Door Entry System

Technical catalog
ABB-Welcome

Power and productivity
for a better world™

Welcome

Leading to a flexible and simple world

The new door entry system ABB - Welcome is a new product range for more flexible application in 2-wire technology.

By the simple 2-wire bus and modular design of outdoor stations, the installers will have a variety of choices for any kind of application of single-family house, multi-family buildings and residential complex, no matter for new buildings or renovation.

Thanks to the modular design and extremely versatile 2-wire bus system,the new Welcome range is designed with the concept of flexibility, simplicity and elegance.Therefore installation and usage become much easier and more comfortable. With the wide range of well-designed products, Welcome meets all your needs for door entry.

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Examples of typical system

Welcome answers to all your needs in all contexts, no matter for new construction or renovation of old buildings, no matter for single-family houses, multi-family houses, high-rise buildings with more than 250 apartments or residential complex.

Single-family house, audio/video Fig.1

Welcome system consists at minimum of a system controller, outdoor station and indoor station. In Fig. 1 three indoor stations are installed in one house. When a visitor rings the bell at the video outdoor station, the call can be answered at either the 4.3" video hands-free indoor station, the 4.3" handset video indoor station, or the audio indoor station.

Multi-family building, audio Fig.2

Retrofitting a Welcome system in a multi-family house with existing wiring is very easy. Even a plain bell system can be converted to audio or video system. Depending on the local circumstances, an installation with recourse to a rising mains, as shown in Fig.2, is recommended. The wires branch off on each floor where the existing apartments are located – to where an audio indoor station with handset is mounted. There the user can answer incoming calls, open the pedestrian door and the garage door. Also door bell buttons can be used. These are connected to the indoor station.

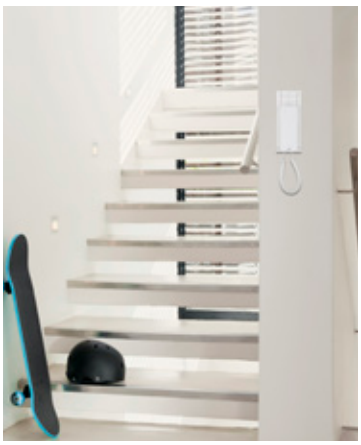


Fig.1

Single family home

» System type: audio/video combined

» Wiring: looped from device to device

» Devices used
  » One video outdoor station, 1-row push button
  » One flush mounted box, size 1/2
  » One mini system controller
  » One 4.3" hands-free video indoor station, white
  » One 4.3" handset video indoor station, white
  » One audio handset indoor station, white
  » One electric door opener (not provided by ABB)

The drawing shows the easy-to-install 2-wire bus. From the door opener to audio/video outdoor station. And from there to the mini system controller whose working mode is “one on”. And from there to 4.3" hands-free indoor station, which loops through to 4.3" handset indoor station and audio indoor station. No additional distributors are required.

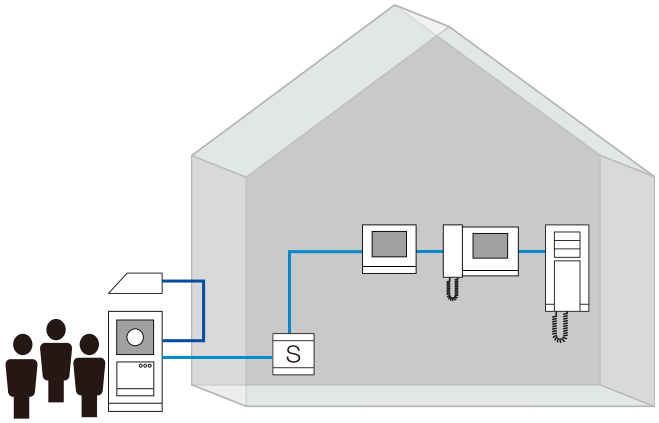


Fig.2

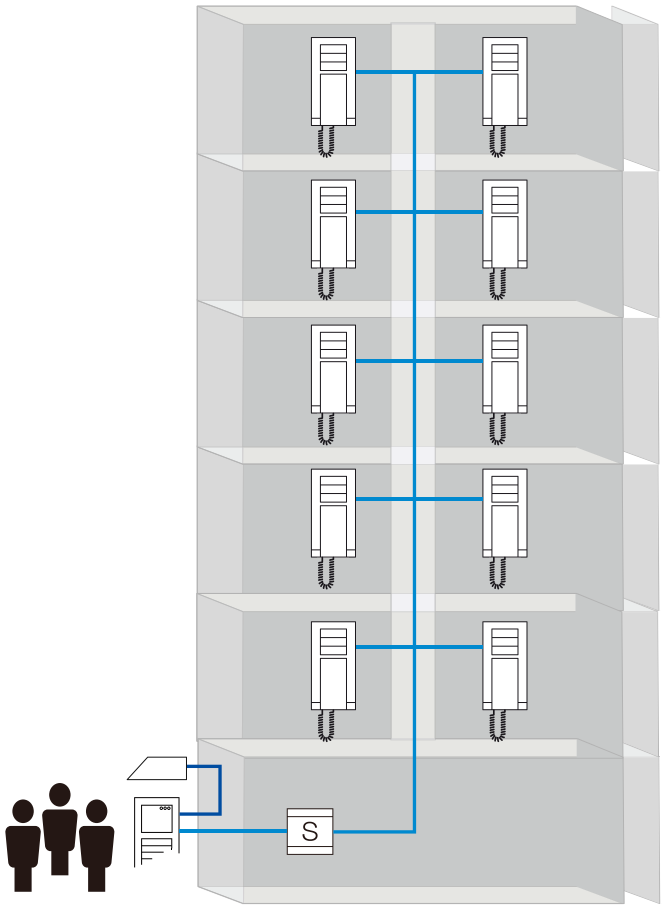
Multi-family building, audio

» System type: audio

» Wiring: rising mains with branch connections

» Devices used
  » One audio outdoor station with the composed of:
    » one audio module with 1-row push button
    » one cover frame
    » one 4-row push button module
    » one flush mounted box, size 1/2
  » One mini system controller
  » Ten audio handset indoor station, white
  » One electric door opener(not provided by ABB)

The audio solution for the multi-family houses. The drawing shows the easy-to-install 2-wire bus from the electrical door opener to outdoor audio station, from there to the system controller and from there to the audio indoor station with handset. No additional distributors are required. In case of future renovation into video system, then a video distributor is needed for every 4 indoor stations.



High-rise building, audio/video Fig.3

The setup of a video system or a combined audio/video system can include existing rising mains. To correctly distribute the video image of the outdoor station inside the house, video distributors are installed in each branch box. When a system controller can not cover all the power consumption of the devices, additional power supply in the bus should be added by the combination of a gateway and a system controller.

Group of single family homes, audio/video Fig.4

For a group of single family homes, a gate station can be equipped as the main entrance. The gateway installed in each single family home ensures the independent operation of each single family home and links the whole group as a networked system.

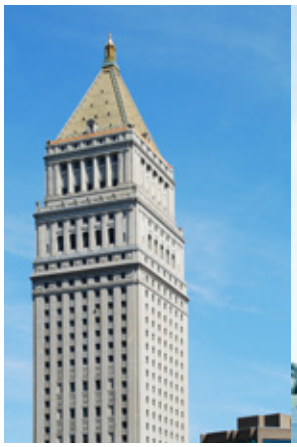


Fig.3

High-rise building, audio/video

» System type: audio/video combined

» Wiring: branch line by distributor connection

» Devices used
- » One keypad outdoor station
- » One flush mounted box, size 1/4
- » Three system controllers
- » Two gateways
- » Twenty five video indoor distributors
- » Fifty audio handset indoor stations. white
- » Fifty video 4.3” hands-free indoor stations. white
- » One electric door opener (not provided by ABB)

The drawing shows the easy-to-install 2-wire bus from the electrical door opener to outdoor audio station, from there to the system controller and from there to the audio indoor station with handset. An additional system controller and a gateway works as auxiliary power supply is needed to support the bus line for power consumption.

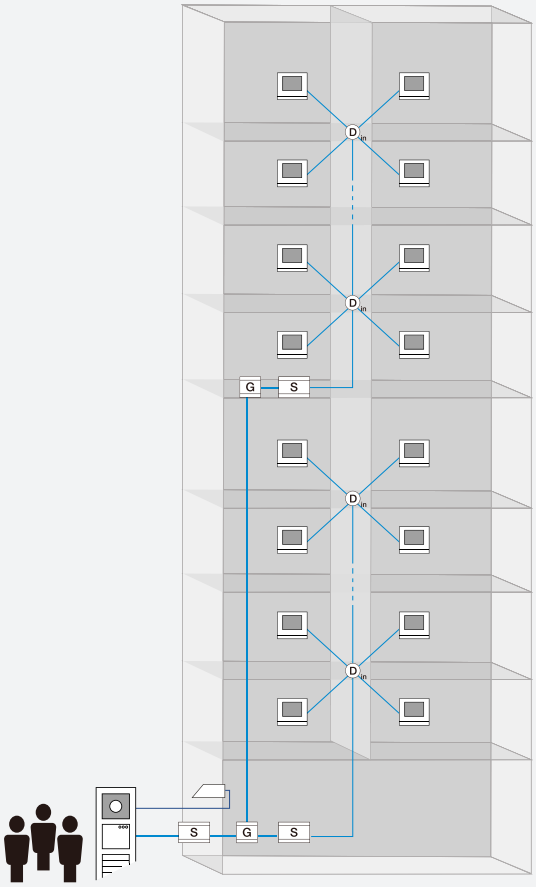


Fig.4

Group of single family homes, audio/video

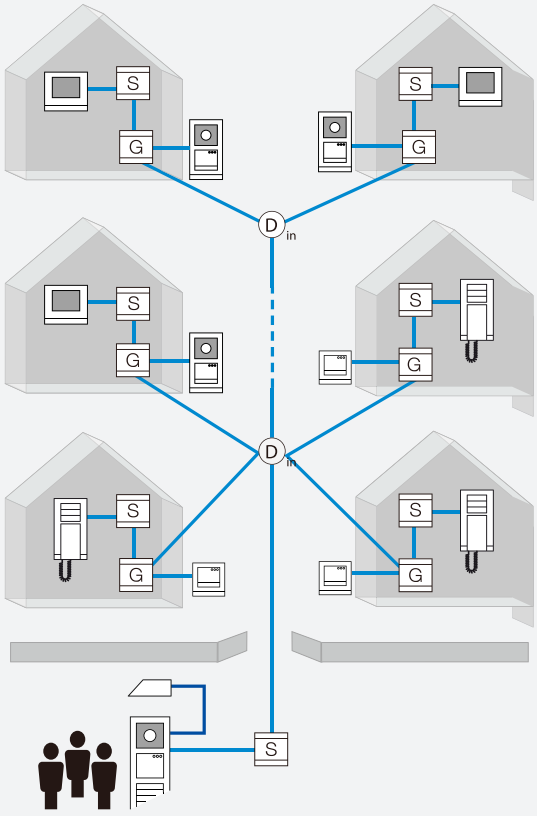
» System type: audio/video combined

» Wiring: branch line by distributor connection

» Devices used
» One keypad outdoor station
- » that includes:
  - » one camera module
  - » one audio module
  - » one cover frame
  - » two pcs of 4-row pushbutton module
  - » one flush mounted box, size 1/4

» One system controller
» Four video indoor distributors
» Sixteen sets of villa kit
» Sixteen gateways
» One electric door opener (not provided by ABB)

The solution for a group of single family homes networked together. The drawing shows the easy-to-install 2-wire bus from the electrical door opener to gate station, from there to the system controller from there to the video indoor distributor, and from there to villa system and to video hands-free indoor station. Each villa system should add a gateway to be insulated from the networked bus.



High-rise building with floor entrance, video Fig.5

For a high-rise building, a pushbutton outdoor station is present on each floor as the second entrance to reach the apartment door. The gateway installed on each floor ensures their independent operation within the building.

Resident complexes, audio/video Fig.6

For residential complexes that may include single family homes, multi-family houses and high-rise buildings, common gate station(s) are present with guard unit(s). The gateway installed in each single family home /high-rise building ensures their independent operation within the building and links the whole group as a networked system.

Fig.5

High-rise building with floor entrance, video

» System type: audio/video combined

» Wiring: branch line by distributor connection

» Devices used
  » One keypad outdoor station
  » One flush mounted box, size 1/4
  » Five video outdoor stations, each containing:
    » one came modules
    » one audio modules
    » one cover frame
    » one flush mounted box
  » One system controller
  » Five mini system controllers
  » Five gateways
  » Five video indoor distributors
  » Fifteen 4.3 video hands-free indoor stations, white
  » Six electric door opener (not provided by ABB)

The drawing shows the easy-to-install 2-wire bus from the electrical door opener to outdoor station, from there to the system controller, from there to floor gateway, and from there to floor system and to video hands-free indoor station. Each floor system should add a gateway to be insulated from the networked bus.

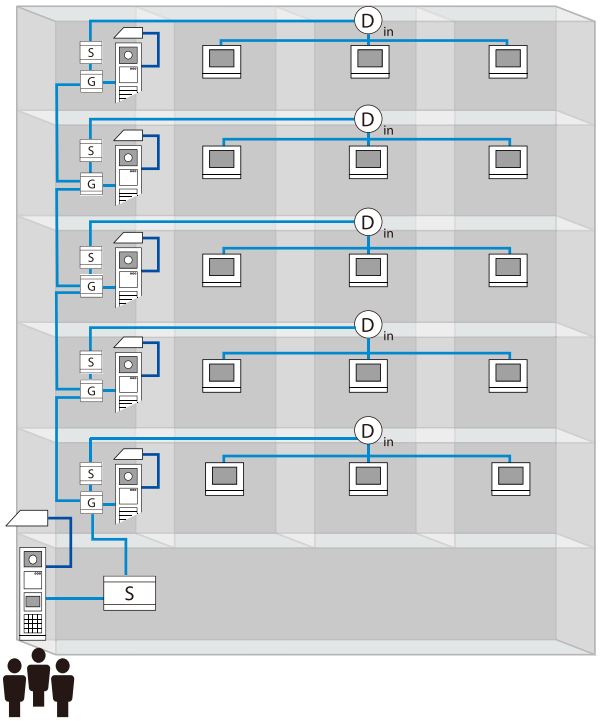


Fig.6

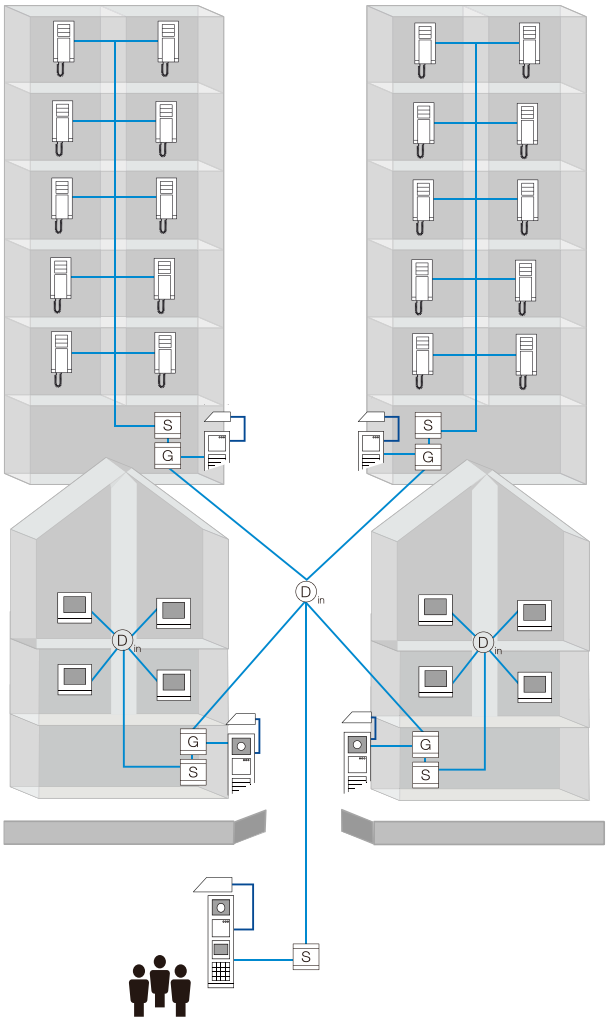
Residential complexes, audio/video

» System type: audio/video combined

» Wiring: branch line by distributor connection

» Devices used
  » One keypad outdoor station
  » One flush mounted box, size 1/4
  » Two video outdoor stations, each composed of:
    » one camera module
    » one audio module
    » one cover frame
    » one flush mounted box
  » Two audio outdoor stations, each composed of:
    » one audio module with 1-row pushbutton
    » one 4-row pushbutton module
    » one cover frame
    » one flush mounted box, size 1/2
  » Five mini system controllers
  » One video indoor distributor
  » Four gateways
  » Eight 4.3” hands-free video indoor stations, white
  » Twenty audio handset indoor stations. white
  » Five electric door openers (not provided by ABB)

The drawing shows the easy-to-install 2-wire bus from the electrical door opener to gate station, from there to the system controller, from there to video distributor, and from there to each insulated building system and to audio handset indoor station. Each building system should add a gateway to be insulated from the networked bus.



