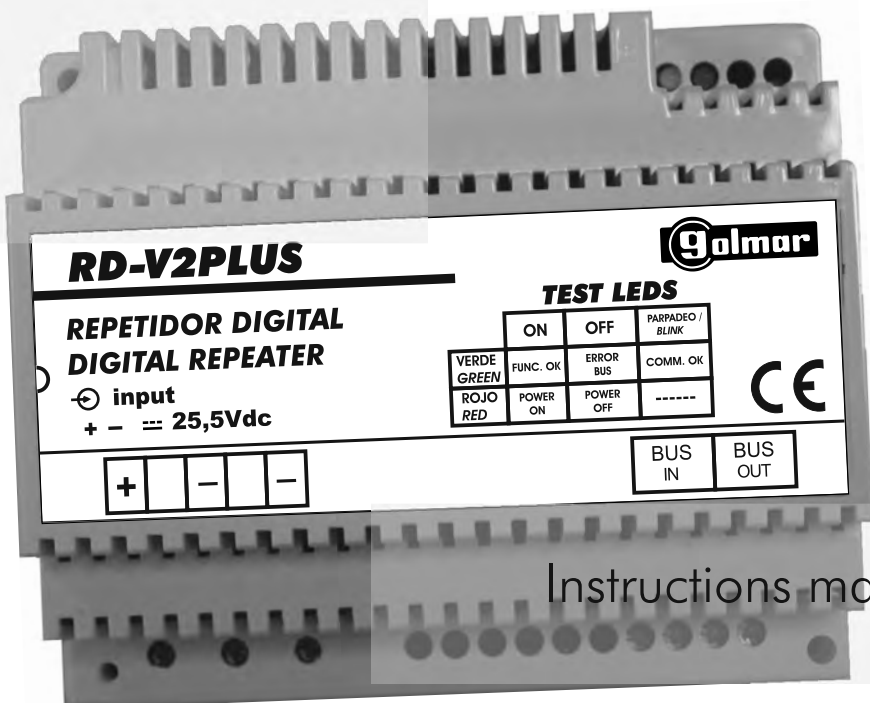




Cód. 50123467

Digital Repeater

RD-V2PLUS



Instructions manual

INTRODUCTION

First of all we would like to thank and congratulate you for the purchase of this product manufactured by Golmar.

The commitment to reach the satisfaction of our customers is stated through the ISO-9001 certification and for the manufacturing of products like this one.

Its advanced technology and exacting quality control will do that customers and users enjoy with the legion of features this system offers. To obtain the maximum profit of these features and a properly wired installation, we kindly recommend you to expend a few minutes of your time to read this manual.

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STARTING RECOMMENDATIONS

- ☞ The installation and handling of this equipment must be performed by **authorised personnel**.
- ☞ Install or modify the equipment **without the power connected**.
- ☞ Do not use excessive force when tightening the repeater connection block screws.
- ☞ The entire installation must be at least **40 cm.** away from any **other installation**.
- ☞ Before connecting the system, check the connections between door panel, repeater, multiplexer, monitors, telephones and the power supply connection.
- ☞ When starting the equipment for the first time, or after a modification, the system will remain inactive for around 45 seconds due to the initial busy channel time.
- ☞ Use Golmar **RAP-2150** cable in the **V2Plus** system.
- ☞ Do always follow the enclosed information.

- ⇨ Install or modify the equipment **without the power connected**.
- ⇨ The installation and handling of these equipments must be performed by **authorised personnel**.
- ⇨ The entire installation must be at least **40 cm.** away from any **other installation**.
- ⇨ Do not use excessive force when tightening the connector screws.
- ⇨ Install the unit in a dry and protected place without risk of drip or water projections.
- ⇨ Avoid to place it near to heating sources, dusty locations, humid or smoky environments.
- ⇨ Do not block ventilation holes of the unit so that air can circulate freely.
- ⇨ To avoid damage, the repeater has to be firmly fixed.

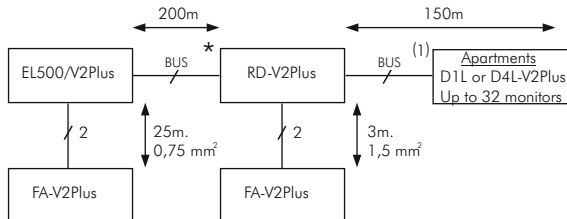
SYSTEM CHARACTERISTICS

- ⇨ Digital repeater for **V2Plus** system allows one of these functions at once:
 - ☪ It increases the distance in 200 meters more.
 - ☪ In daisy chain installations (without distributors), it increases 16 monitors/telephones in a maximum distance of 150 meters between the repeater and the last monitor/telephone and between monitors/telephones of the different apartments (connected to repeater).
 - ☪ It increases 32 monitors/telephones in a maximum distance of 150 meters between the repeater and the last monitor/telephone and between monitors/telephones of the different apartments (connected to repeater).
- ⇨ In installations with 2 repeaters in daisy chain and 1 multiplexer the distances will be:
 - ☪ The repeater will increase the distance in 150 meters more.
 - ☪ In daisy chain installations (without distributors), it increases 16 monitors/telephones in a maximum distance of 100 meters between the repeater and the last monitor/telephone and between monitors/telephones of the different apartments (connected to repeater).
 - ☪ It increases 32 monitors/telephones in a maximum distance of 100 meters between the repeater and the last monitor/telephone and between monitors/telephones of the different apartments (connected to repeater).
- ⇨ Up to 2 digital repeaters connected in daisy chain.
- ⇨ Maximum distance between the power supply and digital repeater: 3 m., with a wire section of 1,5 mm².
- ⇨ Autodiagnostic leds showing the Bus status (in the riser where repeater is installed) and the power supply status of the repeater.
- ⇨ The **Tekna V2Plus Color** monitor must be the version **V.02** or later, for its compatibility with the repeater.
- ⇨ **IMPORTANT:** In the output of a distributor cannot be connected another distributor.
- ⇨ Use Golmar **RAP-2150** cable in the **V2Plus** system.

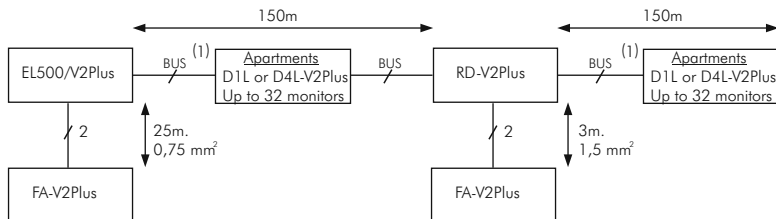
V2Plus system with 1 access door panel (1 riser).

