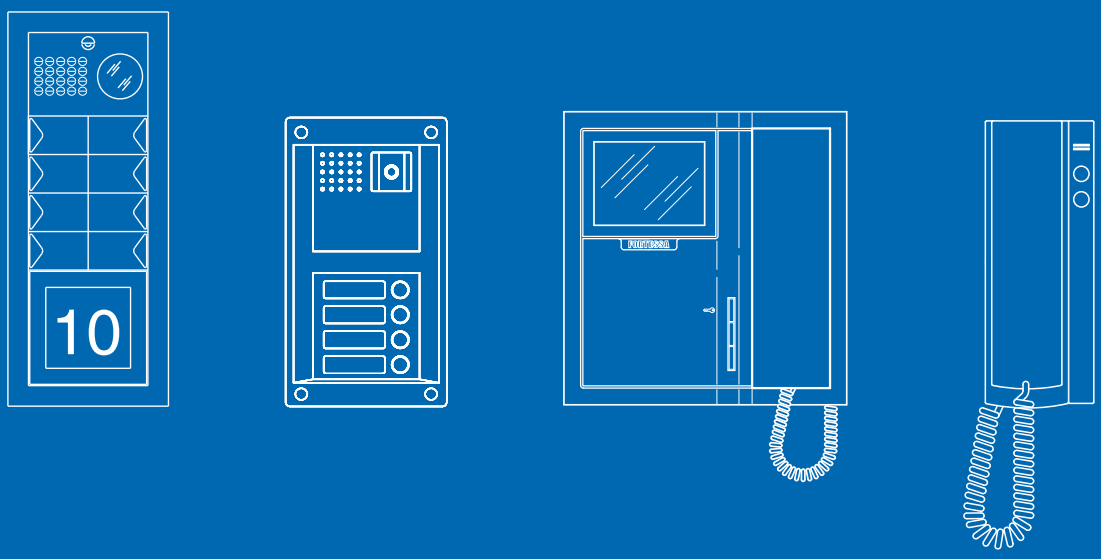
FORTESSA

CONTROLLED ACCESS BY DESIGN

TECHNICAL MANUAL

DOOR ENTRY SYSTEMS



Instructions:

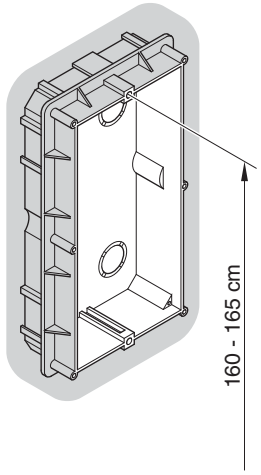
- Install the equipment by carefully following the instructions given by the manufacturer and in compliance with the legislation in force.
- All the equipment must only be used for the purpose it was built for **Fortessa** declines any responsibility for improper use of the apparatus, for modifications made by others under any title or scope, and for the use of accessories and materials which are not the original ones.
- All the products comply with the requirements of the 2006/95/CE directives (which replace the 73/23/CEE directives and the successive amendments). This is proved by the **CE** mark on the products.
- Do not run the riser wires in proximity of the power supply cables (230/400V).

CE

Audio/Video door entry system with traditional cabling

SUMMARY

EXTERNAL UNITS
Instructions for installing external audio-video unit standard



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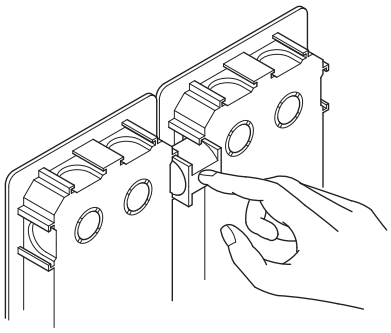

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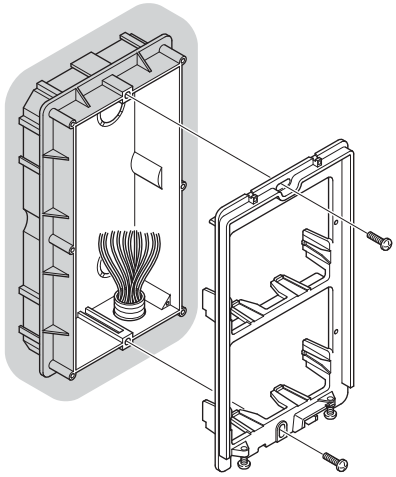

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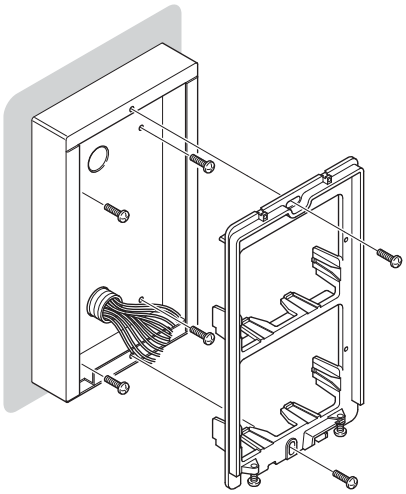

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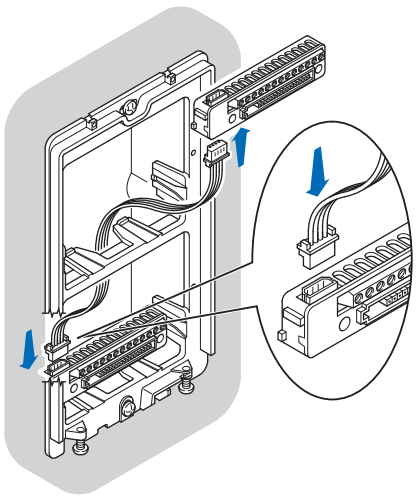

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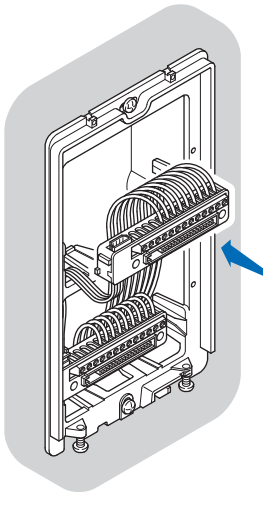

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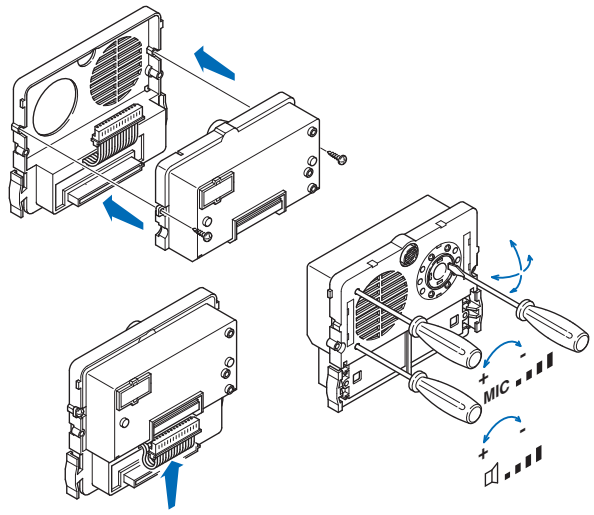

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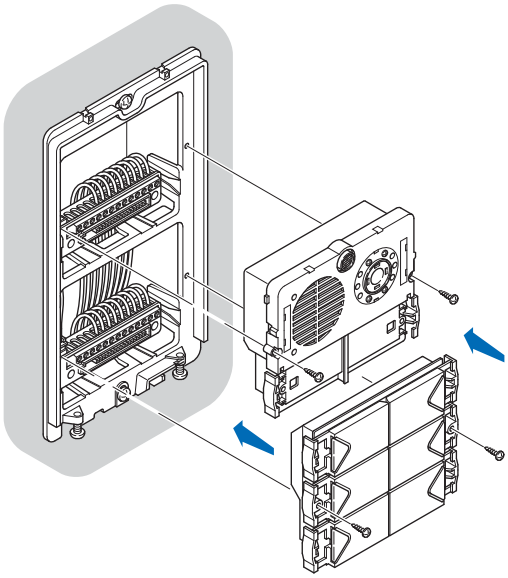

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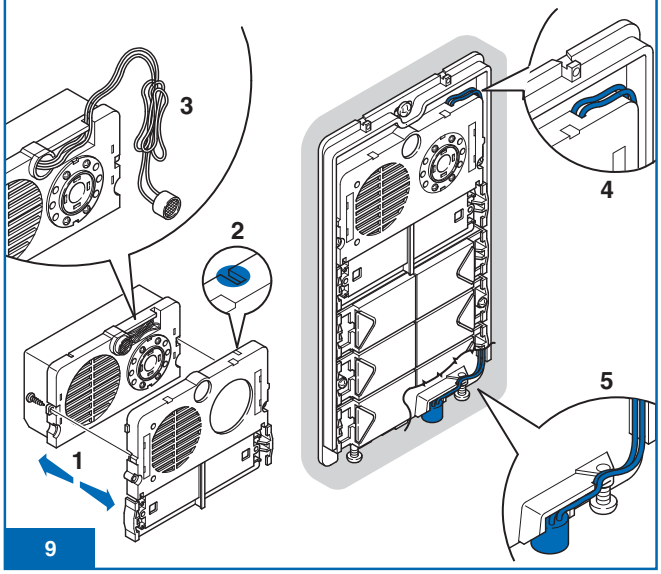
Alternative position of the microphone



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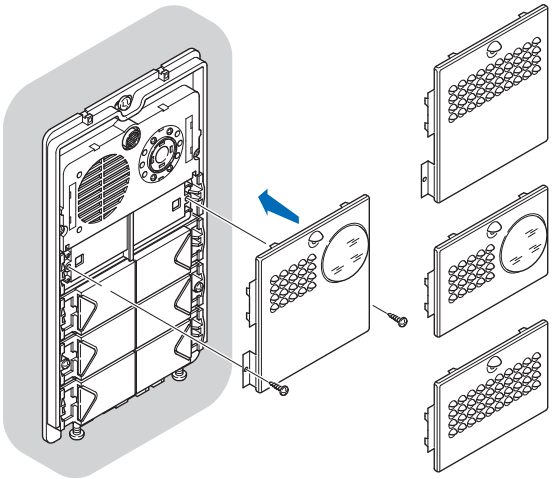

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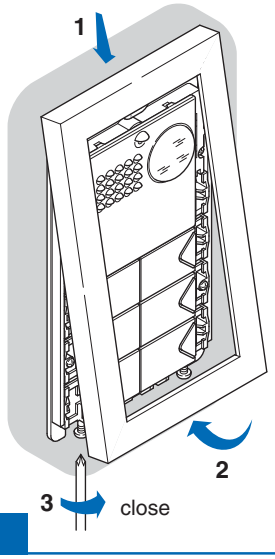

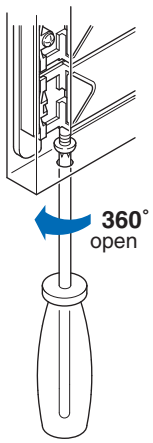

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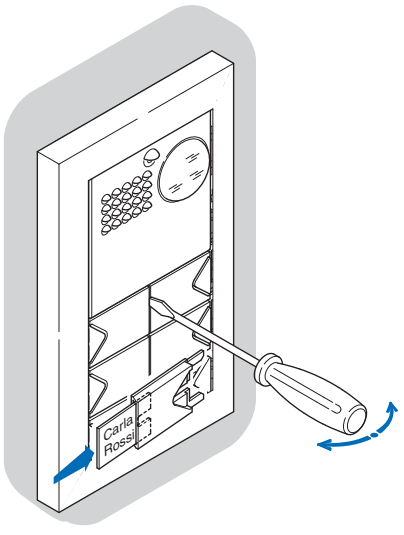

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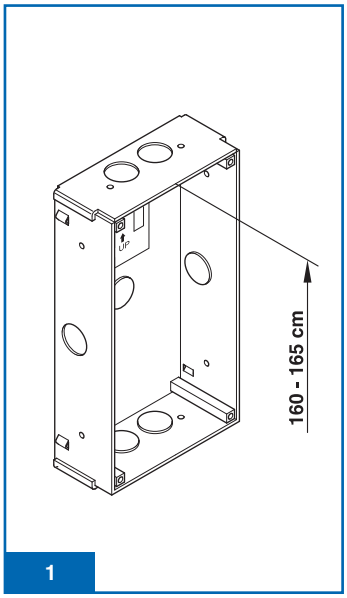
Instructions for installing external audio-video unit vandal resistant



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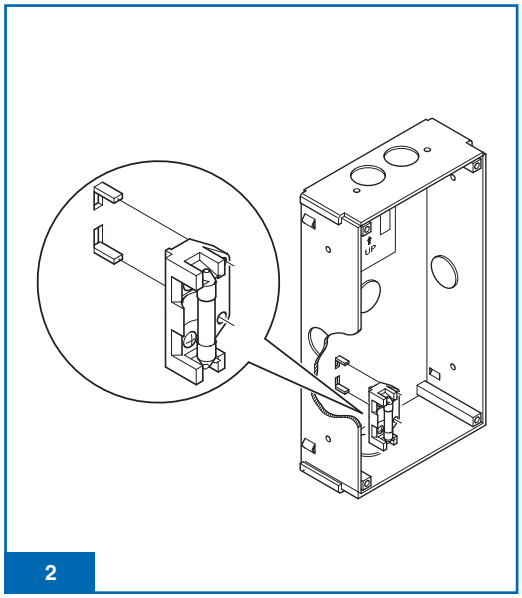

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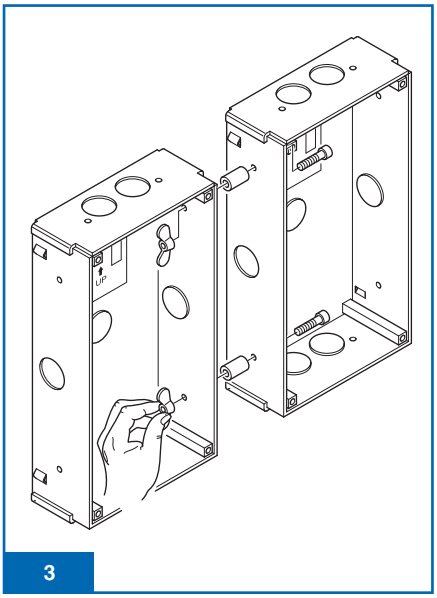

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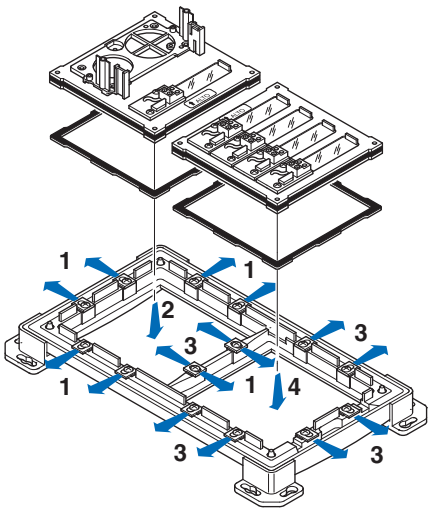

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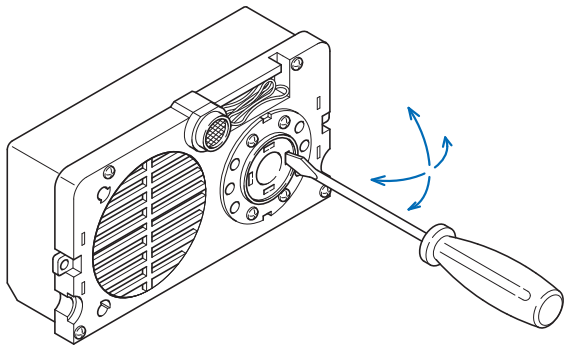

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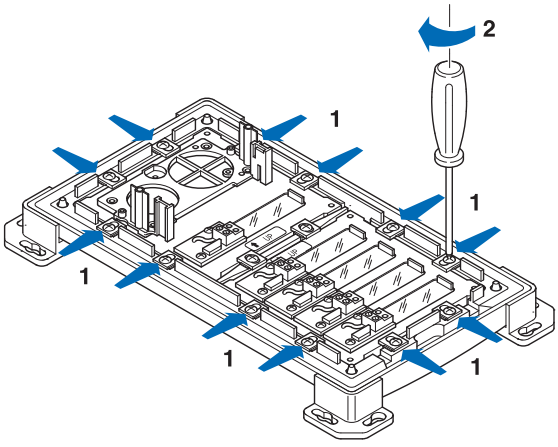

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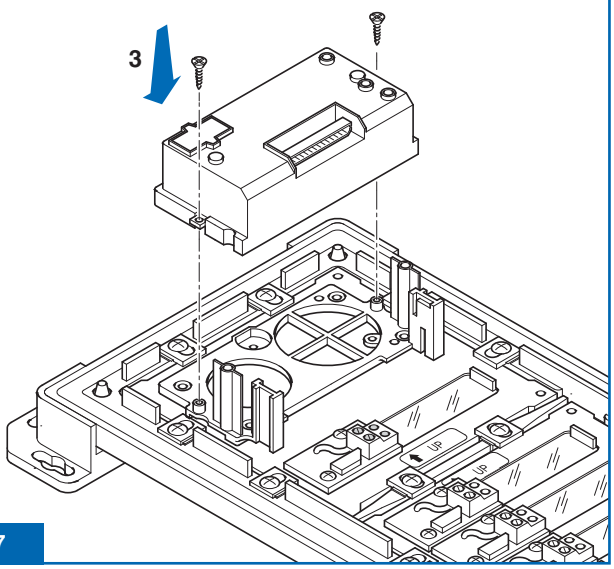

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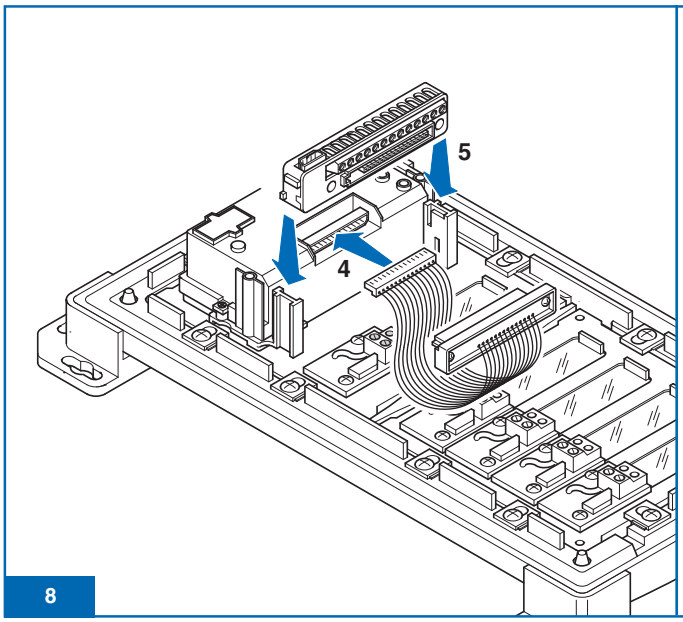

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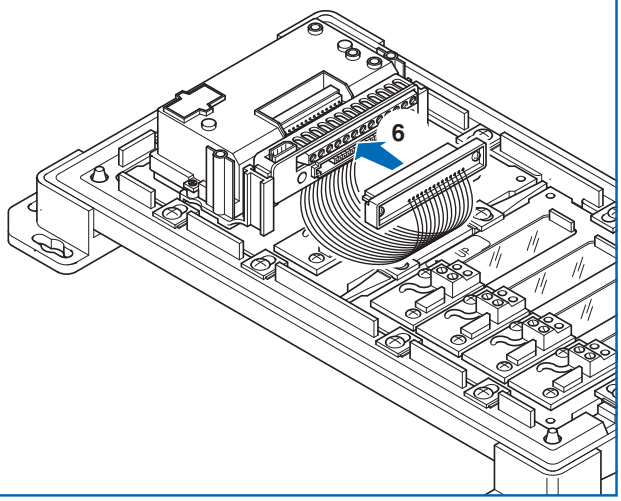

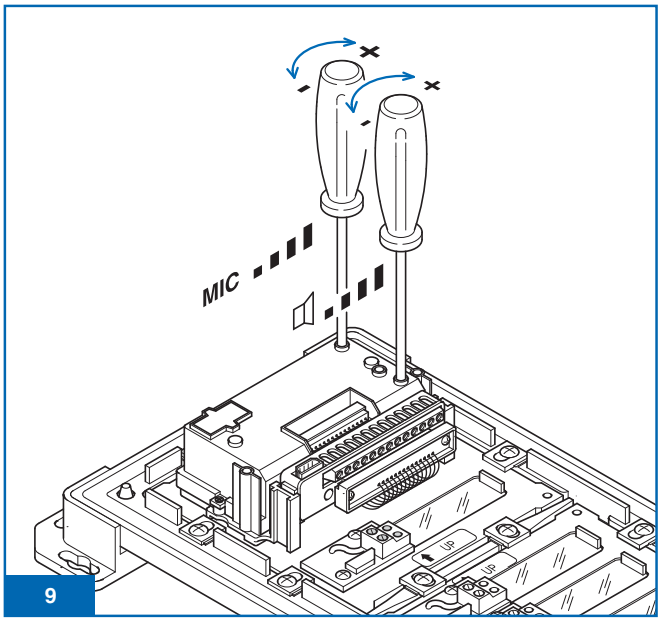

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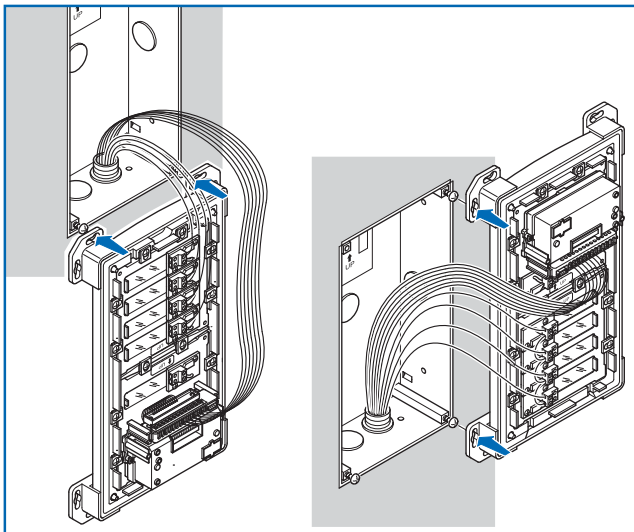