Commercial objects, audio/video Fig.7

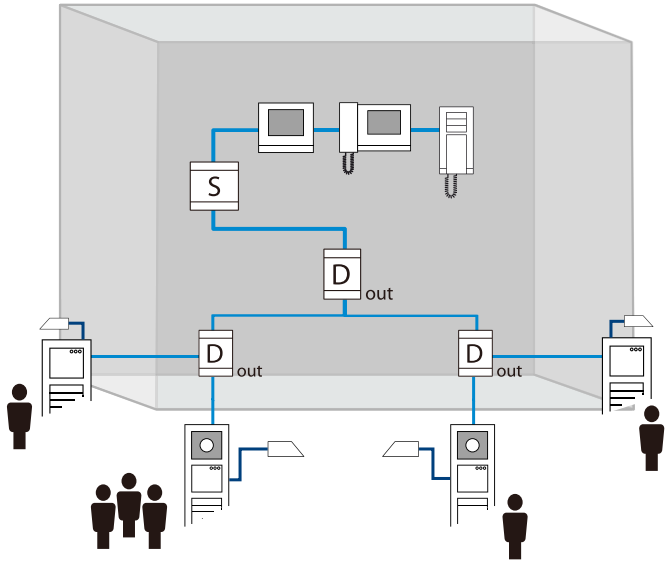
For buildings with several entrances (doctor's office, law firm, small businesses, etc.), these can be individually equipped with outdoor stations. A combination of audio outdoor stations and video outdoor stations is possible. For this application, a video outdoor distributor as MDRC unit must be used. The door, from which the bell is rung, is opened by the indoor station called.

Fig.7

Commercial objects, video/audio

- System type: audio/video combined
- Wiring: looped from devices to devices
- Devices used
  - Two video outdoor stations, each composed of:
    - one camera module
    - one audio module
    - one cover frame
    - one flush mounted box
  - Two audio outdoor stations composed of:
    - one audio module
    - one cover frame
    - two flush mounted boxes
  - One system controller
  - Three video outdoor distributors
  - One audio handset indoor station. white
  - One video hands-free indoor station. white
  - One video handset indoor station. white
  - Four electric door opener (not provided by ABB)

The drawing shows the easy-to-install 2-wire bus connect indoor stations and multi outdoor stations. The outdoor distributor is needed to connect the multi outdoor stations together.



02
Planning

Either by providing an all-round and easy-to-understand table to grasp all the possibilities of the combination of outdoor station, indoor station and system device, or by supplying a few simple rules for flexible topology and power consumption and distance calculation to meet the project requirement, this makes even complex projects easy to manage and easy to implement at a later stage.

In most cases, the existing lines can be used. The universally used 2-wire bus technology allows a bell system to be upgraded to a video system with outdoor camera.

Welcome system can be set up with one system controller or with multi-system controllers. For both types, every system controller makes an insulated system.

For each insulated system, it can be exclusively an audio system. In the building part, visitors and residents use it to communicate between audio outdoor stations and audio indoor stations. In the common part, if a guard unit is present, the visitor and guard can communicate with each other.

The insulated system can also be a video system.
This makes the camera image of the video outdoor station visible at the video indoor stations in the building part, or image of video gate station visible at the guard units in the common part.

This chapter includes the sections below to make planning easier:

System Capacity

2.1 Capacity of Welcome system

The system capacity is determined by the valid address number of the devices. Two kinds of addressing are used in Welcome system:

» For independent addressing, the devices' addresses are independent in the common part and in the building part.
» For combined addressing, the total address number of the devices in every building and the devices in common partshould be less than a certain value.

	Outdoor station	Indoor station	Gateway	Guard unit	Switch actuator
Total address: (independent addressing)	-	250	60 - building gateway mode 99 - apartment/floor gateway mode	9	-
Total address: (combined addressing)	9	-	-	-	199

* Total address of independent addressing = Common part or every individual building part, two parts are independent
Total address of combine addressing = Common part + every individual building part, two parts are combined

Outdoor station

The outdoor station of Welcome system includes the building outdoor station,single family home outdoor station, gate station, and second confirmed outdoor station. The total address number of outdoor stations is 9 for all kinds of entry level.
The following are some examples of the address of door stations:

» In one video system with only one building/single family home, 9 outdoor stations can be installed.
» In a networked system, 4 gate stations in the common part, and each building has 4 building outdoor stations and one second confirmed outdoor station in each of the apartment, total 9 (4+4+1) outdoor stations can be installed for the apartment. Fig.8(B4)

Or 5 building outdoor stations for one single family home and 4 gate stations in the common part, total 9 (5+4) outdoor stations can be installed for the apartment. Fig.8(B54)

Indoor station

In a single building or in the building part of a networked system, the total address number of indoor stations is 250.

» In one audio/video system for one building of up to 250 apartments.
» In one networked system, with each building of up to 250 apartments Fig.8(B1)

Gateway

The address of gateway is using independent addressing. The total address of gateway varies when it is set as different modes for application.

The total address number of gateways when it is set as apartment gateway or floor gateway is 99. The available number of address of gateway when set as building gateway is 60.

Guard unit

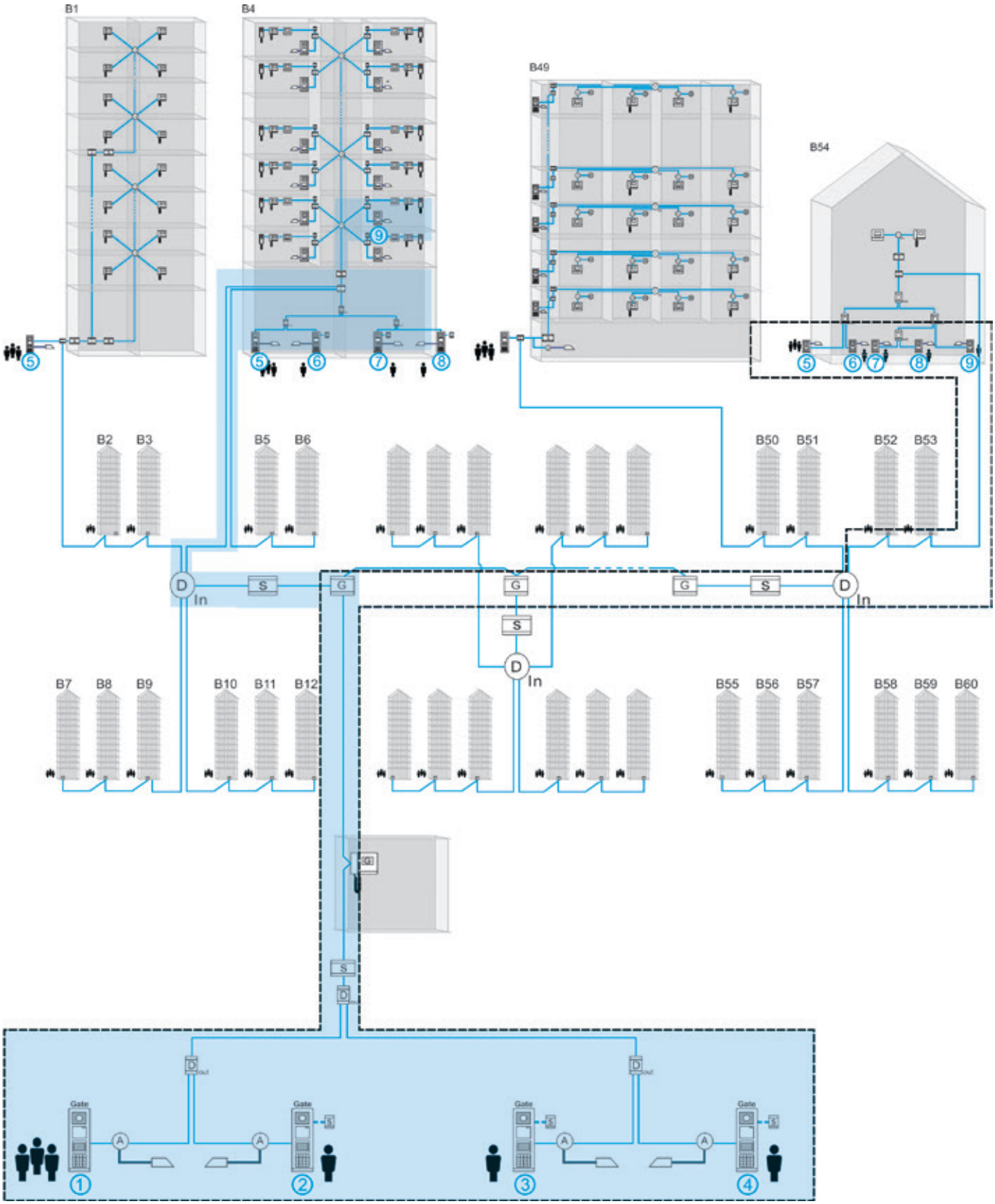
The address of guard unit is using independent addressing. Total up to 9 guard units is allowed in a video system of one building or in the building part of networked system. In one networked system, total up to 9 guard units is allowed in the common part.

Switch actuator

The address of switch actuator uses combined addressing. Up to 199 switch actuators can be connected.
For example:

» In a system with one building with 199 apartments, each apartment can install one switch actuator.
» In a networked system, 4 switch actuators can be installed in the common part, and 195 switch actuators can be installed in every building.

Fig.8


B1
B4
B49
B54
B2
B3
B5
B6
B50
B51
B52
B53
B7
B8
B9
B10
B11
B12
B55
B56
B57
B58
B59
B60
D
In
S
G
Gate
A
1
2
3
4

Outdoor Station Selection

2.2 Selection of the modular outdoor station

Welcome provides a wide range of outdoor stations with pushbutton by the combination of the modules, covers and boxes.

Composition of pushbutton outdoor station

For pushbutton outdoor stations, it multiples the application by setting as one column or double column for the same pushbutton module. The setting is made by the audio modules. We call the different pushbutton status "single row" or "double row". 3-row pushbutton and 4-row pushbutton are optional for application. For pushbutton outdoor stations, to compose an outdoor station, audio module (with no pushbutton, with 1-row pushbutton or 2-row pushbutton), pushbutton module (3-row pushbutton or 4-row pushbutton), cover frame and flush mounted boxes are compulsory. If surface mounting is required, a rain hood is needed. Fig.9

There is a quick composition table for pushbutton outdoor station on page 21-24. Please follow the guide below and refer to the table to choose the articles for the desired pushbutton outdoor station.

Step 1: Audio or video?
Please refer to page 21-22 for audio pushbutton outdoor station and page 23-24 for video pushbutton outdoor station.

Step 2: 3-row pushbutton or 4-row pushbutton?
Please refer to the 3-row pushbutton or 4-row pushbutton table for different pushbuttonapplication.

» It is technically possible but esthetically, inconsistent for combining audio module with pushbutton and 3-row pushbutton module. For better appearance as an outdoor station, the composition of pushbuttons follows the rule that every pushbutton should have the same height. Thus if 3-row pushbutton module is used, audio module with pushbutton and 4-row pushbutton module are not recommended.

Step 3: How many calls are needed?
Please decide whether single row or double row pushbutton is needed, then please turn to the button ranges to quickly locate the possible composition.

» In case the light and call guard functions are required for the outdoor station, then the total buttons should be the combination of the apartment no. and button number for extra functions.

» In case it is not sure whether single or double pushbuttons for one row is optimal, it is also possible to turn to the pushbutton range to see all the possibilities.

Step 4: Choose the right composition by balancing the cost and esthetics

» There may be more than one possibility of compositing outdoor station in certain cases by choosing 3-row pushbutton module or 4-row pushbutton module, choosing a nameplate module or not and setting as single row or double row for the same pushbutton module. It is advised to consider the cost and esthetics together when making the composition decision.