Installations with 1 access door panel and up to 2 repeaters in daisy chain where it is wanted to increase the distance with the repeater in 200 m. more (see example A & C) or increase up to 32 monitors/telephones in a max. distance of 150 m. between the repeater and the last monitor/telephone and between monitors/telephones of different apartments connected to repeater (see example B, C & D). **Important:** Read the footnotes.

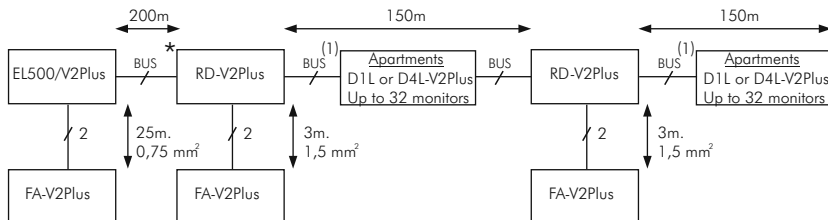
A: 32 elements (350 meters):



B: 64 elements (300 meters):



C: Repeater in daisy chain (64 elements / 500 meters):



(1) **Important:** Do not exceed the max. monitors/telephones connected to a door panel/multiplexer/repeater, or the distances indicated for door panel/multiplexer/repeater and last monitor and monitors between different apartments connected to door panel/multiplexer/repeater. For characteristics, sections and distances see the corresponding product manual.

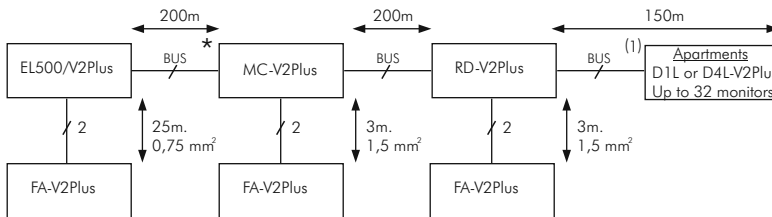
* **Note:** If the repeater/multiplexer is at a distance less than 50 meters from the door panel, place in the door panel the dip gain SW1-6 to OFF.

Bus: Golmar RAP-2150 cable.

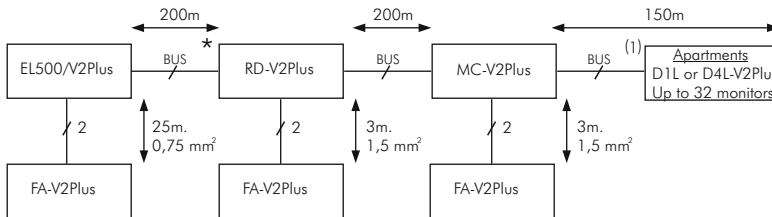
V2Plus system with several accesses and risers.

Installations with several access door panel, 1 multiplexer and up to 2 repeaters in daisy chain where it is wanted to increase the distance with the repeater in 200 m. more (see example A & B) or increase up to 32 monitors/telephones in a max. distance of 150 m. between the repeater and the last monitor/telephone and between monitors/telephones of different apartments connected to repeater (see example A, B, & C). Installations with 2 repeaters in daisy chain and 1 multiplexer, the repeater will increase the distance in 150 m. more or up to 32 monitors/telephones in a max. distance of 100 m. between the repeater and the last monitor/telephone and between monitors/telephones of different apartments connected to repeater (see example D-H). **Important:** Read the footnotes on page 45.

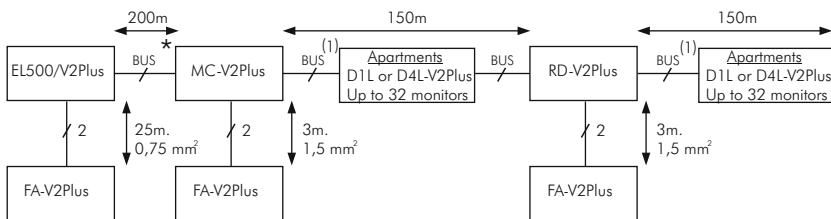
A: 32 elements for riser (550 meters):



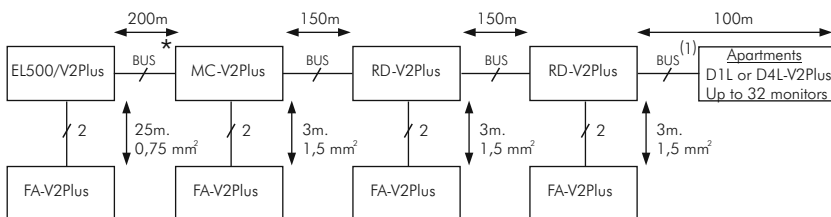
B: 32 elements for riser (550 meters):



C: 64 elements for riser (500 meters):



D: Repeater in daisy chain (32 elements for riser / 600 meters):

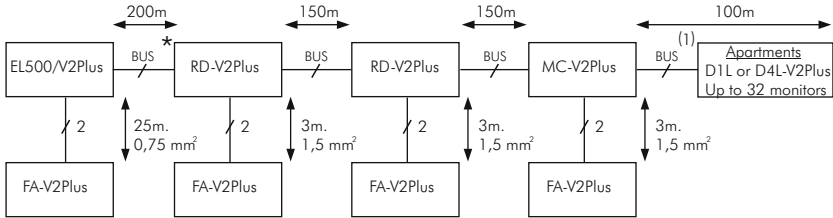


Bus: Golmar RAP-2150 cable.

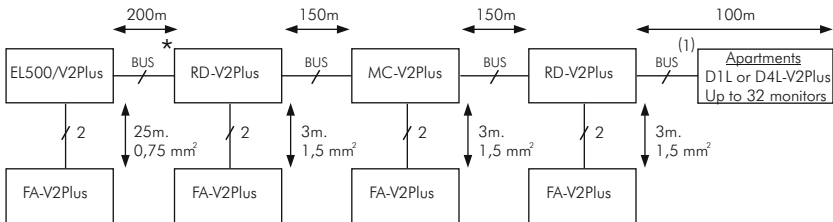
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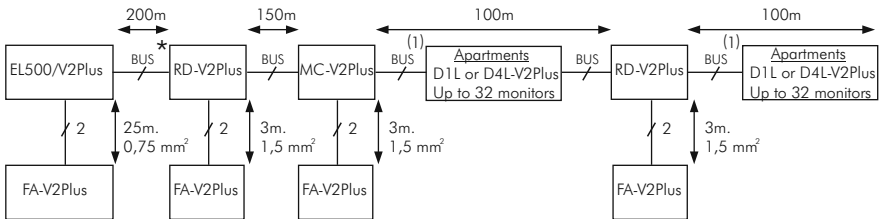
E: Repeater in daisy chain (32 elements for riser / 600 meters):



F: Repeater in daisy chain (32 elements for riser / 600 meters):



G: Repeater in daisy chain (64 elements for riser / 550 meters):



(1) **Important:** Do not exceed the max. monitors/telephones connected to a door panel/multiplexer/repeater, or the distances indicated for door panel/multiplexer/repeater and last monitor and monitors between different apartments connected to door panel/multiplexer/repeater. For characteristics, sections and distances see the corresponding product manual.

