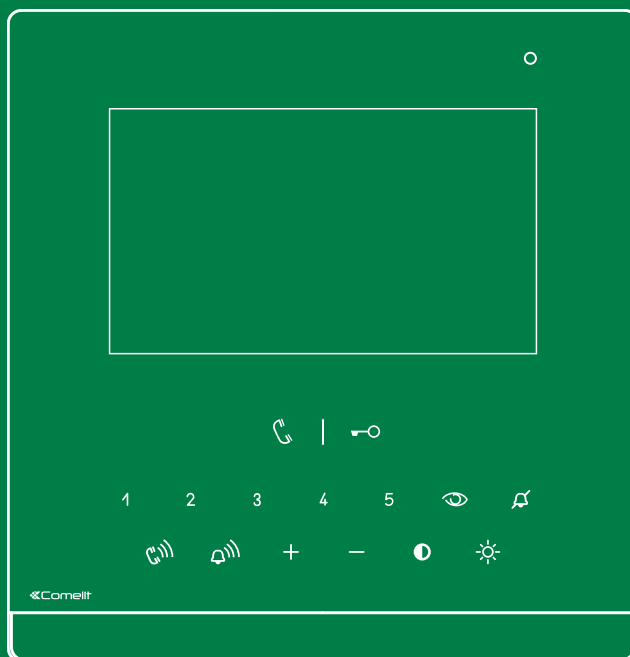Icona 2-wire door entry monitor
Art. 6601W - Art. 6601W/BM

Comelit®
Passion.Technology.Design.

Warning

Intended use

This Comelit product has been designed and manufactured for use in the creation of audio and video communication systems in residential, commercial, industrial and public buildings.

Installation

All activities connected to the installation of Comelit products must be carried out by qualified technical personnel, with careful observation of the indications provided in the Manuals / Instruction sheets supplied with those products.

Wires

Disconnect the power supply before carrying out any operations on the wiring.

Use wires with a cross-section suited to the distances involved, observing the instructions provided in the system manual.

We advise against running the system wires through the same duct as power cables (230V or higher).

Safe usage

To ensure Comelit products are used safely:

- carefully observe the indications provided in the Manuals / Instruction sheets,
- make sure the system created using Comelit products has not been tampered with / damaged.

Maintenance

Comelit products do not require maintenance aside from routine cleaning, which should be carried out in accordance with the indications provided in the Manuals / Instruction sheets.

Any repairs must be carried out:

- for the products themselves, exclusively by **Comelit Group S.p.A.**,
- for the systems, by qualified technical personnel.

Disclaimer

Comelit Group S.p.A. does not assume any responsibility for

- any purpose other than the intended use,
- failure to observe the indications and warnings contained in this Manual / Instruction sheet.

Comelit Group S.p.A. reserves the right to change the information provided in this Manual / Instruction Sheet at any time and without prior notice.
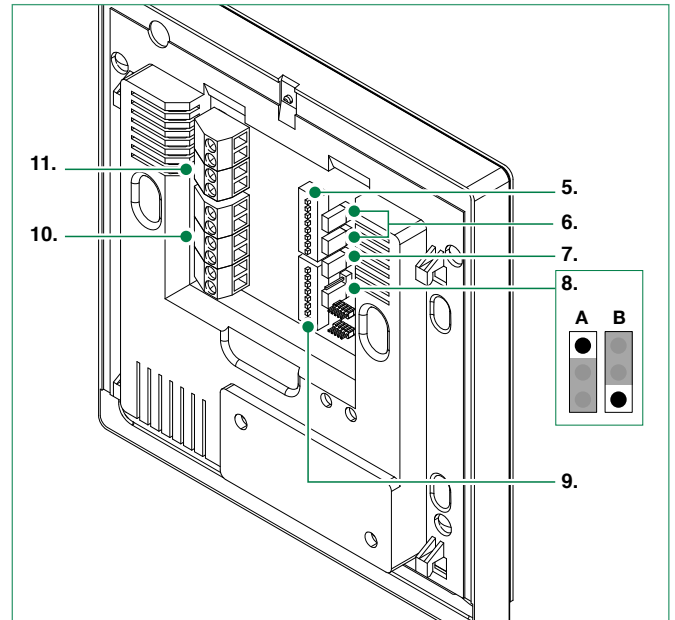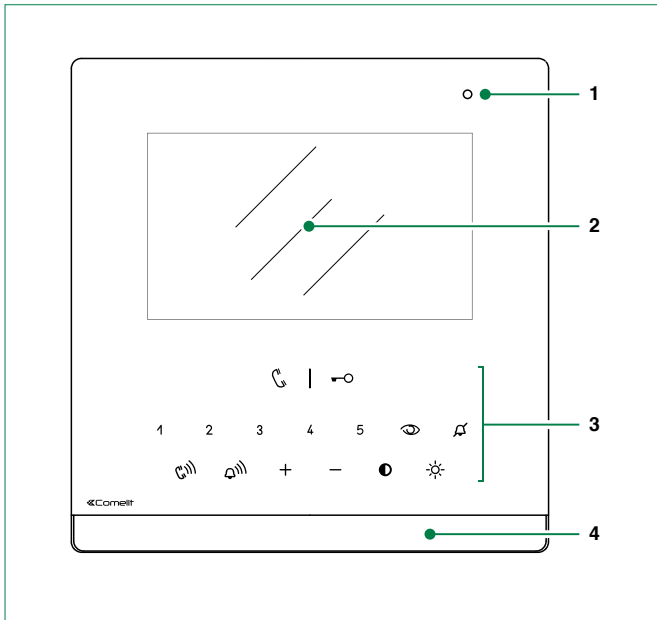
Table of contents

Description

The door entry monitor can be used in Simplebus2 audio/video systems.

Icona 6601W is a colour monitor equipped as standard with 9 function buttons and 6 adjustment buttons.

Icona 6601W/BM is a colour monitor with 9 function buttons and 6 adjustment buttons, equipped with a magnetic amplification system for hearing aid devices.