Fig.9

Composition of an pushbutton outdoor station

Audio pushbutton outdoor station composition

Video pushbutton outdoor station composition

Nameplate module use case

Rainhood use case

Easy reference for the modular outdoor station solution
The mixed power solution for pushbutton outdoor station

Indoor station No. or Apartment No.	System controller	No. of audio outdoor station fed by standard system sontroller or mini system controller				Button Module	Nameplate Module	Audio Outdoor Station Composed by 3-row Button Modules												Distance range and cable type									
								Audio Module						Cover Frame & Flush-mounted Box															
M2200.-.	M2300 or M2301	The article no. of the composed OS modules are shown in the right				M251021P3	51021DN	M251021A-.		M251022A-.		M251023A-.		51021CF-.+ 41021F	51022CF-.+ 41022F	51023CF-. +41023F	51024CF-. +41024F	51028CF-. +41028F	51025CF-. +41025F	51026CF-. +41026F	51029CF-. +41029F	51024CF-. +41024F + 51021J								A=From one or parallell outdoor stations to the furthest indoor staiton B=From system controller to the furthest indoor station							
		By M2300	By M2301	By M2300	By M2301			x1		x1		x1																	
								Below apartment no. is composed by selected push button module and the selected audio module																					
		Single		Double				Single	Double	Single	Double	Single	Double																
Single	Double																							Coax, 75-5		RVV, Ø=0.04inch		J-Y(ST)-Y,Ø=0.03inch		J-Y(ST)-Y,Ø=0.02inch		UTP 5, 2 x 2pairs	
																								A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)
1-2	1-4	1	6	4	6	4	-	-			1	1-2	2	3-4										710.85	656.17	667.1	623.36	448.38	404.64	251.53	218.72	699.91	634.30
3-5	5-10	1	5	3	5	2	1	-	3	5-6	4	7-8	5	9-10										710.85	590.55	667.1	557.74	448.38	371.83	251.53	207.79	699.91	568.68
6-8	11-16	1	5	2	4	2	2	-	6	11-12	7	13-14	8	15-16										710.85	524.93	667.1	492.13	448.38	328.08	251.53	185.91	699.91	503.06
9-11	17-22	1	4	2	3	1	3	-	9	17-18	10	19-20	11	21-22										710.85	426.51	667.1	404.64	448.38	262.47	251.53	153.11	699.91	404.64
12-14	23-28	1	4	2	3	1	4	-	12	23-24	13	25-26	14	27-28										710.85	382.76	667.1	360.89	448.38	240.59	251.53	142.17	699.91	371.83
15-17	29-34	1	3	2	2	1	5	-	15	29-30	16	31-32	17	33-34										710.85	328.08	667.1	306.21	448.38	207.79	251.53	120.30	699.91	317.15
18-20	35-40	1	3	1	2	-	6	1	18	35-36	19	37-38	20	39-40										710.85	306.21	667.1	284.34	448.38	196.85	251.53	109.36	699.91	295.28
21-23	41-46	1	3	1	2	-	7	-	21	41-42	22	43-44	23	45-46										710.85	273.4	667.1	251.53	448.38	174.98	251.53	98.43	699.91	262.47
24-26	47-52	1	2	1	1	-	8	1	24	47-48	25	49-50	26	51-52										710.85	251.53	667.1	240.59	448.38	164.04	251.53	87.49	699.91	240.59
27-29	53-58	1	2	1	1	-	9	-	27	53-54	28	55-56	29	57-58										710.85	229.66	667.1	218.72	448.38	142.17	251.53	76.55	699.91	218.72
30-32	59-64	1	2	1	1	-	10	1	30	59-60	31	61-62	32	63-64										710.85	218.72	667.1	207.79	448.38	131.23	251.53	76.55	699.91	207.79
33-35	65-70	1	2	1	1	-	11	-	33	65-66	34	67-68	35	69-70										710.85	196.85	667.1	185.91	448.38	120.30	251.53	65.62	699.91	185.91
														51021RH	51022RH	51023RH	51024RH	51028RH	51025RH	51026RH	51029RH	51027RH									

Remarks:

1. For each of the additional parallel outdoor station , it should be locally powered. For example, for a building with 32 apartments, the 3-row single button modules are used, totally, 3 outdoor stations are required, then 2 outdoor stations can be powered by standard system controller, and the third one should be powered by mini local power supply.

2.For double button outdoor station, despite techenically possible with the combination of audio module with button, it is recommended to use pure audio module with 3-row button module. Then for example for 28 buttons, the 5 pcs of 3-row button module should be used.

* Optional to install rain hood

Indoor station No. or Apartment No.		System controller	No. of audio outdoor station fed by standard system sontroller or mini system controller				Button Module	Nameplate Module	Audio Outdoor Station Composed by 4-row Button Modules												Distance range and cable type									
									Audio Module						Cover Frame & Flush-mounted Box															
M2200.-.		M2300 or M2301	The article no. of the composed OS modules are shown in the right				M251021P4	51021DN	M251021A-.		M251022A-.		M251023A-.		51021CF-.+ 41021F	51022CF-.+ 41022F	51023CF-. +41023F	51024CF-. +41024F	51028CF-. +41028F	51025CF-. +41025F	51026CF-. +41026F	51029CF-. +41029F	51024CF-. +41024F + 51021J								A=From one or parallell outdoor stations to the furthest indoor staiton B=From system controller to the furthest indoor station									
			By M2300	By M2301	By M2300	By M2301			x1		x1		x1																		
									Below apartment No. is composed by selected push button module and the selected audio module																						
Single	Double		Single		Double				Single	Double	Single	Double	Single	Double													Coax, 75-5		RVV, Ø=0.04inch		J-Y(ST)-Y,Ø=0.03inch		J-Y(ST)-Y,Ø=0.02inch		UTP 5, 2 x 2pairs	
																											A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)
1-2	1-4	1	6	4	6	4	-	-			1	1-2	2	3-4													710.85	656.17	667.10	623.36	448.38	404.64	251.53	218.72	699.91	634.30
3-6	7-12	1	5	3	4	2	1	-	3-4	7-8	5	9-10	6	11-12													710.85	590.55	667.10	557.74	448.38	371.83	251.53	207.79	699.91	568.68
7-10	15-20	1	4	2	4	1	2	-	7-8	15-16	9	17-18	10	19-20													710.85	470.25	667.10	437.45	448.38	295.28	251.53	164.04	699.91	448.38
11-14	23-28	1	4	2	3	1	3	-	11-12	23-24	13	25-26	14	27-28													710.85	382.76	667.10	360.89	448.38	240.59	251.53	142.17	699.91	371.83
15-18	31-36	1	3	2	2	-	4	-	15-16	31-32	17	33-34	18	35-36													710.85	328.08	667.10	306.21	448.38	207.79	251.53	120.30	699.91	317.15
19-22	39-44	1	3	1	2	-	5	-	19-20	39-40	21	41-42	22	43-44													710.85	284.34	667.10	273.40	448.38	185.91	251.53	98.43	699.91	273.40
23-26	47-52	1	3	1	1	-	6	1	23-24	47-48	25	49-50	26	51-52													710.85	251.53	667.10	240.59	448.38	164.04	251.53	87.49	699.91	240.59
27-30	55-60	1	2	1	1	-	7	-	27-28	55-56	29	57-58	30	59-60													710.85	229.66	667.10	218.72	448.38	142.17	251.53	76.55	699.91	218.72
31-34	63-68	1	2	-	1	-	8	1	31-32	63-64	33	65-66	34	67-68													710.85	207.79	667.10	196.85	448.38	131.23	251.53	76.55	699.91	196.85
35-38	71-76	1	2	-	1*	-	9	-	35-36	71-72	37	73-74	38	75-76													710.85	185.91	667.10	174.98	448.38	120.30	251.53	65.62	699.91	185.91
39-42	79-84	1	2	-	1*	-	10	1	39-40	79-80	41	81-82	42	83-84													710.85	174.98	667.10	164.04	448.38	109.36	251.53	65.62	699.91	164.04
43-46	87-92	1	2	-	1*	-	11	-	43-44	87-88	45	89-90	46	91-92													710.85	164.04	667.10	153.11	448.38	98.43	251.53	54.68	699.91	153.11
															51021RH	51022RH	51023RH	51024RH	51028RH	51025RH	51026RH	51029RH	51027RH									

Remarks:

1. * means the outdoor station should be powered by one mini local power supply when the no. of indoor stations are more than 73, as thestandard system controller can not fully cover the required power units

2. For each of the additional parallel outdoor station , it should be locally powered. For example, for a building with 64 apartments, the 4-rowdouble button modules are used, totally, 2 outdoor stations are required, then one outdoor station is powered by standard system controller,and the second one should be powered by mini local power supply.

* Optional to install rain hood

Indoor station No. or Apartment No.		Video distributor No.		System controller	No. of video outdoor station fed by standard system sontroller or mini system controller		Video Outdoor Station Composed by 3-row Button Modules														Distance range and cable type									
							Camera Module	Button Module	Nameplate Module	Audio Module						Cover Frame & Flush-mounted Box									A=From one or parallell outdoor stations to the furthest indoor staiton B=From system controller to the furthest indoor station									
M2231.-. M2230.-.		M2304		M2300 or M2301	The article no. of the composed OS modules are shown in the rightt		M251021C	M251021P3	51021DN	M251021A-. x1		M251022A-. x1		M251023A-. x1		51022CF -. + 41022F	51023CF -. + 41023F	51024CF -. + 41024F	51028CF -. + 41028F	51025CF -. + 41025F	51026CF -. + 41026F	51029CF -. + 41029F	51024CF -. + 41024F + 51021J									
or										Below apartment no. is composed by selected push button module and the selected audio module														Coax, 75-5		RVV, Ø=0.04inch		J-Y(ST)-Y,Ø=0.03inch		J-Y(ST)-Y,Ø=0.02inch		UTP 5, 2 x 2pairs	
Single	Double	Single	Double		Single	Double				Single	Double	Single	Double	Single	Double									A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (inch)	A (yard)	B (yard)
1-2	1-4	1	1	1	4 or 1*	4 or 1*	1	-	-			1	1-2	2	3-4									514.00	371.83	317.15	349.96	164.04	229.66	142.17	131.23	328.08	360.89
3-5	5-10	1-2	2-3	1	4	3	1	1	-	3	5-6	4	7-8	5	9-10									492.13	317.15	306.21	295.28	153.11	196.85	142.17	109.36	317.15	306.21
6-8	11-16	2	3-4	1	3	3	1	2	-	6	11-12	7	13-14	8	15-16									492.13	295.28	306.21	284.34	153.11	185.91	142.17	109.36	317.15	284.34
9-11	17-22	3	5-6	1	3	2	1	3	-	9	17-18	10	19-20	11	21-22									470.25	262.47	284.34	251.53	153.11	164.04	131.23	87.49	306.21	251.53
12-14	23-28	3-4	6-7	1	3	2	1	4	-	12	23-24	13	25-26	14	27-28									470.25	229.66	284.34	218.72	153.11	142.17	131.23	87.49	306.21	229.66
15-17	29-34	4-5	8-9	1	2	2	1	5	1	15	29-30	16	31-32	17	33-34									448.38	207.79	273.40	207.79	142.17	131.23	131.23	76.55	295.28	207.79
18-20	35-40	5	9-10	1	2	1	1	6	-	18	35-36	19	37-38	20	39-40									448.38	196.85	273.40	185.91	142.17	120.30	131.23	65.62	295.28	185.91
21-23	41-46	6	11-12	1	2	1	1	7	1	21	41-42	22	43-44	23	45-46									426.51	174.98	262.47	174.98	131.23	109.36	120.30	65.62	273.4	174.98
24-26	47-52	6-7	12-13	1	2	1	1	8	-	24	47-48	25	49-50	26	51-52									404.64	164.04	251.53	164.04	131.23	98.423	120.30	54.68	262.47	153.11
27-29	53-58	7-8	14-15	1	1	1**	1	9	1	27	53-54	28	55-56	29	57-58									404.64	153.11	251.53	153.11	131.23	98.43	120.30	54.68	262.47	142.17
30-32	59-64	8	15-16	1	1	1**	1	10	-	30	59-60	31	61-62	32	63-64									382.76	153.11	240.59	142.17	120.30	98.43	109.36	54.68	251.53	142.17
Optional to install rain hood																51022RH	51023RH	51024RH	51028RH	51025RH	51026RH	51029RH	51027RH	For each one of video parallel OS, for A, below amount of distance should be subtracted.									
																								54.68 yard	-	32.81 yard	-	21.87 yard	-	21.87 yard	-	43.74 yard	-

Remarks:

1. * means one mini system controller, others are the no. of standard system controller.(M2300)
2. ** means the local power supply should power that outdoor station in addtion to the system controller(M2301)
3. For each of the additional parallel outdoor station , it should be locally powered. For example, for a building with 32 apartments, 2 outdoorstations are required, then one outdoor station is powered by standard system controller, and the second outdoor station should be poweredby mini local power supply.
4. For double button outdoor station, despite techenically possible with the combination of audio module with button, it is recommended touse pure audio module with 3-row button module. Then for example for 28 buttons, the 5 pcs of 3-row button module should be used.

Indoor station No. or Apartment No.	Video distributor No.	System controller	No. of video outdoor station fed by standard system sontroller or mini system controller	Video Outdoor Station Composed by 4-row Button Modules														Distance range and cable type									
				Camera Module	Button Module	Nameplate Module	Audio Module						Cover Frame & Flush-mounted Box														
M2231.-. M2230.-.	M2304	M2300 or M2301	The article no. of the composed OS modules are shown in the rightt	M251021C	M251021P4	51021DN	M251021A-. x1		M251022A-. x1		M251023A-. x1		51022CF -. + 41022F	51023CF -. + 41023F	51024CF -. + 41024F	51028CF -. + 41028F	51025CF -. + 41025F	51026CF -. + 41026F	51029CF -. + 41029F	51024CF -. + 41024F + 51021J	A=From one or parallell outdoor stations to the furthest indoor staiton B=From system controller to the furthest indoor station									
or							Below apartment no. is composed by selected push button module and the selected audio module														Coax, 75-5		RVV, Ø=0.04inch		J-Y(ST)-Y,Ø=0.03inch		J-Y(ST)-Y,Ø=0.02inch		UTP 5, 2 x 2pairs	
Single	Double	Single	Double		Single	Double	Single	Double	Single	Double	Single	Double									A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)	A (yard)	B (yard)
1-2	1-4	1	1	1	4 or 1*	4 or 1*	1	-	-			1	1-2	2	3-4						514.00	371.83	317.15	349.96	164.04	229.66	142.17	131.23	328.08	360.89
3-6	5-12	1-2	2-3	1	4	3	1	1	-	3-4	7-8	5	9-10	6	11-12						492.13	317.15	306.21	295.28	153.11	196.85	142.17	109.36	317.15	306.21
7-10	13-20	2	3-4	1	3	3	1	2	-	7-8	15-16	9	17-18	10	19-20						492.13	273.40	306.21	262.47	153.11	174.98	142.17	98.43	317.15	262.47
11-14	21-28	3	5-6	1	3	2	1	3	-	11-12	23-24	13	25-26	14	27-28						470.25	229.66	284.34	218.72	153.11	142.17	131.23	87.49	306.21	229.66
15-18	29-36	3-4	6-7	1	3	2	1	4	-	15-16	31-32	17	33-34	18	35-36						470.25	207.79	284.34	196.85	153.11	131.23	131.23	76.55	306.21	207.79
19-22	37-44	4-5	8-9	1	2	1	1	5	1	19-20	39-40	21	41-42	22	43-44						448.38	185.91	273.40	174.98	142.17	120.30	131.23	65.62	295.28	174.98
23-26	45-52	5	9-10	1	2	1	1	6	-	23-24	47-48	25	49-50	26	51-52						448.38	174.98	273.40	164.04	142.17	109.36	131.23	65.62	295.28	164.04
27-30	53-60	6	11-12	1	2	1	1	7	1	27-28	55-56	29	57-58	30	59-60						426.51	164.04	262.47	153.11	131.23	98.43	120.30	54.68	273.4	153.11
31-34	61-68	6-7	12-13	1	1	1**	1	8	-	31-32	63-64	33	65-66	34	67-68						404.64	142.17	251.53	131.23	131.23	87.49	120.30	54.68	262.47	142.17
35-38	69-76	7-8	14-15	1	1	1**	1	9	1	35-36	71-72	37	73-74	38	75-76						404.64	131.23	251.53	131.23	131.23	87.49	120.30	43.74	262.47	131.23
39-42	77-84	8	15-16	1	1	1**	1	10	-	39-40	79-80	41	81-82	42	83-84						382.76	131.23	240.59	120.30	120.30	87.49	109.36	43.74	251.53	120.30
Optional to install rain hood													51022RH	51023RH	51024RH	51028RH	51025RH	51026RH	51029RH	51027RH	For each one of video parallel OS, for A, below amount of distance should be subtracted.									
																					54.68 yard	-	32.81 yard	-	21.87 yard	-	21.87 yard	-	43.74 yard	-

Remarks:

1. * means one mini system controller, others are the no. of standard system controller(M2300)

2. ** means the local power supply should power that outdoor station in addtion to the system controller(M2301)

3. For each of the additional parallel outdoor station , it should be locally powered. For example, for a building with 32 apartments, 2 outdoorstations are required, then one outdoor station is powered by standard system controller, and the second outdoor station should be powered by mini local power supply.