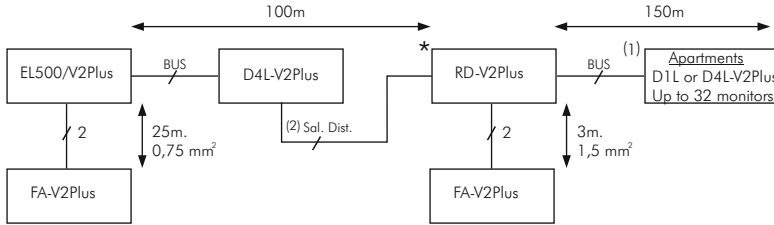
* **Note:** If the repeater/multiplexer is at a distance less than 50 meters from the door panel, place in the door panel the dip gain SW1-6 to OFF.

Bus: Golmar RAP-2150 cable.

Special connection '1': (Door panel + Distributor + Repeater + Monitors).

The Repeater will be connected in the distributed output of D1L-V2Plus or D4L-V2Plus distributor and can increase the distance at 100 meters between the door panel and the repeater/s or most distant points of the bus between the door panel and the repeater/s. **Important:** Read the notes that are detailed below:

A: Up to 32 ele. for distributed output and up to 128 ele. for D4L-V2Plus distributor:



(2) Up to 1 RD-V2Plus for each distributed output of D1L or D4L-V2Plus distributor.

For this operation mode contact our technical support department.

(1) **Important:** Do not exceed the max. monitors/telephones connected to a door panel/multiplexer/repeater, or the distances indicated for door panel/multiplexer/repeater and last monitor and monitors between different apartments connected to door panel/multiplexer/repeater. For characteristics, sections and distances see the corresponding product manual.

* **Note:** If the repeater/multiplexer is at a distance less than 50 meters from the door panel, place in the door panel the dip gain SW1-6 to OFF.

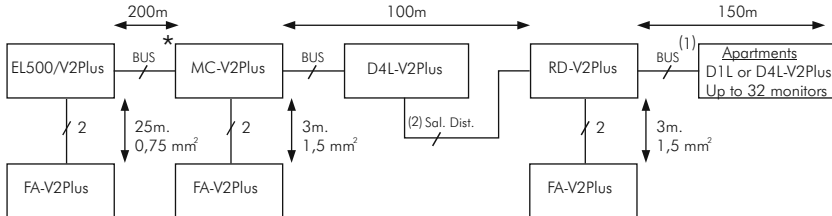
Bus: Golmar RAP-2150 cable.

Distributed output: Golmar RAP-2150 cable.

Special connection '2': (Door panel + Multiplexer + Distributor + Repeater + Monitors).

The Repeater will be connected in the distributed output of D1L-V2Plus or D4L-V2Plus distributor and can increase the distance at 100 meters between the multiplexer and the repeater or most distant points of the bus between the multiplexer and the repeater. **Important:** Read the notes that are detailed below:

A: Up to 128 ele. for riser and up to 512 ele. for multiplexer):



(2) Up to 1 RD-V2Plus for each distributed output of D1L or D4L-V2Plus distributor.

For this operation mode contact our technical support department.

(1) **Important:** Do not exceed the max. monitors/telephones connected to a door panel/multiplexer/repeater, or the distances indicated for door panel/multiplexer/repeater and last monitor and monitors between different apartments connected to door panel/multiplexer/repeater. For characteristics, sections and distances see the corresponding product manual.

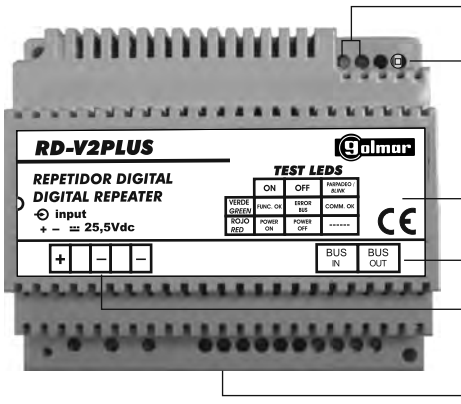
* **Note:** If the repeater/multiplexer is at a distance less than 50 meters from the door panel, place in the door panel the dip gain SW1-6 to OFF.

Bus: Golmar RAP-2150 cable.

Distributed output: Golmar RAP-2150 cable.

DESCRIPTION

Description of the repeater.



Autodiagnostic LEDs.

Reset button 'P1', for short-circuit Bus (riser where repeater is connected).

Label.

Bus connection block.

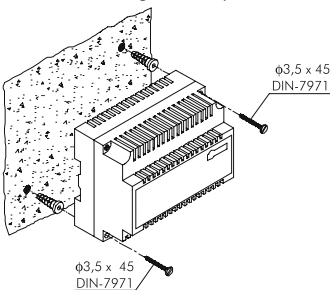
Power supply input (with FA-V2Plus power supply).

DIN rail latch release.

INSTALLATION

Detail of the repeater installation.

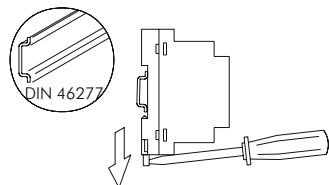
Install the repeater in a dry and protected place without risk of drip or water projections. To avoid damage, the repeater must be firmly fixed.

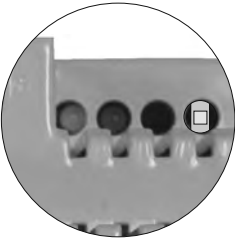


The installation or modification the repeater, must be performed **in the absence of electrical current**. The installation and handling of the repeater must be performed by **authorized personnel**.

To install the repeater directly on the wall, drill two holes of $\varnothing 6$ mm. and insert the wallplugs. Fix the repeater with the specified screws.

The repeater can be installed on a DIN guide (6 elements), pressing it lightly. To extract the repeater from the DIN guide, use a plain screwdriver to lever the flange as shown in the picture.





** If the short circuit is eliminated before 2 minutes (approx.), the repeater will automatically reset. Past this time it will be necessary to press button 'P1' to restart the repeater.
(See description page 47).*

Description of autodiagnostic LEDs.