SOLUTION “A”

SOLUTION “B”

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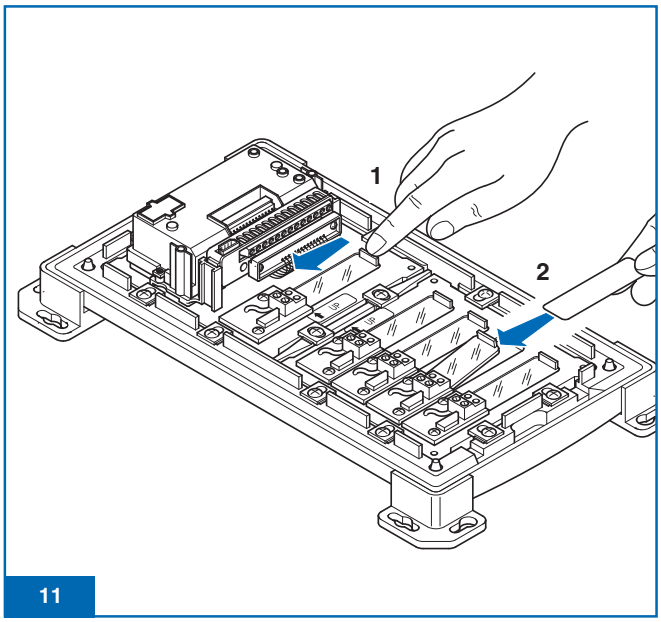

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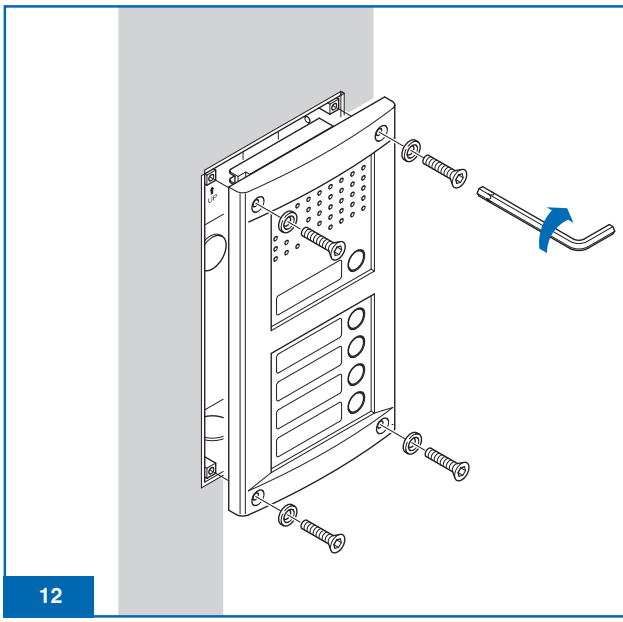
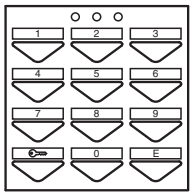


12

Standard combined access and vandal combined access electronic digital key

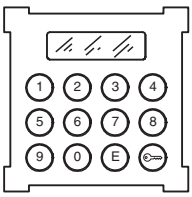
General information

The range of electronic standard combined access keypads consists of 2 models:



FT3328

- FT3328 for insertion in the standard modular push-button panels for the creation of mixed systems with access control - audio and video door entry systems or to be used stand-alone.



FT3188

- FT3188 for insertion in the vandal resistant modular push-button panels for the creation of mixed systems with access control -audio and video door entry systems or to be used stand-alone.

Technically speaking FT3328 and FT3188 come complete with 2 relays which can be controlled with different codes.

Warnings

- Carefully read and follow the instructions given by the manufacture.
- All the equipment making up the installation must only be used for the purpose it was built for.
- Install the equipment in compliance with the legislation in force.
- In case of a fault and/or incorrect operation of the equipment, disconnect it from the power supply and do not tamper with it. For any repair work, only contact a technical service center authorized by the manufacturer.
- Connect to the ground electronic key FT3328 and electronic key FT3188 like showed on page 7.

FORTESSA reserves the right to change the characteristics and dimensions of the equipment without prior warning.

Technical characteristics

- Total no. Of codes available: 302
- one supercode;
- 300 relay codes. The total number of codes available can be distributed as desired between relay 1 and relay 2. E.g.: 245 different codes for relay 1 and 55 different codes for relay 2;
- anti-panic code.
- Outputs available: 2 on independent relays according to the models, plus 2 open collectors (1 for FT3328).
- Operation of output relays: either bistable or monostable; programmed from the keypad.
- Monostable mode: programmable impulse between 1 and 99 secs. approx.
- Length of supercode: from 1 to 8 repeatable digits.
- Lenght of relay codes: from 1 to 8 repeatable digits.
- Length of anti-panic code: 1 digit.
- Input for remote reset (for FT3188 only).
- Remote input for enabling of "key" push button (for FT3328 only).
- Programming input.
- Operation mode input with one button only (time programmer).
- 3 signalling LEDs depending on the model 2 for indication of closure of the relays and 1 to indicate the state of programming.
- NO - NC outputs volt free.
- Contact capacity: 10 A non-inductive.
- Service outputs: max 500 mA.
- Power supply: 12V AC/DC.
- Absorption: 250mA 12V AC with 3 working relays.
- Operation temperature: from -10°C to + 50°C.

Programming and functioning modes

There is a time limit for programming after which the operation is cancelled (approx. 40 secs. between pressing one button and the next): for this reason the procedure should only be started when the operator has a clear idea of all the operations to be carried out.

1) Insertion of supercode

Programming of the supercode is the first operation to be performed since it subsequently affects all the other stages. It is a good idea to choose a short, easy-to-remember code.
Write the number on a piece of paper and keep it in a safe place.

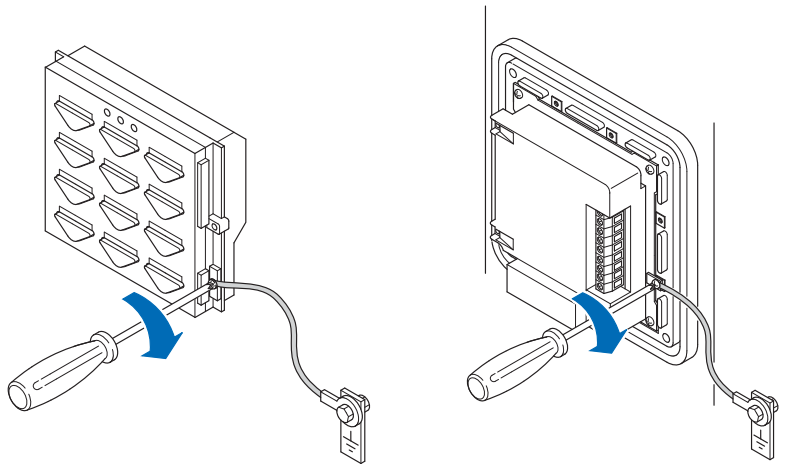
Precedure for entering supercode

1) Connect power to the keypad.
2) Make the bridge between PGM and the negative (– or **CK2**).
3) Check that the red LED is on.
4) Key in the supercode (1 to 8 repeatable digits).
5) Press button "E" on the key-pad to memorise the code entered.
6) Wait 10 seconds or a confirmation tone.
7) Remove the bridge.

E.g. to insert supercode 12345, proceed as follows:

- give power supply;
- make the bridge;
- key in the following: 12345 E;
- wait 10 sec. or a confirmation tone; remove the bridge.

Connection to the ground of electronic standard key FT3328 and electronic vandal resistant key FT3188



- **In case of an error during programming, press button "key" to cancel the operation being carried out.**
- **Always remember to press "E" at the end of each operation, both during the programming stage and during normal operation.**
- **The insertion of the super code cancels all the previous programming.**

2) Initial programming of relay codes

In order to proceed with programming of relay codes it is necessary to know the supercode. During programming, the red LED on the keypad will be on. In case of an error the led will turn off after a brief flashing, so programming must be started again from the beginning.

Procedure for initial programming of relay codes

1) Key in "**0**" followed by "**E**" (start of programming control).
2) Make sure the red LED is on.
3) Key in the **supercode** (entered in point 1), followed by "**E**".
4) Key in the identification **number** of the relay (**1** or **2**) followed by "**E**".
5) Key in the operation **mode** (see point 5), then "**E**".
6) Key in the **new code** to be entered, followed by "**E**".
7) Check that the LED has turned off.

E.g.:

to insert code 55127 for relay 1, in monostable mode (5 sec.), key in the following:

0 E start of programming
12345 E supercode
1 E identification of relay 1
5 E monostable operation mode - 5 seconds
55127 E new code

3) Use of relay codes

After carrying out the above operation, relay 1 can be activated simply by keying in: 55127 E.
In this example, the operation mode was programmed as 0, i.e. relay operation is bistable (on/off). To activate monostable mode operation, see point 5.

- **Up to 300 codes MAX sharded between both release as desired. If an attempt is made to insert a code which has already been stored in the memory, an error is indicated.**

4) Deletion of relay codes

The following procedure must be followed to delete a previously set code from the memory:

1) Key "**0**" followed by "**E**" (start of programming control).
2) Make sure the LED is on.
3) Key in the **supercode** (see point 1), followed by "**E**".
4) Key in "**0**" (code deletion), followed by "**E**".
5) Key in the **code** you wish to delete, then "**E**".
6) Check that the LED is turned off.

E.g.:

to delete code 55127, key in the following:

0 E start of programming
12345 E supercode
0 E deletion procedure
55127 E code to be deleted

5) Bistable/monostable operation

From previous programmings it will be noted that it is possible to obtain bistable (on/off) or monostable (timed) closure, of the relays by programming the desired time value in seconds.

Bistable mode:

if the value "**0**" is programmed, the relay will be activated with the first correct execution of the code, and will be deactivated with the next correct execution.

Monostable mode:

if a value from **1** to **99** is programmed, the relay will be activated with the correct execution of the code, and will be deactivated after the programmed time (1" - 90").

Modification of the relay timing:

Delate the relay code as indicated in point 4 before modifying the relay timing.

E.g.:

if the relay "1" is activated by the code 55127 and is monostable 5 sec., to transform it into bistable mode follow this procedure.

1) Code by keying in:

0 E start programming
12345 E supercode
0 E cancellation procedure
55127 E code to be delated.

2) Re insert the code with the required for bistable mode:
0 E start of programming
12345 E supercode
1 E identification
0 E bistable mode, (on/off)
55127 E new code

After this operation the code 55127 will activate the relay 1 in bistable mode (on/off).

6) Panic function
When the operator needs to send an alarm signal without being seen to do so, he can activate the panic function.
The panic code, which consists of a single digit, must be keyed in after one of the relay codes and this gives activation of both the selected relay and the timed panic output (approx. 5 seconds).
(AC for FT3188 or AL for FT3328)

Procedure for programming the panic function:
1) Key in "**0**" "**E**" (start of programming control).
2) Make sure the LED is on.
3) Key in the programming **supercode** (see point 1), followed by "**E**".
4) Key in "**4**" (selection of panic function), followed by "**E**".
5) Key in the **panic code** (1 digit), followed by "**E**".
6) Check that the LED is turned off.

E.g.:
to programme panic code of 3, key in the following:
0 E start of programmation
12345 E supercode
4 E panic function
3 E panic code

This means that when the relay code followed by the panic code is keyed in, both the output relay and panic relay are activated (timing=approx. 5 seconds): 71032 3 E.

- **The panic code must be keyed in after the relay code and before the final E.**
- **If the panic code is activated, the relay code must not have more than 7 figures.**
- **The relay codes must not end with the digit chosen for the activation of the panic function.**
- **The panic output has an open collector (500 mA max).**

7) Programming of accepted number of errors
This enables the number of code-forming errors which can be keyed in before the block function intervenes to be programmed.
For example, if a value of 3 is fixed, at the third incorrect attempt to form a code the key will temporarily lock for approximately one minute. It is also possible to transmit an alarm signal (**AL** output) after accepted incorrect attempts, if this has been provided when programming.
If you need to transmit the alarm signal, "**1**" will be keyed in during programming otherwise "**0**" will be set in programm (see procedure below).
An attempt to insert an incorrect code is considered keying in a number not previously coded followed by "**E**".

Procedure for programming the number of accept errors
1) Key in "**0**" "**E**" (start of programming control).
2) Make sure the LED is on.
3) Key in the **supercode** (see point 1), followed by "**E**".
4) Key in "**5**" (selection of **"block error"** function), followed by "**E**".
5) Key in the number of accepted errors (1-9), without "**E**".
6) Key in: "**1**" "**E**" if you wish an alarm signal to be transmitted when locking occurs. "**0**" "**E**" if no alarm signal is to be transmitted.
7) Check that the LED is turned off.

E.g.:
to programme locking after 3 errors without an alarm signal, key in the following:
0 E start of programming
12345 E supercode
5 E "error" function
3 number of incorrect attempts accepted
0 E no alarm signal

Enabling of "key" push-button
By short-circuiting terminals CK1 and CK2, e.g. by means of a timer, it is possible to activate relay 1 without forming the relay code, simply by pressing the "key" push-button on the keypad .

Reset input (FT3188 only)
Connecting RST input to the negative (-), operation of the keypad will block completely and all outputs will be deactivated (relays and alarms).

Remote input for enabling of push-button (for FT3328 only)
By connecting the contact **RK** to ground, Relay 1 is activated for 5 sec. The maximum distance for this contact is 20 metres.

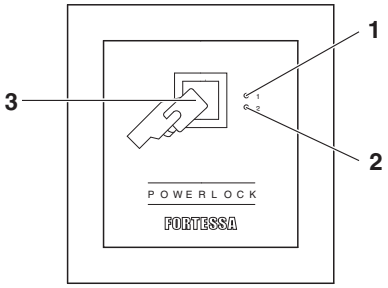
Terminal boards description:
~- ~+ power supply 12V DC/AC
CK1 contact enabling the "key" push-button
CK2 contact enabling the "key" push-button (for FT3188 only)
CK2 contact enabling the "key" push-button/negative (for FT3328 only)
+OUT positive not adjusted
AC- panic output , 500 mA max (FT3188 only)
AL- alarm output (and panic for FT3328) (500 mA max)
L2 L1 free (FT3188 only)
NO/2 relay 2
C/2 relay 2
NC/2 relay 2
NO/1 relay 1
C/1 relay 1
NC/1 relay 1
PGM programming input
RST remote reset input (FT3188 only)
GND - negative (FT3188 only)
RK remote input for enabling of key p. button (FT3328 only)

Proxinity device FT3335 and V/R FT3195.

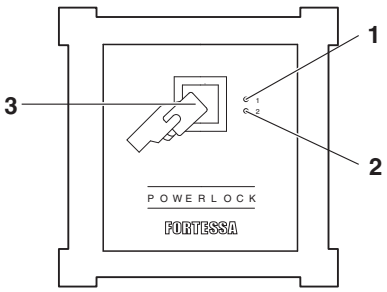
General information:

The Prox device FT3335 and FT3195 are extremely easy to install. It is possible to memorize 1 Master Card and up to 660 User Cards (expandable to a maximum of 2708 User Cards).
The module can be programmed by the user in two ways: using the programmer FT1028, or using the Mastercard (only some functions).

FT3335



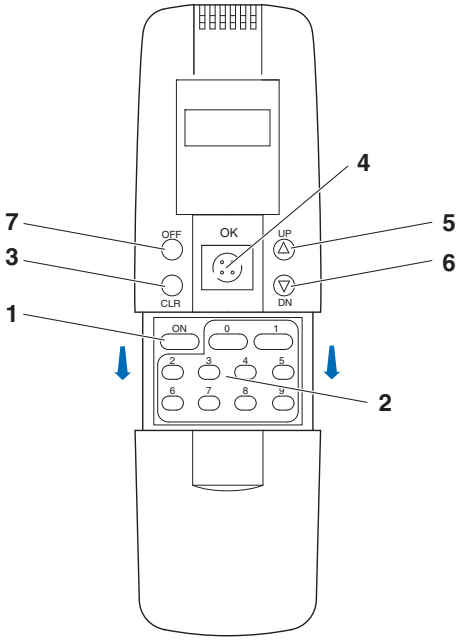
FT3195



1. Power supply LED (blue)
2. Programming LED (red)
3. Entrance key sensor

Terminal box description FT3335:
~ ~ power supply terminals
C NC NO electric lock connection terminals
CLR memory reset terminal
GND ground connection terminal
CHAN master card programming terminal
SP local door opener terminal

FT1028

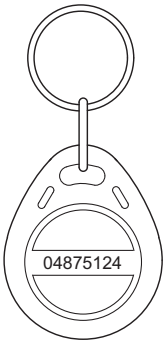


1. On button
2. Numerical keyboard
3. CLR button
4. OK button
5. UP button
6. DN button
7. Off button

FT1026

Badge programmable as access key

FT1027



Keychain programmable as acces key

MODULE INSTALLATION

To install module FT3335 please refer to the diagrams 13, 15 on pages 35, 37.

REGISTRATION OR CHANGING A MASTER CARD

When the module is turned on for the first time, it is necessary to register a Master Card:

OPERATION	DESCRIPTION
Connect terminal **CHAN** to terminal **GND** for 2 seconds	the buzzer will "bip" every second and the programming LED will flash at the same timing
Place the desired **master card** in front of the module *	the buzzer will "bip" continuously for 2 seconds and the module returns to standby mode

* If no card is placed in front of the module within 60 seconds, it automatically returns to standby mode

SETTING THE ADMINISTRATOR PASSWORD

To be able to use the programmer FT1028 it is necessary to set an administrator password:

OPERATION	DESCRIPTION
Place the Master Card in front of the module	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Press the ON button on the programmer FT1028	On the programmer the writing TCSTAR 7320 is displayed
Press the OK button	Access to the programming menu is granted
Scroll the menu using the UP or DN buttons till option: ChgPword. Press OK to select	
Insert a 6 digit password **twice** and press OK twice to confirm	The buzzer will "bip" continuously for 2 seconds
Exit the programming menu	

ENTER AND EXIT THE PROGRAMMING MENU

To enter and exit the programming menu it is possible to use either the Master Card or the Programmer FT1028.

Using the Master Card:

OPERATION	DESCRIPTION
Place the Master Card in front of the module To exit: Place the Master Card in front of the module again	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode) The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

Using the Programmer FT1028:

OPERATION	DESCRIPTION
Press the ON button on the programmer FT1028	On the programmer the writing TCSTAR 7320 is displayed
Press the OK button	Access to the programming menu is granted
Scroll the menu using the UP or DN buttons till option: Password. Press OK to select	
Insert the administrator password and press OK to confirm	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
To exit the programming menu scroll the menu using the UP or DN buttons till option: EndSetup. Press OK to select	The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

PROGRAMMING AN ACCESS KEY USING THE MASTER CARD

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Place the desired badge or keychain in front of the module	The buzzer will "bip" continuously for 2 seconds
Place the next badge or keychain to be programmed in front of the module Or: Exit the programming mode	The buzzer will "bip" continuously for 2 seconds The buzzer will "bip" continuously for 2 seconds and will return automatically to standby mode

PROGRAMMING AN ACCESS KEY USING THE PROGRAMMER FT1028

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Scroll the menu using the UP or DN buttons till option: Add Card. Press OK to select	The programmer requires to insert the number of the card or keychain to be registered
Insert the fist 10 digits written on the lower right corner of the badge or "00" followed by the 8 digits at the center of the keychain and press OK twice **ignore the digits after the comma on the badge**	The buzzer will "bip" continuously for 2 seconds if the card or keychain has been accepted Or: The buzzer will "bip" twice if the access key is already stored in memory
Exit the programming mode	The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

DELETING ALL ACCESS KEYS USING THE TERMINAL BOX

OPERATION	DESCRIPTION
Connect terminal GND to terminal CLR for 2 seconds	The buzzer will "bip" for a variable time, according to how many access keys are stored in memory (Max 8 min), and will return automatically in standby mode.