1. Microphone

2. 4.3'' LCD screen

3. Buttons / Indicator LEDs

4. Loudspeaker

5. **S1 DIP-switches:** Microswitches for assigning user code according to **"Addressing table" on page 17**

6. **CV1 CV2** Jumper to be removed in case of separate power supply

7. **CV5** Jumper for video closure. In systems with more than one door entry monitor connected in cascade, only the door entry monitor furthest away must have CV5 closed

8. **CV6 position A** = contact IN1-IN2 > LED (Default)

   CV6 position B = contact CFP2-IN1 > ALARM / LOCK-RELEASE / ACTUATOR

9. **S2 DIP-switches:** Microswitches for button and function programming

   DIP 1-2-3-4 for button function programming

   DIP 5-6 access to programming

   DIP 7 for power supply voltage management. Paragraph **"Power supply management" on page 9**

   DIP 8 for setting main and secondary door entry monitor. Paragraph **"Main and secondary door entry monitors" on page 9**

10. **M2 Terminal block for system connection:**

    CFP1 CFP2 Floor door call input

    S+ S- Terminals for call repetition device

    IN1 IN2 LED input (programmable)

11. **M1 Terminal block for system connection:**

    L L Bus line connection terminals

    - + Power supply terminals

Touch-sensitive button activation
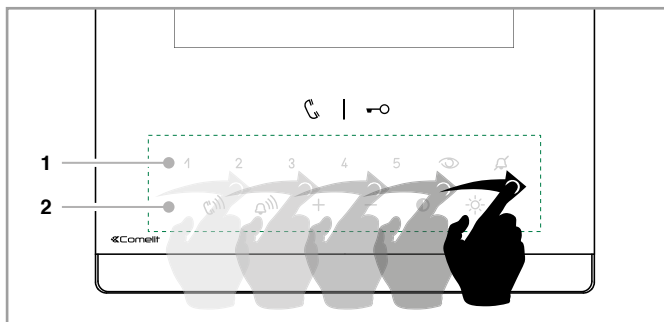
▶ Swipe to enable the row (1) of function buttons.

▶ Swipe again to enable the row (2) of adjustment buttons.

▶ Press the desired button once to activate the function associated with it

⚠️ *Wait for approximately 1 sec. before pressing the same button again. Pressing the same button several times in quick succession will cancel the command.*

Buttons

℄   Audio activation

⌐O   Lock-release activation

1 2 3 4 5   Buttons 1-2-3-4-5 (programmable)

👁   Self activation (programmable)

🔕   Ringtone activation in silent mode (Privacy mode)

℄)))   Audio volume adjustment

🔔)))   Call volume adjustment

+ −   Increase / Decrease value

◑   Contrast adjustment

☼   Brightness control

Indicator LED

℄   **continuous flashing** = incoming call

LED steady in call = communicating

LED steady in standby = *Automatic answer* mode (Hands-free mode) enabled

⌐O   **continuous flashing** = incoming call

1 flash = confirm lock-release

4 flashes = programming successful

10 flashes = programming error

🔕   **LED steady** = ringtone in *silent* mode (Privacy mode)

3 flashes (every 5 s.) = *Automatic door opening on receipt of call mode* (Doctor mode) enabled

slow flashing = programming

4 flashes = device busy

Press and hold keys (Disabled by default from firmware version 1.5.0)

Pressing and holding keys adds further functions to the door entry monitor.

> Carry out the procedure described below to enable - or disable, depending on the factory setting - the press and hold feature:
>
> ✓   Door entry monitor in standby.
> 1.   Take note of the S2 DIP-switch settings.
> 2.   Enter programming mode by setting S2 DIP-switches 1, 3, 5 to ON.
> 3.   Press 1 to enable (or press 2 to disable).
> 4.   Make sure the ⌐O key flashes 4 times and the confirmation tone is emitted.
> 5.   Restore the initial configuration of the S2 DIP-switches.

Once the enabling procedure is complete, you will be able to enable the following functions:

Automatic door opening on receipt of call (Doctor mode)

▶ Press and hold (4 sec.) the programmed button (default: Key 3) to enable/disable the function.
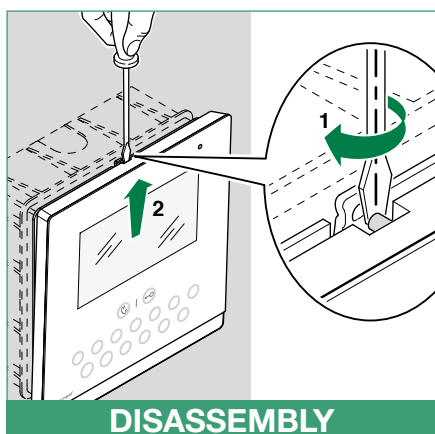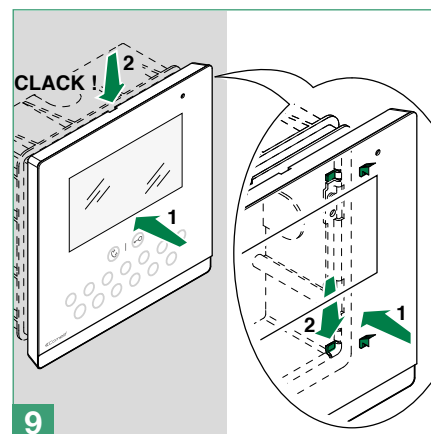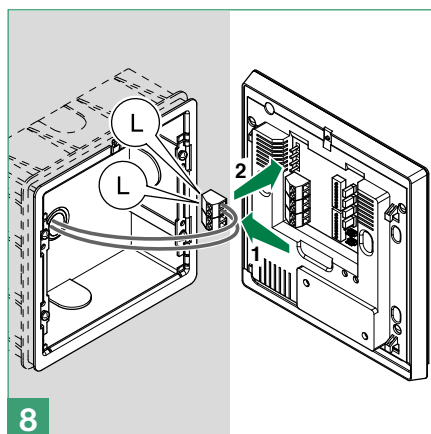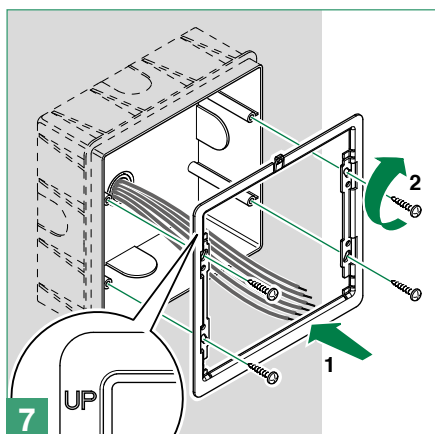
Automatic answer (Hands-Free function)

▶ Press and hold (4 sec.) the audio activation button ℄ to enable/disable the function.