The autodiagnostic LEDs are placed on the top right of the digital repeater.

Green Led

Fixed: Correct operation.

Blinking: Riser communicating.

Off: Riser not functioning due to a short-circuit in the riser * between the bus wires.

Red Led

Fixed: Power supply connected.

OFF: Power supply disconnected.

REPLACEMENT

The Golmar **V2PLUS** video door entry system is a digital system with simplified installation (2 wire bus without polarity), designed to new installations and to replace existing audio door entry systems in both apartment blocks and villas.

In installation for replacement it is necessary a detailed study of the existing installation before installing the system. To check that your installation complies with the system's minimum recommended requirements, please read carefully the following chapters, which provide details of the checks to be done.

MINIMUM REQUIREMENTS

Before installing this system, we must ensure that the existing installation complies with the following requirements:

- The installation must be realized by multipaired cable, (not to use single-wire cables).
- The wires must not be spliced, frayed, nor touch metal parts, and must not vary in cross section throughout the entire installation.
- The entire installation must be at least 40cm away from any other installation otherwise there is a risk that the audio and video signal be exposed to interference, or that the system does not work correctly.
- All branch connections must be made using D4L-V2PLUS or D1L-V2PLUS distributors.
- Each floor must have physical space to situate the distributor/s, in case they are necessary.
- Each apartment must have sufficient space to install the video system monitor.
- Maximum installation distance it will depend on the section and the installed cable (see pages 50-51).
- Installations with independent more common wires, **only use the common wires** (separate and do not connect the independent ones).
- 1 access door panel, (up to 3 access door panel with **MC-V2PLUS** multiplexer).
- Up to 32 (monitors, telephones or call repeaters) and apartments without using converters, repeaters or multiplexers.
- Up to 16 (monitors, telephones or call repeaters) and apartments in daisy chain installations without distributor, per installation without using converters, repeaters or multiplexers.
- Up to 3 elements (monitors, telephones or call repeaters S-45) per apartment.
- Installations with more than 32 elements or it is wanted to increase the distance in the riser (it needs the use of the **RD-V2PLUS**).
- Installations with more than 32 elements or 1 riser (it needs the use of the multiplexer **MC-V2PLUS**).
- Installations with general door panels (it needs the use of the **CD-V2PLUS** converters).
- Before connecting the system's power supply, we must ensure that there are **NO old parallel units, relays or call repeaters in the apartments**. If so, we must disconnect them or replace them with units that are compatible with the new system, otherwise the installation could be seriously damaged or burnt.

If any of the first three requirements are not met, it will be necessary to replace the installation riser.

* If the branch connections to the apartments are in good condition, their replacement will not be necessary.

* If replacing the installation riser, use the Golmar cable **RAP-2150** and the next sections:

One access and one riser

SECTIONS CHART	(2) Door panel-Monitor	P.S.- Door panel	Door panel - CV
Terminal	150m.	50m.	50m.
BUS, D	(1) RAP-2150		
+, -		1,5mm ²	
(d.c lock release) CV1,CV2			0,5mm ²
(a.c lock release) CV1,CV2, ~, ~		1mm ²	1mm ²

* Do not use different types of cable in the same installation (**contact with our technical support department**).

(2) Maximum distance of 150 m. between door panel and last monitor/telephone and between monitors/telephones of different apartments connected to door panel.

Continue.

Coming from previous page

Several accesses and risers

SECTIONS CHART	Door panel-Multiplexer	(3)Multiplexer-Monitor	P.S. - Door panel	Door panel-CV
Terminal	200m.	150m.	50m.	50m.
BUS, D	(1) RAP-2150	(1) RAP-2150		
+, -			1,5mm ²	
(d.c lock release) CV1,CV2				0,5mm ²
(a.c lock release) CV1,CV2, ~, ~			1mm ²	1mm ²

(3) Maximum distance of 150 meters between multiplexer and last monitor/telephone and between monitors/telephones of different apartments (in the same riser) connected to multiplexer.

IMPORTANT:

if the installation includes multiplexers in daisy chain with monitors B/W:

- Maximum distance between door panel/converter and multiplexer: 150m.
- Maximum distance between multiplexer in daisy chain and the last monitor B/W and between monitors of different apartments (in the same riser) connected to multiplexer in daisy chain will be: 100m.

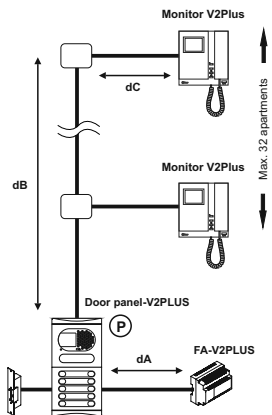
(1) Golmar has a special cable for this system, its reference number is **RAP-2150**. The use of this cable ensures the correct functioning of the system and simplifies the riser replacement given that it contains all the necessary wires for the installation.

INSTALLATION OF REPLACEMENT

Compatibility of cables and sections.

One access and one riser (without multiplexer)**Cables and distances chart**

Cables and sections	dA	dB+dC	dC
0,25mm ² (twisted).	10m.	40m.	15m.
0,5mm ² (twisted).	20m.	70m.	15m.
1mm ² (twisted).	40m.	100m.	15m.
1,5mm ² (twisted).	50m.	100m.	15m.
0,18mm ² (multipaired).	5m.	25m.	15m.
0,18x2 = 0,36mm ² (multipaired).	10m.	50m.	15m.
0,18x4 = 0,72mm ² (multipaired).	25m.	100m.	15m.
*Rap-2150 1mm ² (twisted).	40m.	150m.	15m.
1 par UTP Cat 5 0,18mm ² .	5m.	25m.	15m.
2 par UTP Cat 5 0,18x2 = 0,36mm ² .	10m.	50m.	15m.
4 par UTP Cat 5 0,18x4 = 0,72mm ² .	25m.	100m.	15m.



IMPORTANT: The distance to increase with **repeater**, it will depend on the installed cable section. (**Contact our technical support department**). See examples of installation diagrams, pages 52-54 and 57.

* Use Golmar RAP-2150 cable, for new installations.

