monitor/telephone (internal device C1) to call another monitor/telephone (device C2) in the same apartment:

Without picking up the handset.

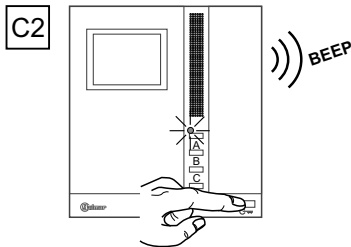
1. Press and hold key B for more than 5 seconds: It emits 3 short tones and the slow blinking of the status LED (yellow) confirms entry into programming mode. In all cases, after 10 minutes elapse, the device exits programming mode and the modified parameters are saved.



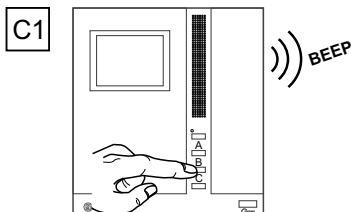
2. Press the button (A, B or C) to be programmed for at least 3 seconds until the confirmation tone sounds.




3. Go to the monitor/telephone (device C2) that has to call the button to be programmed in Step 2 and press the door release button. The monitors/telephones (device C1 and C2) emit a completed programming beep.




4. To exit programming mode, press and hold key B for more than 5 seconds, 2 long tones are emitted and the status LED will turn off confirming exit from programming.



5. Check the programmed function: lift the handset of the monitor/telephone (device C1) and press the programmed button. On the monitor/telephone (device C2), a ringtone will be heard, pick up the handset and check communication.
6. If you also wish to programme the reverse call, it is necessary to programme the monitor/telephone (device C2) for the call to the monitor/telephone (device C1) in the same apartment.

 If the buttons are programmed for this function, the other functions are maintained.

 To change ring melodies, consult the corresponding monitor/telephone manual.

CANCELLATION OF PROGRAMMING DATA

Default settings for the addressing of the buttons on the door panel:

1. Set the SW3 and SW4 rotary DIPs on the EL632 Gtwin module to position 9.



2. Set DIP 1 of the SW1 switch on the EL632 Gtwin module to ON.

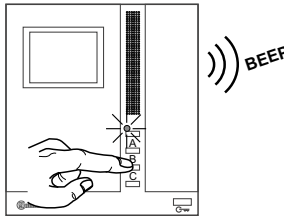



3. Then press any call button for 5 seconds (2 tones will sound in the first second).

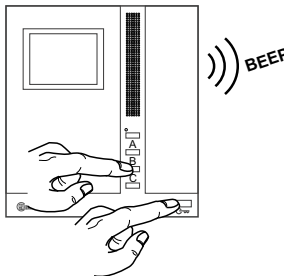
4. To exit 'button addressing default settings' mode, reset the SW3 and SW4 rotary DIPs and DIP 1 of SW1 to their previous settings (working position). That way, the button-apartment association is cancelled and returned to its default (factory) value.

Cancellation of the intercom call codes of the monitors/telephones:

1. **Press and hold key B for more than 5 seconds:** It emits 3 short tones and the slow blinking of the status LED (yellow) confirms entry into programming mode. In all cases, after 10 minutes elapse, the device exits programming mode and the modified parameters are saved.



2. Press buttons **B** and  simultaneously for more than 3 seconds, the command is confirmed by 2 long tones and exit from programming mode.



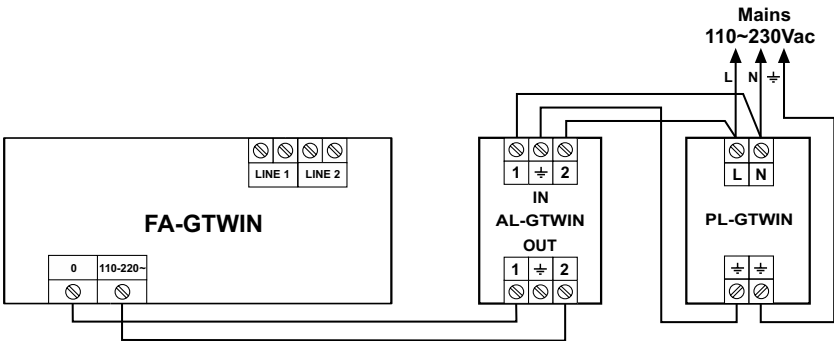
TECHNICAL CHARACTERISTICS OF THE DEVICES

D4L-GTWIN 4-user distributor	
Supply voltage:	36 ÷ 48 Vdc
Max absorption:	9.0mA max
Operating temperature:	- 5°C ÷ + 45°C
Dimensions:	45 x 45 x 16mm
FA-GTWIN power supply	
Power supply:	110/ 230 Vac +/- 10 % 50/60 Hz
Power:	80W
LINE 1/2 output:	48 Vdc
with electronic protection against current overloads	
Operating temperature:	- 10°C ÷ + 35°C
Dimensions:	180 x 80 x 90 mm (10 DIN modules)
Weight:	unos 1000 g