Technical specifications

GENERAL DATA	6601W	6601W/BM
Product height (mm)	147	147
Product width (mm)	143	143
Product depth (mm)	23	23
Product weight (g)	500	500
Product colour	White RAL9003, base grey RAL7001	White RAL9003, base grey RAL7001
Material	ABS, Glass	ABS, Glass
Flush mounting	Yes, with specific accessory	Yes, with specific accessory
Surface mounting	Yes, with specific accessory	Yes, with specific accessory
Desk base mounting	Yes, with specific accessory	Yes, with specific accessory

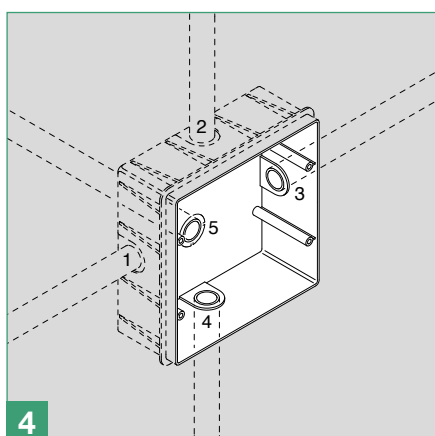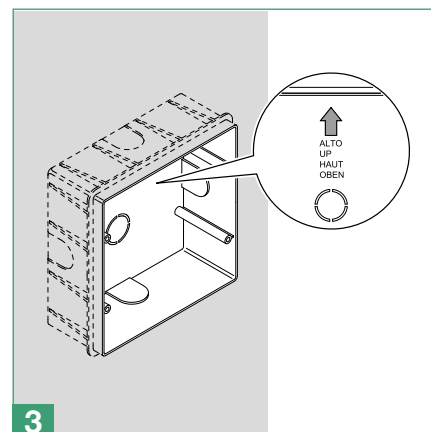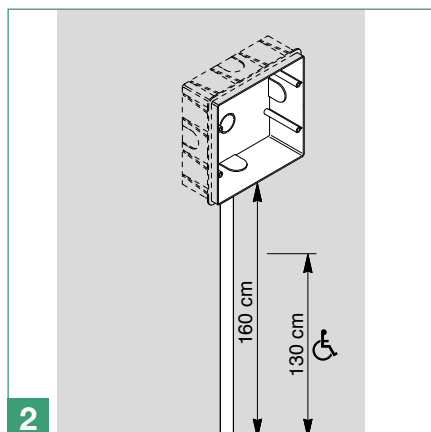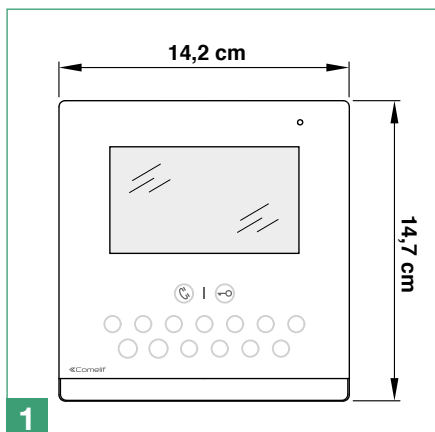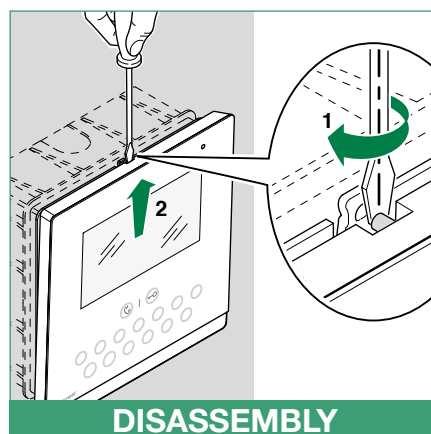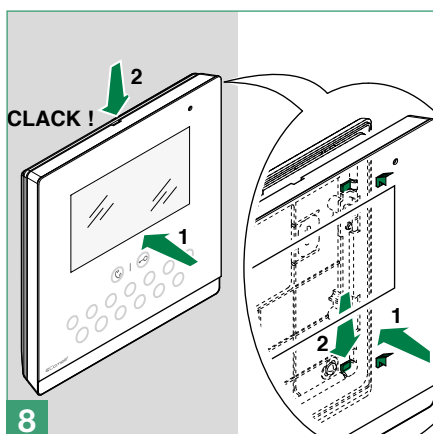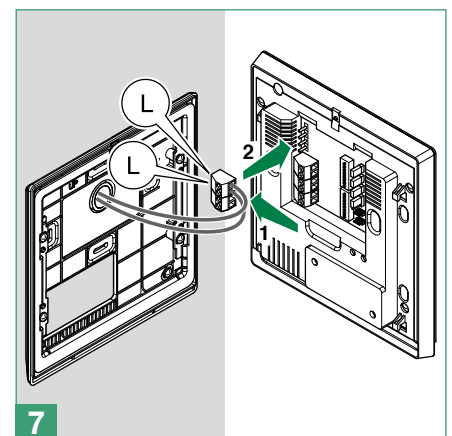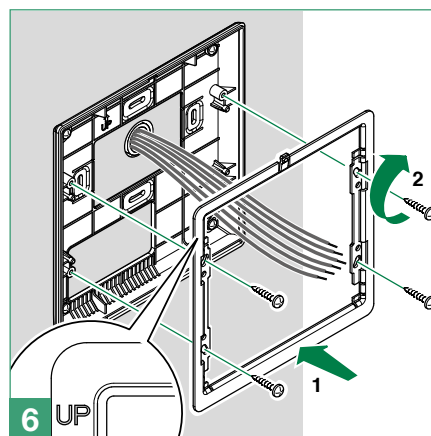| COMPATIBLE SYSTEMS		
Simplebus 2 audio/video with power supply unit art. 4888C	Yes	Yes
Simplebus 2 audio/video with power supply unit art. 1210/1210A	Yes	Yes
Simplebus 2 audio/video kit with power supply unit art. 1209	Yes	Yes

DISPLAY SPECIFICATIONS		
Size (inches) (")	4.3	4.3
Aspect ratio	16:9	16:9
Resolution (pixels)	480x272	480x272

AUDIO SPECIFICATIONS		
Type	Hands-free	Hands-free
Microphone	6 mm (Ø), Omnidirectional	6 mm (Ø), Omnidirectional
Magnetic induction system	No	Yes
Loudspeaker	40 (ø) x 20 (H) mm, 8 Ohm, 2W	40 (ø) x 20 (H) mm, 8 Ohm, 2W
Technologies implemented	Full-Duplex	Full-Duplex

ELECTRICAL SPECIFICATIONS		
Type of power supply	Power supply via video entry bus	Power supply via video entry bus
Power supply voltage	22 to 34 VDC (Bus)	22 to 34 VDC (Bus)
Maximum absorption (W)	10.8	10.8

HARDWARE CHARACTERISTICS		
Type of buttons	Capacitive	Capacitive
Service buttons	Lock-release, Answer, Silent, Door open	Lock-release, Answer, Silent, Door open
No. of programmable buttons for additional functions	5	5
Terminals	L L - + CFP1 CFP2 S+ S- In1 In2	L L - + CFP1 CFP2 S+ S- In1 In2
Removable terminals	Yes	Yes
Number of inputs (no.)	2	2