Options of keypad outdoor station

For condominium buildings and residential complexes, it is recommended to choose keypad outdoor station.

Keypad with pure audio module outdoor station Fig.10

Besides the keyless access by inputting the correct password, it can also be used for inputting the correct call code to call the indoor stations.

The call code is default starting from 1, which will call the indoor station with the address of 1.

Keypad and display (in-built RFID reader) with pure audio module outdoor station Fig.11

The display with in-built ID/IC reader can be used for multiple uses: keyless access by reading the registered proximity card, displaying some welcome messages, showing the status of calling progress, or processing the programming.
Upon programming, the name or call code can also be displayed on the screen and scrolled up and down on the keypad module.

The call code is default starting from 1, which will call the indoor station with the address of 1.

Keypad with the pushbutton outdoor station Fig.12

Keypad provides the keyless access for the residents of the building by inputting the correct password.

It is a good solution especially for the single family home solution. Then the pushbutton is largely for visitors only.

Display(in-built RF reader) with the pushbutton outdoor station Fig.13

ID/IC proximity reader can be useful also for residents' keyless access by reading the registered proximity card. In case lost, it can also be easily wiped out in the system and a new card can be efficiently registered. Then the push button is largely for visitors only.

Keypad and display(in-built RF reader) with pushbutton outdoor station Fig.14

It is the combination of keypad outdoor station and push button outdoor station. It provides the most convenient calling experience for the residents and the visitors. For the residents, he can input the correct password or swipe the registered proximity card. He can also press the push button or scroll up and down the screen and press call button in case the resident's name is stored there.

Fig.10

Keypad with pure audio module outdoor station

Fig.11

Keypad and display (in-built RFID reader)with pure audio module outdoor station

Fig.12

Keypad with pushbutton outdoor station

Fig.13

Display (in-built RFID reader) with pushbutton outdoor station

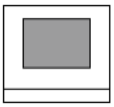
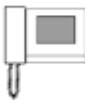
Fig.14

Keypad and display (in-built RFID reader) with pushbutton outdoor station

Indoor Station Selection

2.3 Selection of the indoor station

In addition to the appearance, the indoor station should be selected based on function and application. The table below gives a general function list for the indoor station for application.

Functions	7" all touch video hands-free indoor station 	4.3" video hands-free indoor station 	*4.3" video handset indoor station 	Audio handset indoor station 
Private conversation	x	x	x	x
Cyclical surveillance	x	x	x	-
Manual call	x	x	x	-
Door bell call	x	x	x	x
Remote unlock	x	x	x	x
Control two locks	x	x	x	x
Room to room call	x	x	x	x
Home to home call	x	x	x	x
Paging/Broadcast	-	x	x	-
Black list	x	x	x	-
Call guard unit	x	x	x	x
SOS	x	x	x	x
Image saving	x	x	x	-
Customized audio message leaving	x	-	-	-
Call forward	x	x	x	-
Door status check	x	x	x	x
Variable ringtone	x	x	x	x
Customized password for keypad	x	x	x	-
Picture frame and screen saver	x	-	-	-
Automatic unlock	x	x	x	x
QR code for user manual reach	x	x	x	-
Mute one or mute all	x	x	x	- only mute itself
Induction loop	-	x	x	x
Local power supply	-	x	x	-
Surface mounted installation	x	x	x	x
Desktop installation	x	x	x	-
Flush-mounted installation	-	x	-	-

System Devices Selection

2.4 Selection of system devices

It's important to select the appropriate system devices to set up a Welcome system. Both function of the devices and topology for the application needs to be considered. System controller is a must for any insulated system; other system devices can be selected to meet the specific project requirement.

System controller, local power supply and auxiliary power supply

System controller provides both power and communication command for a Welcome system. An extension of the system controller, auxiliary power supply and local power supply serve as the supplement to provide a flexible power solution to meet the requirement of all kinds of Welcome system. The illustration shown is a project case using three power sources. Fig.15

System controller

Working as the "brain“ of all devices, a system controller is compulsory and exclusive in any insulated system. It not only provides power, but also manages all the communication and control between outdoor stations and indoor stations in the building part,and between gate stations and the gateway in the common part.

For those systems with multi-system illustration shown be broken down into several insulated systems and every insulated system needs separate power consumption and distance limit calculation.

Both standard system controllers and mini system controllers are provided to meet different project needs.

The system controller has two working modes: “all on” and “one on”, "all on" and "one on" are system behavior for screen switching on for the indoor stations with the same address (parallel indoor stations) in case of being called. Under "all on", the master video indoor station and other slave video indoor station(s) will all switch on the screens and ring at the same time upon being called from the outdoor stations or gate stations. Under "one on", only the "master" video indoor station will switch on the screen and ring, the other "slave" video indoor station(s) will ring but will not switch on the screen. Fig.16

Power units of system controller

As system controller will provide the power for the system, it is important to calculate the available power unit of standard system controller or mini system controller for the system before application.

For a 2-wire system, the available power unit of a system controller needs to take the situation of 1 or ⩾ 2 apartments into consideration firstly.

To achieve a comfortable door communication experience in applications, different value of working power will always be reserved first to handle the simultaneous working of different devices(door call, setting, door bell) before allocated to the standby devices.

Fig.15

Application of system controller, local power supply and auxiliary power supply

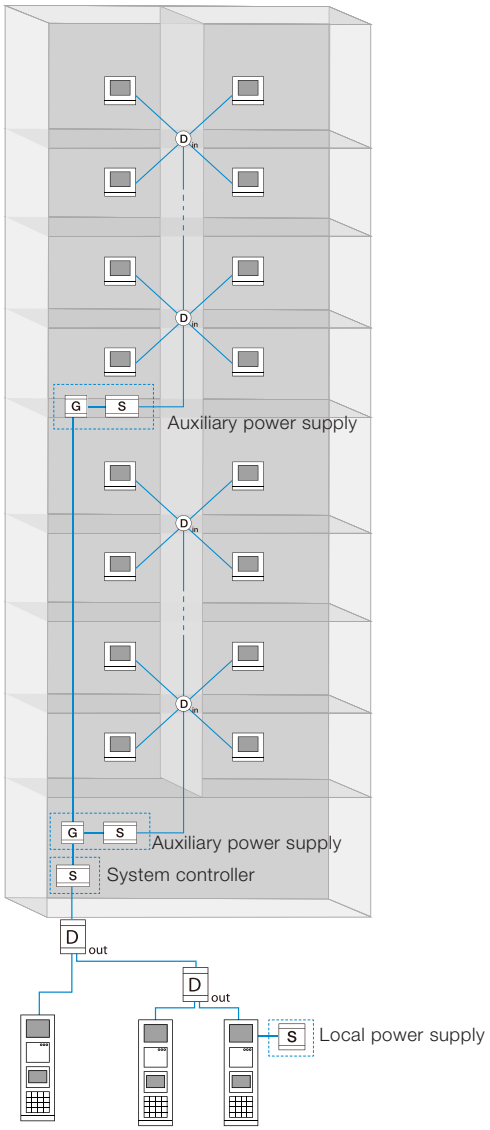
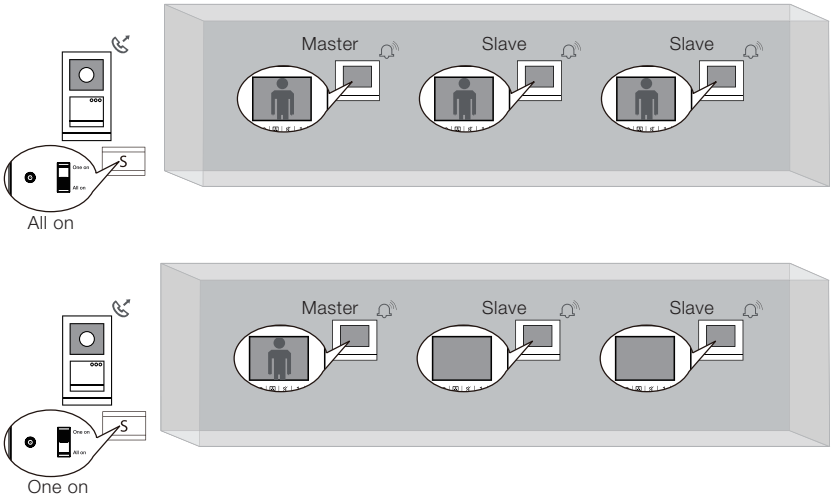


Fig.16

“All on” and “One on” setting of system controller



Local power supply

Local power supply and system controller are exactly the same devices, but they are named differently because of the different functions they serve.

- Local power supply only provides the pure power source without giving communication commands like the system controller.
- Unlike the system controller or auxiliary power supply that provides the power for all the devices in the external and internal bus line through the 2-wire bus terminal, local power supply provides the pure power to individual devices directly by connecting the local power supply terminals.
- Devices below contain local power supply terminals, and can be powered by local power supply:
  - Audio module of outdoor station
  - 4.3” video handset/hands-free indoor station
  - Guard unit

Despite the physical product is like system controller, the working mode setting of local power supply is useless .

Power units of local power supply

One mini local power supply can feed:

- Up to 4 pcs of parallel 4.3" video hands-free indoor station
- Up to 4 pcs of parallel 4.3" video handset indoor station
- Up to 4 pcs of parallel guard units
- 1 pc of any kind of pushbutton outdoor station
- 1 pc of any kind of keypad outdoor station

Even though one standard local power supply doubles the capacity compared to one mini local power supply, the user will not need it.

For parallel 4.3” video indoor stations in one apartment, the screen of any one fed by local power supply will always be on for incoming calls,even in “one on” setting in system controller. Fig.17

When the device is fed by local power supply, it requires rather small power consumer unit from the system controller. The saved power of system controller can be used to increase the number of devices under this system controller.

The increased number of devices can be the increased quantities of apartments in one building or the increased quantities of parallel indoor stations within one apartment.

Specifically, for scenarios below when the power units of one system controller is smaller than required consumer units of devices, local power supply is highly recommended. This is due to the fact that compared to auxiliary power supply, local power supply solution will be less cost and easier wiring:

- When the total consumer units of external and internal bus > power unit of system controller, while the total consumer units of the devices on internal bus ⩽ power unit of system controller, one or all outdoor stations should be powered by local power supply.
- When feeding the local power supply to parallel slave 4.3" video hands-free or 4.3" video handset indoor station(s), the total power consumer units will become ⩽ power units of system controller. Fig.18
- When feeding the local power supply to guard unit, the total power consumer units will become ⩽ power units of system controller.
- When adding the parallel 4.3" video hands-free or 4.3" video handset indoor station to an apartment after the door communication system installation had been finished in the past. Since the additional device might cause the system controller to inadequately cover the increased consumer units, it is safe to put local power supply to additional 4.3" indoor station to that certain apartment without affecting the existing power solution. Fig.19

Fig.17

Local power supply for parallel indoor stations

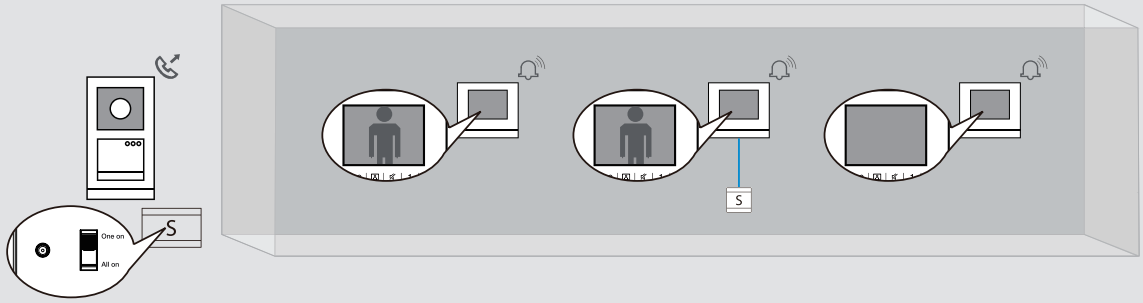
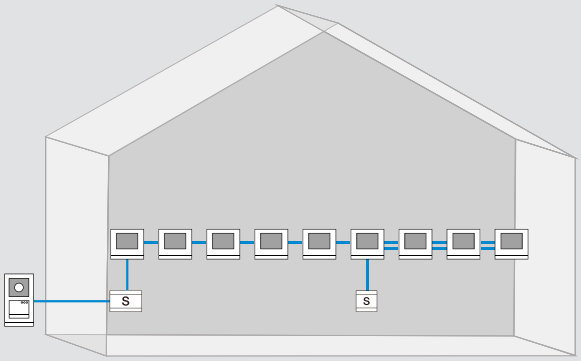
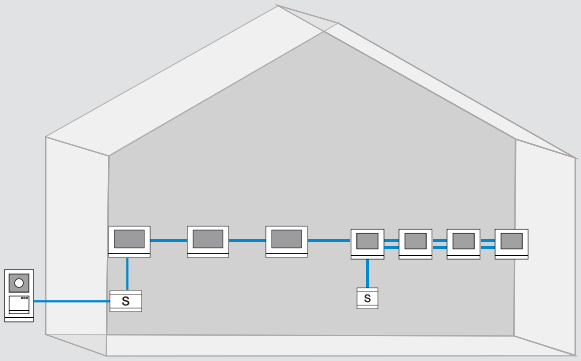


Fig.18

Feed parallel 4.3” video indoor stations by mini local power supply



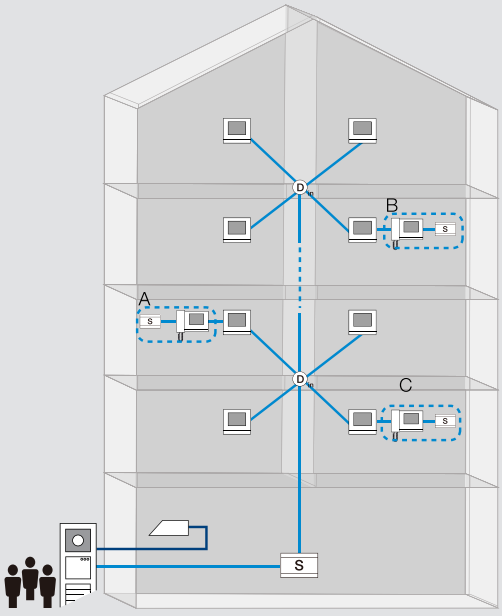
Note:
1. Standard system controller “all on” mode, supports 1 outdoor station + 5 parallel 4.3” video hands-free indoor stations
2. Mini local power supply, feeds 4pcs 4.3 video hands-free indoor stations



Note:
1. Standard system controller “all on” mode, supports 1 outdoor station + 3 parallel 7” video hands-free indoor stations
2. Mini local power supply, feeds 4pcs 4.3 video hands-free indoor stations

Fig.19

Add parallel 4.3” video indoor stations to apartments after installation



Note:
In 2013, the door entry system for this building had been installed. Later on, Apartment A, B and/or C can also require to add one more video indoor station with local power supply without affecting other users.