NOTES RELATED TO THE WIRING DIAGRAMS

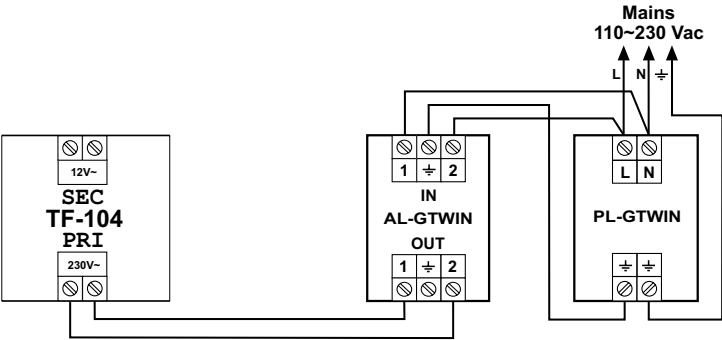
CONNECTION OF THE FA-GTWIN POWER SUPPLY

The **FA-Gtwin** power supply must be connected to the **AL-Gtwin** filter and **PL-Gtwin** line protector, as shown in the following wiring diagram:



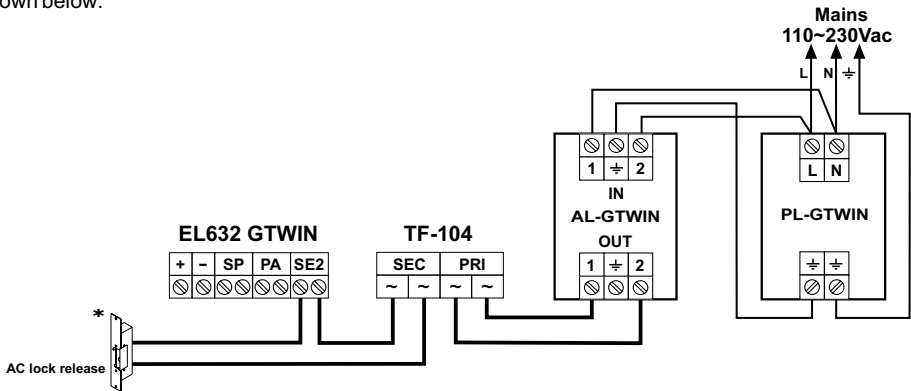
CONNECTION OF THE TF-104 TRANSFORMER

The **TF-104** transformer must be connected to the **AL-Gtwin** filter and **PL-Gtwin** line protector, as shown in the following wiring diagram:



CONNECTION OF THE SECONDARY AC LOCK RELEASE

To connect the 'Golmar' secondary lock release (max 12 ac/1 A) to the 'SE2' terminals (C and NO relay contacts), an additional **TF-104** power supply, **AL-Gtwin** filter and **PL-Gtwin** line protector are required. As shown below:



(*) **Important:** Place the varistor supplied with the sound module directly onto the terminals of the lock release.

SAV-GTWIN TRITONAL CALL REPEATER

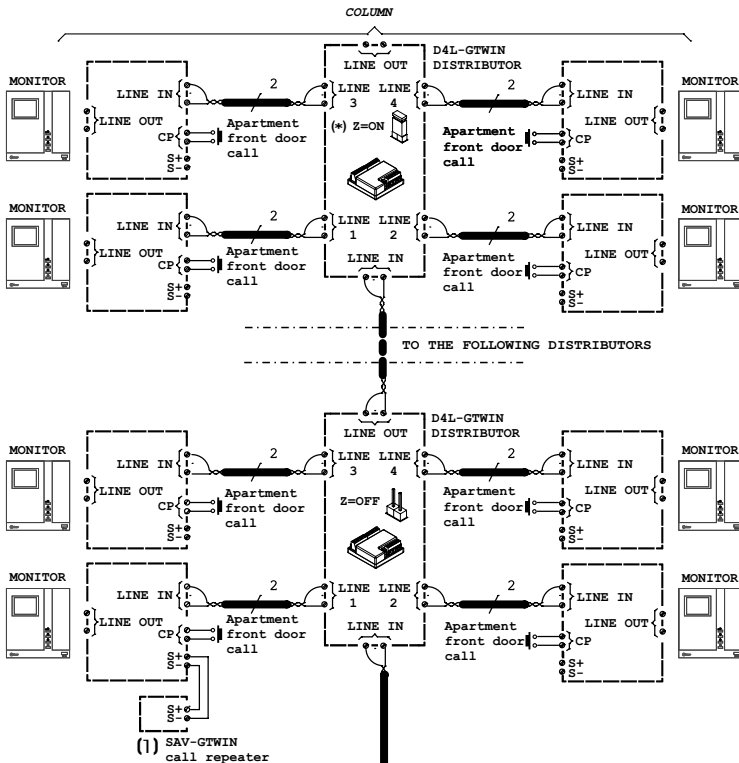
Place a 9 V battery (type MN1604/6LR61) inside the call repeater. The call repeater features 2 configuration jumpers marked as W1 and W2 for selecting the type of sound (triple tone, double tone or single tone), as shown in the following table:

TYPE OF SOUND	JUMPER		
	W1	W2	
(*) TRIPLE TONE	X	X	both jumpers fitted
DOUBLE TONE	X		only the W1 jumper: the W2 is removed
SINGLE TONE		X	only the W2 jumper: the W1 is removed

(*) Factory setting.

WIRING DIAGRAMS

One building with 1 column of up to 127 monitors and 1 main video panel (buttons).