DELETING AN ACCESS KEY

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Scroll the menu using the UP or DN buttons till option: Del Card. Press OK to select	The programmer requests the number of the access key that is to be deleted
Insert the fist 10 digits written on the lower right corner of the badge or "00" followed by the 8 digits at the center of the keychain and press OK twice **ignore the digits after the comma on the badge**	The buzzer will "bip" for 2 seconds if the access key is deleted Or: the buzzer will "bip" twice if the access key is not stored in memory
Exit the programming mode	The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

DELETING ALL ACCESS KEYS USING THE PROGRAMMER FT1028

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Scroll the menu using the UP or DN buttons till option: Del All Press OK to select	The programmer requests the Master Card number
Insert the first 10 digits written on the lower right corner of the Master Card and press OK twice **ignore the digits after the comma on the badge**	The buzzer will "bip" for a variable time, according to how many access keys are stored in memory (Max 8 min).
Exit the programming mode	The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

CHANGING THE MASTER CARD USING PROGRAMMER FT1028

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Scroll the menu using the UP or DN buttons till option: ChgMcard. Press OK to select	The programmer requests the password for changing the Master Card
Insert the password 6789 and press OK twice	the buzzer will "bip" every second and the programming LED will flash at the same timing
Place the desired **master card** in front of the module *	the buzzer will "bip" continuously for 2 seconds and the module returns to standby mode

* If no card is placed in front of the module within 60 seconds, it automatically returns to standby mode

CHANGING THE ADMINISTRATOR PASSWORD

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Scroll the menu using the UP or DN buttons till option: ChgPword. Press OK to select	
Insert a 6 digit password **twice** and press OK twice to confirm	The buzzer will "bip" continuously for 2 seconds
Exit the programming mode	The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

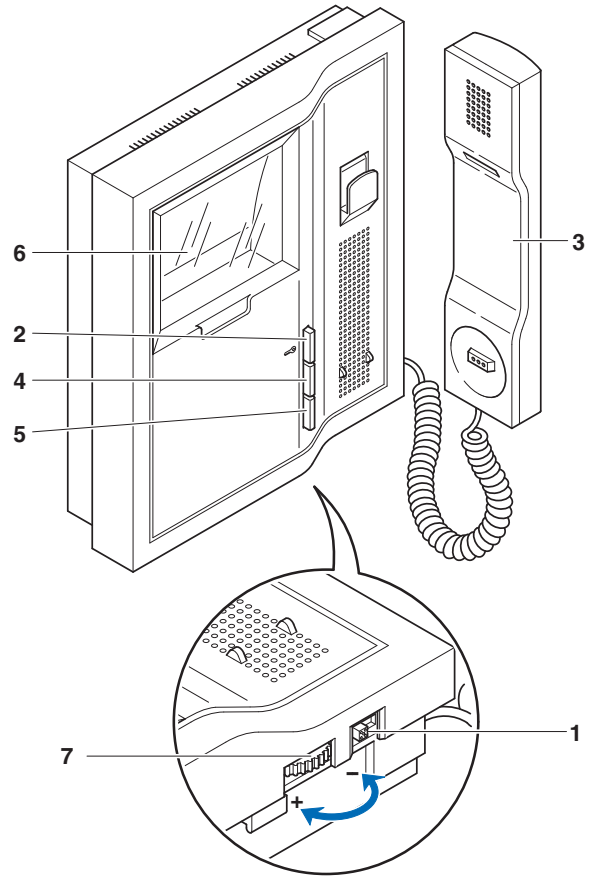
CHANGING THE RELAY LOCK TIME

It is possible to vary the relay lock timing (Min 01 seconds, Max 50 seconds)

OPERATION	DESCRIPTION
Enter the programming mode	The buzzer will "bip" every 3 seconds and the programming led will flash at the same timing (programming mode)
Scroll the menu using the UP or DN buttons till option: Chg Time. Press OK to select	The programmer requests the relay lock timing
Insert the 005 for 5 seconds and press OK twice	
Exit the programming mode	The buzzer will "bip" continuously for 2 seconds and will return automatically in standby mode

INTERNAL UNITS

Description of the monitors FT5801/FT5802 and user information.

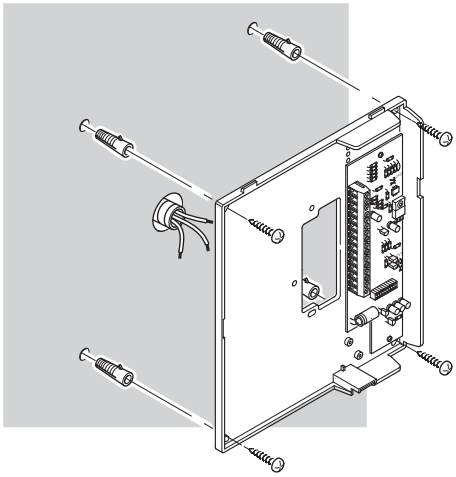


The monitor FT5801 (Black and white Monitor) and FT5802 (Colour Monitor) can be used as on bracket FT5705, and with desk conversion support FT5712.
For the installation and the cabling refer to the products just mentioned.

1. 3-position selector for Bell:
   Left-hand position: Bell at maximum volume.
   Central position: Bell at medium volume.
   Right-hand position: Bell at minimum volume.
2. Door-opening pushbutton .
3. Monitor handset (lift the handset to start communication).
4. Pushbutton available as standard, reference in terminal board. (Normally used for Self-ignition function).
5. Pushbutton available as standard (reference in terminal board P2C2).
6. 4” Black and white or 3,5" colour screen.
7. Brightness adjustment knob (turn counter-clockwise to increase brightness).

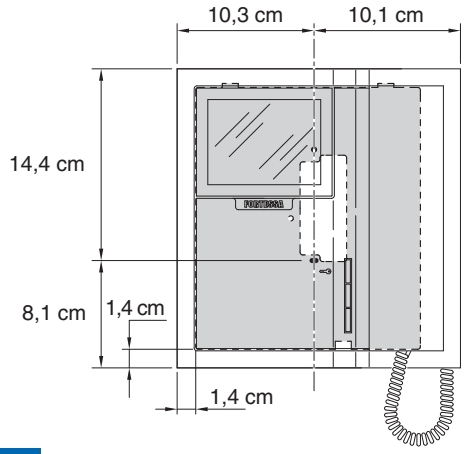
Instruction for installation of the internal units FT5801/FT5802.

Installation on wall with bracket FT5705 with 4 expansion anchoring screws



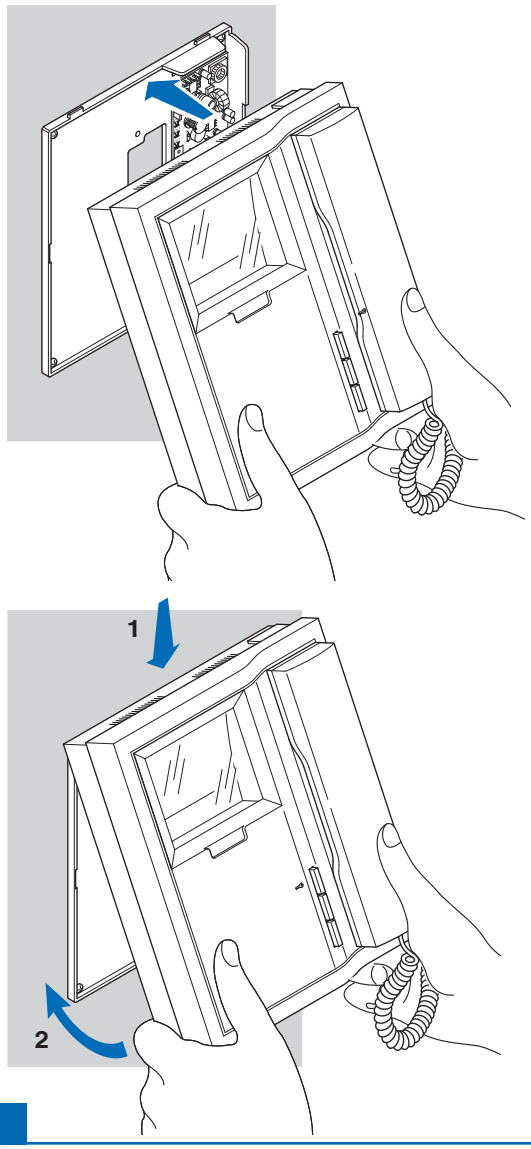
1

Overall dimensions of the Monitor



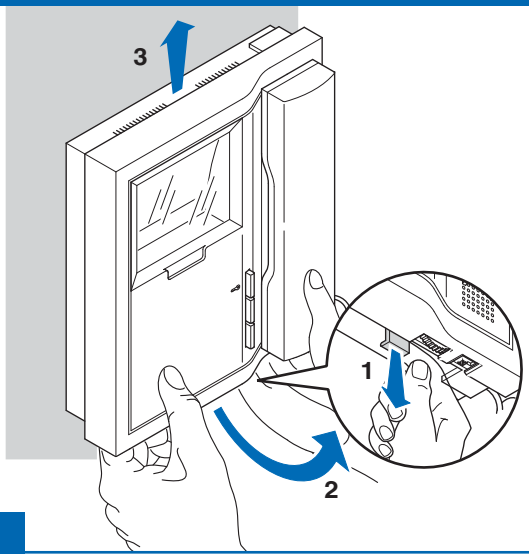
2

Monitor attachment procedure



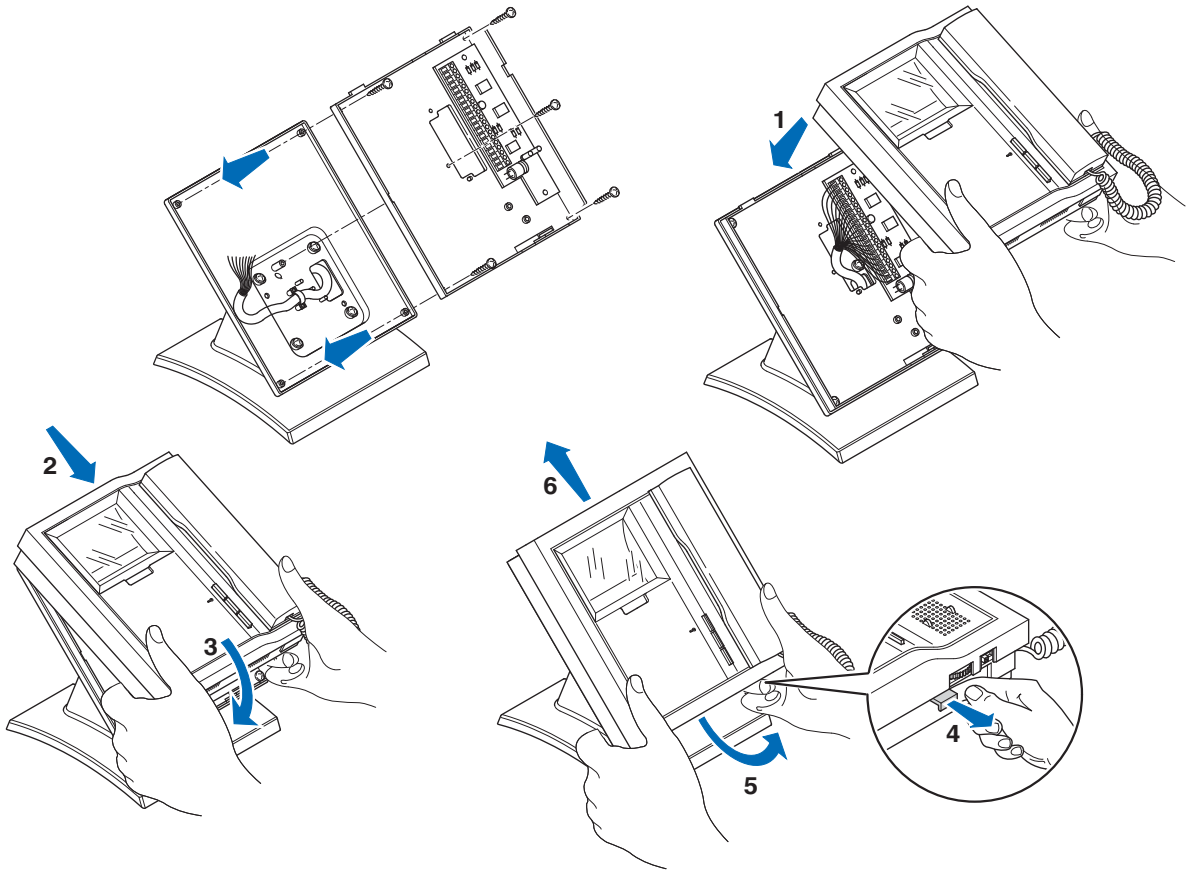
3

Procedure for removing the Monitor



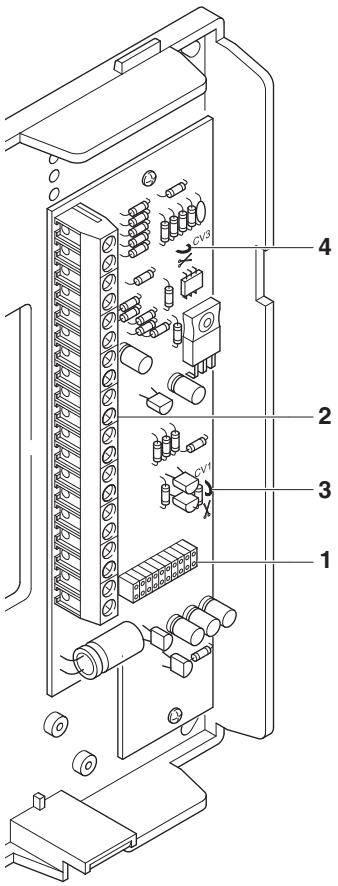
4

Installation of monitor on desk support FT5712



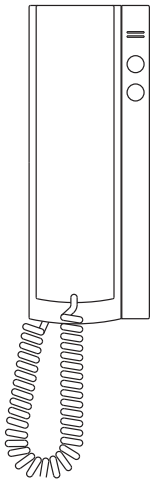
5

Technical characteristics of bracket FT5705 for FT5801/FT5802 monitors.

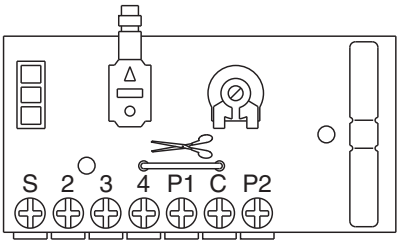


1. Bracket-Monitor connector.
2. Terminals for system connection:
   LED1 Not used.
   SD Input of intercom call signal.
   AI Connection terminal for activation of optional self-ignition function.
   + - Input of Monitor power supply positive (+) and ground (-).
   V SH / SH V Parallel Input/output for Video and screen signal.
   S Input for electronic call signal.
   2 Input for Monitor receiver.
   3 Output for Monitor microphone.
   4 Negative sound.
   P1 Door-opening pushbutton .
   C.NO. Contacts (24V-100mA max) Pushbutton 1 of the Monitor.
   P2 C2 Contacts **C.NO.**(24V-100mA max) Pushbutton 2 of the Monitor.
3. CV1 Bridge for 75 ohm closing of the video signal, to be cut in the case of cascade connection.
4. CV3 Bridge to be cut to prevent automatic ignition up of the Monitor on an external unit call.

Description of FT2402W telephone and terminal box.



Wall telephone 2402W
Telephone with electronic call, conversation button on the base, door opening push-button and supplementary push-button for additional services.
Dimensions: 85 x 223 x 65 mm.

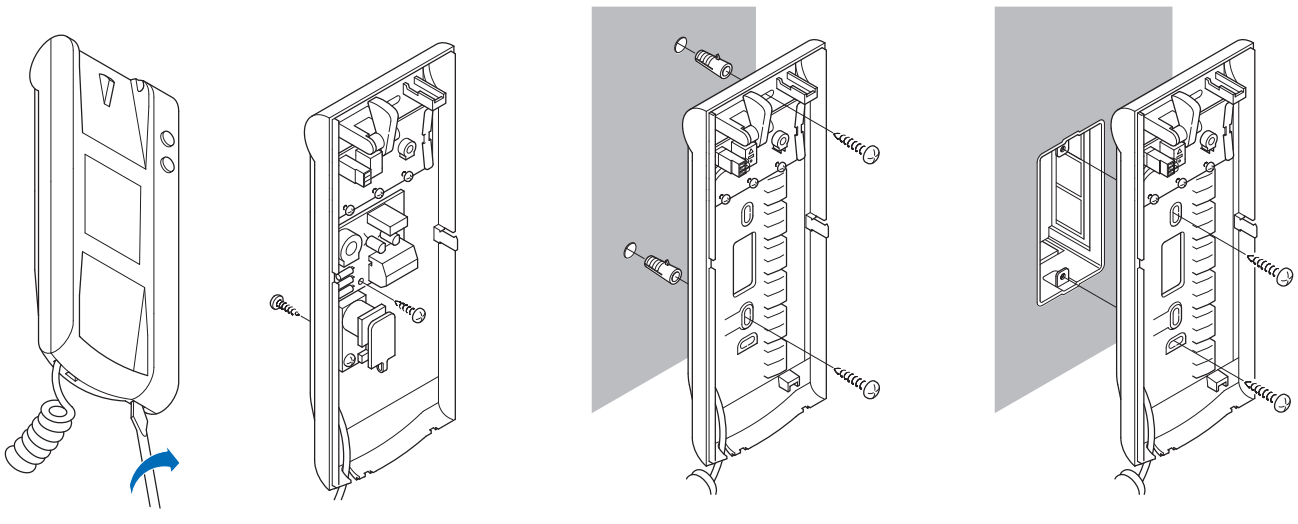


Terminal board description:
S electronic call
2 loudspeaker
3 microphone
4 common audio and services
P1 electric lock push-button
P2 push-button for auxiliary services
C common P1-P2 push-buttons

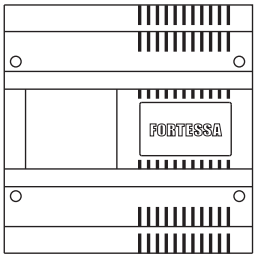

If the push-buttons are needed free of voltage, cut bridge 4-C on the terminal board.


Microphone volume adjustment.

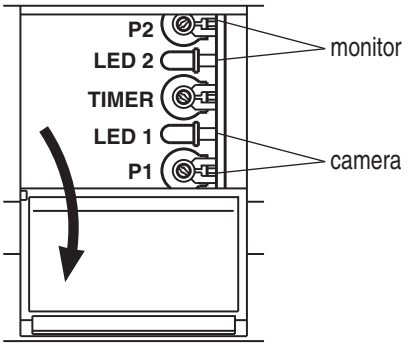
Instructions to install telephone FT2402W



Audio-video central power supply FT4594.



Audio-video central power supply, provides timed power supplies for door station camera and monitors as well as permanent power supply for speaker unit, for nameplate illumination lamps and electric lock. Complete with two call generators with different tones, self-test, protections against short-circuits and overloads.
24V AC power supply (use transformer FT1195).
Dimensions:140x140x67 mm (8 DIN modules).



Terminal board description:

Power

24-12-0 central power supply input

Audio

~*~ 12V AC, 1A for door opener and for a maximum of 4x3W nameplate lamps

+ - 10V DC, 200 mA for speaker unit with PTC protection. In case of short-circuits turn the power off for about 1 min., then power on

C electronic call generator for a maximum of 4 telephones in parallel

PS switch pilotC2 2nd call generator

PS2 2nd switch pilot

Start

IN-OUT start input/output

+S 16V DC start output

R timer reset

Camera

LL NC contact with power on

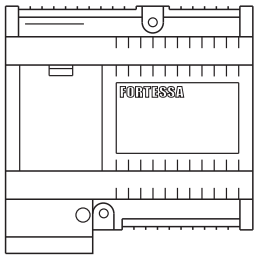
- + The presence of voltage is indicated by a green LED which is visible when the inspection door is opened. P1 current adjustment.

Monitor

+ - 19V DC output of monitors and distributors power supply 1.4 A max.

The presence of voltage is indicated by a red LED which is visible when the inspection door is opened. P2 current adjustment.

Power supply FT1538.



For audio door entry system.
Complete with call generator and 200mA fuse for primary protection. It is visible by opening the inspection door.
Dimensions: 105 x 95 x 65 mm (6 DIN modules).

Terminal board description:

0-230 mains power supply 12VAC, 30VA for door opener and for a maximum of 4x3W nameplate lamps.

+ - 10VDC for the audio with self-protection.

C electronic call generator for a maximum of 4 telephones in parallel.

PS switch pilot.

GENERAL INSTRUCTIONS FOR AUDIO DOOR ENTRY SYSTEM INSTALLATION, TEST AND OPERATION

Systems

The possible systems are subdivided as follows:
audio door entry systems with one or more entrances.
Intercom door entry systems.

FORTESSA constructs any type of special audio door entry system at the customer's request.
In this case, it is essential for the customer to provide all possible information, particulary with regard to the functions of the system and distances covered.

Ducts and conductors

Connections of equipment can either be run through ducts or left visible. We recommend that the audio door entry system conductors should not to be run through piping containing other voltage-carrying or high powered conductors to ensure there are no bad noises in the audio.
The diagrams indicate two types of conductor, with fine and bold line indications depending on the function. The cross-sections indicated in the table below depend on the distances involved:

Conductors	m **20**	m **50**	m **100**	m **200**	m **300**	
2, 3, S	0,30 6/10	0,50 8/10	0,80 10/10	1,00 12/10	1,50 14/10	mm² Ø
4 P1 ~ ~*	0,60 9/10	0,80 10/10	1,00 12/10	1,50 14/10	2,00 16/10	mm² Ø

With distances of over 100 metres, it is indispensable to carry out variation 20 on page 40 to avoid drops in voltage in the electric lock circuit.

General recommendations for installation

- Carefully read and follow the instructions given by the manufacturer.
- All the equipment making up the installation must only be used for the purpose it was built for.
- Install the equipment in compliance with the legislation in force.
- Disconnect the equipment from the electric power supply before carrying out any cleaning or main-tenance operations.
- Do not cover or obstruct any ventilation or heat dissipation openings or vents.
- In case of a fault and/or incorrect operation of the equipment, disconnect it from the power supply and do not tamper with it. For any repair work, only contact a technical service center authorized by the manufacturer.
- Make sure that the installation power supply is fitted with a thermomagnetic circuit-breaker.
- Check that the identification label of the equipment corresponds with the mains data before making any connections.
- Only use power supplies for the purpose they were built for, i.e. supply the audio door entry systems. The manufacturer shall not be held responsible for any damage caused by incorrect, improper or unreasonable usage.
- Keep this document attached to the power supplies at all times.

Caution note for users

- Do not open or tamper with the telephones - high voltage equipment.
- Do not connect voltage exceeding 24V AC - 48V DC to the telephones.
- In case of a fault, any modification to the system, repair work etc. must be carried out exclusively by the authorized installation technician.

Declaration of conformity

All the products comply with the requirements of the 2006/95/CE directives (which replace the 73/23/CEE directives and the successive amendments). This is proved the CE mark on the products.