SETTINGS		
Loudspeaker volume	Yes	Yes
Ringtone volume	Yes	Yes
Screen brightness	Yes	Yes
Screen contrast	Yes	Yes

ENVIRONMENTAL AND CONFORMITY SPECIFICATIONS		
IP protection rating	IP30	IP30
Operating temperature (°C)	5 to 40	5 to 40
Operating humidity (max RH - %)	25 to 75	25 to 75
Environmental class	I	I
Conformity and Certifications	RoHS II - 2011/65/EU (EN 50581:2012), EMC 2014/30/EU (EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011)	RoHS II - 2011/65/EU (EN 50581:2012), EMC 2014/30/EU (EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011)

Installation

Installed in flush-mounted box art. 6117

1 — 14,2 cm / 14,7 cm

2 — 160 cm / 130 cm

3 — ALTO UP HAUT OBEN

4

5 — $L_{min} = 6$ cm / $L_{max} = 10$ cm

6

7 — UP

8 — L / L

9 — CLACK !

DISASSEMBLY
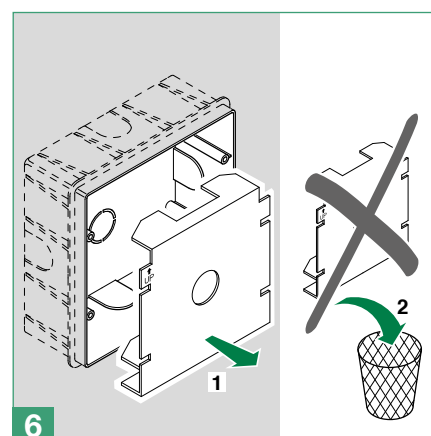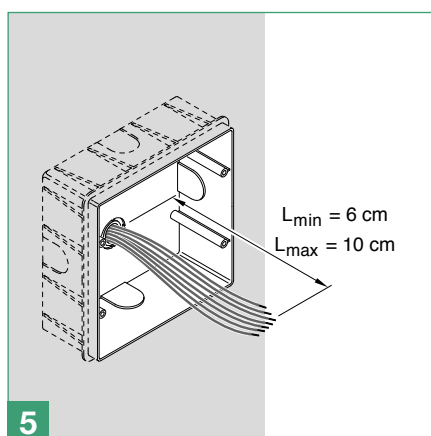
Art. 6620 Surface mounting / in 503 series box / round box

1

14,2 cm

14,7 cm

2

160 cm

130 cm

3A with Art.6620*

UP

1

2

4A with Art.6620*

L$_{min}$ = 6,5 cm

L$_{max}$ = 7 cm

5A with Art.6620*

3B

UP

2

1

3C

UP

2

6

UP

2

1

7

L

L

2

1

* Art. 6620 (optional)

8

CLACK

2

2

1

DISASSEMBLY

1

2

Connections

\# **20 m MAX** - Connect a single call repetition device for each user code.

* **20 m MAX** - Use shielded cable for the connection and do not route the cables in the vicinity of heavy inductive loads or power supply cables (230 V/400 V).
Where multiple door-entry phones or door entry monitors have the same user code, connect the CFP button on one only; all the devices will ring simultaneously.

✳ For programming procedure details, see paragraph: **"LED/alarm/lock-release/actuator programming" on page 15**.

Variant: connection of call repetition device art. 1122/A

* **20 m MAX -** Connect a single call repetition device for each user code. If inductive loads are connected, the connection of 470nF capacitance in parallel with the C-NO contacts of Art. 1122/A is recommended
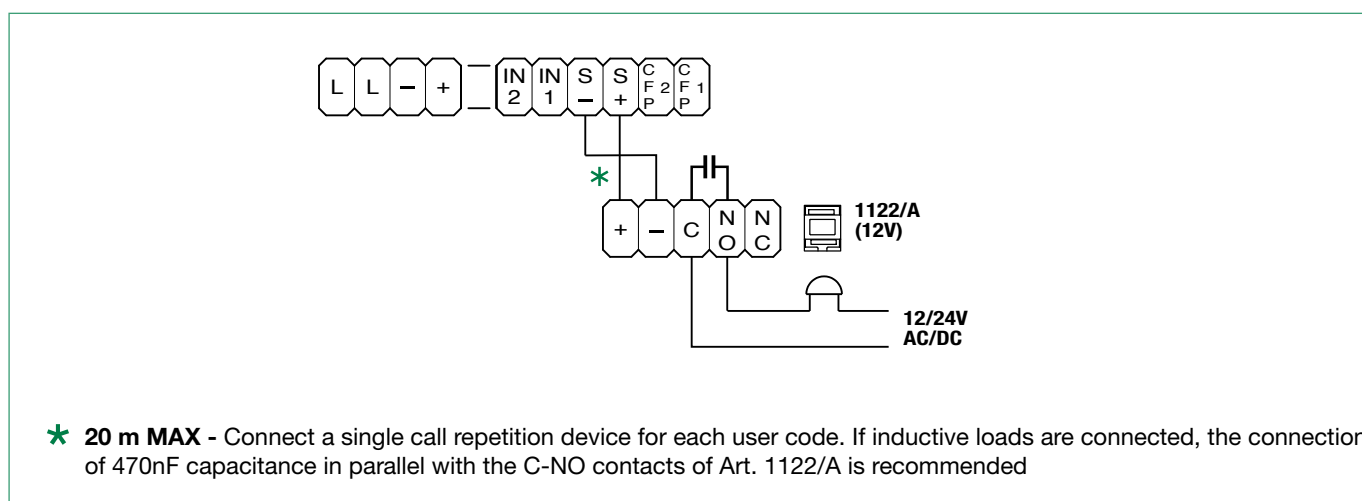
Settings

Main and secondary door entry monitors

In systems with power supply unit 1209, 1210 or 1210A, you can configure a maximum of 1 main door entry monitor (+3 powered separately), while in systems with power supply unit 4888C you can configure a maximum of 2 main door entry monitors (+1 powered separately).

To configure the door entry monitor as the MAIN UNIT **P**, set **DIP 8** of **S2** to **OFF**
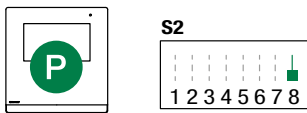

To configure a door entry monitor as a SECONDARY UNIT **S**, set **DIP 8** of **S2** to **ON**
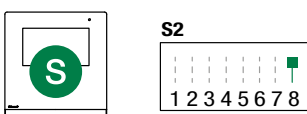
Power supply management

For correct power supply management, set **S2 DIP 7** in accordance with the type of system and its configuration:

- **in systems with power supply units 1209, 1210 and 1210A:** set S2 DIP 7 to **ON**.