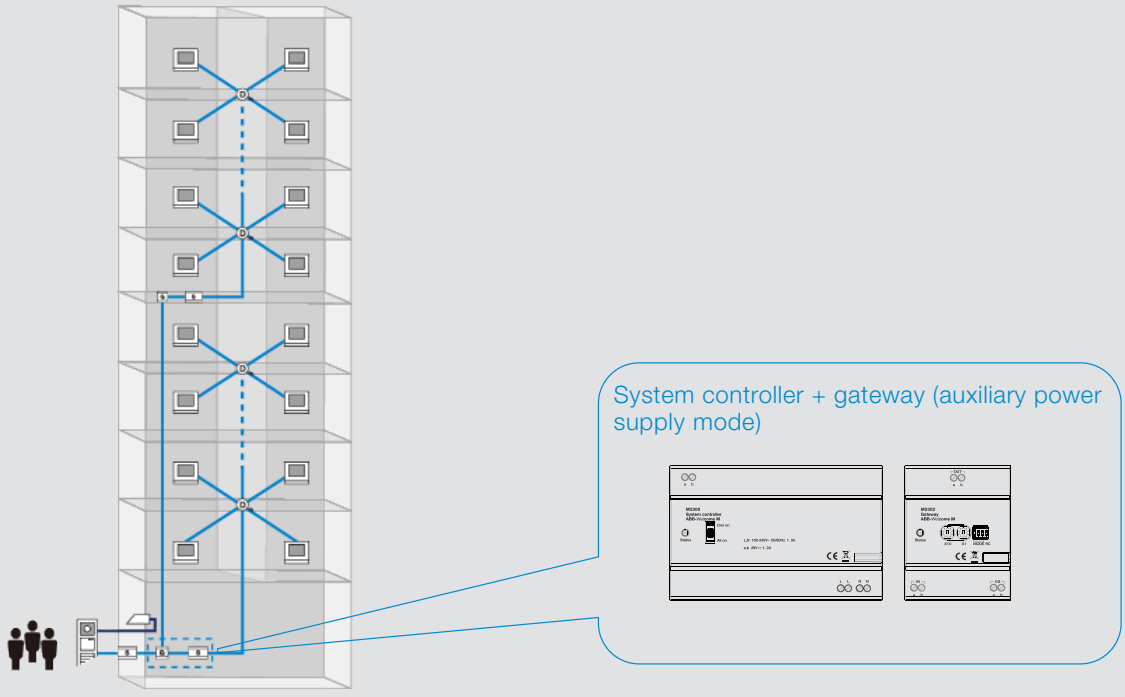
Auxiliary power supply

For one insulated system, when adding the local power supply to the devices in external bus or internal bus, if both ways still cannot cover the required consumption units of the devices, auxiliary power supply is suggested. The combination of gateway (under auxiliary power supply mode) and system controller will make an auxiliary, which can be used to split the system into two insulated systems. Fig.20

Like system controller, the "all on" and "one on" mode setting will impact the power consumption calculation in parallel indoor stations.

Fig.20

Auxiliary power supply



System Topology

2.5 System Topology

For any insulated system, there are 2 kinds of connection to make the topology – loop through connection and branch connection (node branch or branch with video distributor). In actual project there will be more than one topology for the same

Topology of the external bus

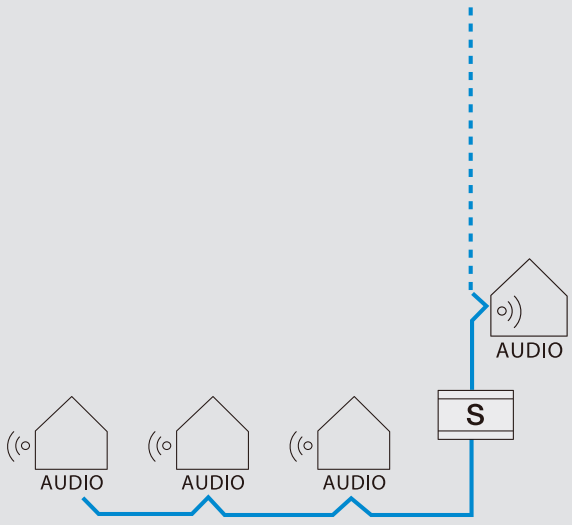
For external bus, if there is more than one outdoor station or system devices in the insulated system, things should be considered to make the topology.

- For audio system, if there is more than one outdoor station,the outdoor station can be looping through the device or node branch. Fig.21
- For video system, if there is more than one outdoor station (audio/video), the outdoor video distributor is needed for a cascading connection for parallel outdoor station. By cascading connection, the distance calculation for external bus line is between the longest parallel outdoor station and system controller, rather the total of the distance of each parallel outdoor station. Fig.22

Fig.21

Topology audio outdoor stations in audio system

Loop though of outdoor station in audio system



Node branch of outdoor station in audio system

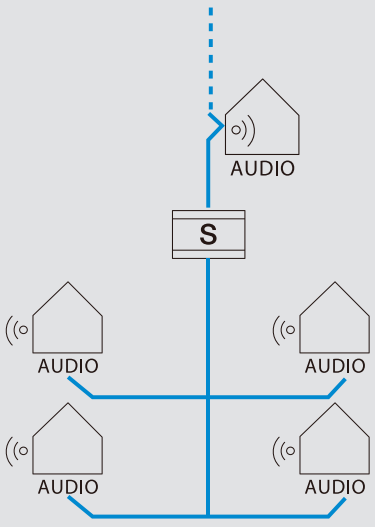
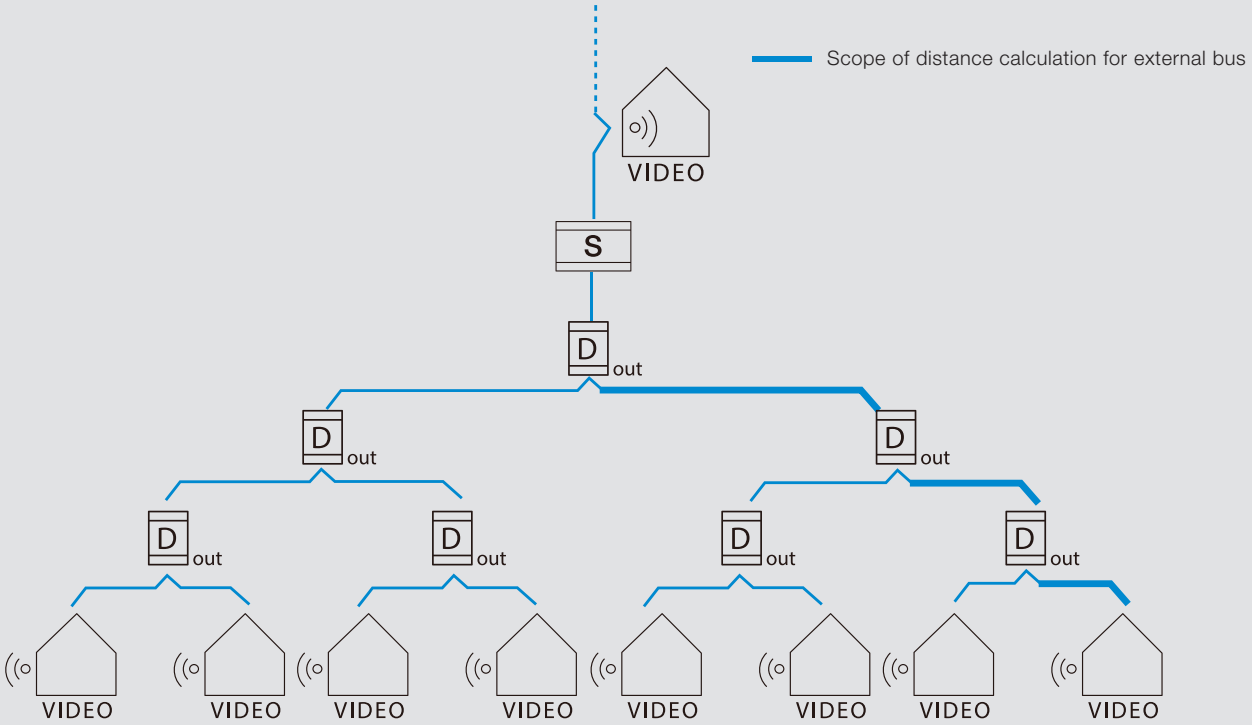


Fig.22

Topology video outdoor stations in a video system

3 level cascading connection for 8 outdoor stations with outdoor distributor



Topology of the internal bus

For internal bus, the RC rule should be considered when making the topology.

Topology	RC rule if in audio system	RC rule if in video system	Can be used in building part?	Can be used in common part?	Advantages	Things to Consider
Looping through the indoor station	RC=OFF in all the devices Fig.23	RC=ON in the last device RC=OFF in all Fig.24	YES	NO	- Good for low rise building and parallel indoor stations - Future proof even upgrading from audio system into video system - Cost and power effective without video distributor	- When the BUS terminals of one indoor station which is in the middle of building is not well fixed, the rest of the indoor stations will not work - The diameter of the cable is recommended no less than Ø=0.024 inch
Looping through the node(branch line/stub line)	RC=OFF in all the devices Fig.25	-	YES	NO	- Flexible wiring, "star shaped" is allowed - Cost effective for audio system, no distributor is needed	Each node should be changed into video distributor if upgrading into video system
looping through the video	RC=OFF in all the devices	RC=ON in the last device of each stub line and at the end of the rising main and RC=OFF in all other Fig.26	YES	YES	- It will have longer distance compared to looping the same quantity of gateway or indoor station, especially when parallel indoor stations are looped within the apartment - When one of the branch does not work, it will not impact the others - Allow the parallel bus lines	The total cable length should be less than 874 yard, this might not be enough in a big residential complex. Auxiliary power supply can be used to spit the common part from one system controller into several system controllers
looping through the gateway	RC=OFF in all the devices Fig.27	RC=ON in the last device RC=OFF in all Fig.28	YES	YES	Long distance when the looping quantities are less (for example≤8),which is good for	When as building gateway in the residential complex, the distance will not be long enough when with many looping quantities

Remarks: The combination of different topologies will be used to maximize the advantage while to avoid the constraint of each topology.
See Fig.29 Fig.30 Fig.31 for RC rule.

Fig.23

Looping through the indoor station in audio system

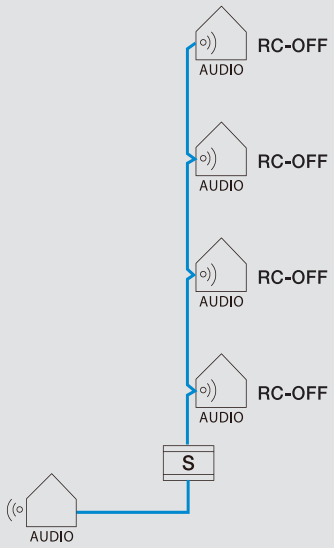


Fig.24

Looping through the indoor station in video system

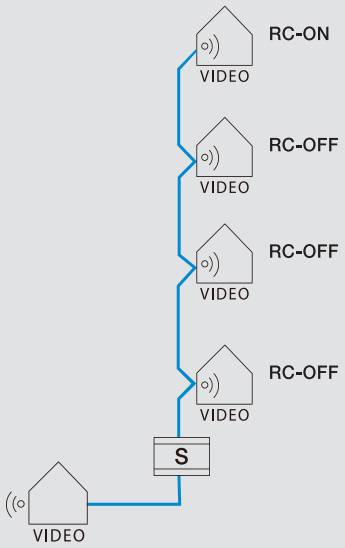


Fig.25

Looping through the node(branch line/stub line)

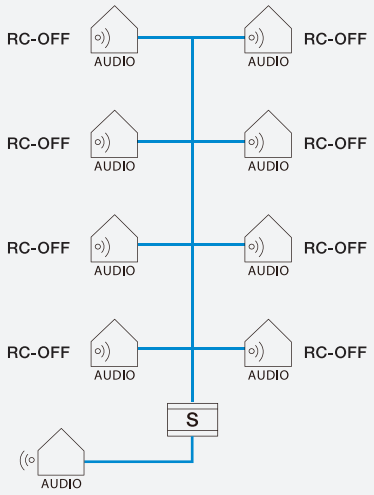
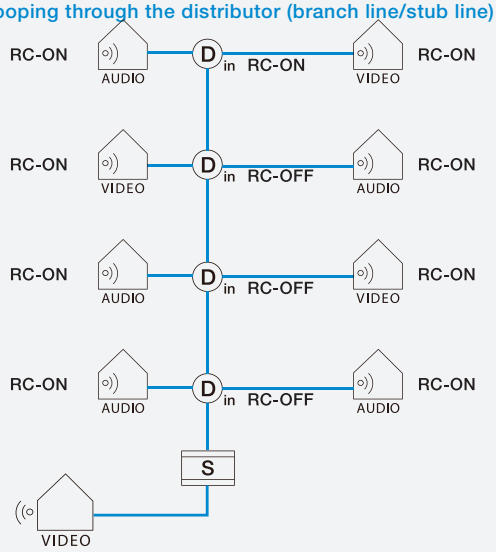
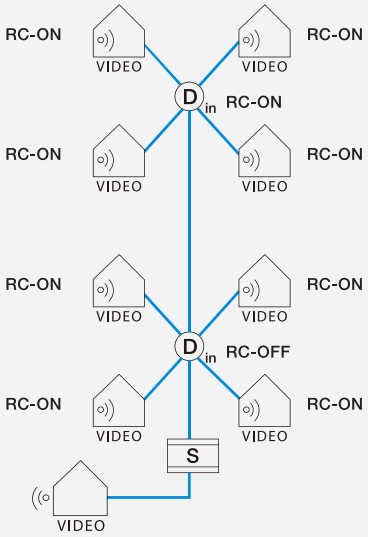


Fig.26

Looping through the distributor (branch line/stub line)