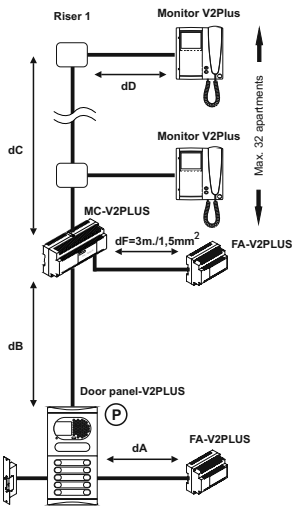
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INSTALLATION OF REPLACEMENT

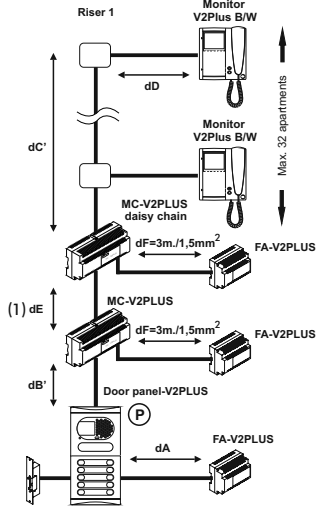
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Several accesses and risers (with multiplexers)

Installation with multiplexer



Installation with multiplexers in daisy chain and monitors B/W



See operation modes, configuration, programming and installation in the TMC-V2PLUSML instructions manual.
 (1) The distances indicated for 'dE' in the chart, it must be with the multiplexer **V.02** ó later; previous versions (distance=3m).

Cables and distances chart

Cables y secciones	dA	dB	dD	dC+dD	dB'	(1) dE	dC'+dD
0,25mm ² (trenzado).	10m.	50m.	15m.	40m.	37m.	26m.	26m.
0,5mm ² (trenzado).	20m.	100m.	15m.	70m.	75m.	46m.	46m.
1mm ² (trenzado).	40m.	100m.	15m.	100m.	75m.	67m.	67m.
1,5mm ² (trenzado).	50m.	150m.	15m.	100m.	112m.	67m.	67m.
0,18mm ² (multipar).	5m.	35m.	15m.	25m.	26m.	16m.	16m.
0,18x2 = 0,36mm ² (multipar).	10m.	70m.	15m.	50m.	52m.	33m.	33m.
0,18x4 = 0,72mm ² (multipar).	25m.	100m.	15m.	100m.	75m.	67m.	67m.
*Rap-2150 1mm ² (trenzado).	40m.	200m.	15m.	150m.	150m.	100m.	100m.
1 par UTP Cat 5 0,18mm ²	5m.	35m.	15m.	25m.	26m.	16m.	16m.
2 par UTP Cat 5 0,18x2 = 0,36mm ²	10m.	70m.	15m.	50m.	52m.	33m.	33m.
4 par UTP Cat 5 0,18x4 = 0,72mm ²	25m.	100m.	15m.	100m.	75m.	67m.	67m.

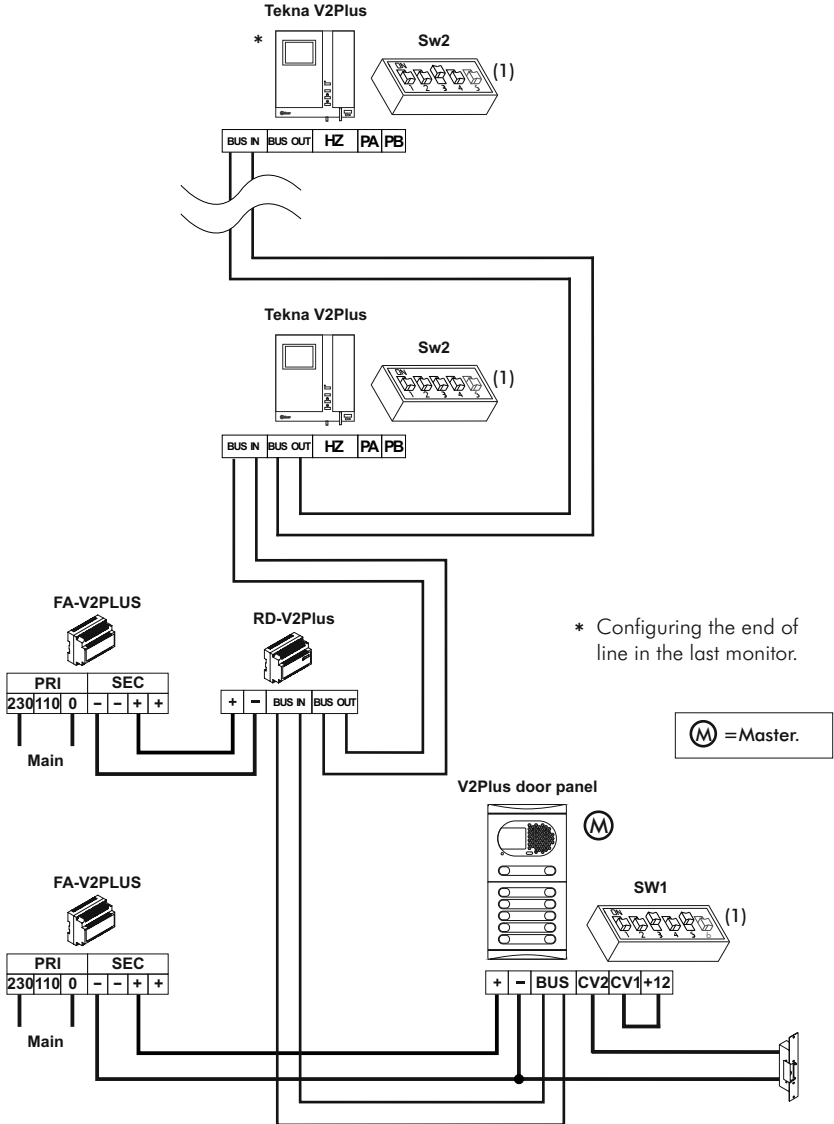
IMPORTANT: The distance to increase with **repeater**, it will depend on the installed cable section.
 (Contact our technical support department). See examples of installation diagrams, page 55-56 and 58.

* Use Golmar RAP-2150 cable, for new installations.

Daisy chain installation for Video door entry system without distributor, 1 repeater & d.c lock release.

See example 'A' and important notes in 'operation modes' (page 43).

REMEMBER: The total number of daisy chain elements (monitors/telephones) installed for each repeater must never exceed 16 units.