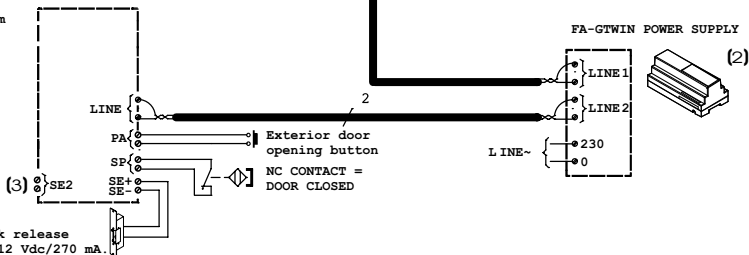
(*) Remove the jumper from all of the distributors except the last.

(1) Configuration of the SAV-GTWIN call repeater, see p. 44.

(2) Connecting the FA-Gtwin power supply to the filter and line protector, see p. 44.

(3) Connecting the secondary AC lock release (Golmar), see p. 45.

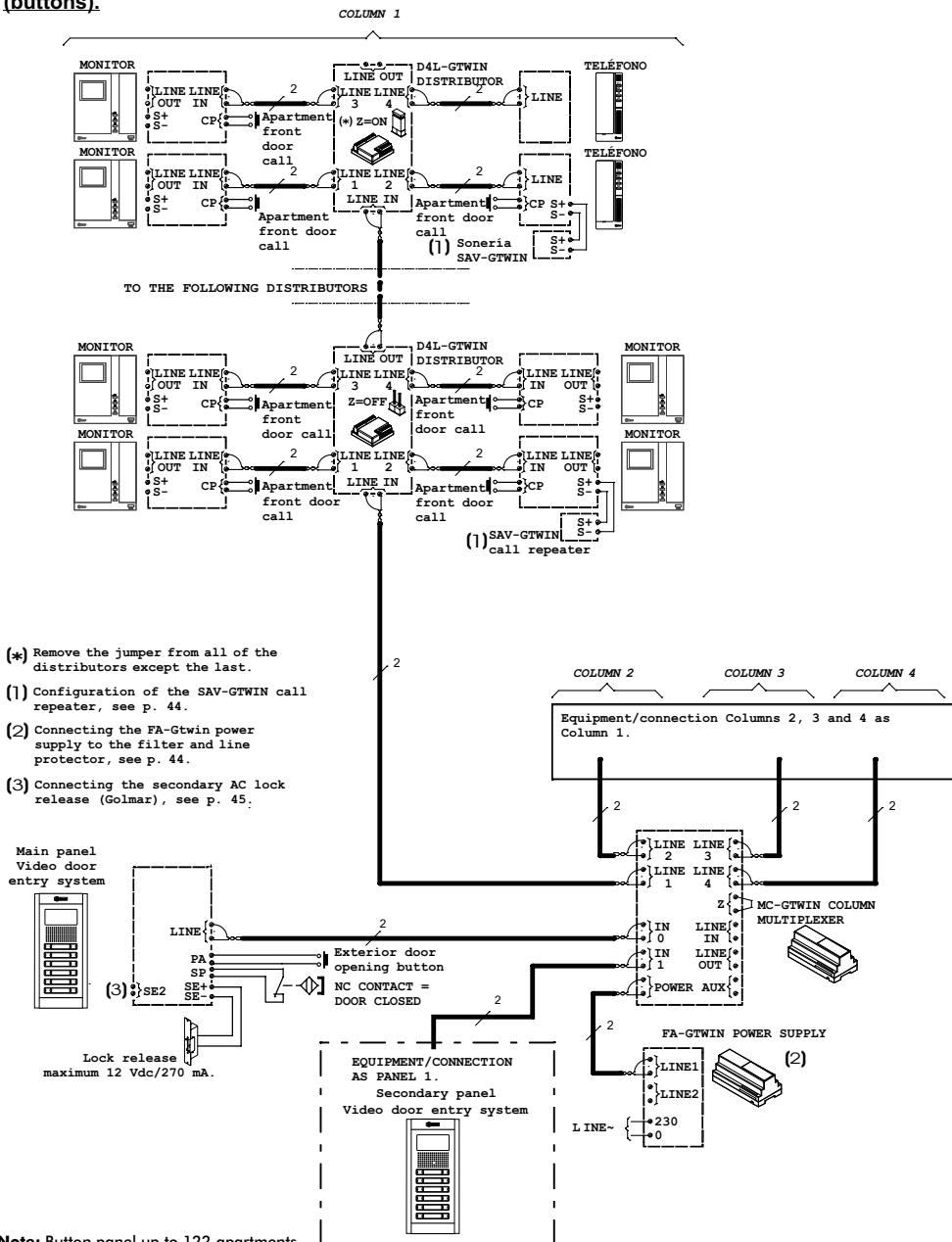
Main panel
Video door
entry system



Note: Button panel up to 122 apartments.

Important: To configure and programme each device, see the corresponding section of the manual.

WIRING DIAGRAMS

One building, up to 4 columns (maximum 127 monitors/telephones) and 2 access panels (buttons).

BUILDING 1

The diagram illustrates the wiring for a building alarm system in Building 1. It is divided into two main sections: COLUMN 1 and COLUMN 2.