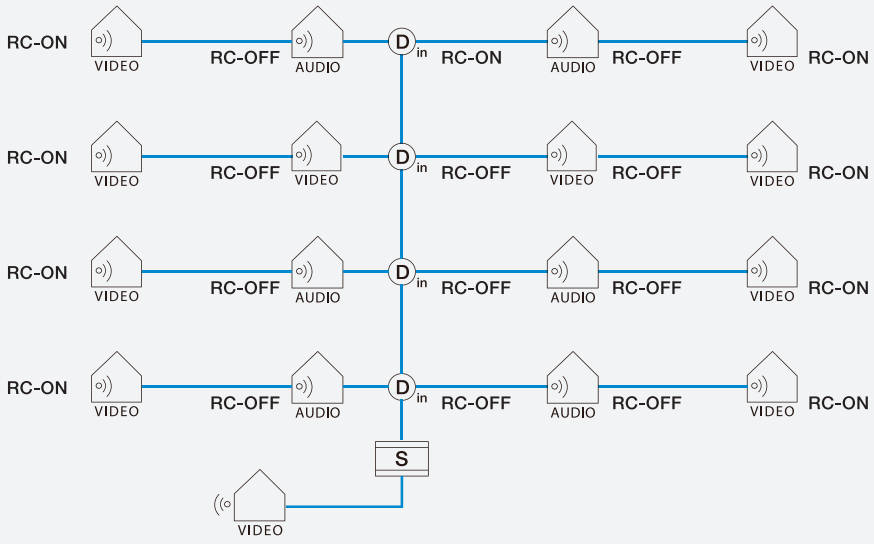


Fig.27

Looping through the gateway in audio system

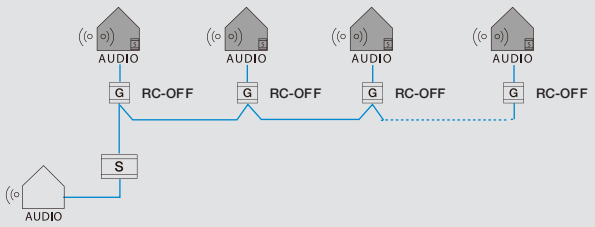


Fig.28

Looping through the gateway in video system

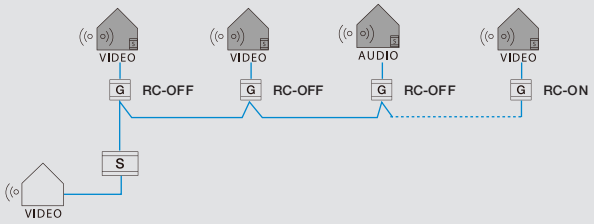


Fig.29

In audio system
Looping through the video distributor with each distributor branching into 4 lines . The terminal resistor must be set as “OFF”, to all the gateway and distributor

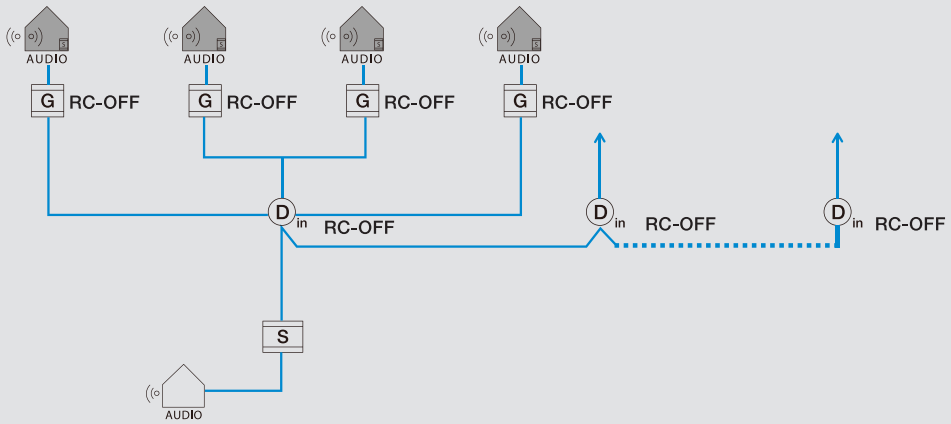


Fig.30

In video system
Looping through the video distributor with each distributor branching into 4 lines. The terminal resistor must be set as "ON" on the last gateway each stub line and at the end of last distributor

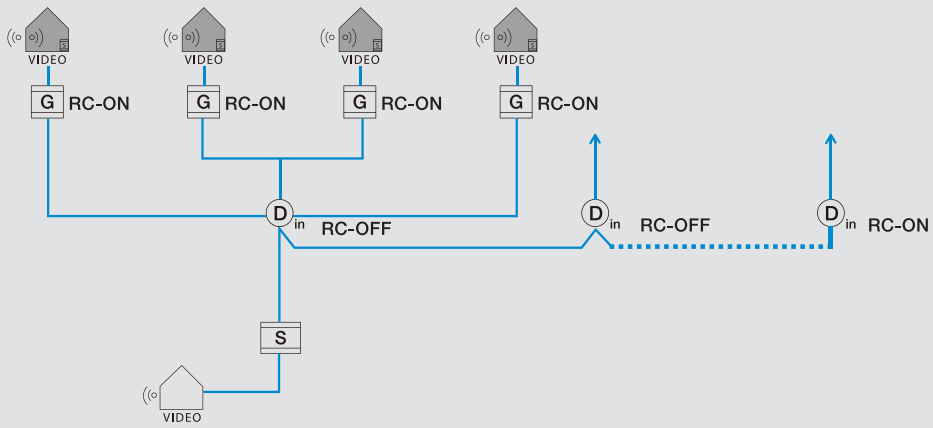
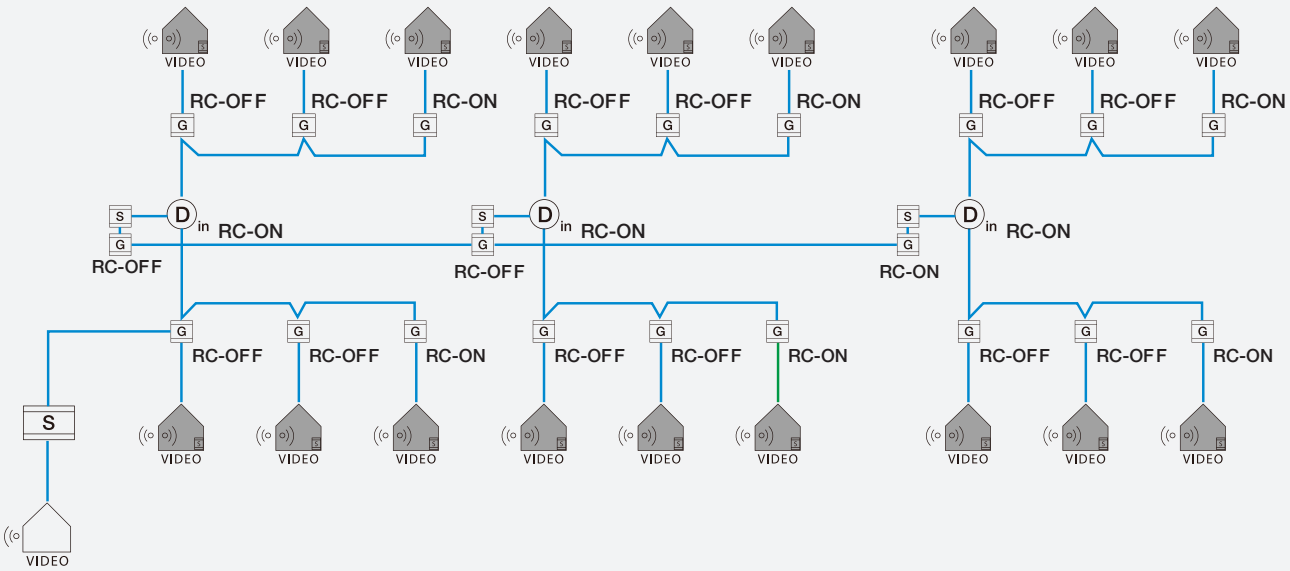


Fig.31

Looping through gateway as auxiliary power supply. Each distributor is connected to branching into 4 lines with each. Each line looping through the building gateway.



Sample Project

Sample project 1: big single family home with 3 outdoor stations

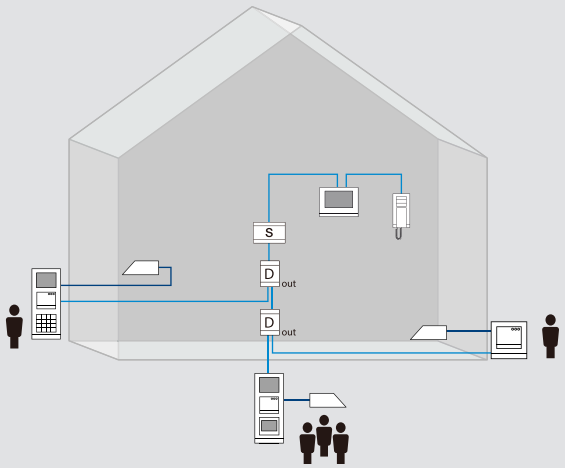
One big villa with 3 outdoor stations all with one 1 button. First one is video with display as reader, second one as video with keypad, without display, third one is audio only, inside the apartment, 1 x 7", and 1 audio handset. All on mode with branch line connection by a video distributor. The cable will use RVV, Ø=0.039 inch, The cable run is estimated to be around 218.7 yards from outdoor station to the 7".

Fig.32

Big single family home with 3 outdoor stations

- System type: audio/video combined
- Wiring: looping through
- Devices used:
- Two camera modules
- Three audio modules
- One keypad module
- One display module
- Two cover frames, size 1/3
- One cover frame, size 1/1
- Two flush mounted boxes, size 1/3
- One flush mounted box, size 1/1
- Two outdoor distributors
- One system controller
- One 7” video hands-free indoor station
- One audio handset indoor station
- Three electric door opener (not provided by ABB)

The power consumption is fine with one system controller. The max distance from outdoor station is 240.6 yard, so the distance is also OK without amplifier



Sample project 2: condominium with 12 apartments

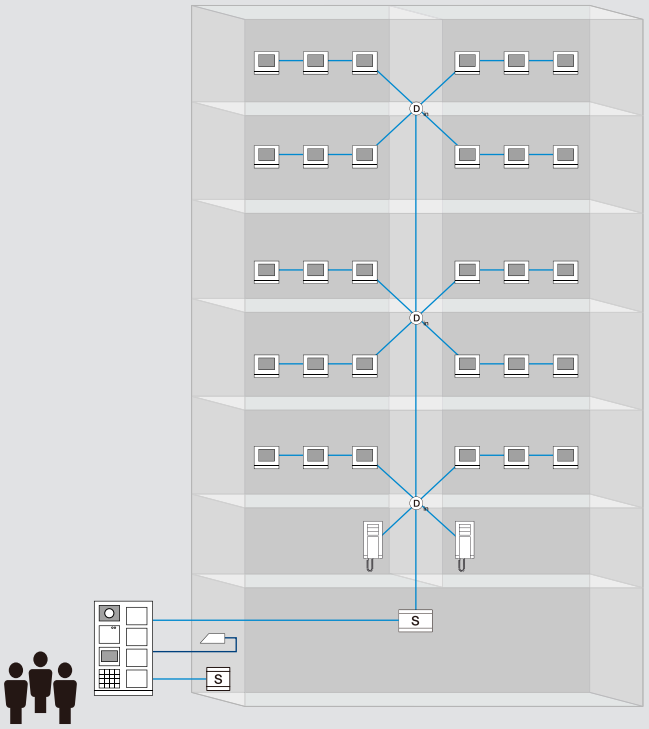
One keypad OS(display is included+4pcs name plate modules) with 12 apartments, 10 apartments with 3 pcs 4.3" in each apartment and 2 apartments with 1 audio handset per apartment, one standard system controller under "one on" working mode. Branch line connection with 3pcs of video distributor (4 apartments per distributor). Cable will use J-Y(ST)-Y,Ø=0.024 inch. The cable run will be around 109.36 yard from outdoor station to last indoor station.

Fig.33

Condominium with 12 apartments

- System type: audio/video combined
- Wiring: branch line by distributor connection
- Devices used:
- One camera module
- One audio module
- One keypad module
- Four nameplate modules
- One cover frame, size 2/4
- One flush mounted box, size 2/4
- One system controller
- One mini system controller
- Three video distributors
- Thirty 4.3” video hands-free indoor stations
- Two audio handset indoor stations
- One electric door opener (not provided by ABB)

One standard system controller is not enough, need to add a local power supply for outdoor station.



Sample project 3: residential complex with 4 entrances

4 gate stations, one is keypad with display(ID card reader), and the other is video push button modules with up to 7x4-row modules, 4 buildings are looped with building gateway together with 1 guard unit, the system controller is used to feed all the above products in the common part. The max. distance from gate station to last building is around 273.40 yard. RVV, Ø=0.039 inch, is going to be used.

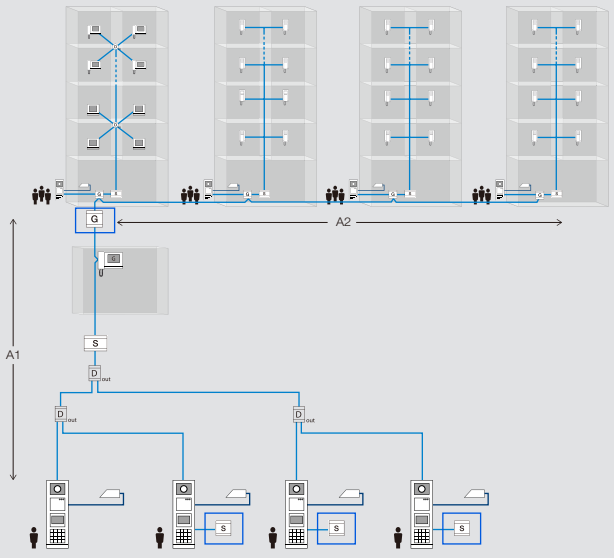
Analysis: The network system involves 5 insulated systems: 4 buildings and one in the common part. Each insuated system should be evaluated respectively. Only the insulated system in the common part will be examplified.

Fig.34

Residential complex with 4 entrance

- System type: video
- Wiring: branch line by distributor connection
- Devices used (common part only)
- Four keypad outdoor stations, with ID card reader
- Four flush mounted boxes, size 1/4
- Three outdoor distributors
- One guard unit
- One system controller
- Three mini system controllers
- Four electric door openers (not provided by ABB)

One standard system controller is not enough, and distance is problem, need to add a local power supply for each outdoor station and a gateway in the internal



03 Installation

Following is general information for the installation of an ABB Welcome system in new and existing buildings.
The installation of flush-mounted and surface-mounted devices as well as MDRC units and Kit is described in detail in the operating manuals of the devices. There will have video describing the installation in more detail.

Installation of the outdoor stations

The composition process from modules into an outdoor station is convenient. The direction to snap the module should be heeded. A "click" sound will be heard when the module is well placed. The installation video is available to see the entire process. Fig.35

For all outdoor stations, an installation wall box is available for flush-mounting. The rainy hood servers as surface-mounting box as well as the device to protect dirt, water or snow falling on the camera lens.
Flush-mounting is suitable for all types of walls, whether rendered, clinker or cavity wall. because the installation box has a full perimeter frame. For flush-mounting in a cavity wall (thickness between 0.08 and 1 inch), a cavity wall mounting set consisting of mounting anchors is available. Fig.36

In case a 10-moudle frame and box are not enough for the actual application, the conjunction by 3 or more 4-module frame and flush box by jointing fixture is possible. However, the rainy hood is only available 3 pcs of 4-module frames in horizontal connection. Fig.37

For dismantling the end strip, a distance of 0.394 inch should be kept to the right of the outdoor station. Fig.38

The camera has a large detection angle . The view area can be manually adjusted by a simple tool with range of +15 ,-15 at all directions. Fig.39

Note: The camera at the video outdoor station should not face powerful light sources, such as street lights. This should be taken into consideration when choosing the correct position for mounting. Lamps in the entrance area should uniformly illuminate the face of the visitor. The recommended installation height is 59 inches. This optimally captures persons of average body size. Bright or backgrounds with a deep contrast should be avoided. It could reduce the quality of the picture.