After-sales service

FORTESSA designs and manufactures high quality equipment for door entry telephones, audio and video
door entry phone systems, access control systems and CCTV systems, which are sold all over the world.
Should you require any information or assistance now or in the future, please do not hesitate to contact your local supplier.
FORTESSA reserves the right to change the characteristics and dimensions of the equipment without prior warning.

Testing the system

- Make sure the system is correctly Installed in compliance with the diagram selected and that the cross-sections of the conductors are as indicated on page 18.
- Make sure there are no short-circuits in the system by using the appropriate instruments.
- Connect the power supplies to the mains supply checking that the value is not more than 10% above or below the rated current.
- Check operation of the telephone:
  the call and relative adjustment, conversation and electric lock button.
- The speaker unit has been adjusted to obtain optimum amplification. If there should be any Larsen effect, turn down the volume of the external speaker unit slightly, using the adjustment on the speaker unit.
- Should there be any irregularity in operation, refer to the section on "Troubleshooting" on page 20.

GENERAL INSTRUCTIONS FOR AUDIO/VIDEO DOOR ENTRY SYSTEM INSTALLATION, TEST AND OPERATION

Systems

The possible systems are subdivided as follows:
video door entry systems with one or more entrances, with or without picture call-up on the monitor (automatic switch-on);
intercom video door entry systems with picture call-up on the monitor (automatic switch-on).
Self-ignition function is recomended for system with max 4 users.

FORTESSA constructs any type of special video door entry system at the customer's request.
In this case, it is essential for the customer to provide all possible information, particulary with regard to the functions of the system and distances covered.

Ducts and conductors

Connections of equipment can either be run through ducts or left visible. We recommend that the video door entry system conductors should not to be run through piping containing other voltage-carrying or high powered conductors to ensure there are no bad noises in the audio or disturbed pictures on the monitor.
The diagrams indicate two types of conductor, with fine and bold line indications depending on the function. The cross-sections indicated in the table below depend on the distances involved:

Conductors	m **20**	m **50**	m **100**	m **200**	m **300**	
———	0,30 6/10	0,50 8/10	0,80 10/10	1,00 12/10	1,50 14/10	mm² Ø
4 P1 ~ ~*	0,60 9/10	0,80 10/10	1,00 12/10	1,50 14/10	2,00 16/10	mm² Ø
+ - Monitor	0,60 9/10	0,80 10/10	1,00 12/10	1,50 14/10	2,00 16/10	mm² Ø
------⟨⟩------	Coaxial cable		75 ohm RG 59U			

With distances of over 100 metres, it is indispensable to carry out variation 20 on page 40 to avoid drops in voltage in the electric lock circuit.

Transportation and distribution of the video signal

The video signal is transported by means of the coaxial cable with low loss 75 ohm impedance (see cable RG 59U) over a maximum distance of 300 m. For greater distances, add the video and synchronism amplifier/corrector FT4374, which should be installed approximately half way along. The wiring diagram is supplied with the equipment.
For distribution of the video signal, use a video distribution amplifier FT4555/A, which gives distribution
for 4 monitors directly from the riser. The unused outputs must remain open. The last distributor must have
75 ohm closing resistance at terminal EX, while this must be removed for the transit distributors (see basic diagram 4 on page 26).
For distribution of the video signal on several risers and in cascade, see variant 30 on page 45.

General recommendations for installation

- Carefully read and follow the instructions given by the manufacturer.
- All the equipment making up the installation must only be used for the purpose it was built for.
- Install the equipment in compliance with the legislation in force.
- Disconnect the equipment from the electric power supply before carrying out any cleaning or main-tenance operations.
- Do not cover or obstruct any ventilation or heat dissipation openings or vents.
- In case of a fault and/or incorrect operation of the equipment, disconnect it from the power supply and do not tamper with it. For any repair work, only contact a technical service center authorized by the manufacturer.
- Make sure that the installation power supply is fitted with a thermomagnetic circuit-breaker.
- Check that the identification label of the equipment corresponds with the mains data before making any connections.
- Only use power supplies for the purpose they were built for, i.e. supply the audio and video door entry systems. The manufacturer shall not be held responsible for any damage caused by incorrect, improper or unreasonable usage.
- Keep this document attached to the power supplies at all times.

Caution note for users

- Do not open or tamper with the monitors - high voltage equipment.
- Any shock or impact to the monitors could break the screen.
- Use only a dry cloth for cleaning the screen.
- Do not connect voltage exceeding 24V AC - 48V DC to the monitors.
- In case of a fault, any modification to the system, repair work etc. must be carried out exclusively by the authorized installation technician.

Declaration of conformity

All the products comply with the requirements of the 2006/95/CE directives (which replace the 73/23/CEE directives and the successive amendments). This is proved the CE mark on the products.

After-sales service

FORTESSA designs and manufactures high quality equipment for door entry telephones, audio and video
door entry phone systems, access control systems and CCTV systems, which are sold all over the world.
Should you require any information or assistance now or in the future, please do not hesitate to contact your local supplier.
FORTESSA reserves the right to change the characteristics and dimensions of the equipment without prior warning.

Testing the system

- Make sure the system is correctly Installed in compliance with the diagram selected and that the cross-sections of the conductors are as indicated on page 19.
- Make sure there are no short-circuits in the system by using the appropriate instruments.
- Connect the power supplies to the mains supply checking that the value is not more than 10% above or below the rated current.
- Check operation of the monitor.
  For audio: the call and relative adjustment, conversation and electric lock button.
  For video: adjust contrast and brightness to get a good picture.
- The speaker unit has been adjusted to obtain optimum amplification. If there should be any Larsen effect, turn down the volume of the external speaker unit slightly, using the adjustment on the speaker unit.
- For further testing, insert a milliammeter in series to the conductor + monitors on output from the supply to check if absorption of the individual monitors is correct.
- Should there be any irregularity in operation, refer to the section on "Troubleshooting".

TROUBLESHOOTING

Should any problem occur with operation of the system, follow the instructions below:

- check the presence of mains voltage of the power supplies and make sure this is within 10% of the rated voltage;
- check the audio part and the presence of DC and AC output voltages.In case of a short-circuit, the voltages are protected by the PTC and are annulled. To reset, remove the mains voltage for approx. 1 minute, eliminate the short-circuit and restore mains voltage;
- check the video part, and the presence of output voltages for the door station camera and monitors after making a call.
  The voltages are indicated in central power supply FT4594 by a green LED and red LED respectively which are visible by opening the inspection door.
- check there have been no modifications to the system. If any modification has been carried out, make sure this is compatible with the functioning of the system.

POSSIBLE FAULTS FOR ALL TYPES OF SYSTEM

AUDIO
Fault / Probable damage and relative remedy

- Audio of one handset is poor on the external unit /
  The handset for that handset is faulty. Replace.

- The audio on all handsets is poor on the external unit /
  1. External volume of the speaker unit is set at too low a level.
  2. The external unit is faulty. Replace.

- Reception on a handset is poor /
  The handset for that handset is faulty. Replace the speaker unit.

- Reception on all handsets is poor /
  1. The internal volume of the speaker unit is set at too low a level.
  2. The external unit is faulty.Replace.

- The audio between the external unit and the handset is poor from both sides /
  1. The volume of the speaker unit is set at too low a level.
  2. The conductors connected to terminals 2 and 3 are in short-circuit.
  3. The speaker unit is faulty.Replace.
  4. The power supply gives a voltage of below 10V DC.Replace.

• No reception on a handset /
The wires of terminals 2, 3 and 4 of the handset in question are not connected or are interrupted.

• There is a background noise at 50Hz throughout the system /
  1. The system cables have been ducted over a long distance with conductors supplying high-powered alternating current loads.
  2. Loads have been incorrectly connected on the speaker unit + - circuit.

- The electronic call from the external unit does not reach a handset/
  1. The call wire between the external unit and the handset (terminal S) is interrupted.
  2. The call button on the external unit for the handset in question is faulty.
  3. The handset speaker unit is faulty. Replace.

- The electronic call does not reach any of the monitors /
  1. The wire connecting terminal C of the central power supply to the common of the call buttons is interrupted.
  2. The call generator of the central power supply is faulty. Replace the central power supply.

- The electric lock does not work /
  1. The wire connecting the electric lock to terminal P1 of the handset is interrupted.
  2. The wire connecting the second end of the lock to the terminal ~ is interrupted.*
  3. The cross-section of wires 4 and P1 is insufficient. Follow variation 20 on page 40.
  4. The power supply does not produce sufficient voltage owing to the fact that more than 4 nameplate lights have been connected on the external unit. Follow variation 17 on page 39.
  5. The handset push-button marked with the key symbol is faulty. Replace.

VIDEO
Fault / Probable damage and relative remedy

- A monitor switches on but gives no picture /
  1. *The distribution amplifier involved is not supplied with voltage at the + terminal.*
  2. *The coaxial cable from the distribution amplifier to the monitor is interrupted or in short-circuit.*
  3. *The output is faulty on the shunt involved.Connect the coaxial cable to a free output or, if there is no free output, replace shunt.*
  4. *The monitor is faulty. Replace.*

- All monitors switch on but give no picture/
  1. *All distributors are not supplied with voltage at the + terminal.*
  2. *The coaxial cable of the riser is disconnected.*
     To check this, disconnect the coaxial cable from the door station camera and, using an appropriate instrument, measure the cable resistance, which should be 75 ohm (closing resistance on the last distributor).
  3. *No power supply to the door station camera. Check presence of 13V DC voltage to the + and - terminals of the door station camera module.*
  4. *The door station camera is faulty. Replace the module.*

- Monitor does not switch on when a call is made/
  1. *19VDC voltage does not reach monitor. Check continuity of + and - conductors.*
  2. *Bridge has not been made between terminal S and AC of the monitor.*
  3. *Monitor is faulty.Replace.*

- Automatic monitor switch-on does not occur /
  The conductor relative to the START OUT of the central power supply FT4594 is not connected to the monitors.

- None of the monitors switch on when called/
  1. *The conductors of the + and - terminals in riser are disconnected.*
  2. *The central power supply does not produce 19VDC voltage to + and - terminals of the monitor.Replace the central power supply.*

- The picture on the monitors is out of focus or gives a shadow effect /
  1. *The coaxial cable is not 75 ohm.*
  2. *Distribution of the signal is not correct.*
  3. *The 75 ohm resistance is not present on the last distributor of the riser.*

POSSIBLE FAULTS IN SYSTEMS WITH 2 OR MORE EXTERNAL UNITS

Fault / Probable damage and relative remedy

- One external unit is always excluded /
  1. *Check the precision of the connection of the conductors relative to terminals CP1-CP2-CP(IN1)-CP(IN2) of switching device FT4551/B.*
  2. *Switching device FT4551/B is not energized. Check whether there is 12VAC at terminals ~L~*.*
  3. *Switching does not occur because device is faulty. Replace.*

- Audio-video communication is coming from the wrong external unit/
  The conductors for terminals CP(IN1) and CP(IN2) have been inverted to switching device FT4551/B.

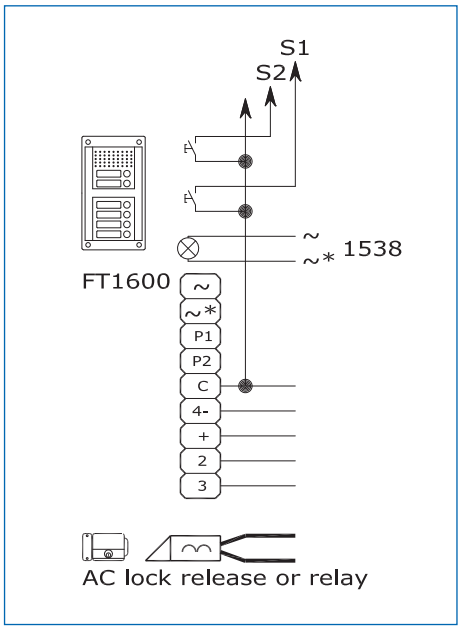
WIRING DIAGRAMS

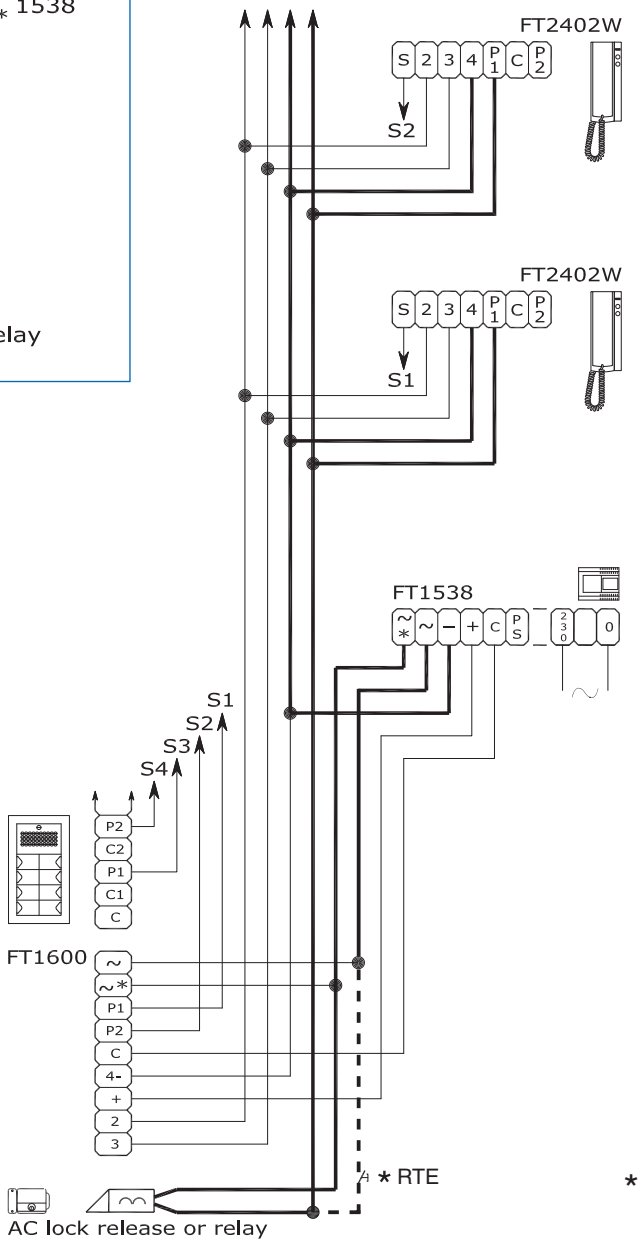
Conductors	m **20**	m **50**	m **100**	m **200**	m **300**	
2, 3, S	0,30 6/10	0,50 8/10	0,80 10/10	1,00 12/10	1,50 14/10	mm² Ø
4 P1 ~ ~*	0,60 9/10	0,80 10/10	1,00 12/10	1,50 14/10	2,00 16/10	mm² Ø
+ - Monitor	0,60 9/10	0,80 10/10	1,00 12/10	1,50 14/10	2,00 16/10	mm² Ø
------⊖------	Coaxial cable 75 ohm RG 59U					

VARIATIONS OF SYSTEM DIAGRAMS

Diagram 1

Basic system with 1 audio entrance.





* Only required if local exit button (RTE) is used

See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 2

Door entry system with 2 external units.

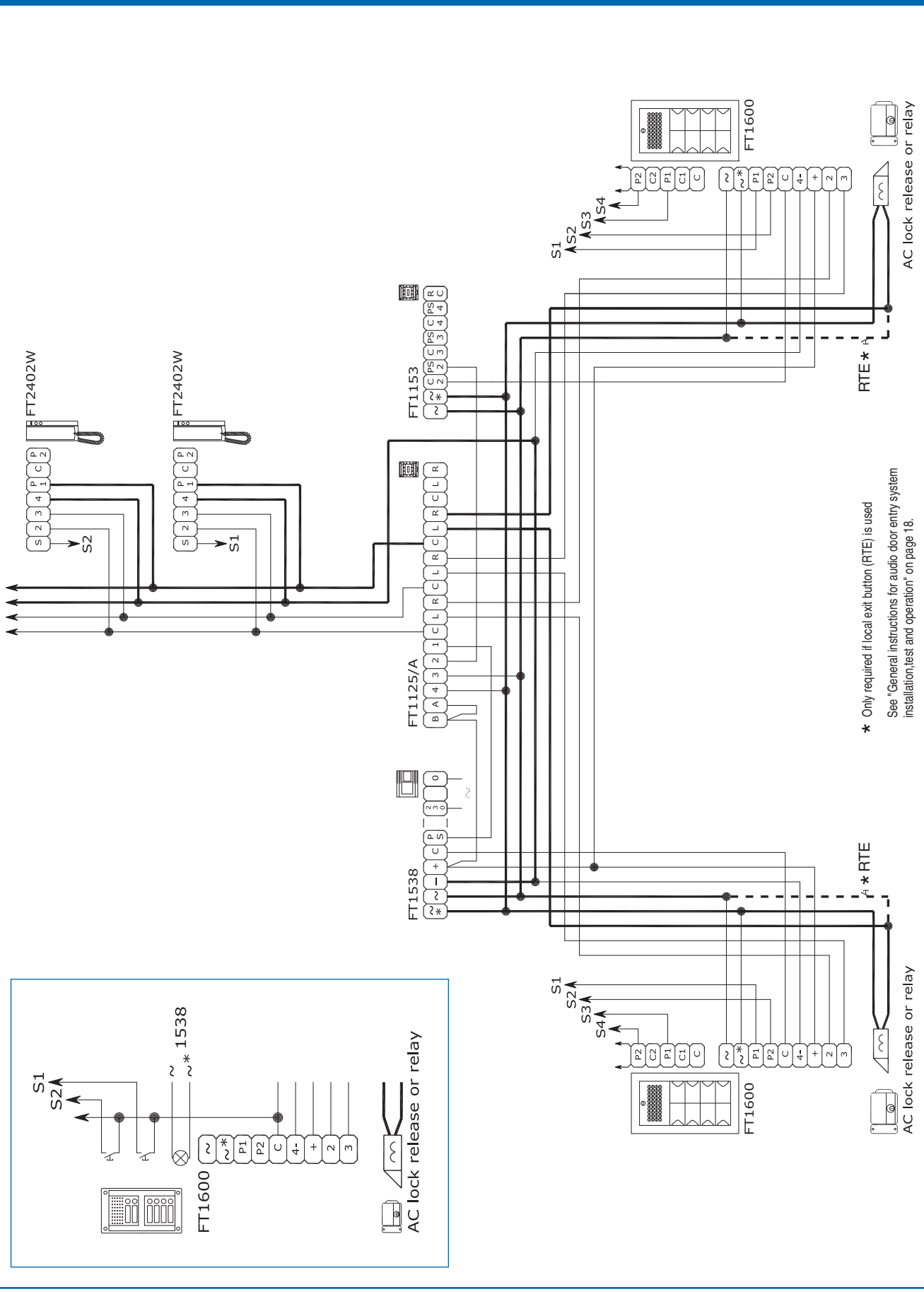
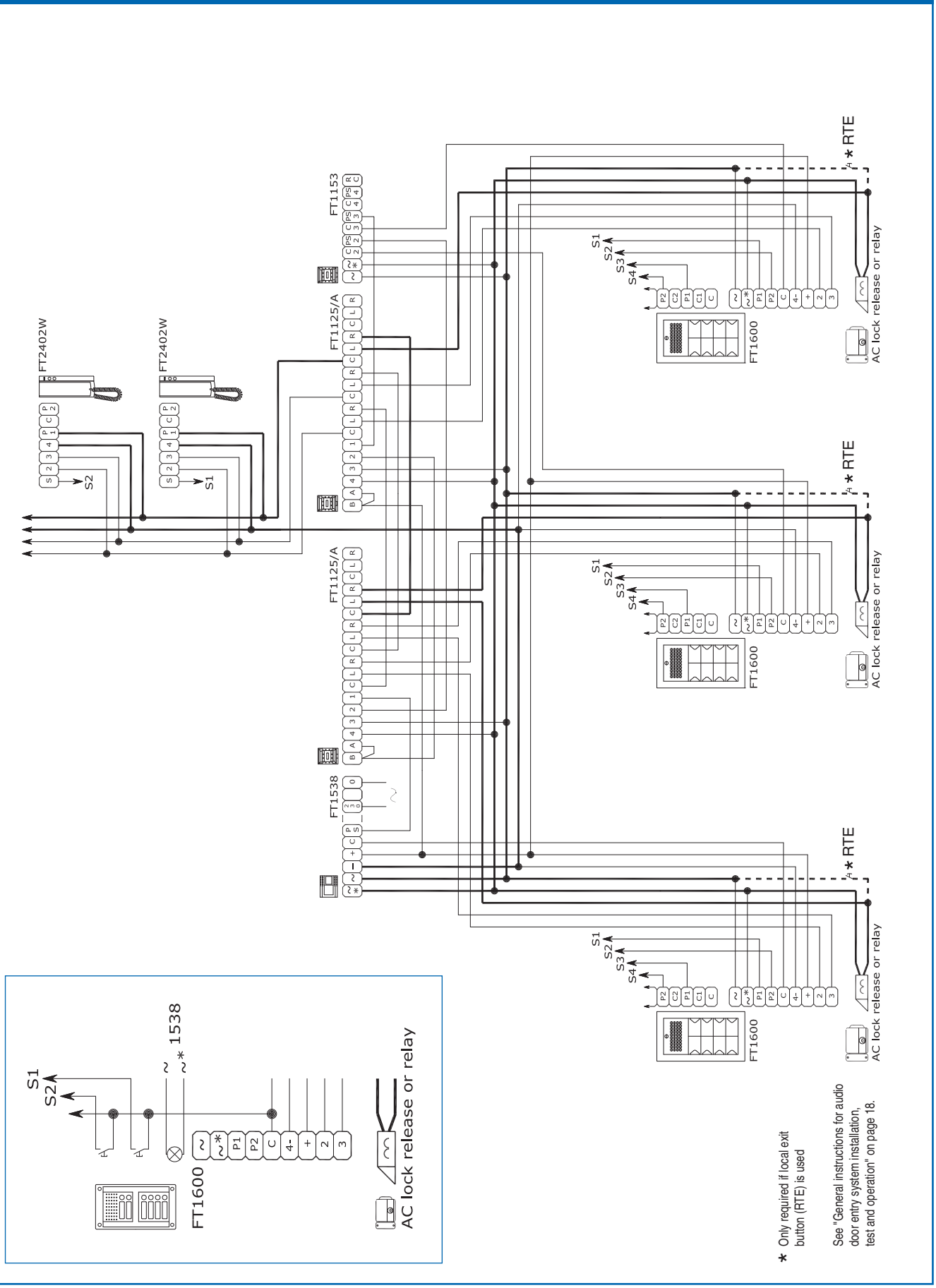


Diagram 3

Door entry system with 3 external units.

