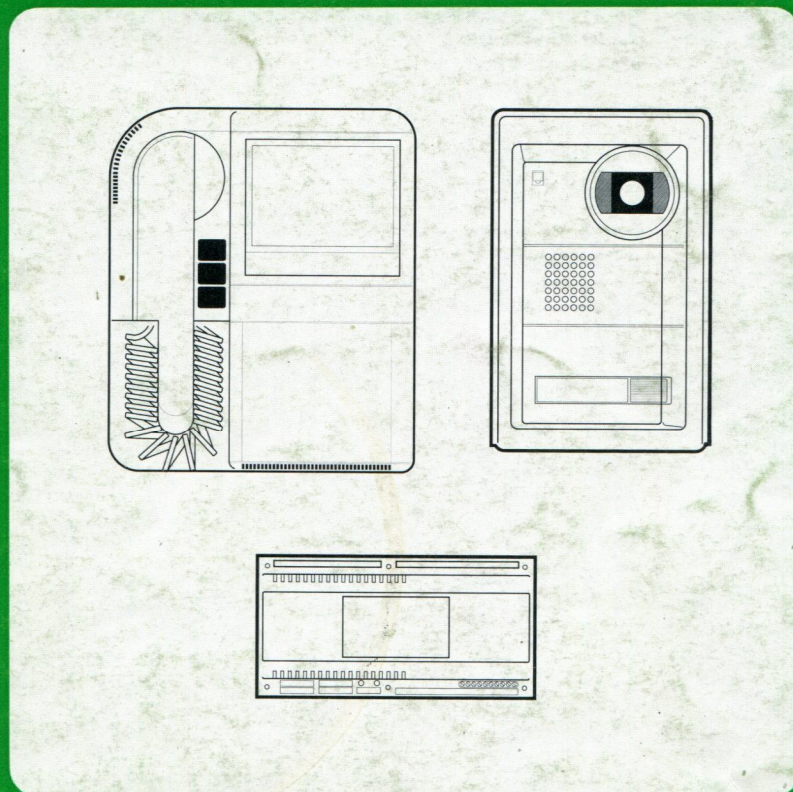


VK10-VK20



VK10-VK20

Contents

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Important

It is recommended that only original LT accessories be used, particularly our power supply units. Other manufacturer's material, even if of top quality, is unlikely to have the characteristics required for correct operation of the equipment described in this brochure. Due to continuous product improvement, features and specifications may be subject to change without notice.

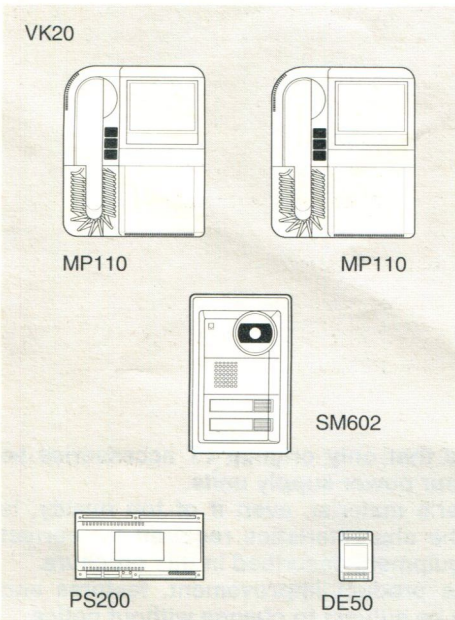
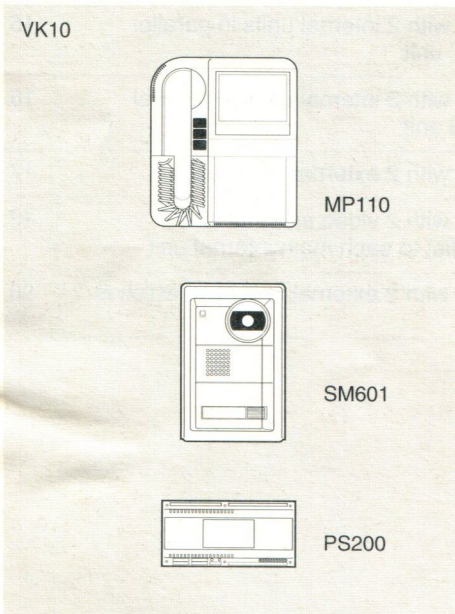
General

This video intercom system, made up with VK10 one-way kit and VK20 two-way kit, is easily wired and installed, therefore reducing time and also the possibilities of errors on installations.