COLUMN 1: This section contains two identical blocks. Each block features a 'D4L-GTWIN DISTRIBUTOR' connected to four 'MONITOR' units. The distributor has 'LINE OUT' (1, 2, 3, 4) and 'LINE IN' (1, 2, 3, 4) terminals. Each monitor has 'LINE IN', 'LINE OUT', 'S+', 'S-', 'CP', and 'Z' terminals. The distributor is also connected to a 'SAV-GTWIN call repeater' (1) via a 'Z=ON' terminal. The repeater is connected to 'TO THE FOLLOWING DISTRIBUTORS'.

COLUMN 2: This section contains two identical blocks, each labeled 'AS COLUMN 1'. It features a 'MC-GTWIN COLUMN MULTIPLEXER' connected to four 'MONITOR' units. The multiplexer has 'LINE IN', 'LINE OUT', 'S+', 'S-', 'CP', and 'Z' terminals. It is also connected to a 'FA-GTWIN POWER SUPPLY' (2) via a 'Z' terminal.

Secondary Panels: Two 'SECONDARY PANEL 0' and 'SECONDARY PANEL 1' are shown. Each panel has a 'Z=OFF' terminal connected to the 'Z' terminal of the distributor or multiplexer. The connection of terminals is as per the 'General Panel'.

Power Supplies: Two 'FA-GTWIN POWER SUPPLY' units (2) are shown. Each unit has 'LINE1', 'LINE2', 'S+', 'S-', 'CP', and 'Z' terminals. They are connected to the 'Z' terminal of the distributor or multiplexer.

Main General Panel: The 'MAIN GENERAL PANEL' is shown at the bottom. It has 'LINE', 'FA', 'SP', 'SE+', and 'SE-' terminals. The 'LINE' terminal is connected to the 'LINE' terminal of the distributor or multiplexer. The 'FA' terminal is connected to the 'FA' terminal of the power supply. The 'SP' terminal is connected to the 'SP' terminal of the power supply. The 'SE+' and 'SE-' terminals are connected to the 'SE+' and 'SE-' terminals of the power supply. The 'SE+' terminal is also connected to the 'Z' terminal of the distributor or multiplexer.

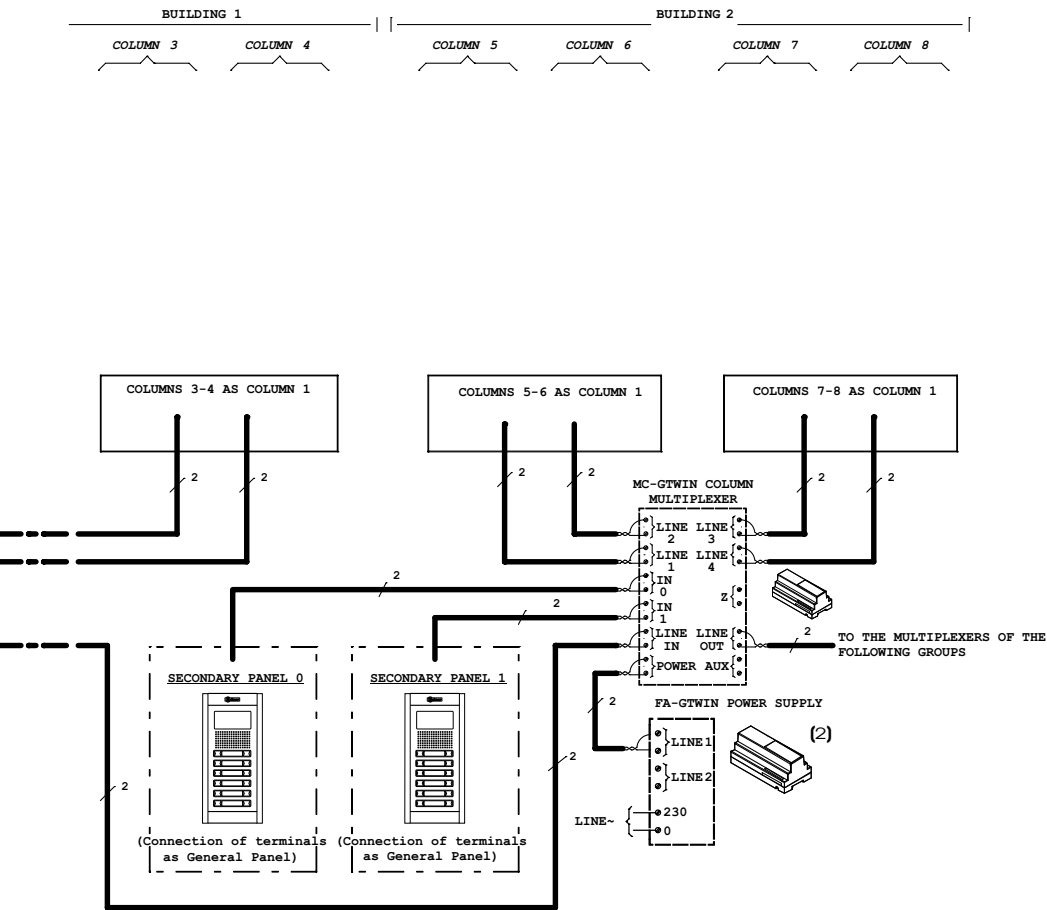
Legend:

- (*) Remove the jumper from all of the distributors except the last.
- (1) Configuration of the SAV-GTWIN call repeater, see p. 44.
- (2) Connecting the FA-Gtwin power supply to the filter and line protector, see p. 44.
- (3) Connecting the secondary AC lock release (Golmar), see p. 45.