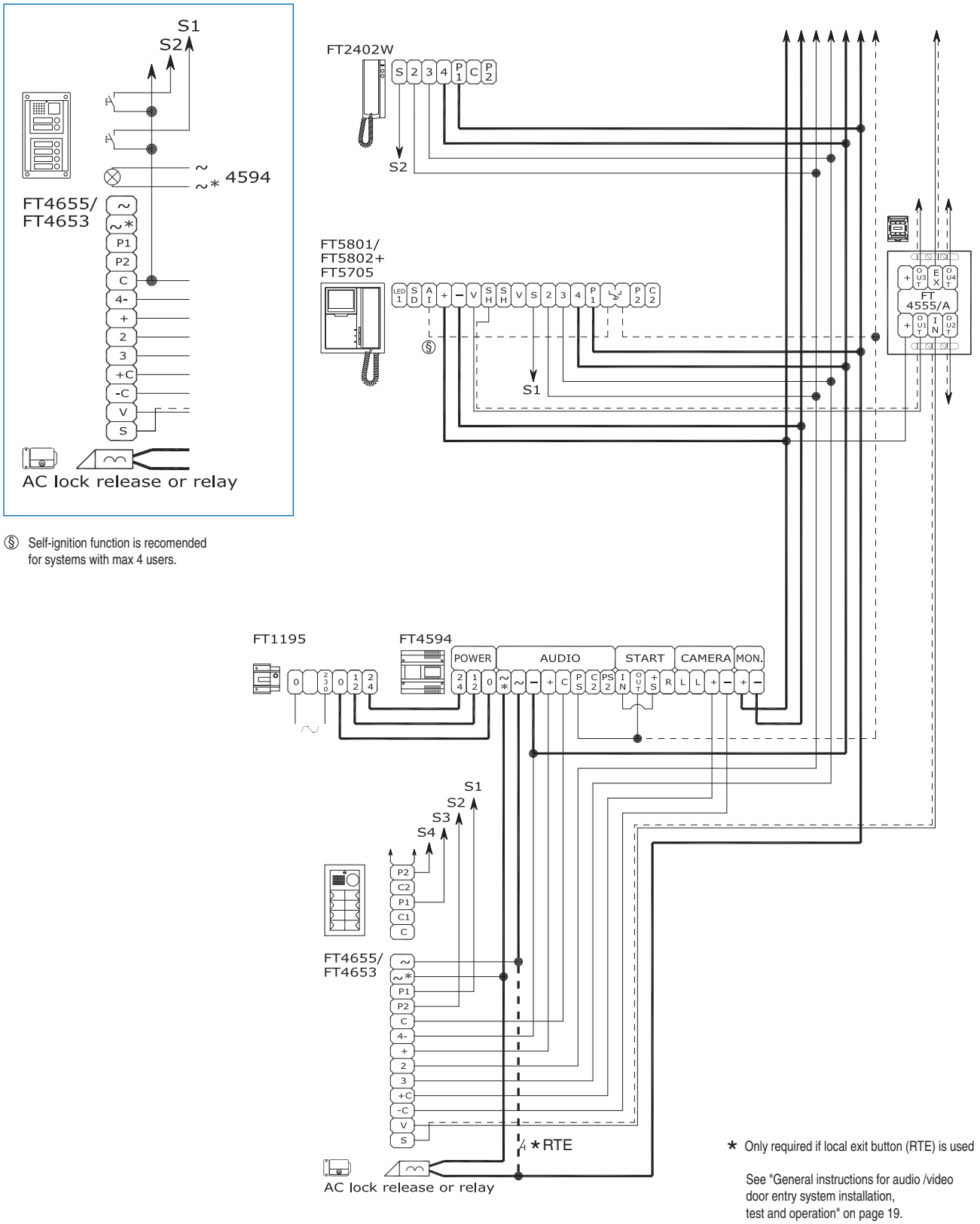


* Only required if local exit button (RTE) is used

See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 4

Basic system with 1 audio-video entrance.



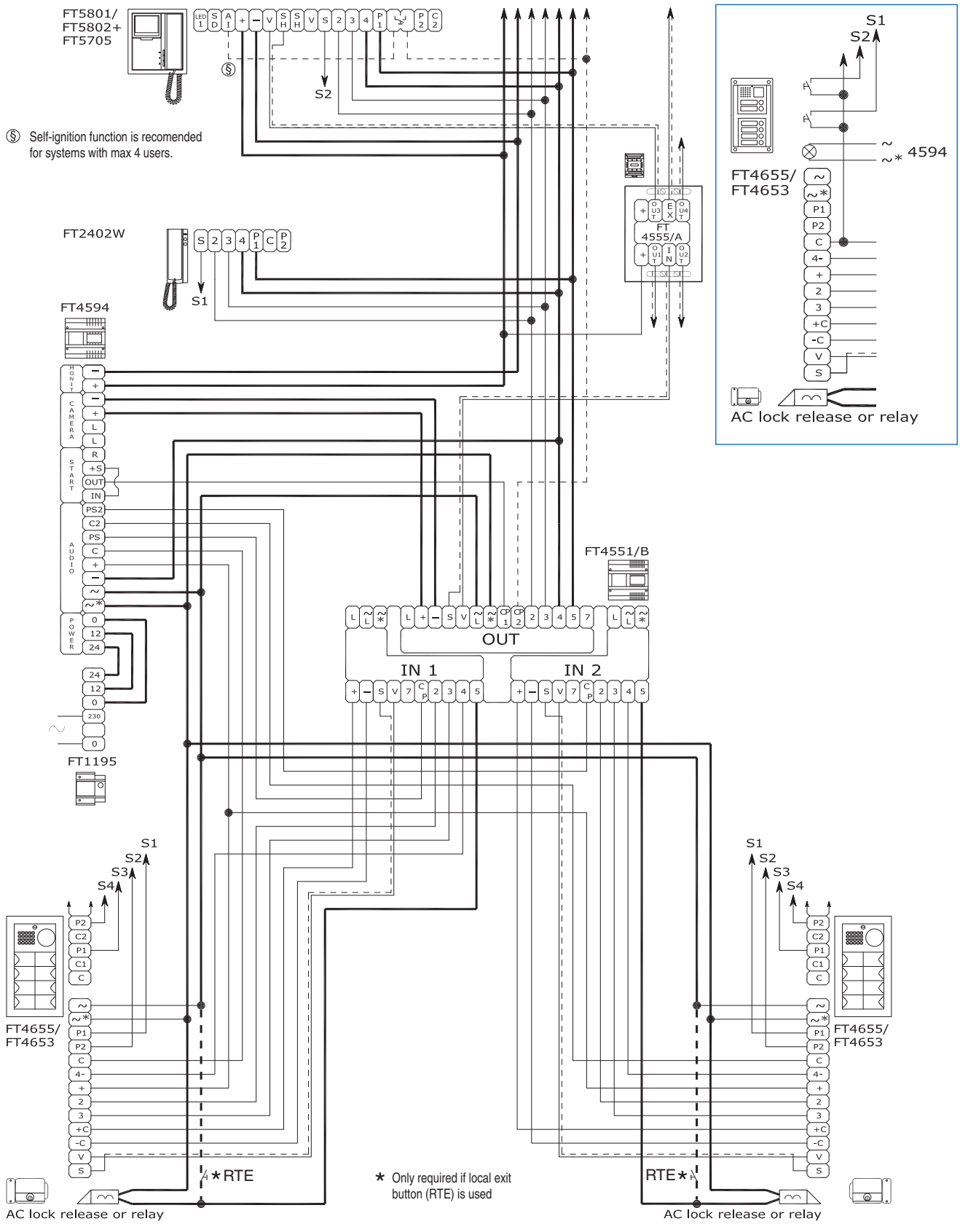
§ Self-ignition function is recomended for systems with max 4 users.

* Only required if local exit button (RTE) is used

See "General instructions for audio /video door entry system installation, test and operation" on page 19.

Diagram 5

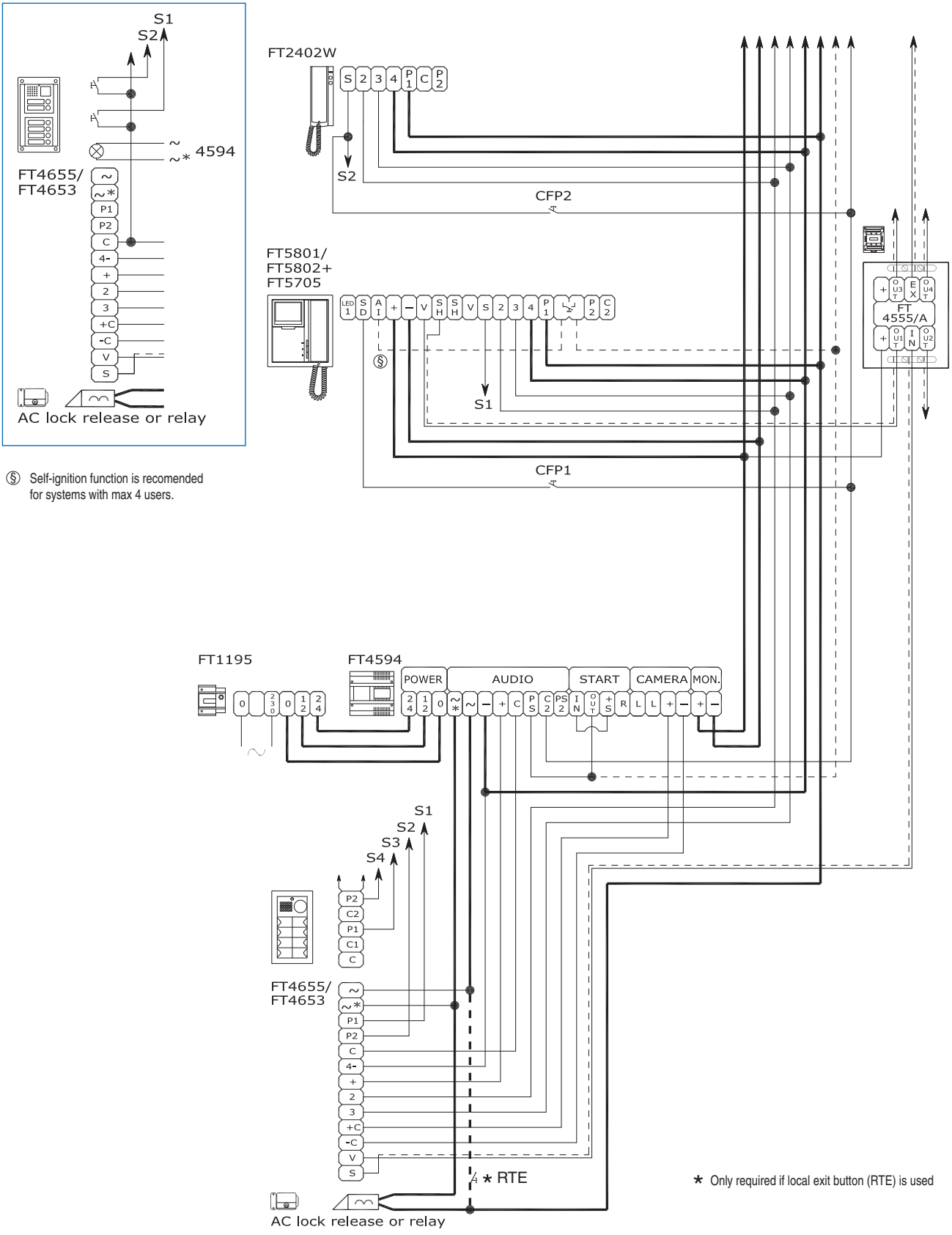
System with two entrances audio-video.



See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 6

Basic video entry phone system with door bell.



§ Self-ignition function is recomended for systems with max 4 users.

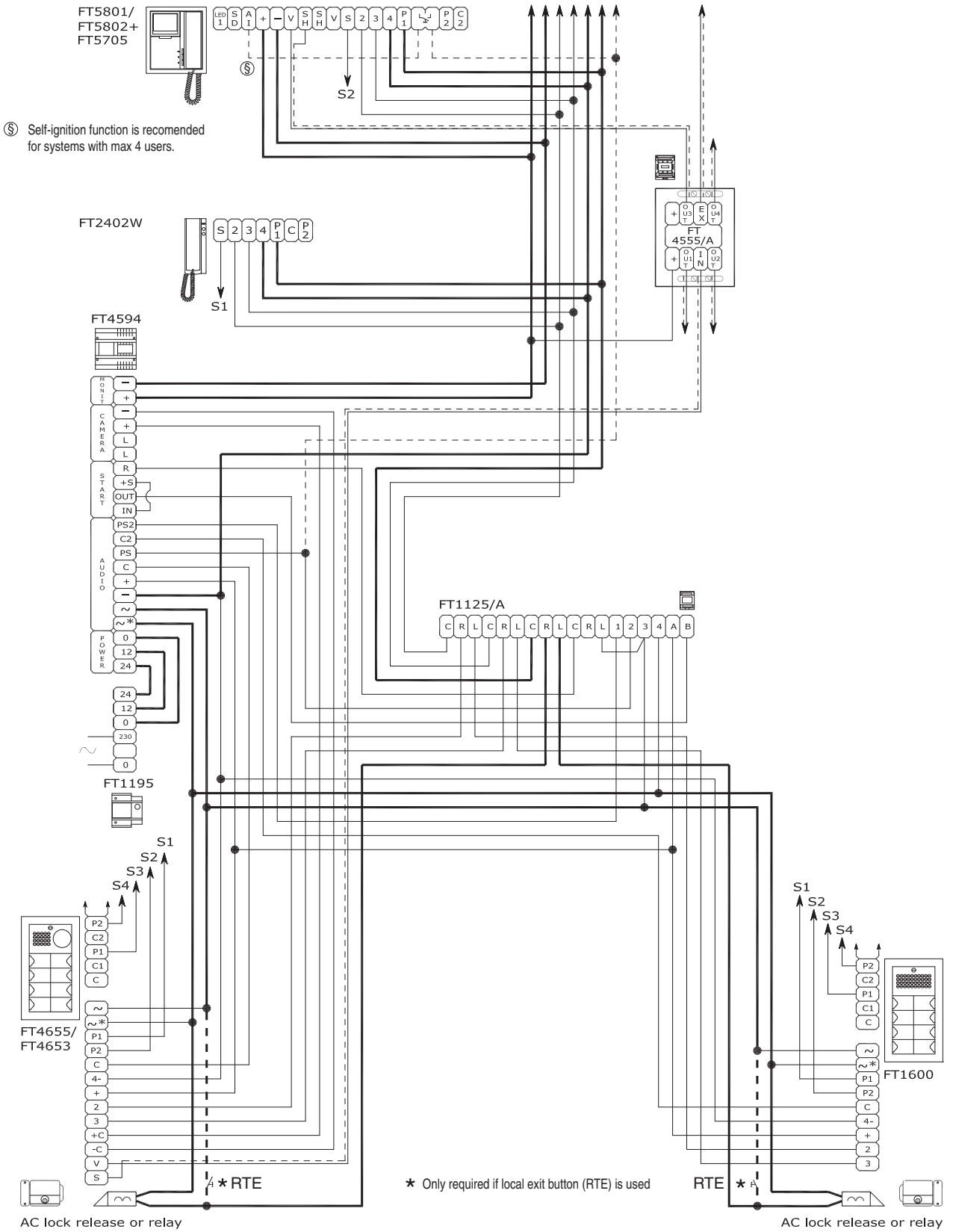
* Only required if local exit button (RTE) is used

See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 7

System with 2 external units, one of which has audio only and automatic switch-on.

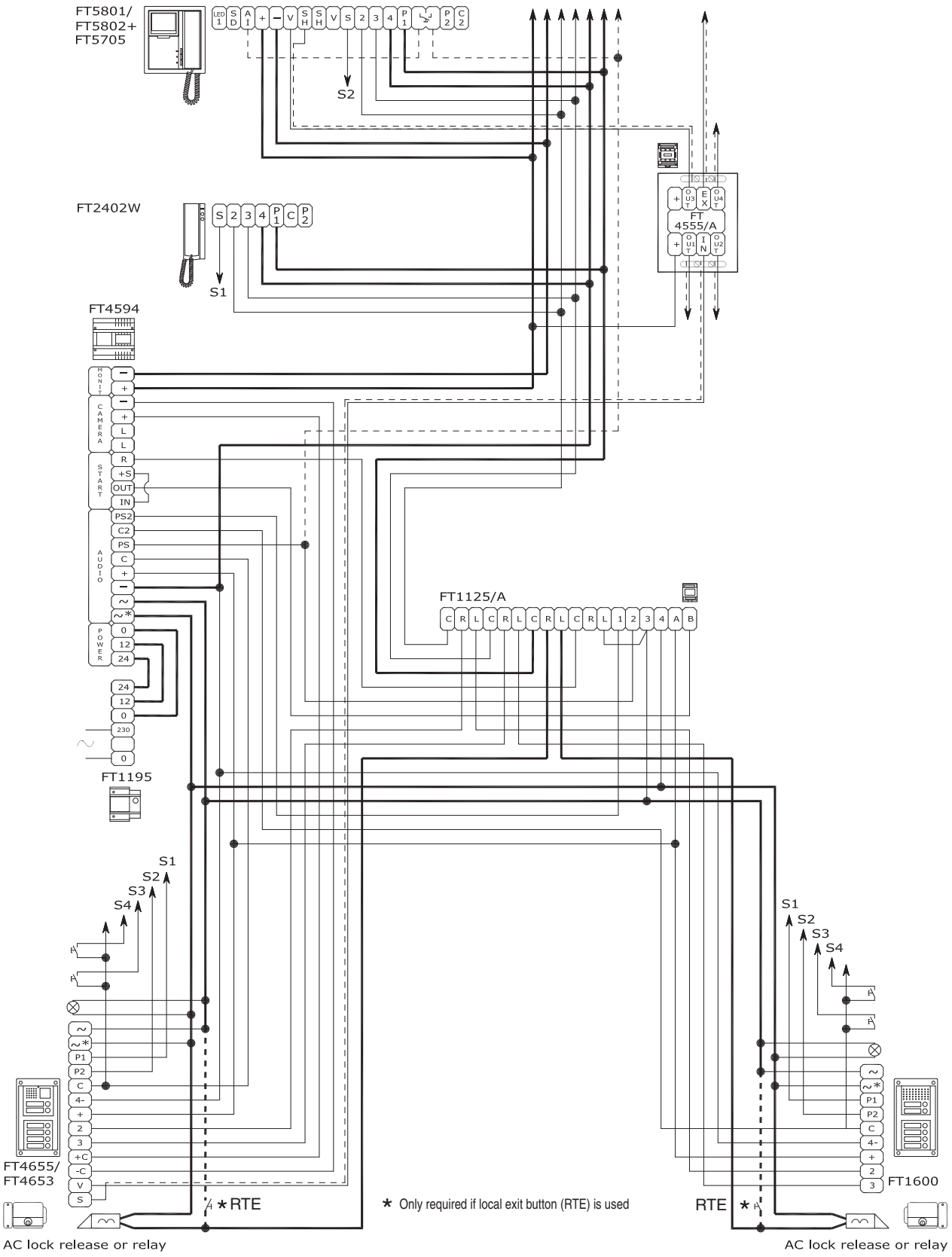
See diagram 8 for V/R solution.



See "General instructions for audio and audio/video door entry system installation, test and operation" on page 19.

Diagram 8

System with 2 external units, one of which has audio only and automatic switch-on - V/R panel.