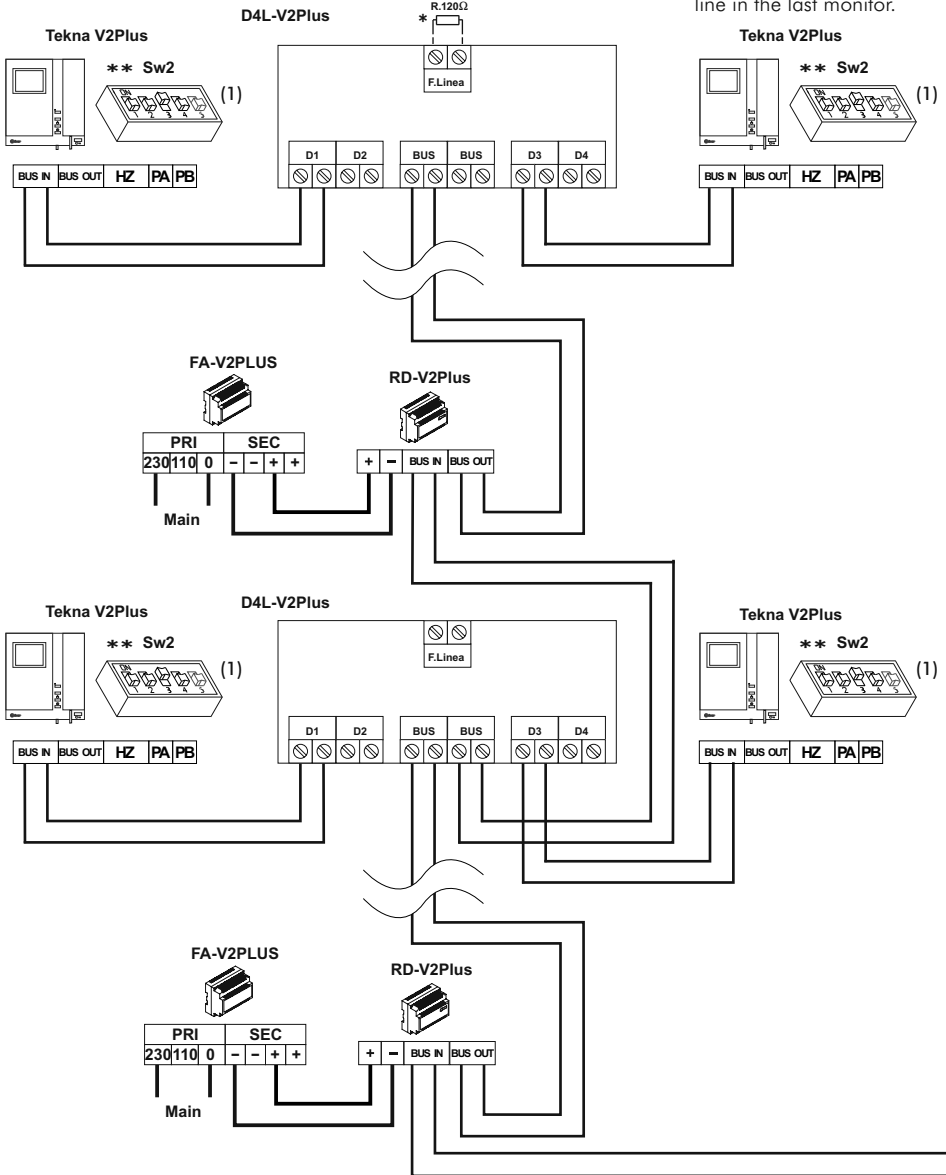
* Configuring the end of line in the last monitor.

(M) = Master.

(1) IMPORTANT: To configure and to program each equipment see the appropriate instruction book.

* Insert a 120 ohm end of line resistor in the last distributor.

** Configuring the end of line in the last monitor.



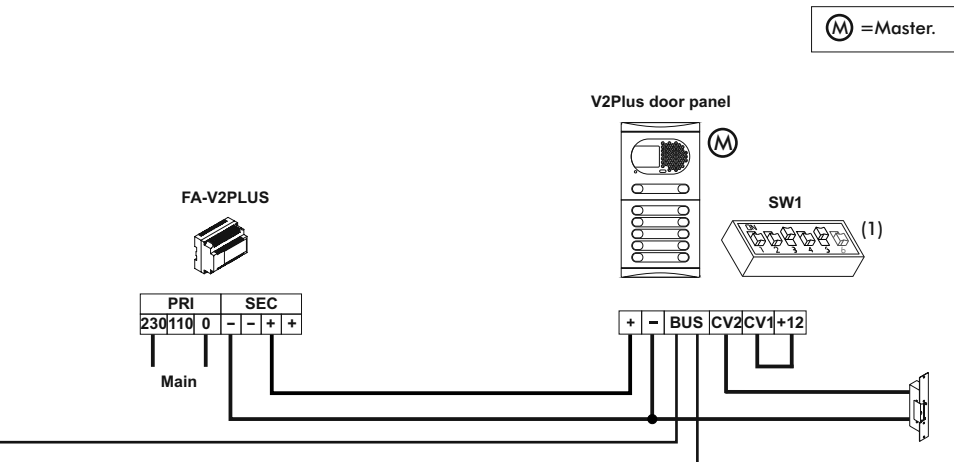
(1) **IMPORTANT:** To configure and to program each equipment see the appropriate instruction book.

Video door entry system with distributor, 2 repeaters and d.c lock release.

See example 'C' and important notes in 'operation modes' (pág. 43).

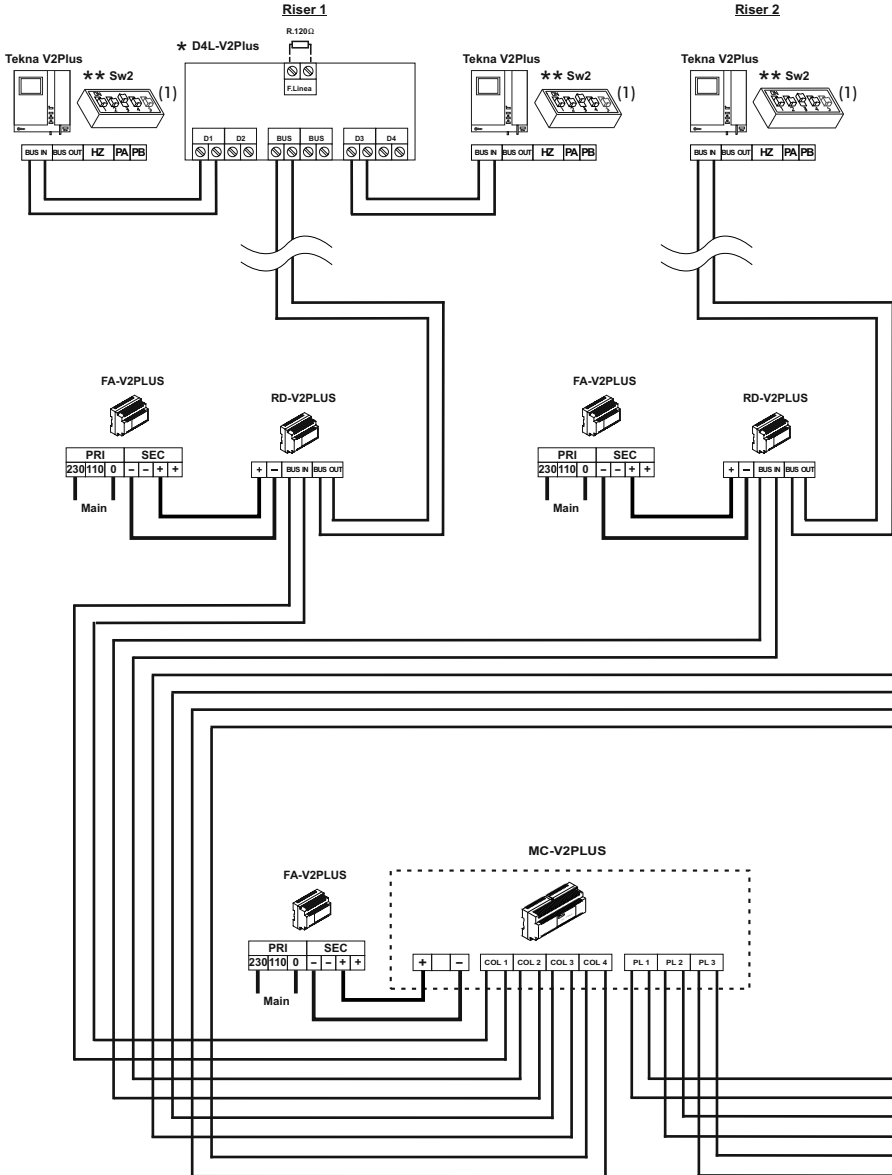
The installation diagram shows the connection of a video door entry system with one door panel to access the building with distributors, 2 repeaters in daisy chain and d.c lock release.