- **in systems with power supply unit 4888C** set S2 DIP 7 to **OFF** for SECONDARY door entry monitors; for MAIN door entry monitors follow the instructions illustrated as examples in the figure.
    - **A.** 1 main door entry monitor
    - **B.** 2 main door entry monitors
    - **C.** 3 main door entry monitors, 1 of which is powered separately

4888C
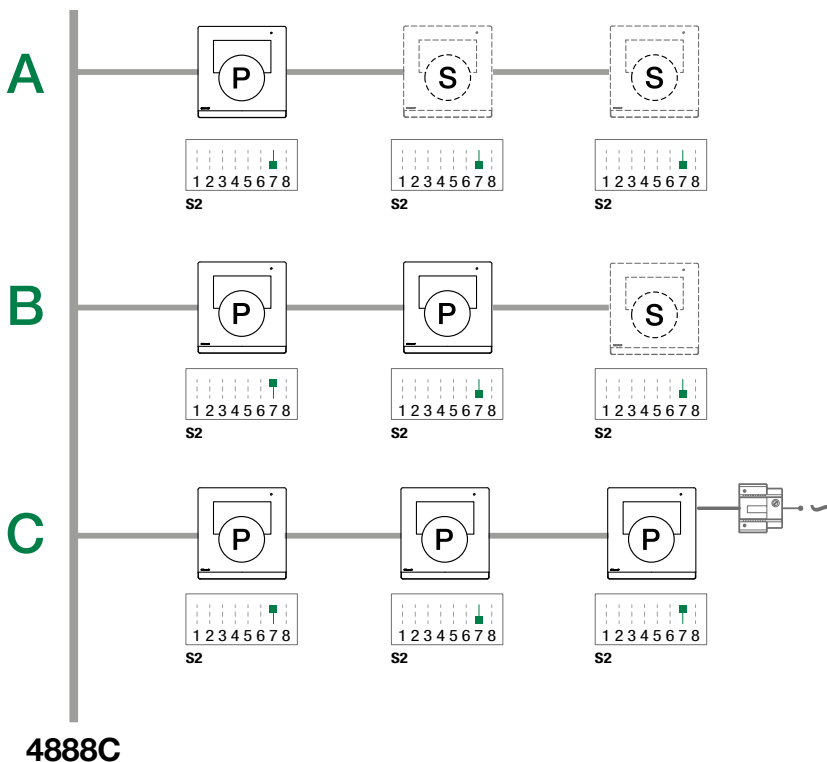
Configuring buttons

By default the buttons control the functions in row A ("Basic configuration" table).

It is possible to change the default configuration of the buttons by changing the positions of S2 DIP-switches 1-2-3-4 on the rear of the door entry monitor to one of the combinations (B-P) suggested in the table. All the buttons will change function.

Basic configuration

	S2 DIP-switch				▶	☎	🔓	1	2	3	4	5	👁
	DIP 1	DIP 2	DIP 3	DIP 4									
A	OFF	OFF	OFF	OFF		AUDIO	AP	CCS	ACT	D	PAN	K	AI
B	ON	OFF	OFF	OFF		AUDIO	AP	ACT	INT	INTb	D	CCS	AI
C	OFF	ON	OFF	OFF		AUDIO	AP	INT	INTb	ACT	CCS	CCP	AI
D	ON	ON	OFF	OFF		AUDIO	AP	ACT	CCP	PAN	K	D	CCS
E	OFF	OFF	ON	OFF		AUDIO	ACT	ACT	ACT	ACT	ACT	ACT	ACT
F	ON	OFF	ON	OFF		AUDIO	AP	INT	CCS	CCP	INTb	PAN	ACT
G	OFF	ON	ON	OFF		AUDIO	AP	AI	K	CCS	CCP	INTb	D
H	ON	ON	ON	OFF		AUDIO	AP	INTb	AI	INT	PAN	D	INT
I	OFF	OFF	OFF	ON		AUDIO	AP	CCS	D	AI	INT	INTb	PAN
J	ON	OFF	OFF	ON		AUDIO	AP	K	PAN	CCP	AI	INT	CCS
K	OFF	ON	OFF	ON		AUDIO	AP	CCP	PAN	ACT	INT	AI	K
L	ON	ON	OFF	ON		AUDIO	AP	PAN	CCS	K	ACT	D	CCP
M	OFF	OFF	ON	ON		AUDIO	AP	D	INT	ACT	AI	CCS	INTb
N	ON	OFF	ON	ON		AUDIO	AP	INT	INT	INT	INT	INT	INT
P	OFF	ON	ON	ON		NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
	ON	ON	ON	ON		PROG							

Legend

ACT	Actuator
AI	Self Activation
AP	Lock-release
AUDIO	Audio
CCP	Call to main switchboard [not available in KIT systems]
CCS	Call to secondary switchboard [not available in KIT systems]
D	Automatic door opening on receipt of call [Doctor mode]
INT	General or selective programmable intercom. Single-family call default for Kit and Simplebus2
INTb	Two-family intercom call [for KIT only]
K	Caretaker door-entry phone call
PAN	Priority call to switchboard [not available in KIT systems]
NULL	No function
PROG	With these S2 DIP-switch settings, the buttons control the programmed functions as in the "Advanced configuration".

Advanced configuration

If the basic configuration settings (A-P) do not reflect requirements, the buttons can be programmed differently by carrying out the steps below.

After programming, set S2 DIP-switches 1-2-3-4 (PROG) to ON. With these DIP-switch settings, the buttons manage the programmed functions.

The buttons that are NOT programmed control the functions in row A ("Basic configuration" table).
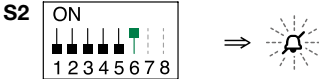
Intercom call

Introduction
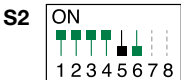
By "**General** intercom call" we mean a call from a door-entry phone/door entry monitor to the devices (in the same apartment or another apartment) identified by the call address for the apartment (user code).

By "Intercom call to **selective address**" we mean a call from a door-entry phone/door entry monitor to a device (or several) identified by a specific (selective) address which is different from the call address for the apartment (user code).