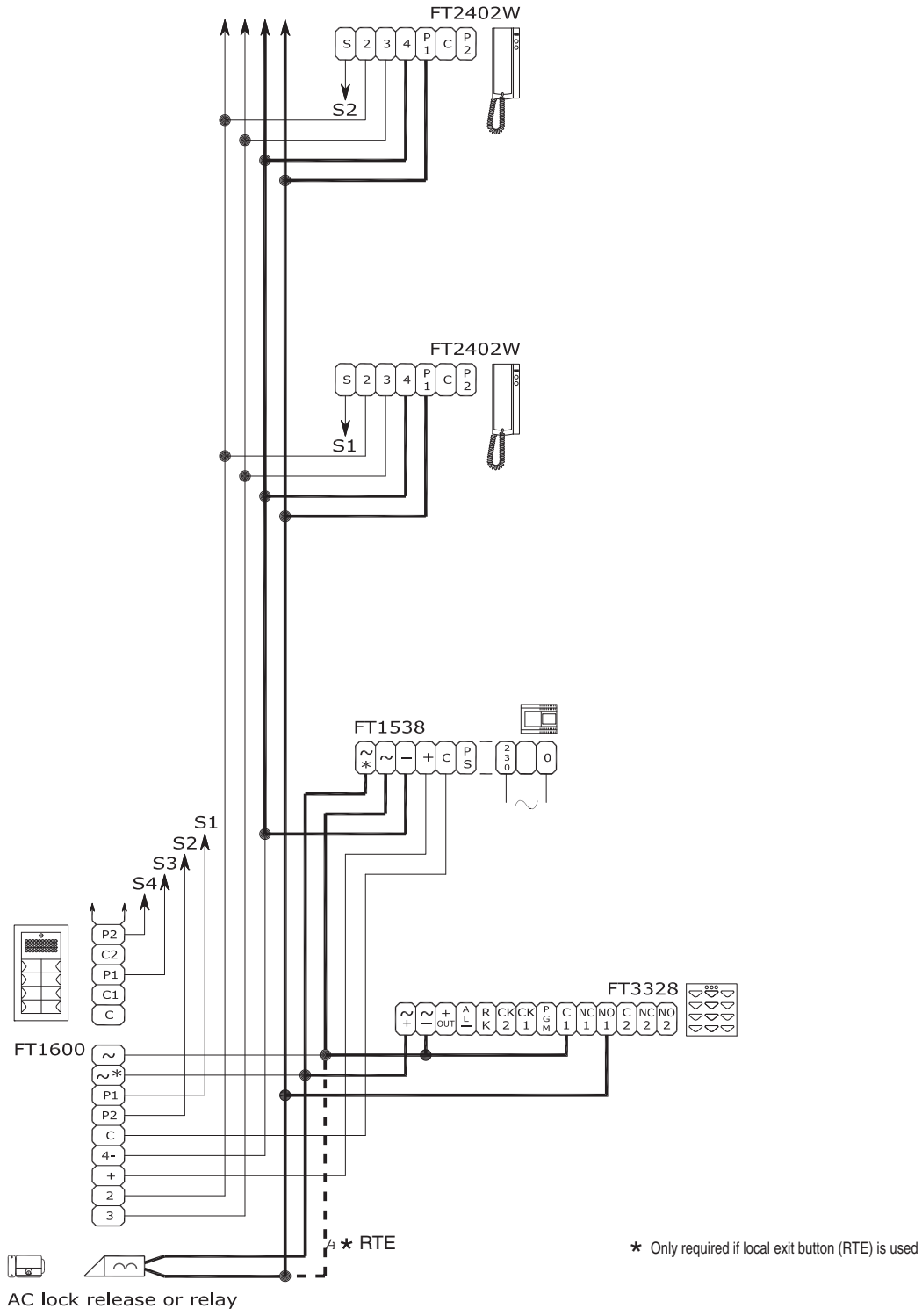


See "General instructions for audio and audio/video door entry system installation, test and operation" on pages 18, 19.

Diagram 9

Standard combined access electronic key system in traditional cabling door entry systems.

See diagram 10 for V/R solution.

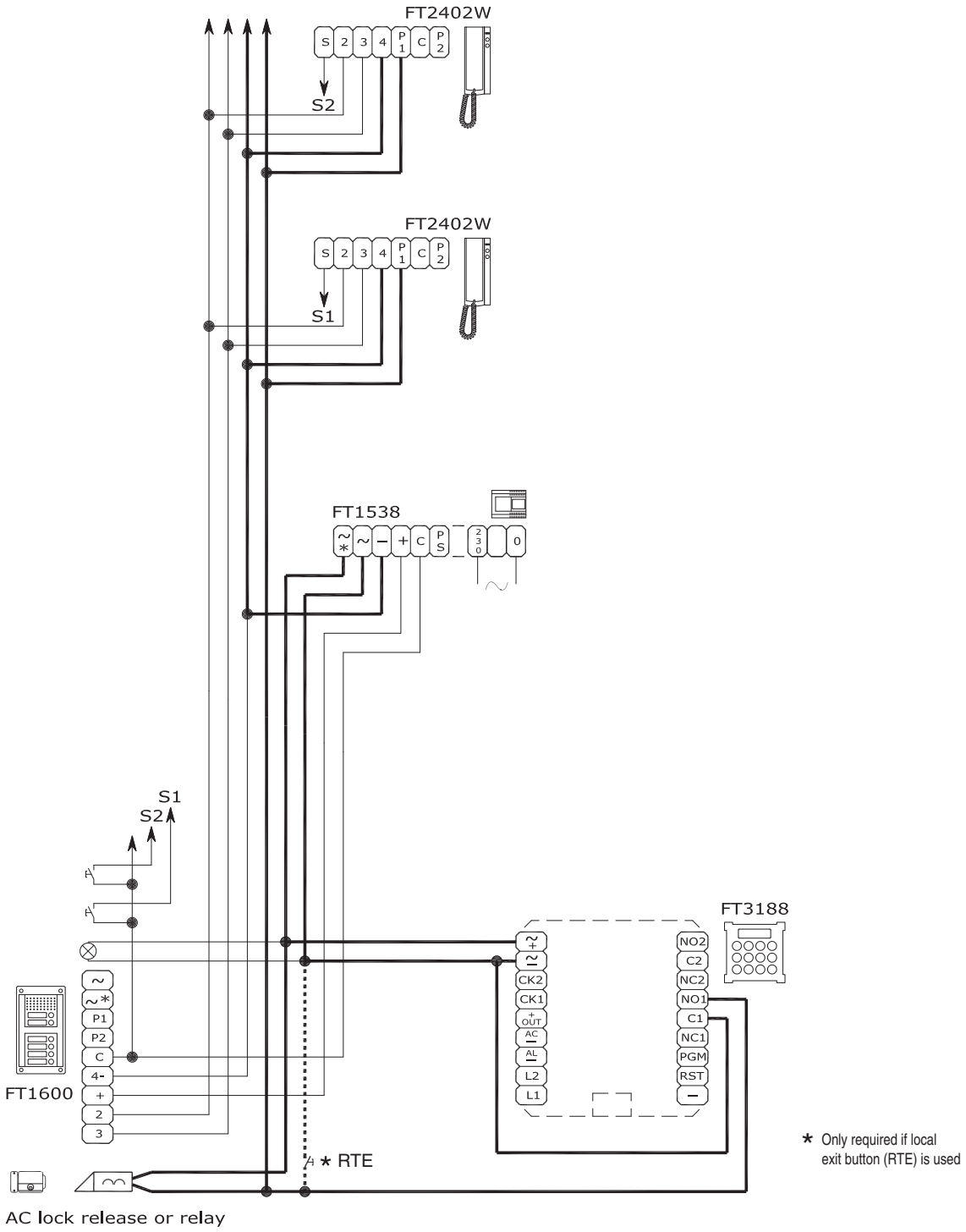


* Only required if local exit button (RTE) is used

See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 10

Vandal combined access electronic key in traditional cabling door entry systems.

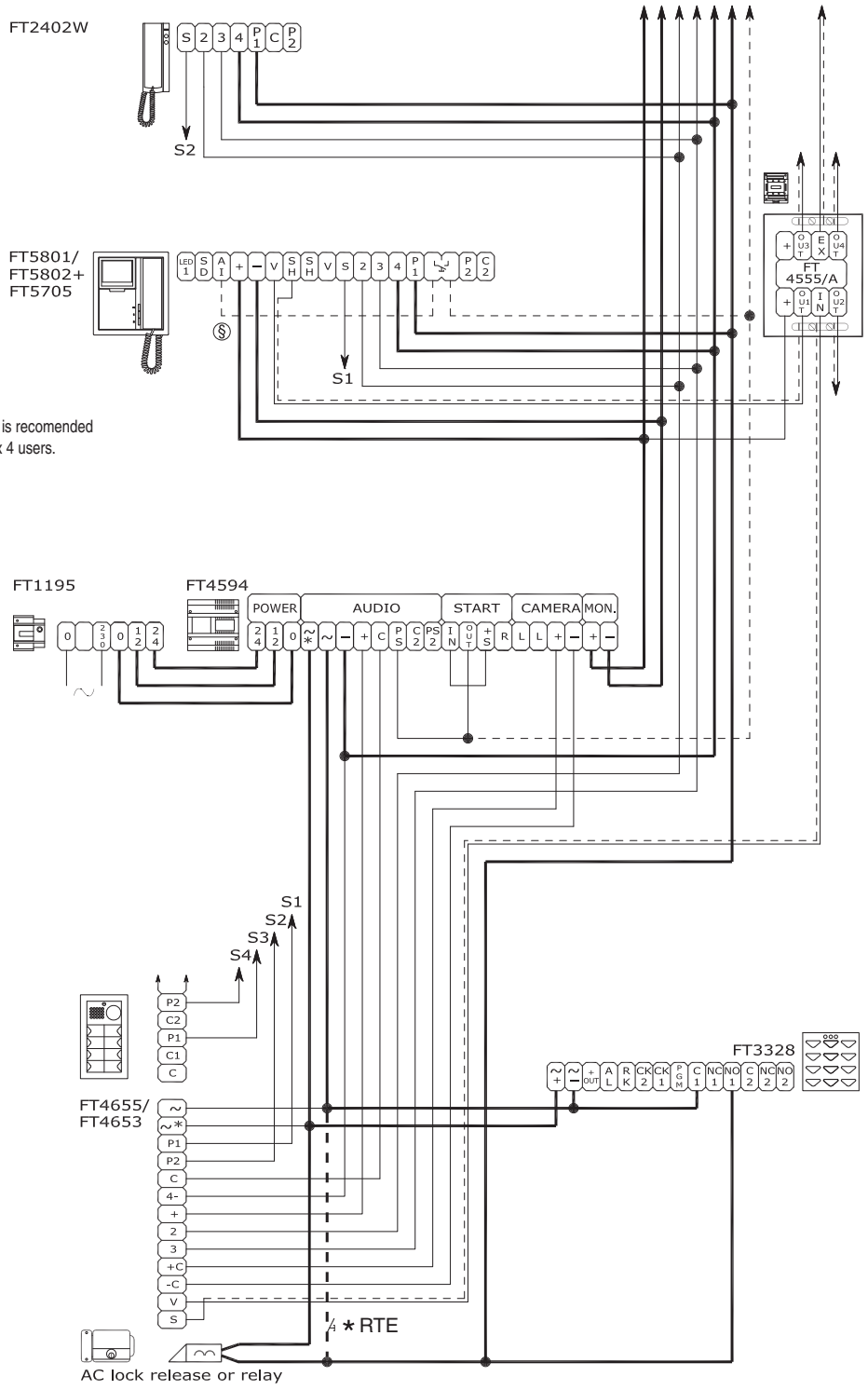


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 11

Standard combined access electronic key system in traditional cabling video door entry systems.

See diagram 12 for V/R solution.



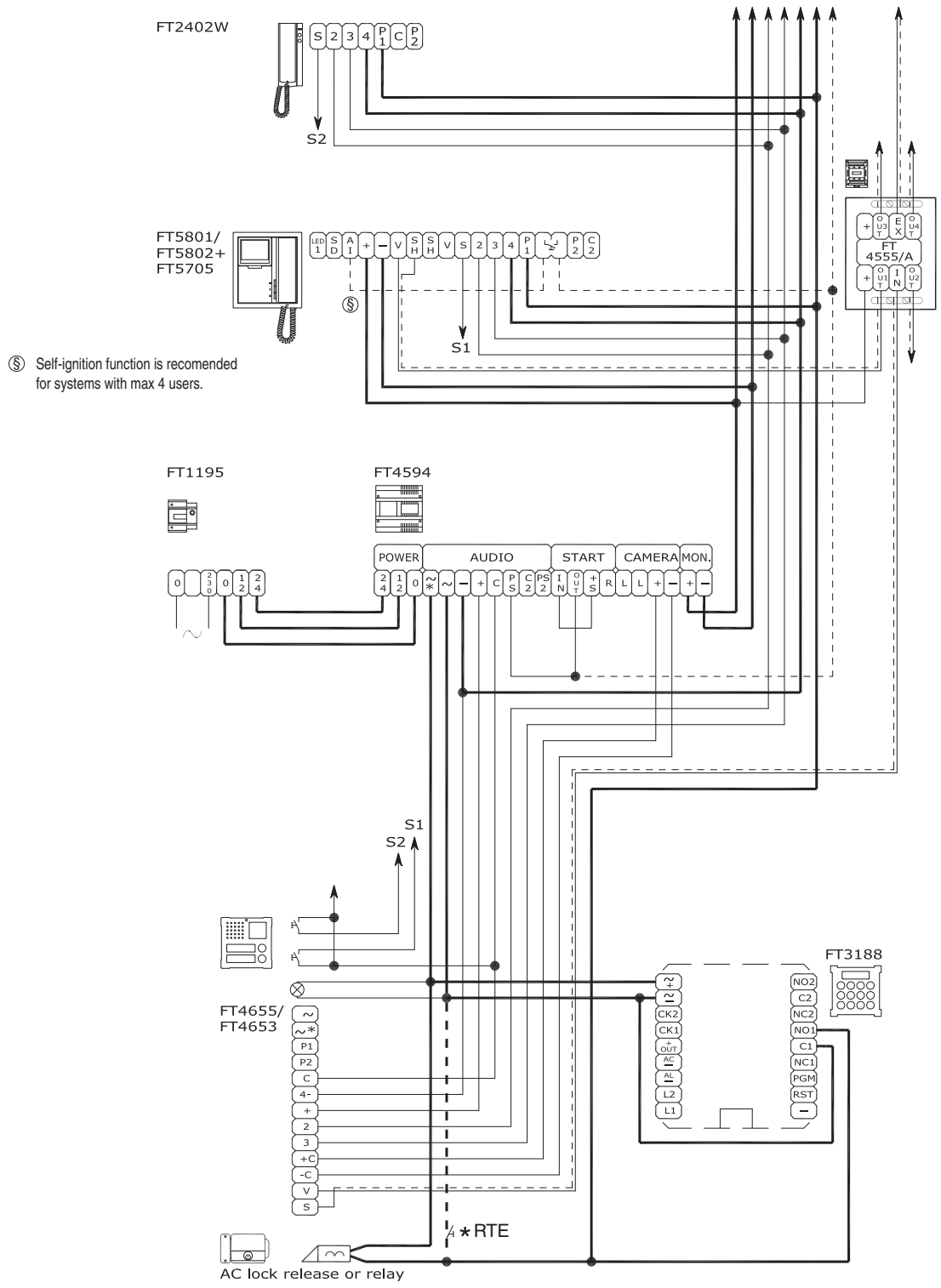
Ⓢ Self-ignition function is recomended for systems with max 4 users.

See "General instructions for audio/video door entry system installation, test and operation" on page 19.

* Only required if local exit button (RTE) is used

Diagram 12

Vandal combined access electronic key system in traditional cabling video door entry systems.

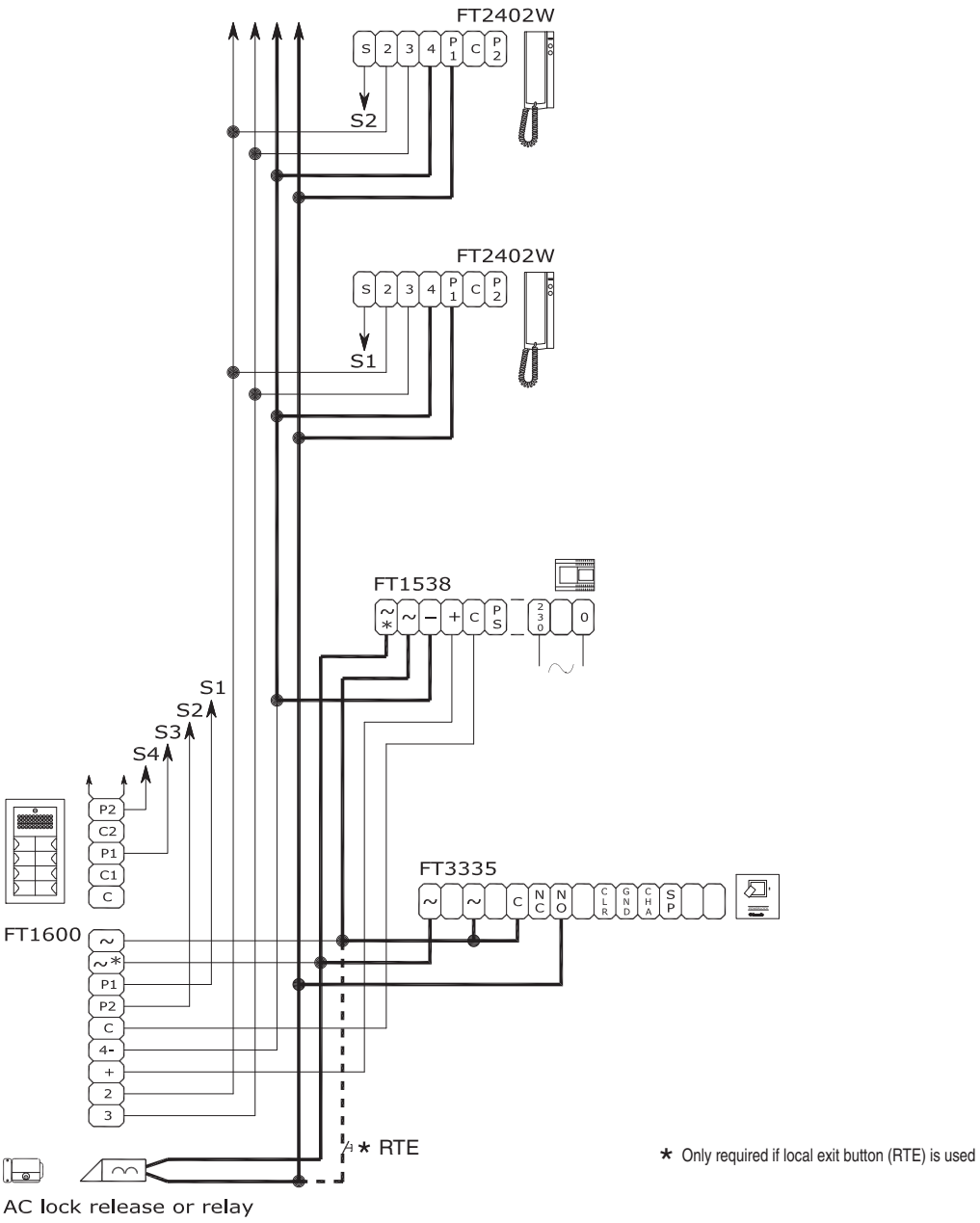


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

* Only required if local exit button (RTE) is used

Diagram 13

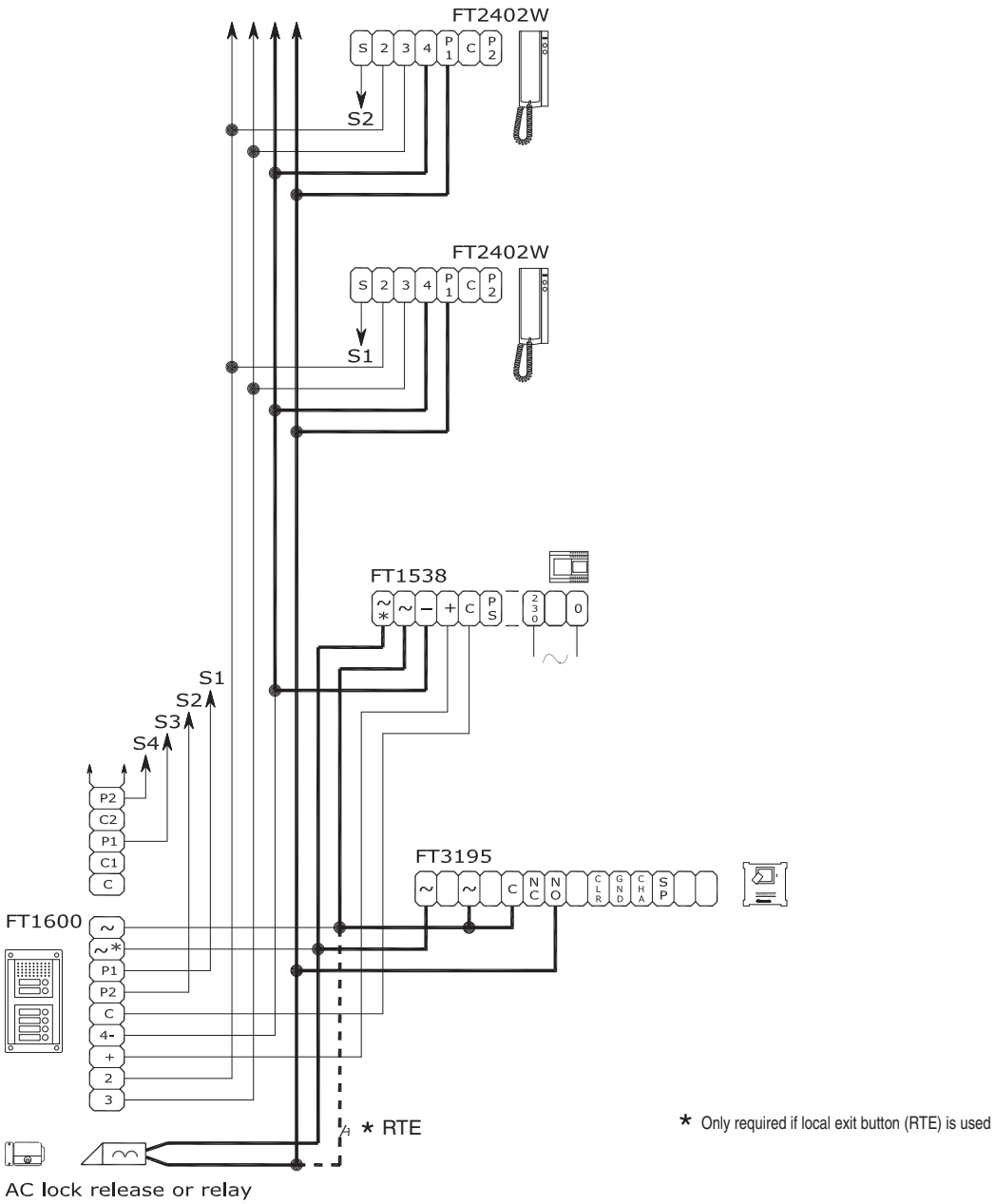
Access control device FT3335 in traditional cabling audio door entry systems.