Fig.35

Composition of outdoor station

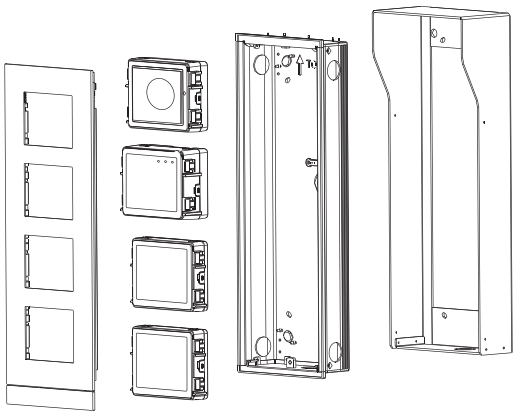


Fig.36

Flush-mounting box installation

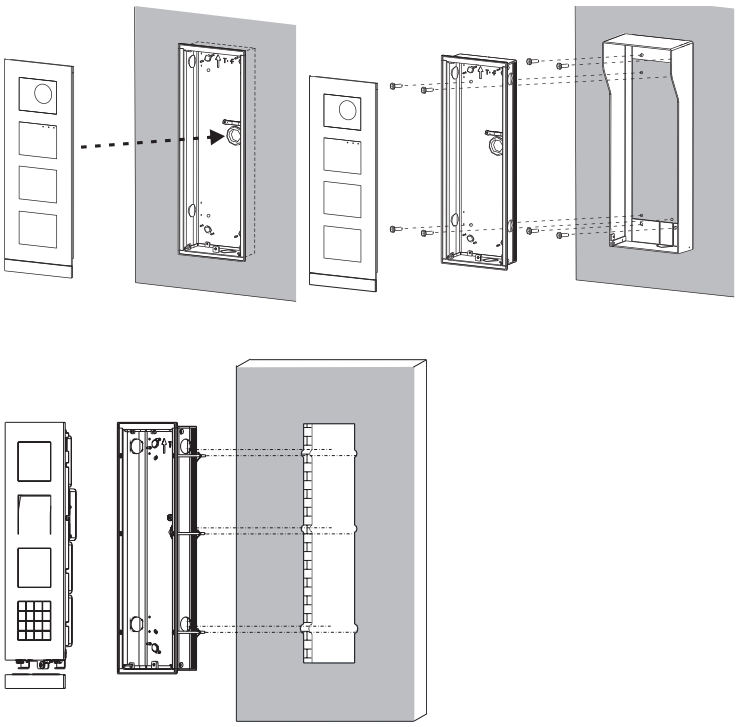


Fig.37

The conjunction of 3 pcs of 4-moudle outdoor stations

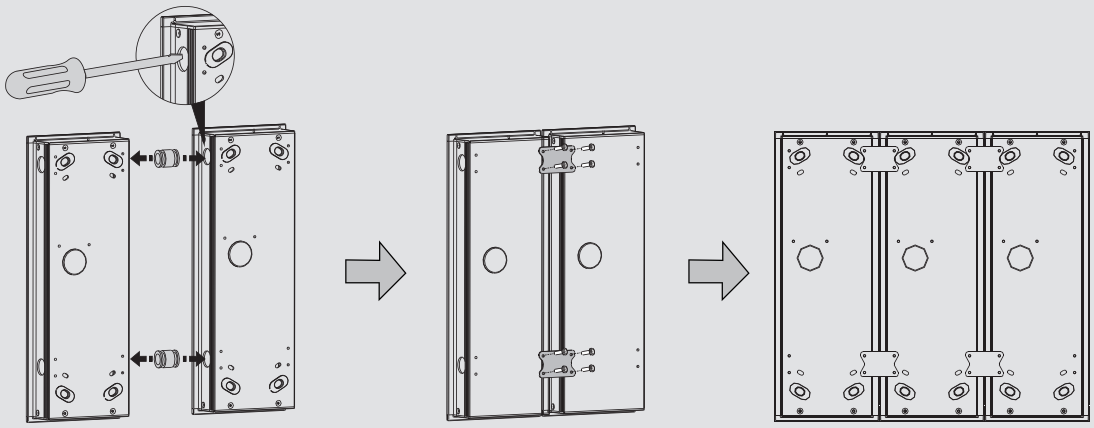


Fig.38

The distance zones for the installation of the outdoor station

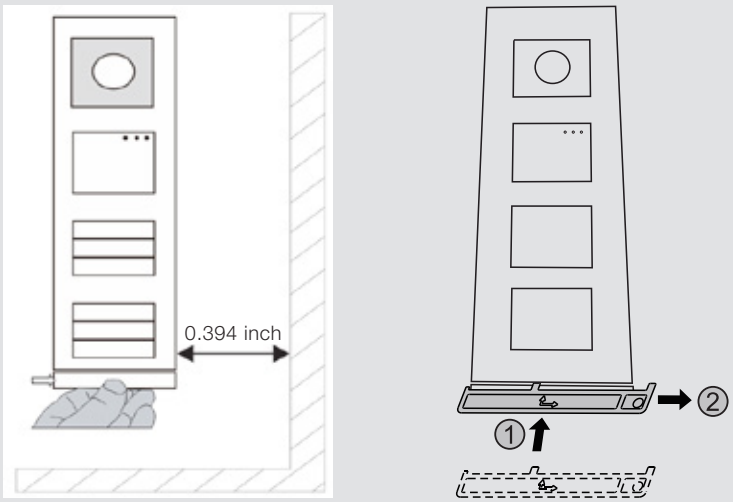
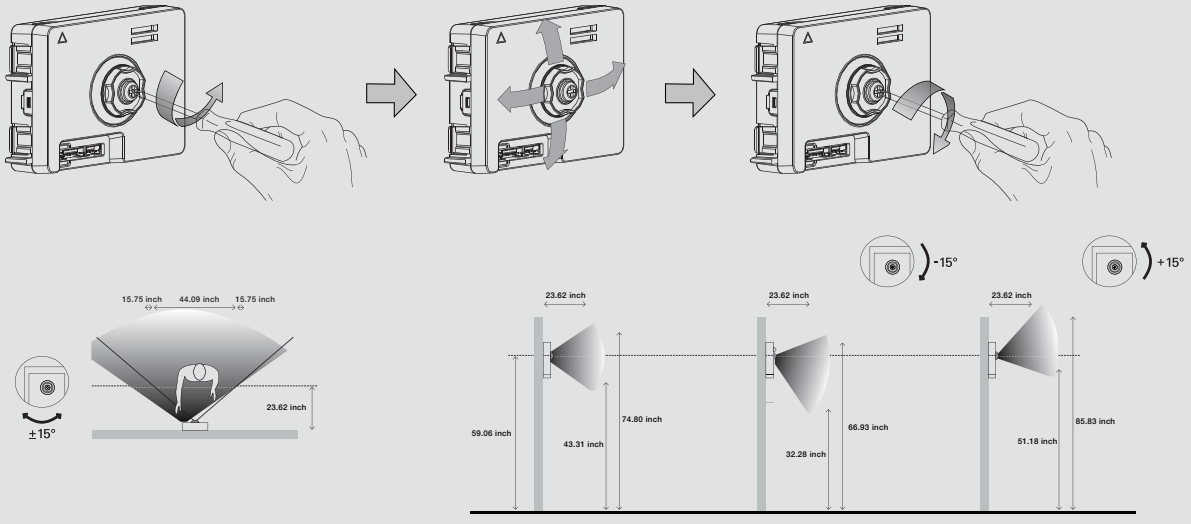


Fig.39

Mechanical adjustment and detection angle of camera



Installation of indoor stations

The Welcome audio indoor station and video 4.3" handset indoor station and 7" video handsfree indoor station are easy to install as a surface mounted device with the aid of the enclosed mounting frame. The devices can also be mounted on a commercially available VDE or Italian(or equirement) flush mounted wall box. Fig.40 Fig.41 Fig.42

The 4.3" video hands-free indoor station can be installed in the design of 5 various easily changeable color frames so to comply with or contrast the decoration color in an apartment. Both surface mounted and flush mounted are possible.
For surface mounted, the device can be mounted on VDE/ Italian(or equirement) flush mounted wall box. For the flush mounted version, a metal flush box is recommended to ensure the efficient and sleek installation. For flush-mounting in a cavity wall (thickness between 0.08 and 1 inch),a cavity wall mounting set consisting of mounting anchors is available. Fig.43

Note: In order to enable disabled people to use and set video handsets, we recommend an installation height of 47.24 - 49.21 inches.

Additional information is contained in the operating manuals. The associated QR codes are listed starting from page 48.

Installation of system devices

Recommendation: All MDRC units should be mounted in the central distribution of the building. This can be fixed depending on the size of the building and topology selected. Fig.44

For example, when installing an auxiliary power supply in the sub-distribution of the apartment, for connecting the devices.

The ABB-Welcome indoor video distributor is suitable for mounting in rising mains below a door bell button in a deep flush-mounted wall box. Fig.45

Fig.40

Surface mounted and desktop of 7” video hands-free indoor station

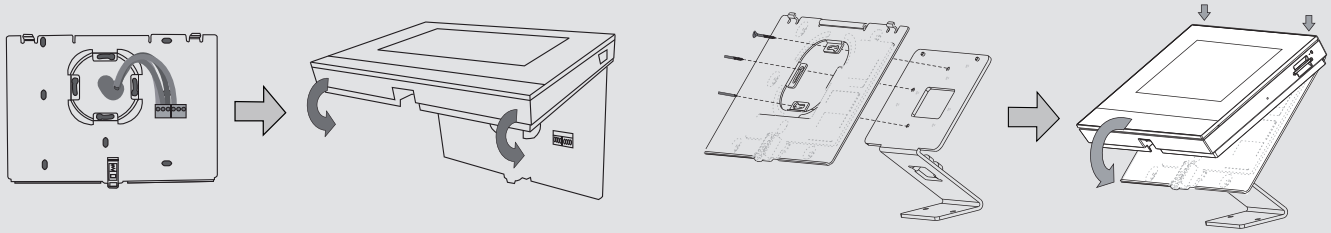


Fig.41

Surface mounted and desktop of 4.3" video handset indoor station

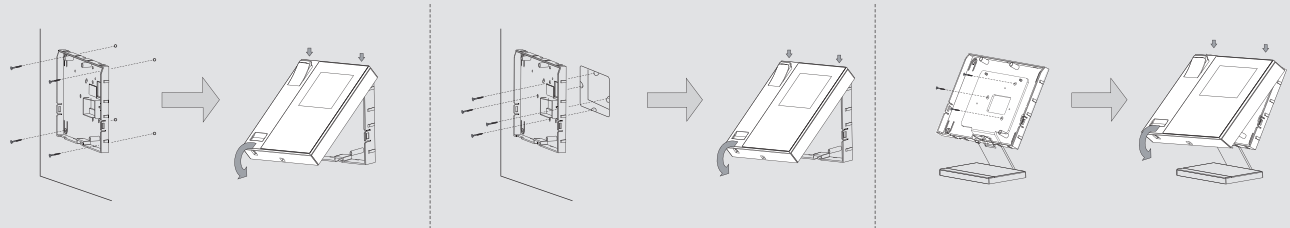


Fig.42

Surface mounted and desktop of audio handset indoor station

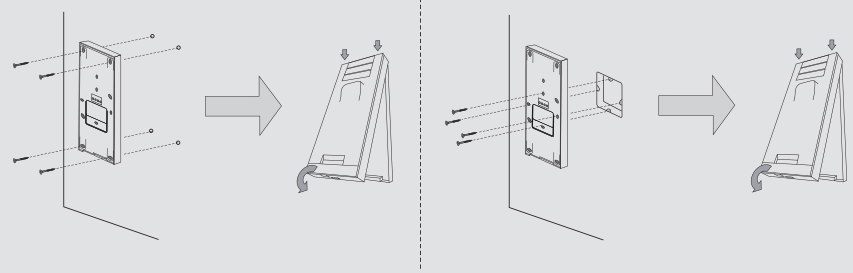


Fig.43

Surface mounted, desktop mounted and flush mounted of 4.3” video hands-free indoor station

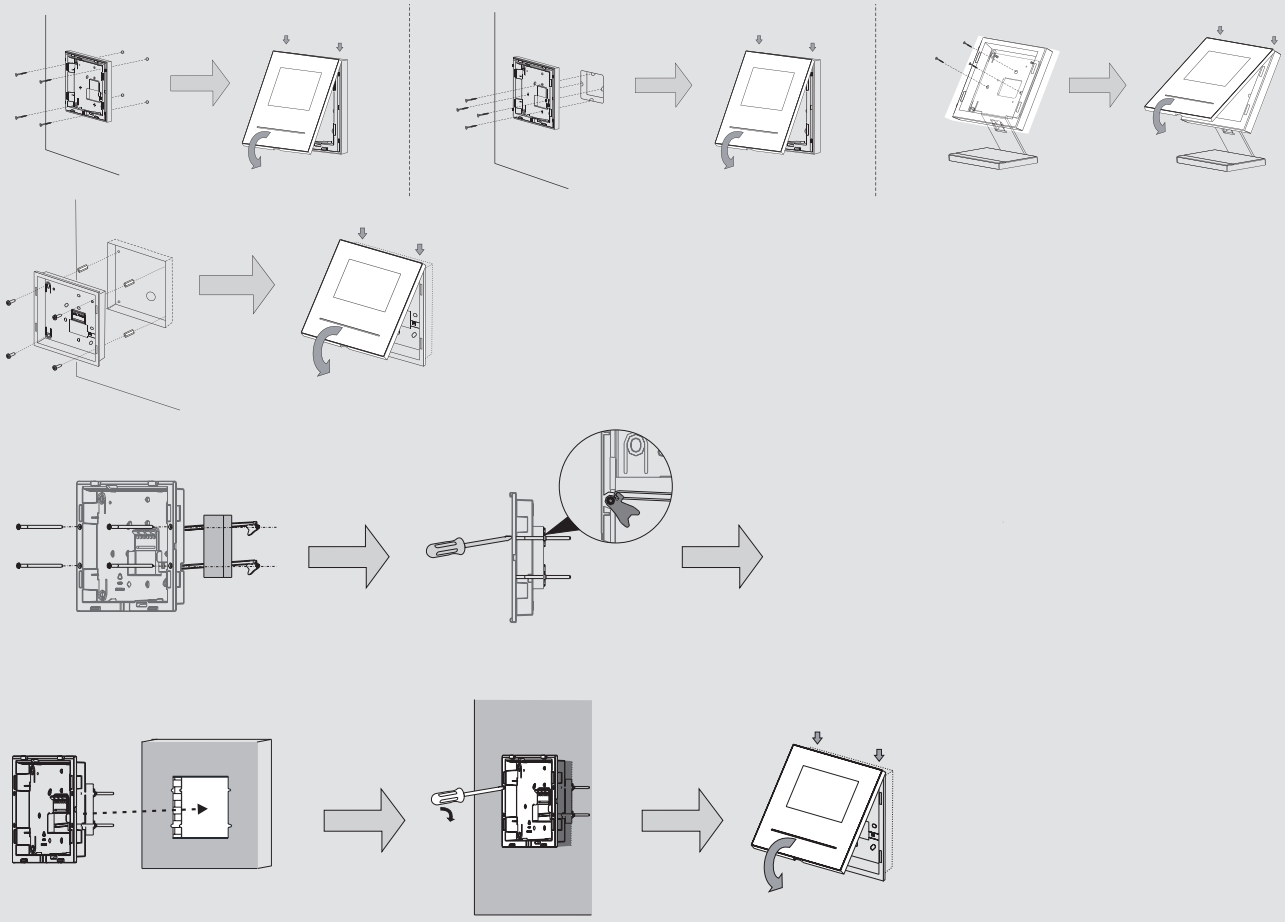


Fig.44

Mounting of the MDRC devices

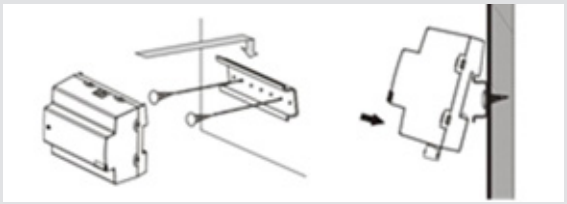
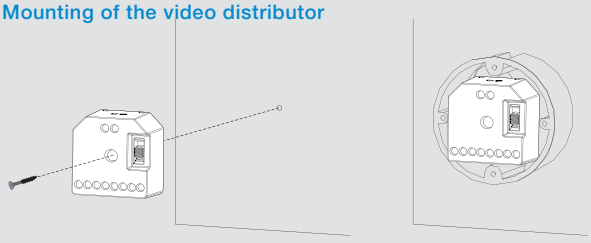