Lock release: maximum 12 Vdc/270 mA

Important: To configure and programme each device, see the corresponding section of the manual.

One main general access, up to 16 buildings (16 MC-Gtwin multiplexers) and 2 secondary accesses in each building. (Maximum 127 monitors/telephones per building).



BUILDING 1

The diagram illustrates the wiring for a building's intercom system, divided into two main sections: COLUMN 1 and COLUMN 2.

COLUMN 1: Shows two rows of apartments. Each apartment has a monitor, a door call unit (CP), and a front door call unit (S+ S-). The wiring connects these units to a D4L-GTWIN DISTRIBUTOR. A central line (LINE IN) runs through the middle, with a Z=ON switch and a (1) SAV-GTWIN call repeater. The system is labeled "TO THE FOLLOWING DISTRIBUTORS".

COLUMN 2: Shows a similar setup for another set of apartments, with a D4L-GTWIN DISTRIBUTOR and a (1) SAV-GTWIN call repeater. The system is labeled "AS COLUMN 1".

GENERAL PANEL MAIN 'A': A central panel with terminals for LINE, PA, SE+, SE-, and SE2. It is connected to the intercom system and an exterior door opening button (DOOR CLOSED).

GENERAL PANEL MAIN 'B': A similar panel, connected to the intercom system and an exterior door opening button (DOOR CLOSED).

Secondary Panels: Two secondary panels (SECONDARY PANEL 1 and SECONDARY PANEL 2) are shown, each with a connection to the main panels.

Multiplexers and Power Supplies: The diagram includes a DPM-Gtwin panel multiplexer, an FA-GTWIN POWER SUPPLY, and a DPM-Gtwin panel multiplexer. These components are connected to the intercom system and the general panels.

Important Notes:

- (*) Remove the jumper from all of the distributors except the last.
- (1) Configuration of the SAV-GTWIN call repeater, see p. 44.
- (2) Connecting the FA-Gtwin power supply to the filter and line protector, see p. 44.
- (3) Connecting the secondary AC lock release (Golmar), see p. 45.

Lock release: maximum 12 Vdc/270 mA.

IMPORTANT:

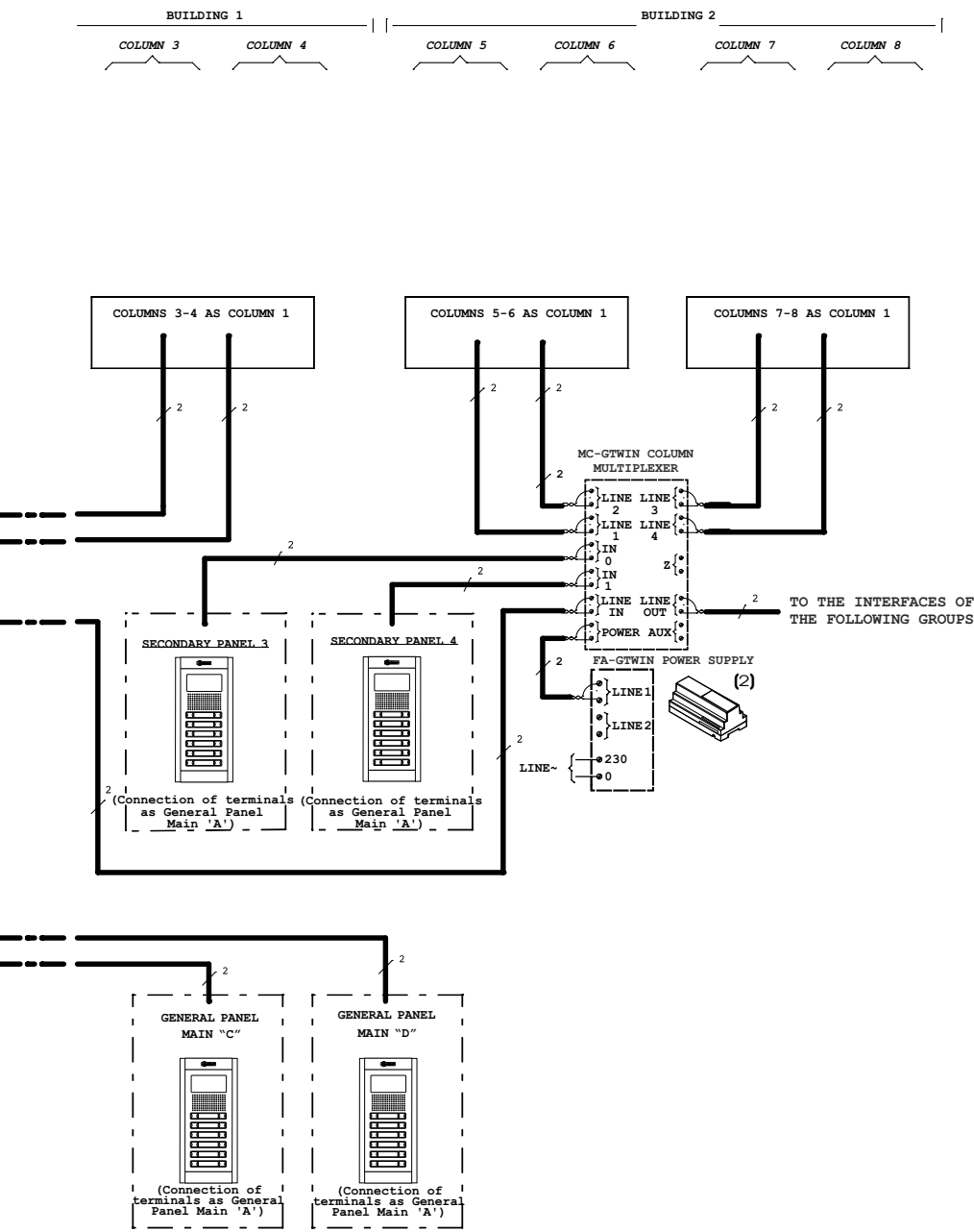
- To configure/programme each device, see the corresponding section of the manual.
- Panel multiplexer (depending on the outputs used):
 - With 1 output (up to 20 buildings)
 - With 2 outputs (up to 32 buildings, "16 buildings per output")
 - With 4 outputs (up to 32 buildings, "8 buildings per output")