See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 14

Vandal access control device FT3195 in traditional cabling audio door entry systems.

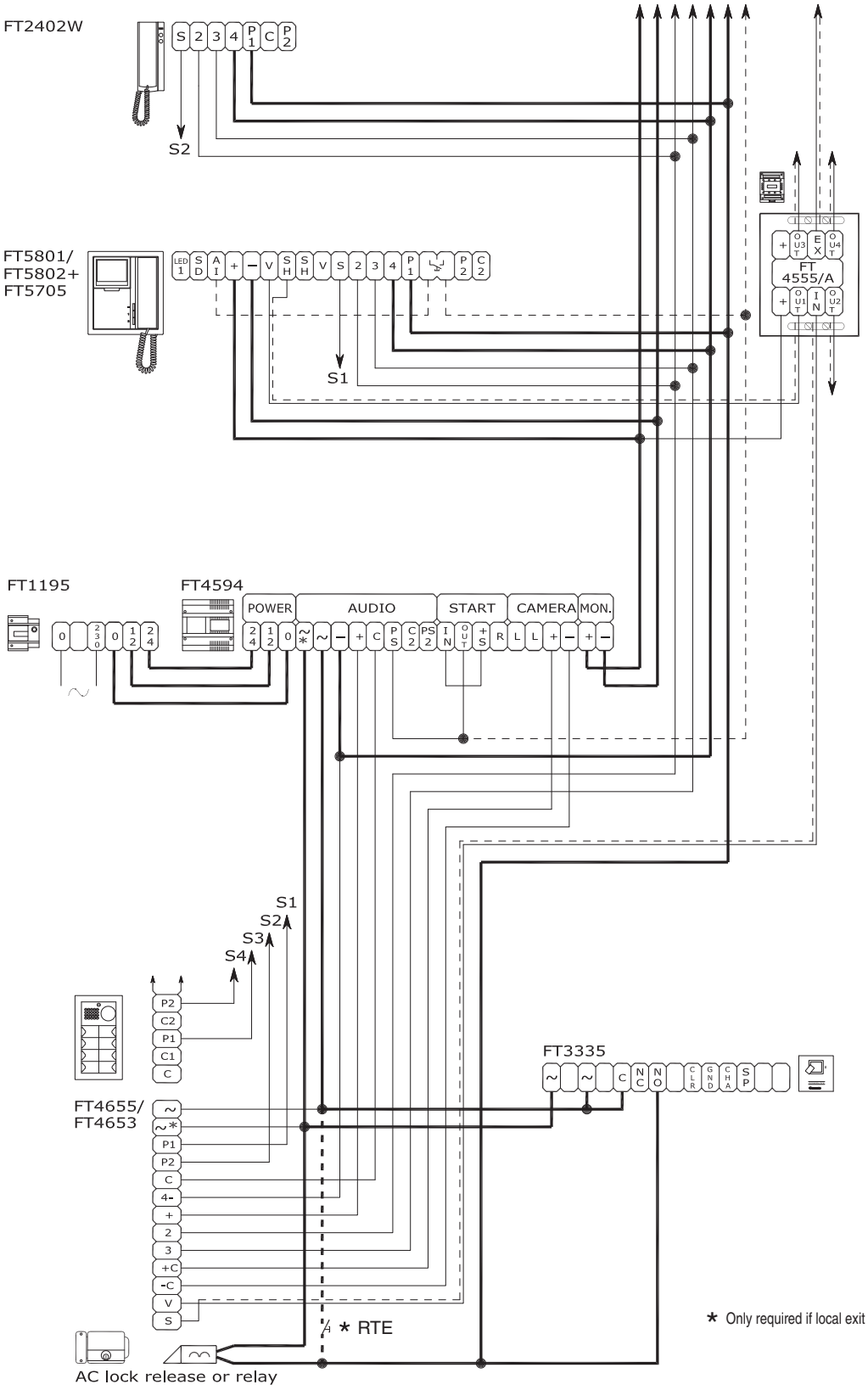


* Only required if local exit button (RTE) is used

See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 15

Access control device FT3335 in traditional cabling video door entry systems.

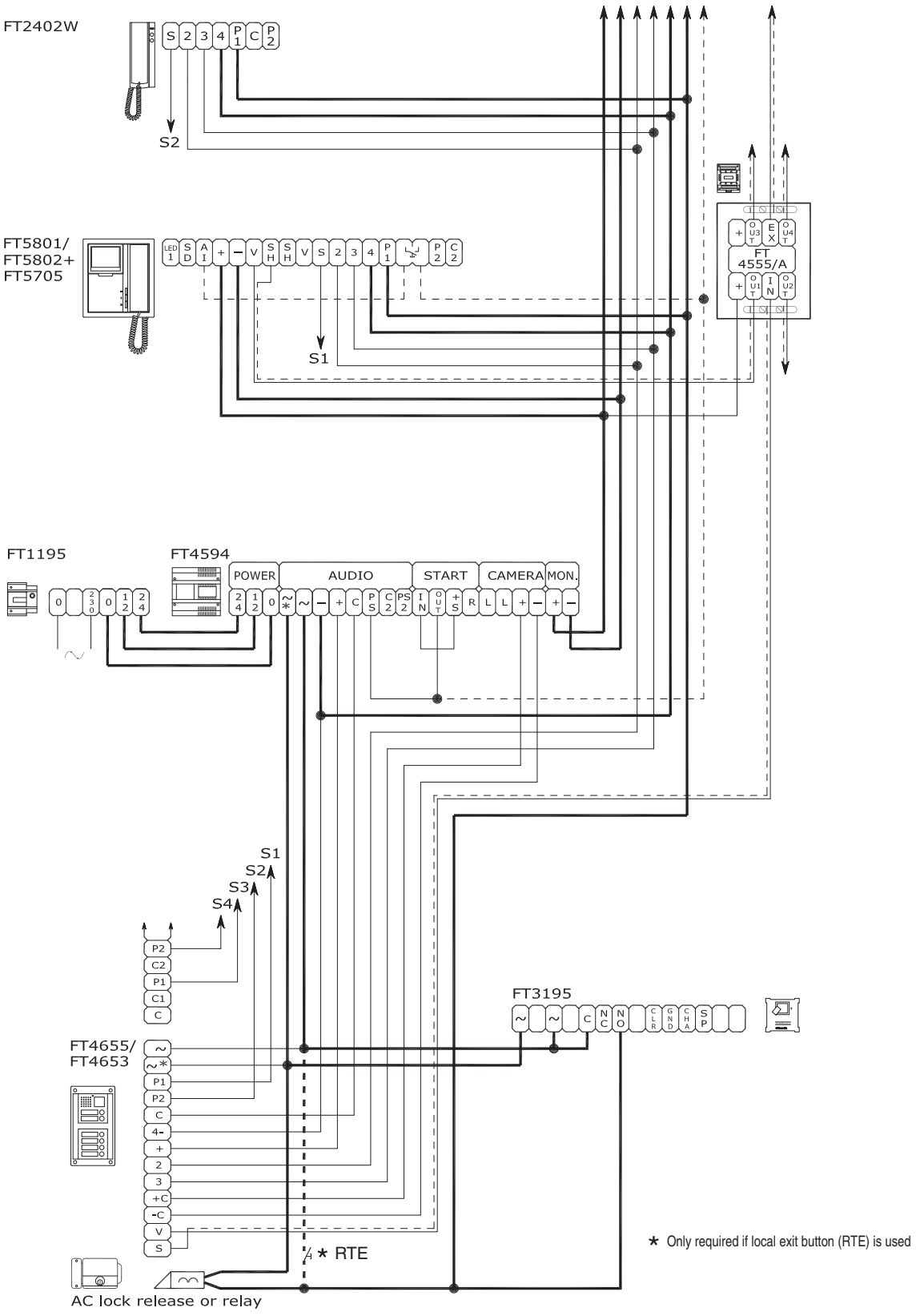


* Only required if local exit button (RTE) is used

See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 16

Vandal access control device FT3195 in traditional cabling video door entry systems.

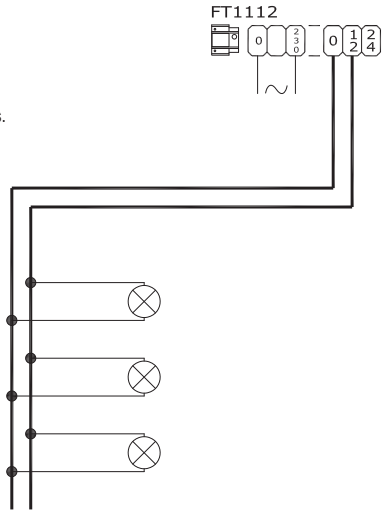


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 17

Lights in external unit.

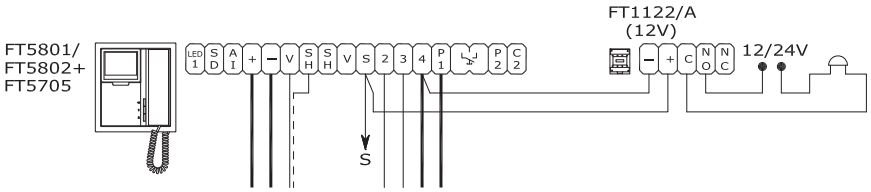
The unit vandal resistant push-button modules and the modules for indications are fitted with 3W bulb each.
The single plate panels are preset for 1 up to 6 3W bulbs.
The central power FT4594 supply is designed for a maximum of four 3W bulbs. If the external units have more than 4 bulbs, it is essential to add an auxiliary transformer FT1112 and two conductors to the system for power supply of additional lamps.



See "General instructions for audio and audio/video door entry system installation, test and operation" on pages 18, 19.

Diagram 18

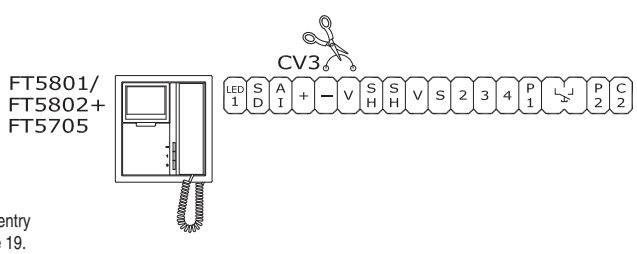
Repetition of call to the monitor with relay FT1122/A (not temporized).



See "General instructions for audio and audio/video door entry system installation, test and operation" on pages 18, 19.

Diagram 19

Self-lighting exclusion on calls from external post.

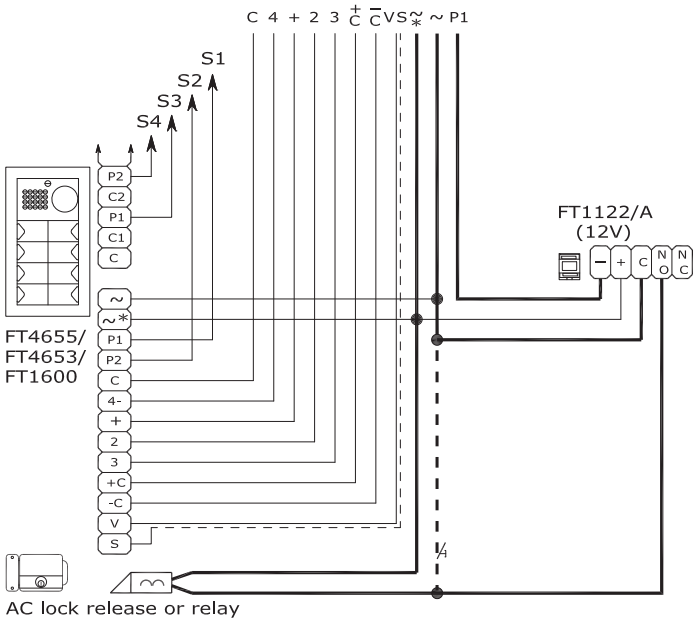


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 20

Relay for lock release.

If the electric lock does not work because the cross-section of conductors 4 and P1 is too small or because the electric locks are not 12V, use relay FT1122/A connected as indicated in the diagram. This is indispensable when the system exceeds 100 metres.

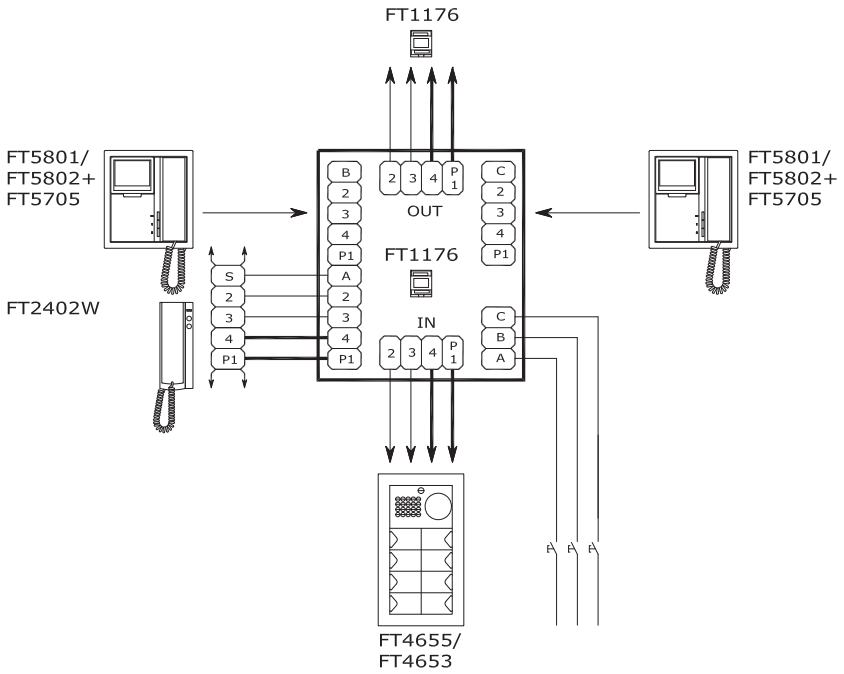


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 21

Privacy of conversation (max 3 users for module FT1176).

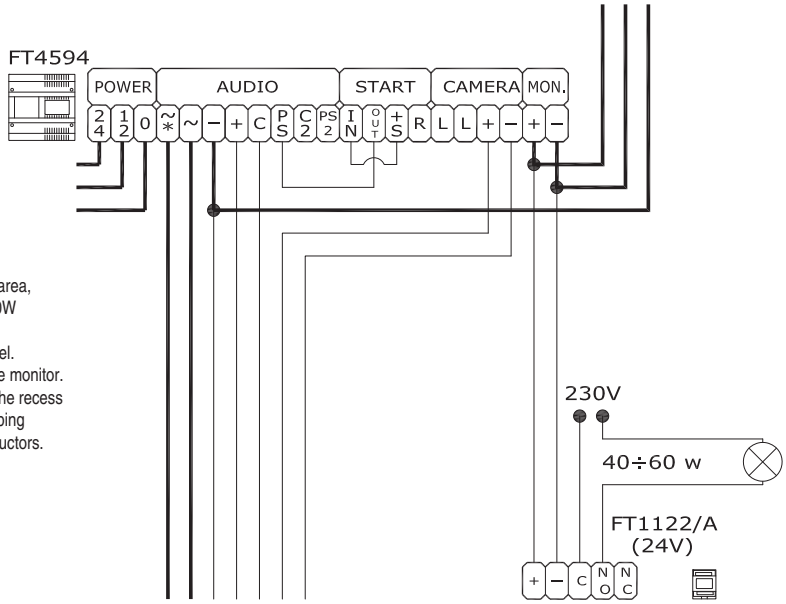
The monitor handset or the telephone is then enabled for conversation for approx. 90 secs. only when called.
This variant is not possible in intercommunicating systems.



See "General instructions for audio and audio/video door entry system installation, test and operation" on pages 18, 19.

Diagram 22

Addition of supplementary lamp to the external unit.

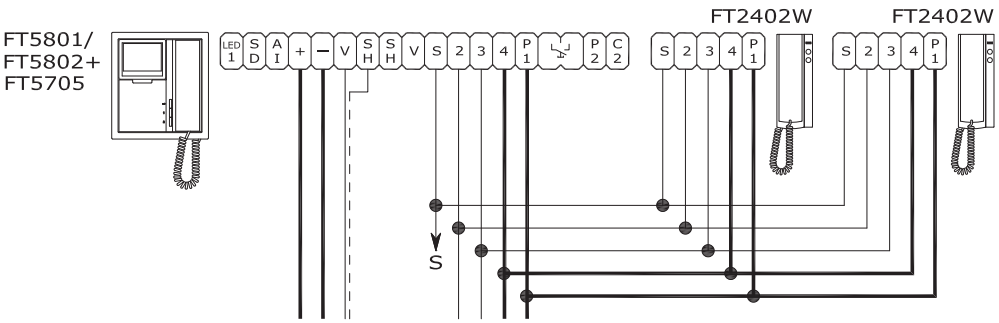


If the external unit is placed in a totally dark area, we recommend installing an additional 40-60W lamp mains voltage controlled by a relay FT1122/A, at 30 cm above the entrance panel. The lamp will light up at the same time as the monitor. Conductors for the lamp must not be run in the recess box of the entrance panel nor through the piping containing the video door entry system conductors.

See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 23

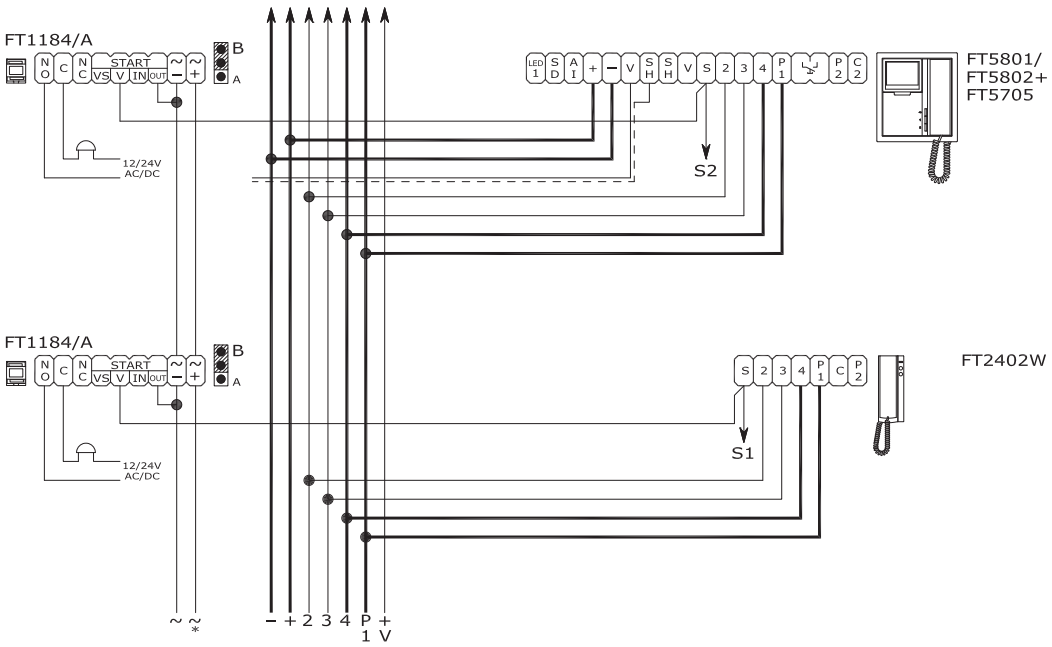
Telephones in parallel with monitor (max 3 telephones).



See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 24

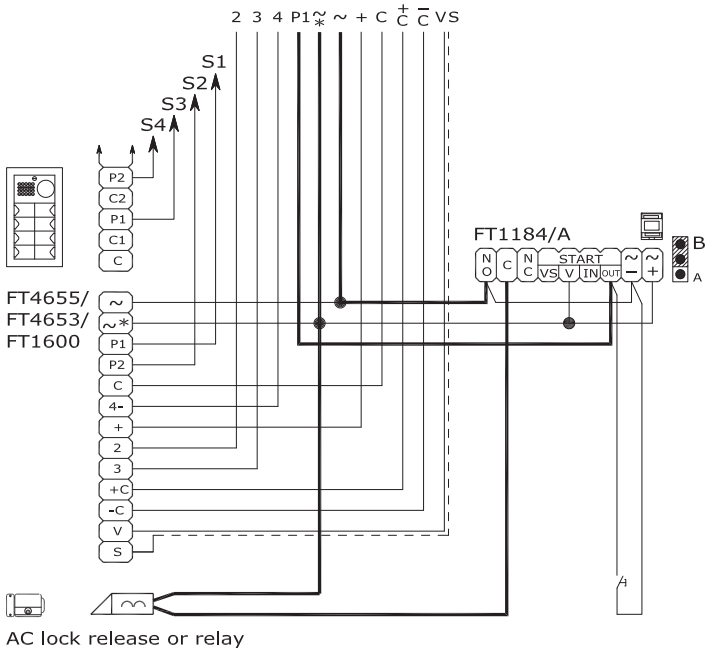
Connection of timer FT1184/A for call repetition.



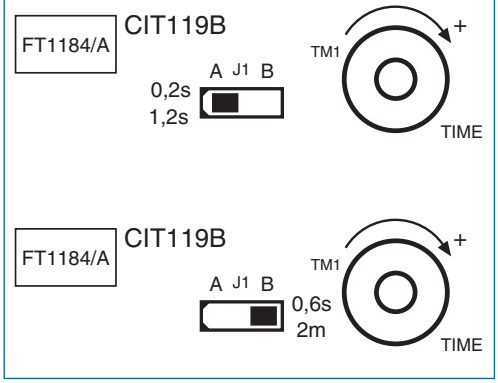
See "General instructions for audio and audio/video door entry system installation, test and operation" on pages 18, 19.