It is possible to carry out installations using four common wires and one call wire for each extension unit, without the need for coaxial cable.

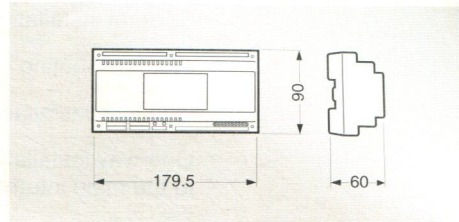
The internal units can be table-mounted, in conjunction with accessory AT020 and socket AS2; it is also possible to install several sockets, in order to move the monitor to different positions. For repeating the electronic call in several rooms, it is possible to connect up to three additional chimes 40.50N, up to 3 PH620WS telephones in parallel to each external units or up to 3 monitors MP110 in parallel.

The maximum distance allowed between external and internal unit is 300 m and between external unit and power supply unit 100 m.



Description of units

PS200 - Power supply unit



Characteristics

- 10 unit DIN modular housing
- 220V 50-60V Hz power supply
- 65VA transformer
- Colour coded terminal blocks
- Weight 1.45 Kg

Connecting terminals and associated functions

S 0V AC

T 12V AC non-continuous 1' on 4' off with automatic short circuit protection to supply the following:

pushbutton illumination lamps and heater element for video camera, common audio and calling unit, etc. ..., electric lock release (non-continuous impulsive service)

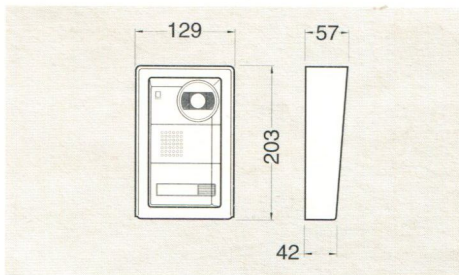
- 0V DC

+ 15V DC 0.75A non-continuous 1' on 4' off with automatic short circuit and overload protection for supplying internal units, junction units, etc.

Installation options

The unit may be mounted on a DIN 35 rail in a modular housing or in conjunction with accessory APS10 which may be wall mounted.

SM601 - Pushbutton panel



Characteristics

- Wall mounting without recessed box
- Black polyester-resin base
- Pressed aluminium front-plate
- Rainshield
- Complete with speaker unit, electronic unit and video camera
- Repetition of electronic signal for call confirmation

Characteristics of the speaker unit

- Amplified electret microphone and loud-speaker

Characteristics of the video camera

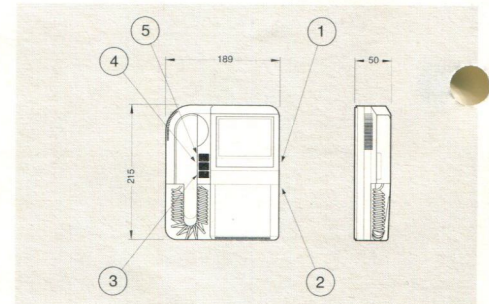
- 1/3" CCD sensor
- f 4.3 mm F 1.8 lens
- 12V DC power supply
- Power consumption 120mA (LED excluded)
- Horizontal frequency 15625 Hz

- Vertical frequency 50 Hz
- Definition at the centre of the picture 380 horizontal lines
- Minimum illumination 0.9 lux at 1.8 F with LEDs on
- Maximum illumination 40.000 lux (electronic shutter)
- Video output 1Vpp on 75 ohms
- Start-up time: immediate
- Operating temperature from -20° to +50° C
- Possibility of adjusting height of the picture to be viewed
- Illumination with infrared LEDs

Connecting terminals and associated functions

- + B Positive power supply input
- B Buffer battery power supply negative input
- T 12V (RMS value) transformer input
- S 0V AC
- 0V DC
- 14 OR diode common
- 10 Positive video signal output
- 11 Negative video signal output
- + Timed output for internal unit power supply
- 17 Output for electric door lock control
- + R Timed output for external relay power supply
- CV Prearrangement for switch-on from indoors (connected with +)
- 14 Insertion for extension (audio signal, door lock control, call signal)
- 13 Call signal output
- P1 Call signal pushbutton
- 13 Call pushbutton common
- P2 Call pushbutton