IMPORTANT:
-To configure/programme each device, see the corresponding section of the manual.

- Panel multiplexer (depending on the outputs used):

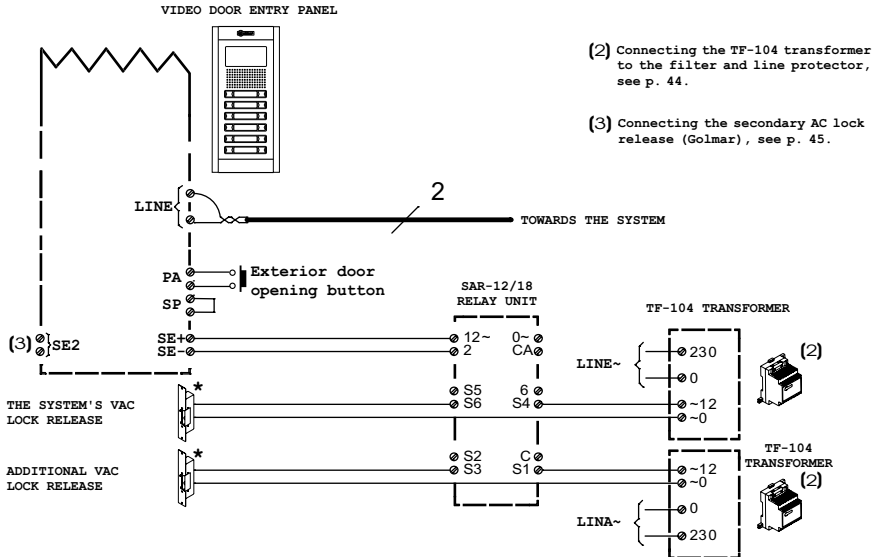
- With 1 output (up to 20 buildings)
- With 2 outputs (up to 32 buildings, "16 buildings per output")
- With 4 outputs (up to 32 buildings, "8 buildings per output")

4 main general accesses, up to 32 buildings (32 MC-Gtwin multiplexers) and 2 secondary accesses in each building. (Max. 127 monitors/telephones per building).



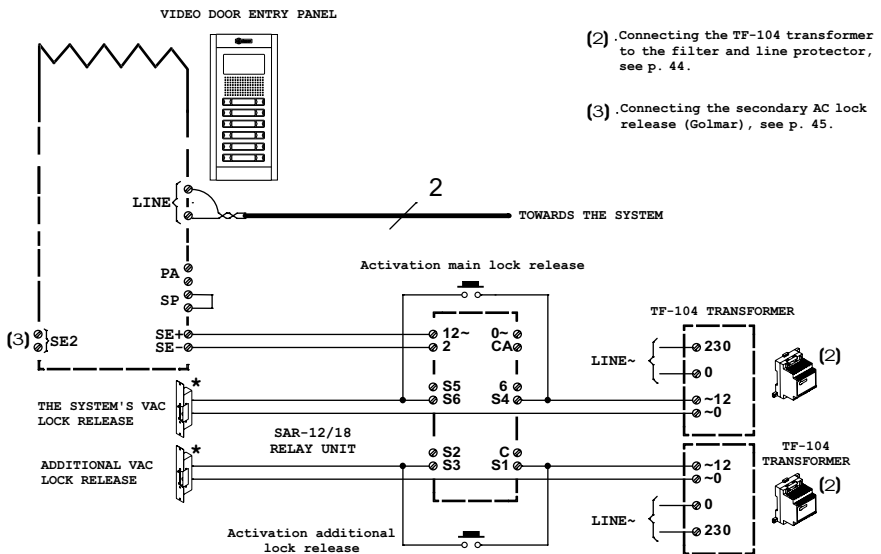
OPTIONAL CONNECTIONS

A) manual control for joint activation of the 2 lock releases.