Diagram 25

Connection of timer FT1184/A for intermittently supplied electric lock.



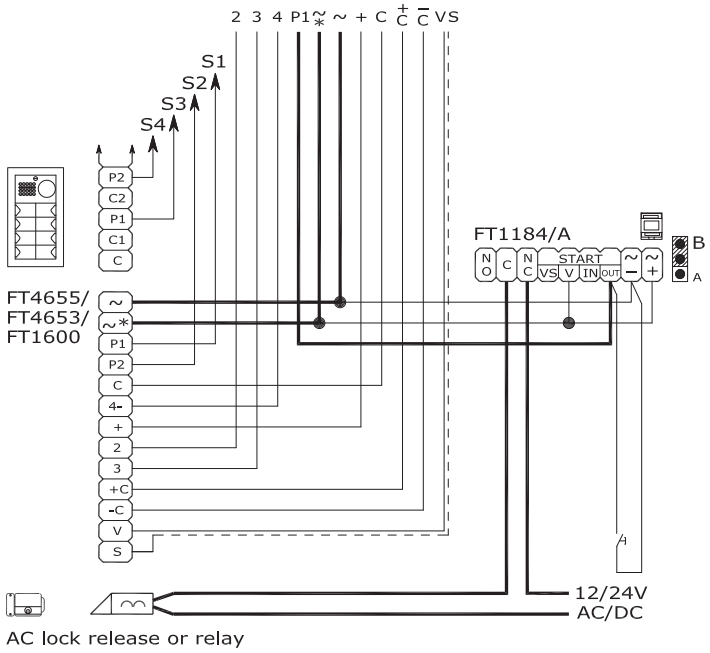
Relay FT1184/A timing regolation.



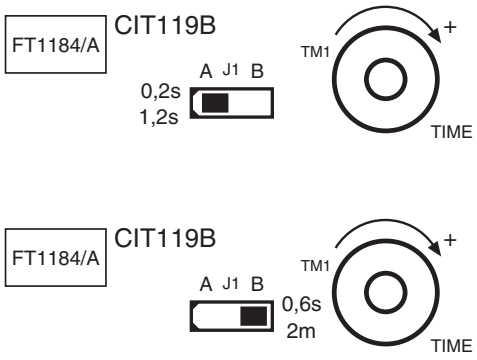
See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 26

Connection of timer FT1184/A for fail safe electric lock.



Relay FT1184/A timing regolation.

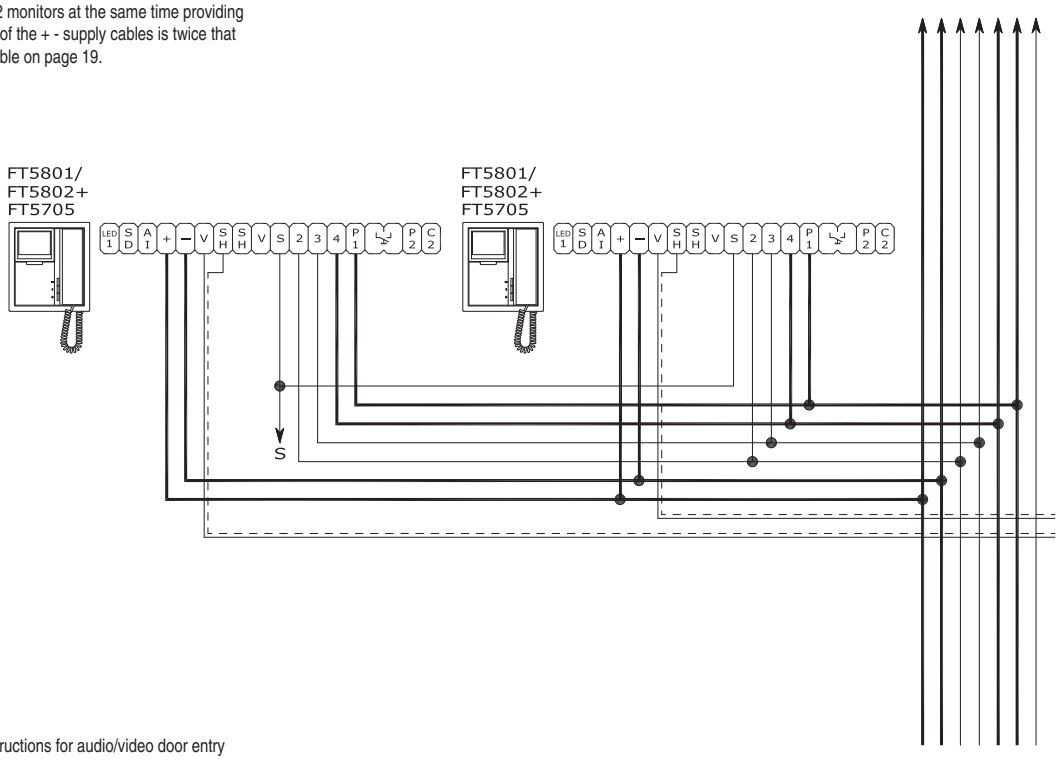


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 27

Monitor with simultaneous switch-on.

The central power supply is able to supply sufficient power to turn on 2 monitors at the same time providing the cross-section of the + - supply cables is twice that indicated in the table on page 19.

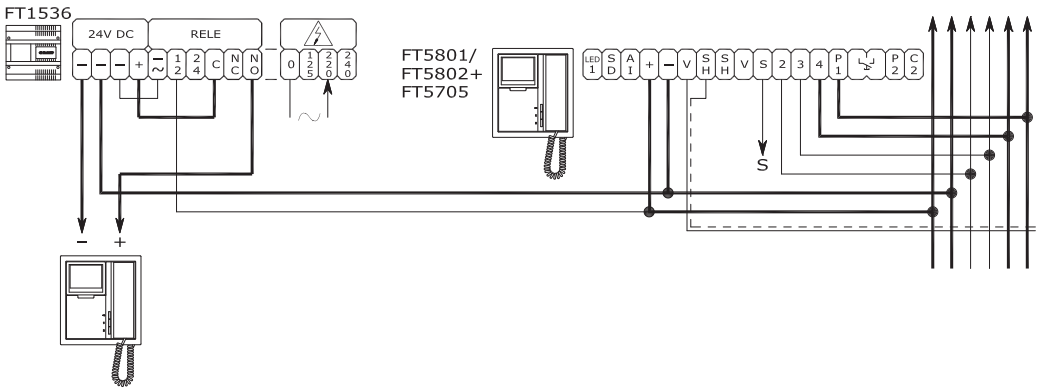


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 28

Supplementary power supply for monitor.

If it is necessary to have simultaneous switch-on of other monitors besides those described in the variant 31 and up to a maximum of 4, use power supply FT1536. Power supply FT1536 can also be used to supply a set of monitors being used by several different users, in cases where the + and - conductors do not have the minimum recommended cross-section, or in cases where the monitors are at considerable distance away from the general power supply of the system.

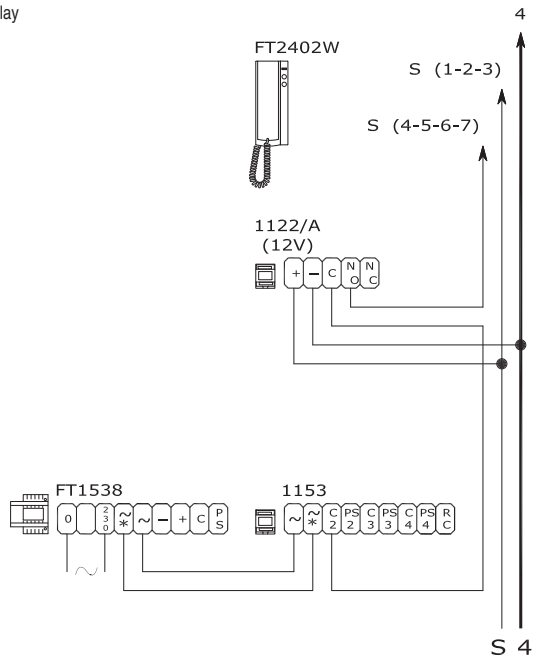


See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 29

Call repetition for systems with more than 4 monitors of telephones.

The call generator in the central power supply FT4594 provides a call to a maximum of 4 monitors or telephones simultaneously. In case of systems with more than 4 monitors or telephones, it is necessary to add a call generator FT1153 and a relay FT1122/A to effect a call up to 7 units.

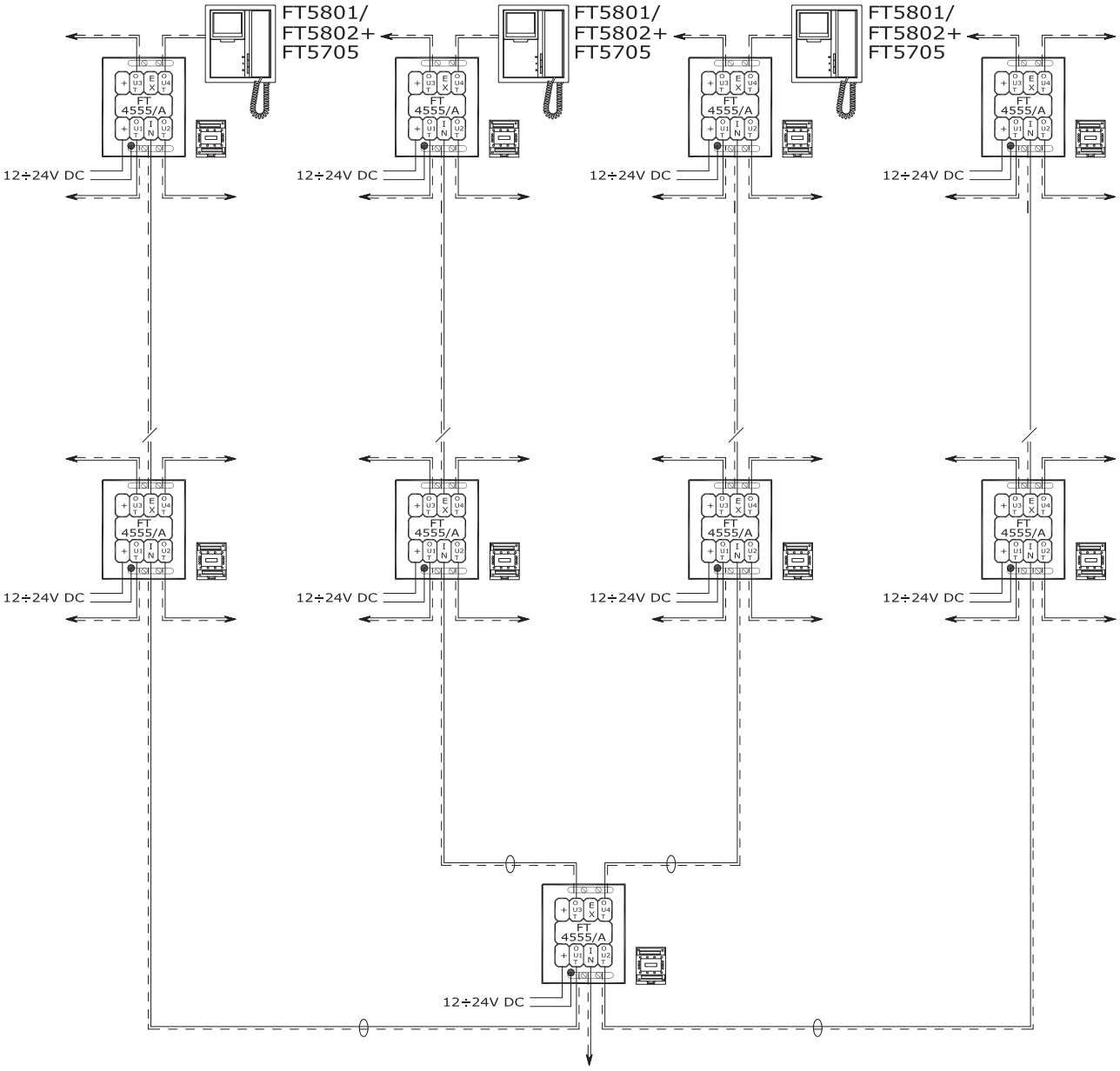


See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 30

Video signal distribution “shunted” on several risers.

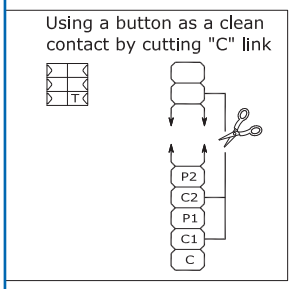
To shunt the video signal on a number of risers, use FT4555/A with 4 outputs for the same number of risers.
For more than 4 risers add extra distributors to get the required number of outputs. The absorption of each distributor is approx.
30 mA for the monitor power supply circuit. For more than 8 shunts it is necessary to supply the shunts with a 12-24V
DC source separately (connecting - to ground). The unused monitor outputs must not be closed with resistances.

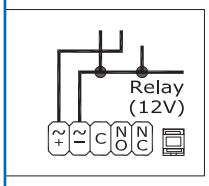


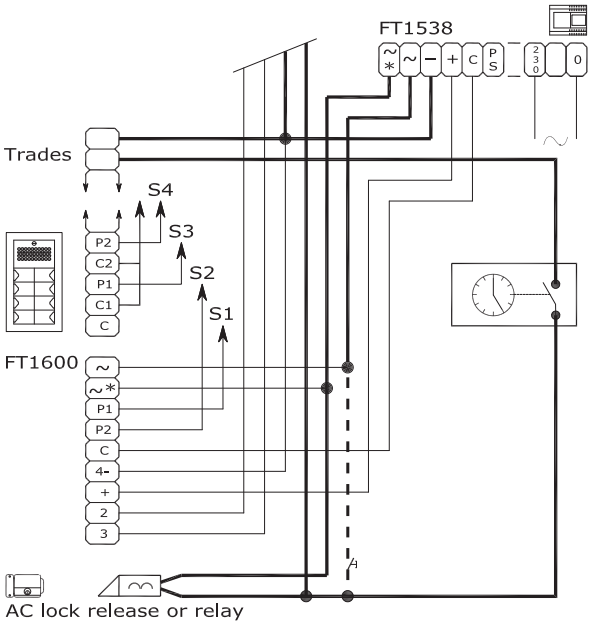
See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 31

Variant for trade facility. Serie standard audio entrance.



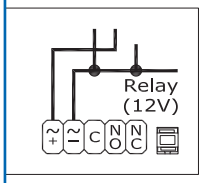


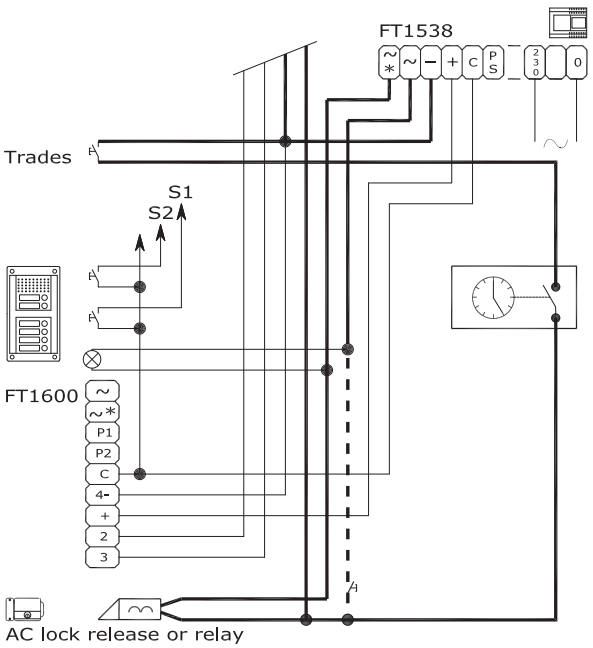


See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 32

Variant for trade facility. Serie vandal resistant audio entrance.

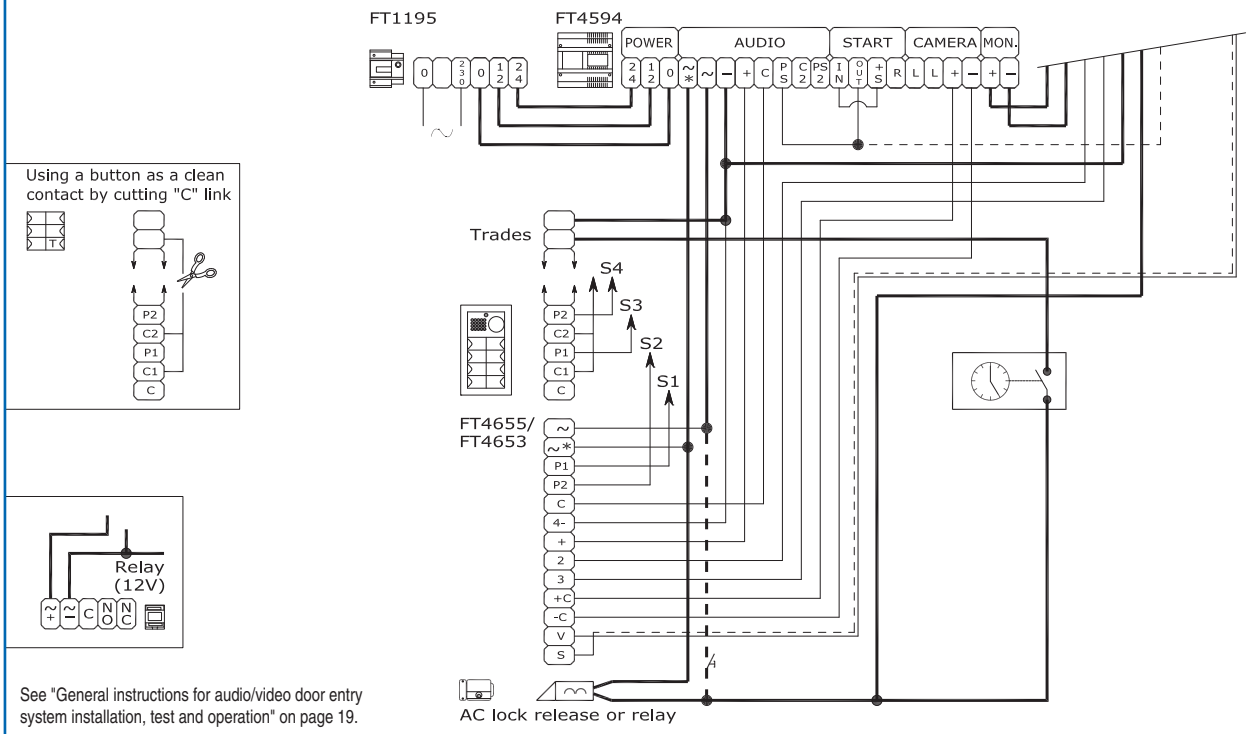




See "General instructions for audio door entry system installation, test and operation" on page 18.

Diagram 33

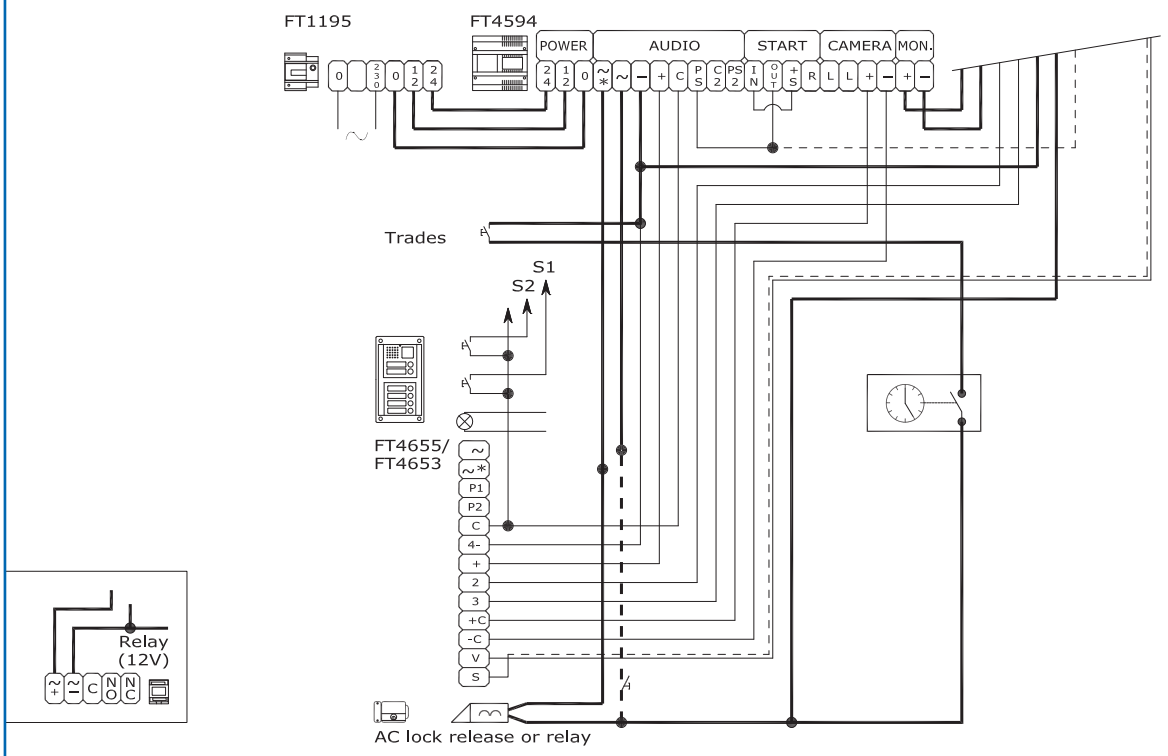
Variant for trade facility. Serie standard video entrance.



See "General instructions for audio/video door entry system installation, test and operation" on page 19.

Diagram 34

Variant for trade facility. Serie vandal resistant video entrance.



See "General instructions for audio/video door entry system installation, test and operation" on page 19.

FORTESSA

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