⚠️ *General and selective intercom calls CANNOT be used together on the same riser!*

General intercom call: button programming

1. Take note of the S1 DIP-switch settings.	
2. To enter programming mode, set S2 DIP-switch 6 to ON. » *the LED 🔔 flashes*	S2 [ON 1 2 3 4 5 6 7 8] ⇒ 🔔
3. Refer to the table *"Basic configuration"* to identify a DIP-switch combination in which the intercom function (INT or INTb) corresponding to the button you want to program appears, then set the **S2 DIP-switches**. Example: For button 1= Intercom (INT) set S2 DIP-switches 1-2-3-4 as specified in row "C" in the "Basic configuration" table.	
4. Set the **S1 DIP-switches** according to the call address of the desired apartment. See **"Addressing table" on page 17**	
5. Press and release the button to be associated with the function. » *Correct procedure indication*: the LED ▬O flashes for a few seconds and a confirmation tone sounds. ✓ when programming using several buttons, continue programming the next key by repeating the process from step 4 onwards.	
6. Exit programming mode by setting S2 **DIP-switch 6** to OFF. » *LED 🔔 switches off*	S2 [ON 1 2 3 4 5 6 7 8]
7. Set S2 **DIP-switches 1-2-3-4** to ON.	
8. Return S1 DIP-switches to the original combination.	

## Intercom call to selective address: button programming

1. The steps illustrated in paragraph "Assigning a selective address" should be carried out on the devices involved in the intercom call.

2. Take note of the S1 DIP-switch settings.

3. To enter programming mode, set S2 DIP-switch 6 to ON.

» *the LED ⌀ flashes*

S2 | ON 1 2 3 4 5 6 7 8 ⇒

4. Refer to the table *"Basic configuration"* to identify a DIP-switch combination in which the intercom function (INT or INTb) corresponding to the button you want to program appears, then set the S2 DIP-switches.

5. Use the S1 DIP-switches to set the *selective* address of the device you wish to call. **Table B**.

ⓘ For group calls, simultaneously set the desired selective addresses (max. 3) to ON.

6. Press and release the button to be associated with the function.

» *Correct procedure indication: the LED ▬O flashes for a few seconds and a confirmation tone sounds.*

✓ when programming using several buttons, continue programming the next key by repeating the process from step 5 onwards.

7. Exit programming mode by setting S2 DIP-switch 6 to OFF.

» *LED ⌀ switches off*

S2 | ON 1 2 3 4 5 6 7 8

8. Set S2 **DIP-switches 1-2-3-4** to ON.

9. Return S1 DIP-switches to the original combination.
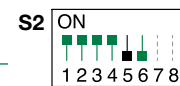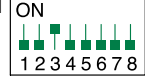
Selective intercom address

TABLE B

Code	S1 DIP-switch ON		Code	S1 DIP-switch ON		Code	S1 DIP-switch ON
1	1	ON 12345678	**4**	4	ON 12345678	**7**	7	ON 12345678
2	2	ON 12345678	**5**	5	ON 12345678	**8**	8	ON 12345678
3	3	ON 12345678	**6**	6	ON 12345678		

Assigning selective address
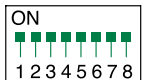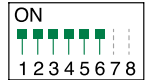
(Steps only need to be carried out for "Intercom call to selective address" programming)

1.	2.	3.	4.	
Take note of the S1, S2 settings and **restore them when programming** is complete.	S1: Set an address. (Table B) Example 3: **S1** ON 12345678	S2: Set the DIP-switches as shown in the figure. **S2** ON 12345678 ⇒		✓**OK prog:** ▬O x4
				✗ **KO prog:** ▬O x10

Assign one of the 8 addresses available in TABLE B to each device involved in the intercom call.
- You can assign the **same** selective intercom address to a maximum of 3 devices.

Deleting the selective address of the door entry monitor

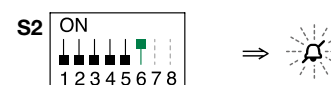| 1.	2.		3.	
Take note of the S1, S2 settings and **restore them when programming** is complete.	Set the DIP-switches as shown in the figure. **S1** ON 12345678	**S2** ON 12345678 ⇒		✓**OK prog:** ▬O x4
				✗ **KO prog:** ▬O x10

Generic actuator, coded actuator

Generic **actuator**: button programming

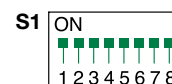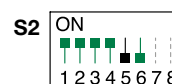|	
1.	Take note of the S1 DIP-switch settings.
2.	To enter programming mode, set S2 DIP-switch 6 to ON. » *the LED flashes*
3.	Refer to the table *"Basic configuration"* to identify a DIP-switch combination in which the actuator function (ACT) corresponding to the button you want to program appears, then set the S2 DIP-switches.
4.	Set all the S1 DIP-switches to the ON position.
5.	Press and release the button to be associated with the function. » *Correct procedure indication: the LED ━○ flashes for a few seconds and a confirmation tone sounds.*
6.	Exit programming mode by setting S2 DIP-switch 6 to OFF. » *LED switches off*
7.	Set S2 DIP-switches 1-2-3-4 to ON.
8.	Return S1 DIP-switches to the original combination.

Coded **actuator**: button programming
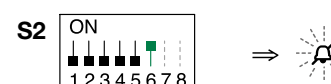
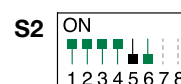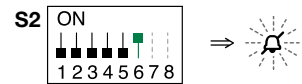|	
1.	Take note of the S1 DIP-switch settings.
2.	To enter programming mode, set S2 DIP-switch 6 to ON. » *the LED flashes*
3.	Refer to the table *"Basic configuration"* to identify a DIP-switch combination in which the actuator function (ACT) corresponding to the button you want to program appears, then set the S2 DIP-switches.
4.	Set the S1 DIP-switches with the desired code, according to **"Addressing table" on page 17**
5.	Press and release the button to be associated with the function. » *Correct procedure indication*: the LED ━○ flashes for a few seconds and a confirmation tone sounds
6.	Exit programming mode by setting S2 DIP-switch 6 to OFF. » *LED switches off*
7.	Set S2 DIP-switches 1-2-3-4 to ON.
8.	Return S1 DIP-switches to the original combination.