*** Important:** Place the varistor supplied with the sound module directly onto the terminals of the lock release.

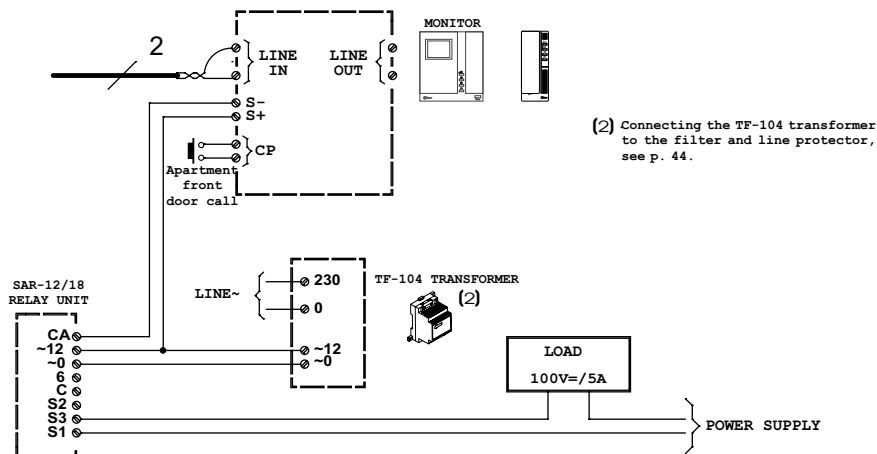
B) dedicated manual control for the activation of each lock release.



*** Important:** Place the varistor supplied with the sound module directly onto the terminals of the lock release.

OPTIONAL CONNECTIONS

Additional call repeater with SAR-12/18 relay unit in monitor/telephone.

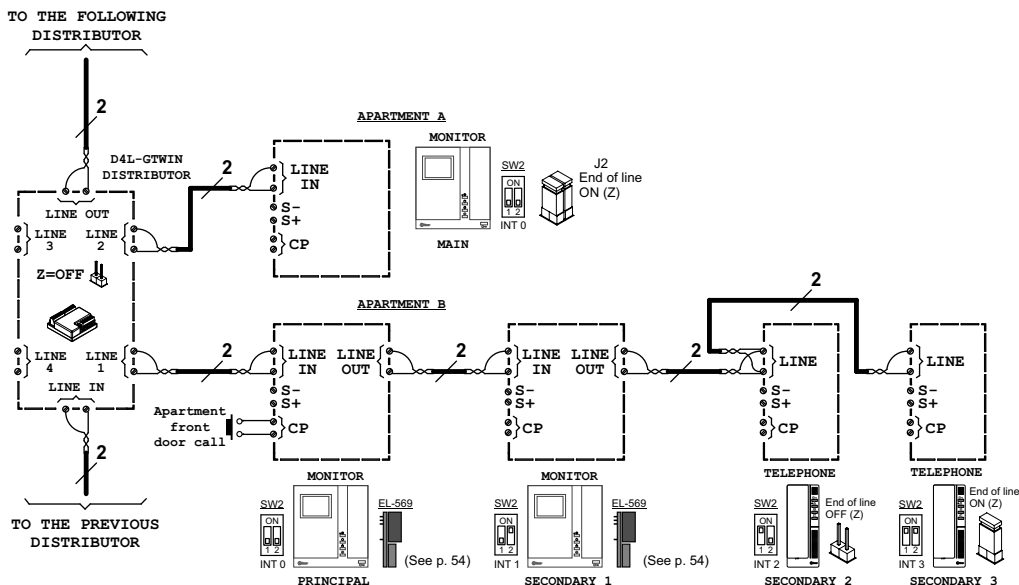


Monitors/telephones in parallel (input/output) from a bypass of the D4L-Gtwin distributor: Max. connection 4 monitors/telephones in one apartment.

Tekna Gtwin monitor: The EL569 in/out unit must be inserted in all of the intermediate monitors and leave the end of line (Z) inserted in the last monitor (see p. 54).

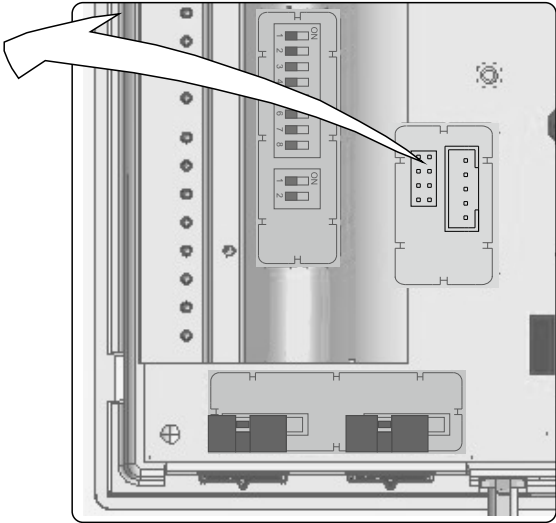
Tekna HF Gtwin/Tekna S Gtwin monitor: The EL566 in/out unit must be inserted in all of the intermediate monitors and leave the end of line (Z) inserted in the last monitor (see p. 55).

All devices must have the same apartment call code. The internal code of the Main device must be equal to 0.