MP110 - Internal unit



- (1) Brightness adjustment
- (2) Contrast adjustment
- (3) Door opening pushbutton
- (4) Stairwell lights pushbutton
- (5) Monitor switch-on from indoors

Characteristics

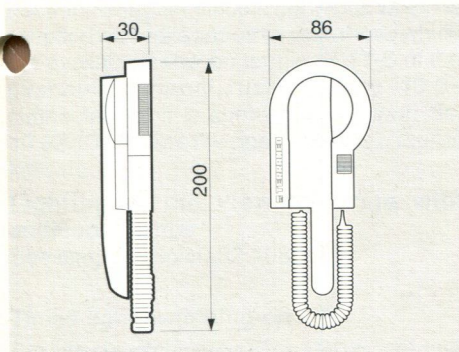
- 12-15V DC power supply
- Power consumption with unit ON 0.4-0.45A
- Monitor: 4" screen
- Start-up time: 2 seconds
- Input video signal amplitude: 0.75 Vpp
- Scanning standard 625 lines
- Vertical frequency 50 Hz
- Timed activation period: 60 seconds approx.
- Audio signal with secrecy
- Colour coded terminal blocks
- Weight 1.6 Kg

Connecting terminals and associated functions

- + C Positive input for timed telephone power supply
- + Positive input for timed telephone and monitor power supply
- Earth
- CV/PS Link for switch-on from indoors
- L.S. Stairwell lights pushbutton (earth)
- P Insertion for extension (audio signal, door lock control, call signal)
- 18 Output for additional sounder
- 10 Positive video signal output
- 11 Negative video signal output

PH620WS - Telephone

Telephone for internal units in parallel.
Colour: white.

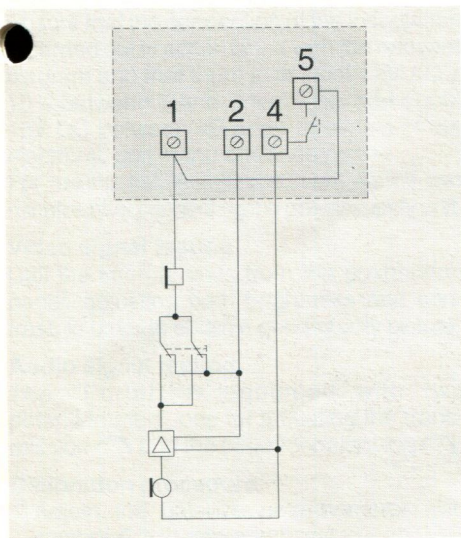


Characteristics

- Door open pushbutton
- Arranged for electronic call
- Electret microphone
- Weight 0.200 Kg

Installation

Wall-mounted with screws and fixing plugs
Ø 60 mm recessing box model 503 BTicino

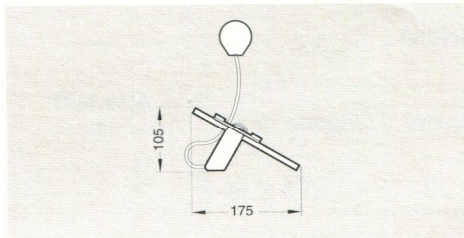


CI060 - Cable for installations

Cable for installations with colour coded terminal blocks:

- Red, Black, Yellow, Blue cross sect. 2.5 mm²
- White cross sect. 1.0 mm²
- Brown, Pink (twisted) cross sect. 0.28 mm²

AT020-Adapter for table mounting

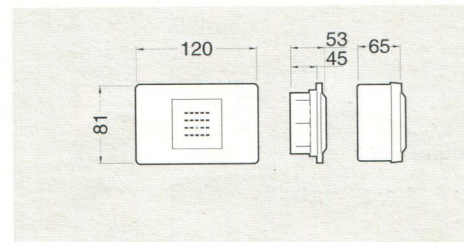


Characteristics

Housing complete with 2.5 m cable and multipin plug for socket AS2.
AT020 allows to install a monitor for table mounting and, installing several sockets AS2, it is possible to move the monitor to different positions within the installation.

AS2 - Flush or surface wall mounting socket

For connecting art. AT020. Complete with rectangular recessing box or with box for surface-mounting.