REMEMBER: Installations with distributors, the total number of elements (monitors/telephones) installed for each repeater must never exceed 32 units.



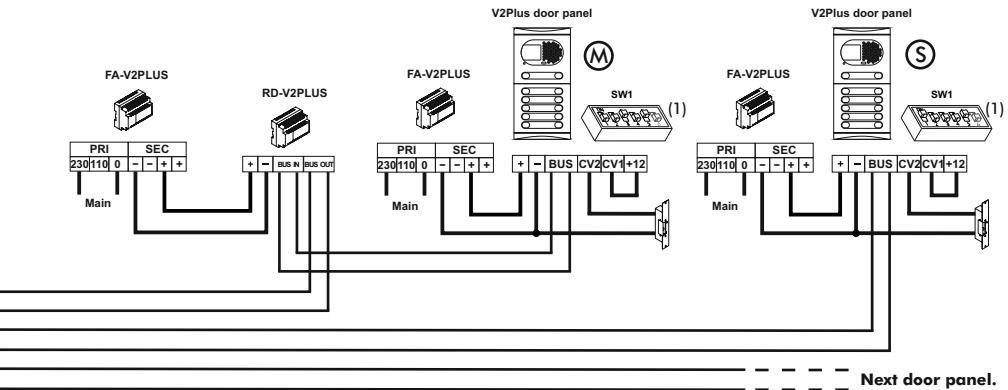
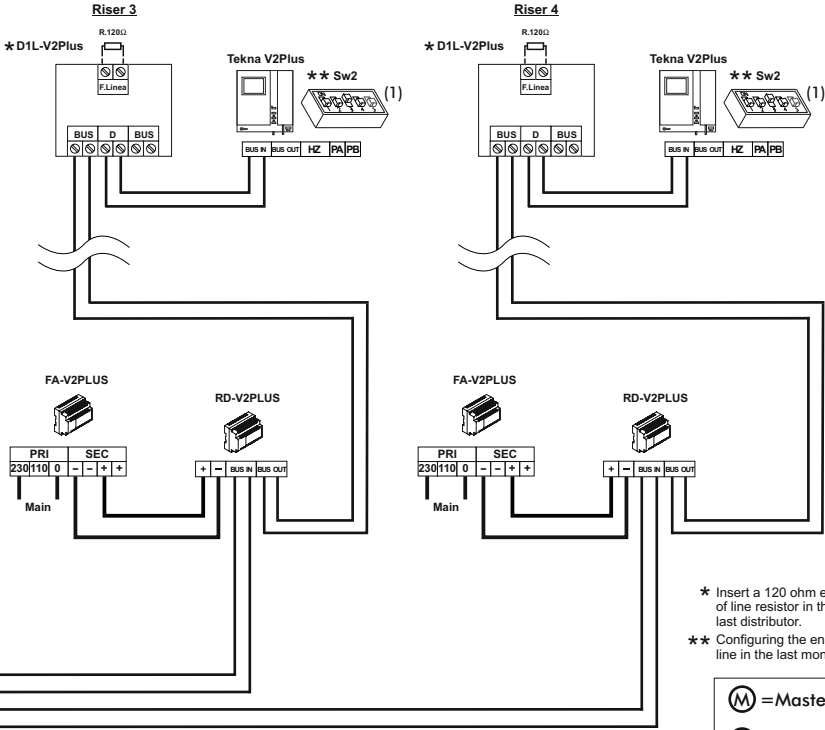
See example 'F' and important notes in 'operation modes' (page 45).

The installation diagram shows the connection of a video door entry system with several door panel to access the building and risers with distributors, 2 repeaters in daisy chain (1 between door panel and the multiplexer and the other one in each riser of the multiplexer) and d.c lock release.



(1) **IMPORTANT:** To configure and to program each equipment see the appropriate instruction book.

Video door entry system with distributors, several accesses and risers, 2 repeaters and d.c lock release.