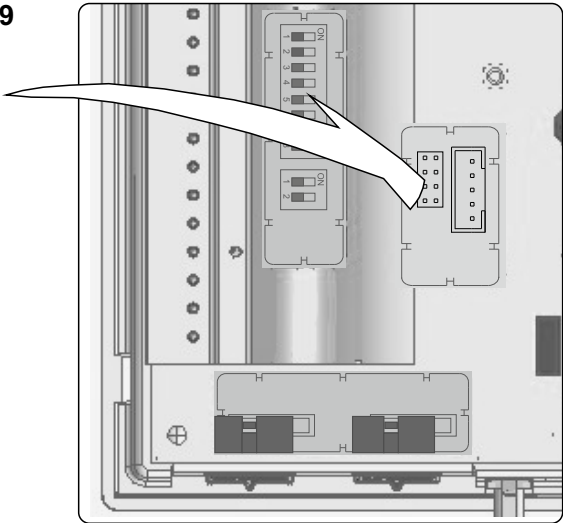
EL 569 IN/OUT UNIT

Tekna Gtwin monitor: The EL569 in/out unit must be inserted in all of the intermediate monitors and leave the J4 end of line jumper (Z) inserted in the last monitor (see p. 53).



1

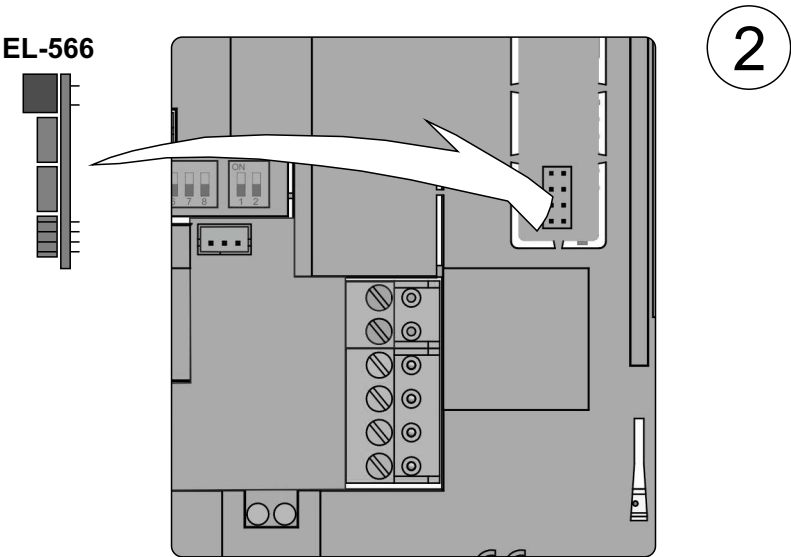
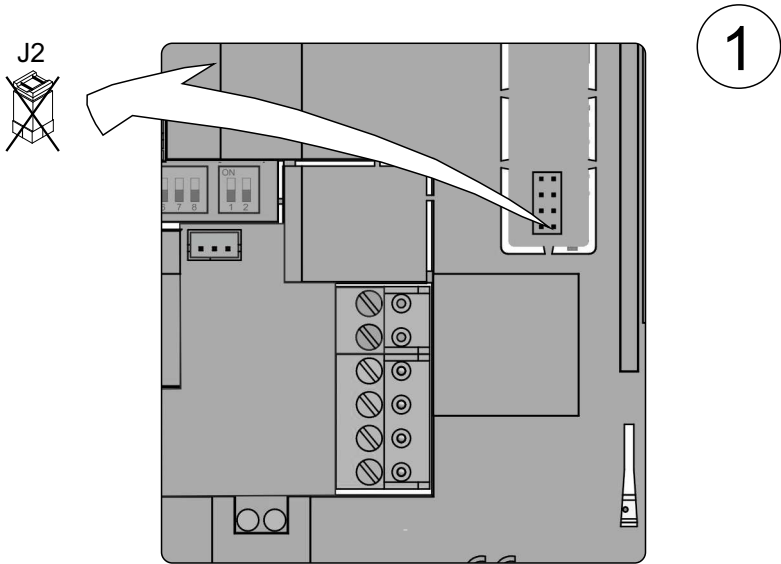
EL-569



2

EL 566 IN/OUT UNIT

Tekna HF Gtwin/Tekna S Gtwin monitor: The EL566 in/out unit must be inserted in all of the intermediate monitors and leave the J2 end of line jumper (Z) inserted in the last monitor (see p. 53).



COMPLIANCE

Este producto es conforme con las disposiciones de las Directivas Europeas aplicables respecto a la Seguridad eléctrica **2014/35/CEE** y la Compatibilidad Electromagnética **2014/30/CEE**.

*This product meets the essentials requirements of applicable European Directives regarding Electrical Safety **2014/35/ECC**, Electromagnetic Compatibility **2014/30/ECC**.*



NOTA: El funcionamiento de este equipo está sujeto a las siguientes condiciones:

(1) Este dispositivo no puede provocar interferencias dañinas, y (2) debe aceptar cualquier interferencia recibida, incluyendo las que pueden provocar un funcionamiento no deseado.

NOTE: Operation is subject to the following conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any received interference, including the ones that may cause undesired operation.



golmar@golmar.es

www.golmar.es

GOLMAR S.A.
C/ Silici, 13
08940- Cornellá de Llobregat
SPAIN



Golmar se reserva el derecho a cualquier modificación sin previo aviso.

Golmar se réserve le droit de toute modification sans préavis.

Golmar reserves the right to make any modifications without prior notice.