Other functions: button programming

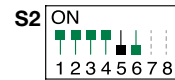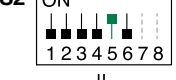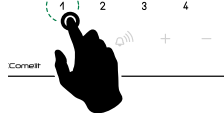|	
1. To enter programming mode, set S2 DIP-switch 6 to ON. » *the LED 🔔 flashes*	S2 `ON` [1 2 3 4 5 6 7 8] ⇒ 🔔
2. Refer to the table *"Basic configuration"* to identify a DIP-switch combination in which the desired functions corresponding to the buttons you want to program appear, then set the S2 DIP-switches. Example: For button 4= Self Activation (AI) and button 5 = Call to Secondary Switchboard (CCS), set S2 DIP-switches 1-2-3-4 as specified in row M in the "Basic configuration" table.	
3. Press and release the buttons involved in the change. » *Correct procedure indication*: the LED ⌐O flashes for a few seconds and a confirmation tone sounds.	
4. Exit programming mode by setting S2 DIP-switch 6 to OFF. » *LED 🔔 switches off*	S2 `ON` [1 2 3 4 5 6 7 8]
5. Set S2 DIP-switches 1-2-3-4 to ON.	
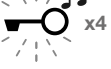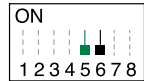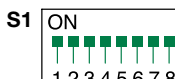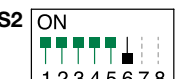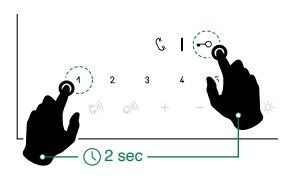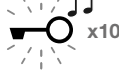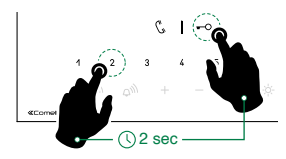
Programming range

⚠ *Take note of the S2, S1 settings and restore on completion of programming*
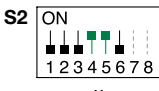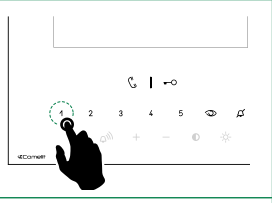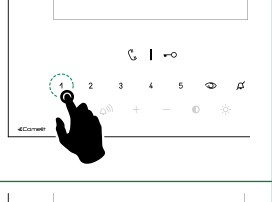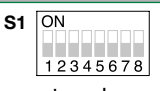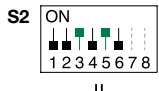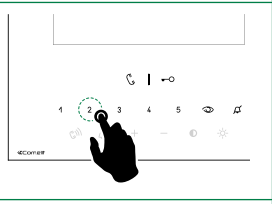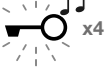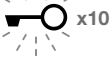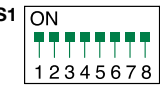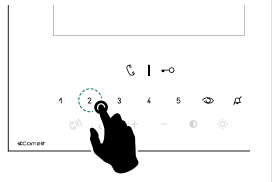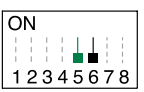
	1.	**2.**	**3.**	**4.**
Min. address	S1 `ON` [1 2 3 4 5 6 7 8] Set a code. **"Addressing table" on page 17**	S2 `ON` [1 2 3 4 5 6 7 8] ⇓ 🔔		
Max. address			 **OK prog:** ✔ ⌐O 🎵 x4 **KO prog:** ✘ 🔔 x4	S2 `ON` [1 2 3 4 5 6 7 8] ⇓ 🔔
Cancellation	S1 `ON` [1 2 3 4 5 6 7 8]	S2 `ON` [1 2 3 4 5 6 7 8] ⇓ 🔔	⏱2 sec.	

	1.		
Enable	⏱2 sec	**OK prog:** ✔ ⌐O 🎵 x10	**KO prog:** ✘ 📞 x10
Disable	⏱2 sec		

When the procedure is complete, restore the initial DIP-switch combination.

LED/alarm/lock-release/actuator programming

⚠️ *Take note of the S2, S1 settings and restore on completion of programming*

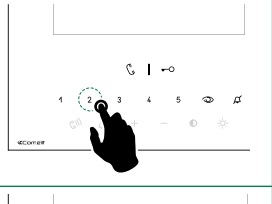|	1.	2.	3.		4.
Input IN 1- IN 2 ⟹ LED (default)*		**S2** ON ▪▪▪■■▪▪▪ 1 2 3 4 5 6 7 8 ⟱ 🔔		**OK prog:** 🔑🎵 x4	**S2** ON ▏▏▏▏■■▏▏ 1 2 3 4 5 6 7 8 ⟱ 🔔
Input CFP2 - IN 1 ⟹ ALARM*					
Input CFP2 - IN 1 ⟹ LOCK-RELEASE*				**KO prog:** 🔑 x10	
Input CFP2 - IN 1 ⟹ CODED ACTUATOR*	**S1** ON 1 2 3 4 5 6 7 8 set code, **"Addressing table" on page 17**	**S2** ON ▪▪▪■▪■▪▪ 1 2 3 4 5 6 7 8 ⟱ 🔔			
Input CFP2 - IN 1 ⟹ GENERIC ACTUATOR*	**S1** ON ■■■■■■■■ 1 2 3 4 5 6 7 8				

* See **"Connections" on page 8**.

When the procedure is complete, restore the initial DIP-switch combination.

Changing the ringtone

1. Press and hold 🔑 for 6 sec.
   - » a confirmation tone is emitted
   - » the LED 🔔 flashes
   - ✓ the procedure can only take place while the system is in standby; otherwise the LED 🔔 will flash 4 times to inform the user that the system is busy

2. Press and release 🔑
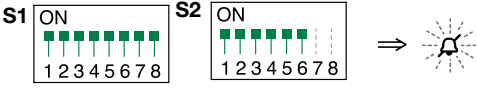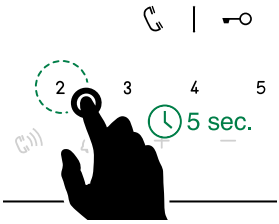
   Once (1 confirmation tone is emitted) to change the ringtone for calls from the external entrance panel.
   twice (2 confirmation tones are emitted) to change the ringtone for calls from the switchboard.
   3 times (3 confirmation tones are emitted) to change the ringtone for intercom calls made from the door entry monitor.
   4 times (4 confirmation tones are emitted) to change the floor door call ringtone.

   ⚠️ Any further pressing of the button repeats the sequence described above.