Fig.45

Mounting of the video distributor



04
Overview of product range

Camera module

Features

- Scratch and fire resistant finish
- Video camera with large detection angle (H 86°,V 67°, D 104°) and manually mechanical adjustment (H ± 15°, V ± 15°)
- Anti-fog design with in-built heater
- Built-in infrared lighting ensures clear picture at night
- Secret "surveillance" enables users to surveil one area through the camera of the outdoor station, whose backlight will not be switched on
- Optional to connect one additional output of camera for surveillance inside the video indoor station
- Optional to choose the standard of the video signal, either

Technical data

- Waterproof: IP 54, vandal proof: IK 07.
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Audio module

Features

- 1 output for door opener without the need of additional power supply
- 1 output for floating output, door opener (30V AC/DC 1A)
- 1 input for door status check
- 1 input for exit pushbutton
- 2 options: aluminum brush and white coating
- 4 options of functions: audio without pushbutton, audio with 1 row of pushbutton, audio with 2 rows of pushbuttons, audio without pushbutton but with speech synthesis
- 3 led indications: call established / system busy, communication possible, door unlocked
- Adjustable feedback ringtone of pushbutton
- Adjustable lock release time
- Adjustable speaker volume
- Integrated optic sensor for day/night mode
- Mode setting for the first/second button as switch on lightings, call indoor station or call guard unit
- Mode setting for pushbutton as single column or double columns

Technical data

- Waterproof: IP 54, vandal proof: IK 07.
- Operation temperature: -40 °F – 158 °F
- Power supply, door opener (Lock-GND): 18 V 4 A impulsive, 250 mA holding
- Floating output: door opener (COM-NC-NO): 30 V AC/DC,1 A
- Bus voltage: 20-30 VDC

QR code service

Pushbutton module

Features

- Two options of article: 3 rows and 4 rows
- Two options: single column or double columns
- Extractable nameplate by tool without the need to disassemble the panel
- Backlight ensures clear visibility at night
- UV resistant

Technical data

- Waterproof: IP 54, vandal proof: IK 07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Keypad module

Features

- Name scrolling by up and down or by inputting letters of the calling name (display must be accompanied, sorting is progressive upon inputting next letter of name)
- The calling code can be numbers only or the combination of numbers and letters
- Call can be activated automatically or by pressing after inputting code
- Download name directory from PC or directly enter to edit from the keyboard
- Up to 3,000 names
- Public password and up to 6,000 customized passwords are allowed
- Repeatedly inputting wrong password will be locked
- Password can be set with 6~8 digits
- Calling code can be set with 1~6 digits
- Call guard unit is available
- Backlight ensures clear visuality at night

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Display module

Features

- 2 options for in-built RFID proximity reader: ID card and IC card
- Wiegand output available
- Up to 3000 different cards
- Register and delete cards locally in setting menu
- Different feedback sounds when accepting or rejecting the reading card
- Customized message is programmable
- Withstand down to -40 °C

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Nameplate module

Features

- It can be used to hold the address of the building or the resident directory for keypad outdoor station, or simply to complete the module within the cover frame
- Backlight ensures clear visibility at night

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Push button module, round button

Features

- 1 round push button with even backlight ensures legible nameplate at night
- NFC/IC reader button optional
- Screwless mounting module compatible for stainless steel and aluminum outdoor station
- Supporting software ensures high quality nameplate printing

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Push button module, round button

Features

- 2 round push button with even backlight ensures legible nameplate at night
- NFC/IC reader button optional
- Screwless mounting module compatible for stainless steel and aluminum outdoor station
- Supporting software ensures high quality nameplate printing

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Push button module, round button

Features

- 3 round push button with even backlight ensures legible nameplate at night
- NFC/IC reader button optional
- Screwless mounting module compatible for stainless steel and aluminum outdoor station
- Supporting software ensures high quality nameplate printing

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Audio outdoor station, stainless steel

Features

- Clean design with brushed stainless steel
- 1/2/3 push buttons with and without NFC/IC optional reader
- Surface mounting (41021F and 51021RH needed), flush mounting (41021F needed) and cavity wall set (51021CS needed)
- Different mode setting is possible for pushbutton, such as light switch and calling guard
- Optional built-in NFC/IC reader
- Up to 2 lock connections

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

Video outdoor station, 1 button and 2 button optional

Features

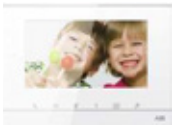
- Clean design with brushed stainless steel
- 1/2/3 push buttons with or without NFC/IC reader
- Surface mounting (41021F and 51021RH needed), flush mounting (41021F needed) and cavity wall set (51021CS needed)
- Different mode setting is possible for pushbutton, such as light switch and calling guard
- Optional built-in NFC/IC reader
- Up to 2 lock connections

Technical data

- Waterproof: IP54, vandal proof: IK07
- Operation temperature: -40 °F – 158 °F
- Bus voltage: 20-30 VDC

QR code service

7" video hands-free indoor station



Features

- Large 7 inch (7") color display with intuitive touch control
- 6 touch film buttons for communication, unlocking, mute, programmable button (can be set as intercom, call guard unit, etc.), surveillance and setting
- During resident's absence, voice message of the resident will be played automatically in case of door calls, and 3 pictures of the visitor will be automatically stored
- The no. of pictures that can be stored is decided by the capacity of the SD card (not provided)
- Call transfer among different apartments and guard unit is available
- Doctor function for automatic unlock
- 5 ringtones for different call sources, i.e. from default outdoor station, secondary outdoor station, door bell, intercom or guard unit
- Send SOS alarm to guard unit in emergency
- Surface mounting and desktop mounting
- The detailed user manual can be downloaded though scanning the QR code on the screen

Technical data

- Display resolution: 800 x 480
- Display size: 7"
- Operating temperature: -14 °F – 131 °F
- Protection: IP 30
- Bus voltage: 20-30 VDC

QR code service

4.3" video hands-free indoor station

Features

- 4.3" color display with OSD
- 6 touch film buttons for communication, unlocking, mute, programmable button (can be set as intercom, call guard unit, etc.), surveillance and setting
- 2 pictures of the visitor will be automatically stored in the picture memory for door calls during resident's absence
- The no. of the pictures is up to 60 pcs
- Call transfer among different apartments and guard unit is available
- Doctor function for automatic unlock
- 5 ringtones for different call sources, i.e. from default outdoor station, secondary outdoor station, door bell, intercom or guard unit
- Broadcast by simply long pressing the communication button
- Surface mounting, flush mounting and desktop mounting
- The detailed user manual can be downloaded though scanning the QR code on the screen

Technical data

- Display resolution: 480 x 272
- Display size: 4.3"
- Operating temperature: -14 °F – 131 °F
- Protection: IP 30
- Bus voltage: 20-30 VDC

QR code service

4.3" video handset indoor station

Features

- Slim indoor station with handset (depth of 1.77 inch)
- 4.3" color display with OSD
- 6 touch film buttons for communication, unlocking, mute, programmable button (can be set as intercom, call guard unit, etc.), surveillance and setting
- 2 photos of the visitor will be automatically stored in the picture memory for door calls during resident's absence
- Up to 25 photos
- Call transfer among different apartments and guard unit is available
- Doctor function for automatic unlock
- 5 ringtones for different call sources, i.e. from default outdoor station, secondary outdoor station, door bell, intercom or guard unit
- Surface mounting and desktop mounting
- The detailed user manual can be downloaded through scanning the QR code on the screen

Technical data

- Display resolution: 480 x 272
- Display size: 4.3"
- Operating temperature: -14 °F – 131 °F
- Protection: IP 30
- Bus voltage: 20-30 VDC

QR code service

Audio handset indoor station

Features

- 1 easy pushbutton for unlock, and 2 additional buttons for self setting functions, e.g. intercom, door status check, second lock release or even calling the security guard, etc
- Max-mid-mute volume adjuster on the side
- 2 LEDs to indicate different working status
- 5 ringtones for different call sources, i.e. from default outdoor station, secondary outdoor station, door bell, intercom or guard unit
- The activating or deactivating of automatic unlock can be made by simply pressing the unlock button for 10 seconds
- Surface mounted

Technical data

- Operating temperature : -14 °F – 131 °F
- Protection: IP 30
- Bus voltage: 20-30 VDC

QR code service

System controller

Features

- Control the entire system, the "brain" of the individual system
- Over-heat protection, over-current protection, lightening protection
- Two working modes to switch between "all on" and "one on"
- 1LED for normal working condition indication
- Overheat, short-circuit and lightening protection
- As auxiliary BUS power supply when connecting to gateway under certain mode

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 20
- Mains voltage: 100-240 V, 50 / 60 Hz, 1.0 A
- Bus voltage: 28 ± 2 VDC, 1.2 A
- Size: 8 U

QR code service

Mini system controller

Features

- Control the entire system, the "brain“ of the individual system
- Over-heat protection, over-current protection, lightening protection
- Two working modes to switch between "all on" and "one on"
- 1LED for normal working condition indication
- Overheat, short-circuit and lightening protection
- As auxiliary BUS power supply when connecting to gateway under certain mode

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 20
- Mains voltage: 100-240 V, 50 / 60 Hz, 0.6 A
- Bus voltage: 28 ± 2 VDC, 0.65 A
- Size: 4 U

QR code service

Gateway

Features

» It offers 5 different modes which can be set by dipswitch: apartment gateway, floor gateway, building gateway, auxiliary BUS power supply interface and line amplifier

Technical data

» Operating temperature: -13 °F – 131 °F
» Protection: IP 20
» Bus voltage: 20-30 VDC

QR code service

Video outdoor distributor

Features

» 2 way inputs connect different outdoor stations
» Used in buildings with more than one video outdoor station

Technical data

» Operating temperature: -13 °F – 131 °F
» Protection: IP 20
» Bus voltage: 20-30 VDC
» Size: 2U

QR code service

Guard unit

Features

- 4.3" touch screen and 6 touch film buttons can ensure the communication with calls from outdoor station, indoor station or other guard unit (if any)
- It can be manually or automatically set into intercept mode to increase security level for all users or only VIPs
- Surveillance can be done through the camera of outdoor stations or integrated analog camera
- Missed calls and alarm messages stored in the memory can be reviewed
- It can be surface mounted on the wall or desktop mounted

Technical data

- Display resolution: 480 x 272
- Display size: 4.3"
- Operating temperature: 14 °F – 131 °F
- Protection: IP 30
- Bus voltage: 20-30 VDC
- Weatherproof: IP54, IK07

QR code service

Video distributor

Features

- This compact device supports 4-way outputs connected to different apartments or different high-rise buildings
- Flush-mounted into VDE/Italian box or surface mounted through the hole in the middle

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 20
- Bus voltage: 20-30 V

QR code service

Switch actuator

Features

- 1 output for connecting an electronic lock or light
- 1 output for local pushbutton
- 3 working modes: extend door bell, switch on lighting, door lock release
- The switching duration of unlock or switch on lighting is adjustable
- Flush-mounted

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 30
- Floating output for light: 230 V AC, 3 AX
- Floating output for door opener: 30 V AC/DC; 3 A
- Bus voltage: 20-30 VDC

QR code service

Camera interface

Features

- Supports up to 4 analog 3rd party cameras for one device
- Supports camera connection to the existing video/audio outdoor station
- Supports transfer of image from guard unit to the indoor station
- Supports the camera for viewing the area of the floor(for example with the connection from indoor station to this interface, where it connects to the analog camera)
- Supports input and output of video signal of outdoor station to 3rd party VDR during the call, which can be viewed from the video indoor station
- Supports IP Gateway image remote surveillance to all the connected OS and 3rd party camera
- Supports for installation in DIN, surface mounted

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 30
- Bus voltage: 20-30 VDC

QR code service

IP Gateway

Features

- Enables Smartphones (iOS and Android) and tablet by installing the app as video indoor station
- Supports both WIFI and remote access under 3G/4G with the help of service provider
- Enable the integration with ABB Comfort touch as indoor station
- PC interface efficiently programs telephone gateway products

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 20
- Bus voltage: 20-30 VDC

QR code service

Telephone Gateway

Features

- PSTN Telephone integrated as audio indoor station
- Unlock the door, switch the light, communication can be done through normal telephone
- Any mobile can be set as extended indoor station
- Efficient progra(in)ing through PC by IP Gateway

Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 20
- Bus voltage: 20-30 VDC

QR code service

Lift control module

Features

- Enhance security to allow authorized visitor/resident to ONLY go to the designated floor while unauthorized visitor can not activate any floor button in the lift
- Efficient programming through PC by dedicated commissioning software
- Each module supports up to 16 floors, total up to 16 modules can be cascaded

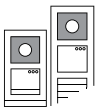
Technical data

- Operating temperature: -13 °F – 131 °F
- Protection: IP 20
- Bus voltage: 20-30 VDC

QR code service

Legend

Terminal devices


Welcome video outdoor station

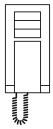

Welcome audio outdoor station


Welcome video keypad outdoor station


Welcome 7“ video hands-free indoor station


Welcome 4.3“ video hands-free indoor station


Welcome 4.3“ video handset indoor station


Welcome audio handset indoor station

System devices/wiring


Welcome system controller


Welcome mini system controller


Welcome gateway


Welcome video indoor distributor


Welcome video outdoor distributor


Welcome video switch actuator


Welcome guard unit


Electric door opener


Video indoor station


Audio indoor station


Video outdoor station


Audio outdoor station


Video system


Audio system

2-wire bus

Wire

Inputs


Floor call button


Main entrance


Analog camera


Side entrance


Lighting

M/S Master/Slaver configuration

RC Terminal register

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