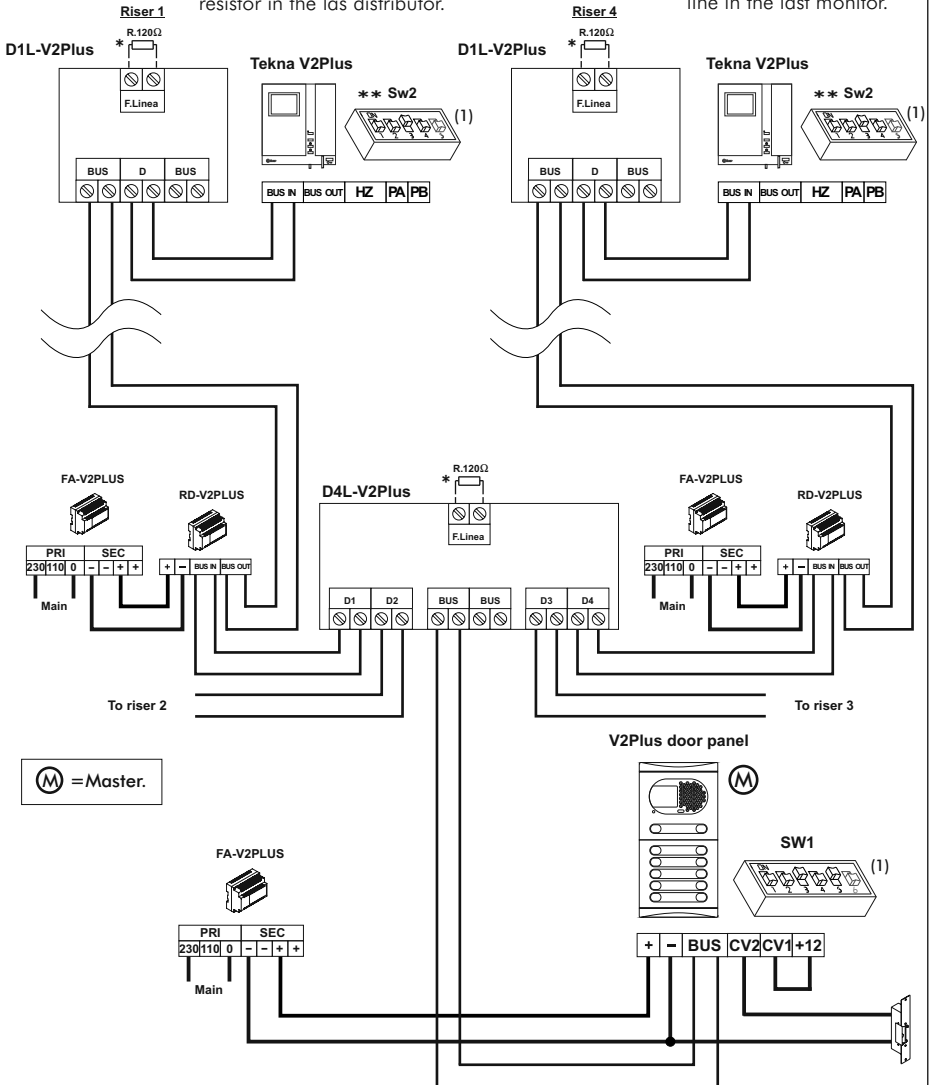
Special connection 1: Door panel with 4 lines distributor, repeater and d.c lock release.

See special connection '1' example 'A' and important notes in 'operation modes' (pág. 46).

The installation diagram shows the connection of a video door entry system with 1 distributor of 4 lines, 1 repeater for each distributed output of D4L-V2Plus distributor and d.c lock release.

* Insert a 120 ohm end of line resistor in the las distributor.

** Configuring the end of line in the last monitor.

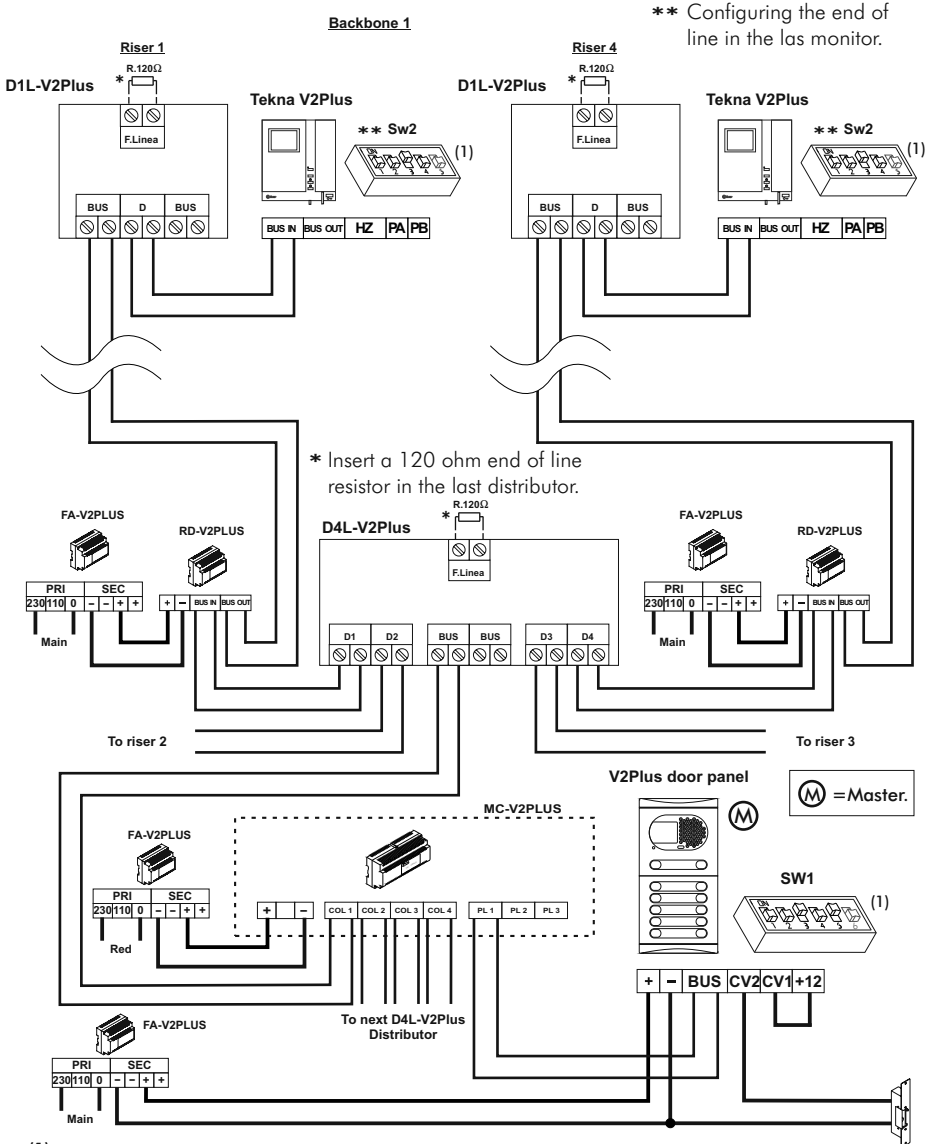


(1) **IMPORTANT:** To configure and to program each equipment see the appropriate instruction book.

Special connexion 2: Door panel with multiplexer, 4 lines distributor, repeater and d.c lock release.

See special connexion '2' example 'A' and important notes in 'operation modes' (page 46).

The installation diagram shows the connection of a video door entry system with 1 multiplexer, 1 D4L-V2Plus distributor of 4 lines, 1 repeater for each distributed output of D4L-V2Plus distributor and d.c lock release.



(1) **IMPORTANT:** To configure and to program each equipment see the appropriate instruction book.



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