3. Press and release 1 to scroll through the available ringtones in sequence.

4. Press the 2 button to confirm selection of the last ringtone heard and to exit change door entry monitor ringtone mode.
   - » a confirmation tone is emitted
   - » LED 🔔 switches off

Programming reset

Factory settings:

- Button functions for the S2 DIP-switches 1-2-3-4 combination
- Intercom address absent
- Range function and min./max. addresses absent
- Ringtone reset
- Input IN 1 - IN 2 > LED (default)
- "Automatic answer", "Automatic door opening on receipt of call" and "Silent" mode disabled

1.	2.	3.	
Take note of the S1, S2 settings and **restore them when programming** is complete.	Set the DIP-switches as shown in the figure. S1 ON 12345678 S2 ON 12345678 ⇒	⏱ 5 sec.	✓ **OK prog:** x4 ✗ **KO prog:** x10

System performance and layouts

For further information of system performance and to view installation layouts, click on the system type that best meets your requirements:

- Simplebus2 audio/video kit with power supply unit art. 1209 for the creation of audio-video systems for *individual residences*
- Simplebus2 audio/video with power supply unit art. 1210/1210A for the creation of audio-video systems for *small apartment blocks*
- Simplebus2 audio/video with power supply unit art. 4888C for the creation of audio-video systems for *residential complexes*

Addressing table

Code	DIP-switch ON	Code	DIP-switch ON	Code	DIP-switch ON	Code	DIP-switch ON	Code	DIP-switch ON	Code	DIP-switch ON	Code	DIP-switch ON	Code	DIP-switch ON
1	1	31	1,2,3,4,5	61	1,3,4,5,6	91	1,2,4,5,7	121	1,4,5,6,7	151	1,2,3,5,8	181	1,3,5,6,8	211	1,2,5,7,8
2	2	32	6	62	2,3,4,5,6	92	3,4,5,7	122	2,4,5,6,7	152	4,5,8	182	2,3,5,6,8	212	3,5,7,8
3	1.2	33	1.6	63	1,2,3,4.5.6	93	1,3,4,5,7	123	1,2,4,5,6,7	153	1,4,5,8	183	1,2,3,5,6,8	213	1,3,5,7,8
4	3	34	2.6	64	7	94	2,3,4,5,7	124	3,4,5,6,7	154	2,4,5,8	184	4,5,6,8	214	2,3,5,7,8
5	1.3	35	1,2,6	65	1.7	95	1,2,3,4,5.7	125	1,3,4,5,6,7	155	1,2,4,5,8	185	1,4,5,6,8	215	1,2,3,5,7,8
6	2.3	36	3.6	66	2.7	96	6.7	126	2,3,4,5,6,7	156	3,4,5,8	186	2,4,5,6,8	216	4,5,7,8
7	1,2,3	37	1,3,6	67	1,2,7	97	1,6,7	127	1,2,3,4,5,6,7	157	1,3,4,5,8	187	1,2,4,5,6,8	217	1,4,5,7,8
8	4	38	2,3,6	68	3.7	98	2,6,7	128	8	158	2,3,4,5,8	188	3,4,5,6,8	218	2,4,5,7,8
9	1.4	39	1,2,3,6	69	1,3,7	99	1,2,6,7	129	1.8	159	1,2,3,4,5.8	189	1,3,4,5,6,8	219	1,2,4,5,7,8
10	2.4	40	4.6	70	2,3,7	100	3,6,7	130	2.8	160	6.8	190	2,3,4,5,6,8	220	3,4,5,7,8
11	1,2,4	41	1,4,6	71	1,2,3,7	101	1,3,6,7	131	1,2,8	161	1,6,8	191	1,2,3,4,5,6,8	221	1,3,4,5,7,8
12	3.4	42	2,4,6	72	4.7	102	2,3,6,7	132	3.8	162	2,6,8	192	7.8	222	2,3,4,5,7,8
13	1,3,4	43	1,2,4,6	73	1,4,7	103	1,2,3,6,7	133	1,3,8	163	1,2,6,8	193	1,7,8	223	1,2,3,4,5,7,8
14	2,3,4	44	3,4,6	74	2,4,7	104	4,6,7	134	2,3,8	164	3,6,8	194	2,7,8	224	6,7,8
15	1,2,3,4	45	1,3,4,6	75	1,2,4,7	105	1,4,6,7	135	1,2,3,8	165	1,3,6,8	195	1,2,7,8	225	1,6,7,8
16	5	46	2,3,4,6	76	3,4,7	106	2,4,6,7	136	4.8	166	2,3,6,8	196	3,7,8	226	2,6,7,8
17	1.5	47	1,2,3,4,6	77	1,3,4,7	107	1,2,4,6,7	137	1,4,8	167	1,2,3,6,8	197	1,3,7,8	227	1,2,6,7,8
18	2.5	48	5.6	78	2,3,4,7	108	3,4,6,7	138	2,4,8	168	4,6,8	198	2,3,7,8	228	3,6,7,8
19	1,2,5	49	1,5,6	79	1,2,3,4,7	109	1,3,4,6,7	139	1,2,4,8	169	1,4,6,8	199	1,2,3,7,8	229	1,3,6,7,8
20	3.5	50	2,5,6	80	5.7	110	2,3,4,6,7	140	3,4,8	170	2,4,6,8	200	4,7,8	230	2,3,6,7,8
21	1,3,5	51	1,2,5,6	81	1,5,7	111	1,2,3,4,6.7	141	1,3,4,8	171	1,2,4,6,8	201	1,4,7,8	231	1,2,3,6,7.8
22	2,3,5	52	3,5,6	82	2,5,7	112	5.67	142	2,3,4,8	172	3,4,6,8	202	2,4,7,8	232	4,6,7,8
23	1,2,3,5	53	1,3,5,6	83	1,2,5,7	113	1,5,6,7	143	1,2,3,4,8	173	1,3,4,6,8	203	1,2,4,7,8	233	1,4,6,7,8
24	4.5	54	2,3,5,6	84	3,5,7	114	2,5,6,7	144	5.8	174	2,3,4,6,8	204	3,4,7,8	234	2,4,6,7,8
25	1,4,5	55	1,2,3,5,6	85	1,3,5,7	115	1,2,5,6,7	145	1,5,8	175	1,2,3,4,6,8	205	1,3,4,7,8	235	1,2,4,6,7,8
26	2,4,5	56	4,5,6	86	2,3,5,7	116	3,5,6,7	146	2,5,8	176	5,6,8	206	2,3,4,7,8	236	3,4,6,7,8
27	1,2,4,5	57	1,4,5,6	87	1,2,3,5,7	117	1,3,5,6,7	147	1,2,5,8	177	1,5,6,8	207	1,2,3,4,7,8	237	1,3,4,6,7,8
28	3,4,5	58	2,4,5,6	88	4,5,7	118	2,3,5,6,7	148	3,5,8	178	2,5,6,8	208	5,7,8	238	2,3,4,6,7,8
29	1,3,4,5	59	1,2,4,5,6	89	1,4,5,7	119	1,2,3,5,6,7	149	1,3,5,8	179	1,2,5,6,8	209	1,5,7,8	239	1,2,3,4,6,7,8
30	2,3,4,5	60	3,4,5,6	90	2,4,5,7	120	4,5,6,7	150	2,3,5,8	180	3,5,6,8	210	2,5,7,8	*240	5,6,7,8

* NOTE: Code 240 is reserved for the porter switchboard