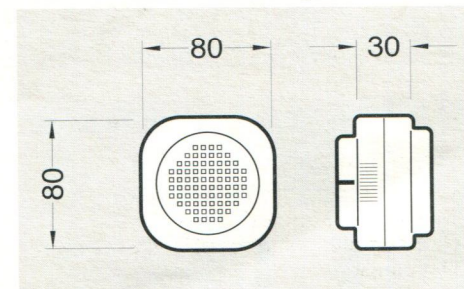


Installation

Mounting on rectangular recessing box or with box for surface-mounting.

40.50N - Additional audible sounder

This is used for remote signalling in other rooms of the same dwelling.



Characteristics

- Size: 80x80x30
- 50 mm 50 Ohm loudspeaker

Connecting terminals and associated functions

- 18 Call signal input
- 0 0 volt loudspeaker

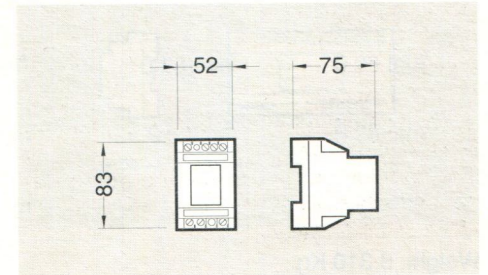
Installation

Wall-mounted with screws and fixing plugs on Ø 60 mm recessing box.

40.91 - Relay unit with timer for stairwell illumination

The timer may be controlled either by the mains 220V or 12-30V (DC or AC) at the same time if desired.
Continuous timer period adjustment range from 15 seconds to 10 minutes. The timer is reset each time the stairwell illumination light switch is pressed.

Colour: grey



Connecting terminals and associated functions

- 1-2 NO relay contact
- 5-4 Relay control, 12-30V AC/DC (positive connection to terminal 4)
- 3 Relay control, 220V AC

Installation option

Wall mounting using screws and wall plugs supplied, or may be mounted on DIN35 rail

40.92 - Relay unit

Relay fitted with one closing contact and one changeover contact for control of: illumination lamps for video cameras, additional bells, electric door locks supplied with voltages other than those supplied by electronic power supply unit.

Connecting terminals and associated functions

- +/- 12V AC or DC
- /~ 12V AC or DC
- 3/4 NO contact
- 1/5 NC exchange contact
- 1/2 NC exchange contact

Characteristics

- Size: as per item 40.91
- 12V AC or DC power supply
- 5A 220V contacts

DE50 - Video signal distributor

This is used to decouple on three outputs the signal drawn from the riser.

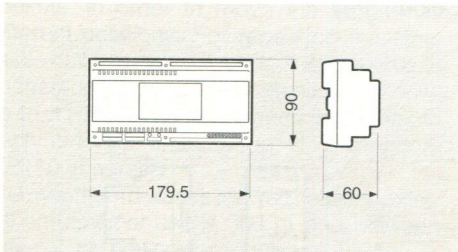
Installation options

Mounting in shunt box.

BV040 - Switching unit

Switching unit for two external units.
Enables audio signal connection, as well as electric door lock control signal connection with the external unit from which the call has been made.

For two-way installations with internal units in parallel this switching unit has the function to block the image transfer.



Weight: 0.310 Kg

Connecting terminals and associated functions

Riser

- P1 Call OUT from internal unit 1
- P2 Call OUT from internal unit 2
- CV/PS Control IN for activating external unit A from internal unit
- LS Control IN for activating external unit B from internal unit
- 10 Positive video signal OUT
- 11 Negative video signal OUT
- +1 positive OUT for internal unit A
- +2 positive OUT for internal unit B
- CV1 Control IN for activating external unit from internal unit 1, when internal units are in parallel
- CV2 Control IN for activating external unit from internal unit 2, when internal units are in parallel
- +C1 Timing positive OUT for audio signal - int. unit 1
- +C2 Timing positive OUT for audio signal - int. unit 2
- - 0V IN for internal units 1 and 2

Connections for pushbutton panels A and B

- P1 Call IN from external unit for internal unit 1
- P2 Call IN from external unit for internal unit 2
- CV Control OUT for activating external unit
- 10 Positive video signal IN
- 11 Negative video signal IN
- 12 "Occupied" indicator lamp OUT
- 0V IN for external unit
- + Timing positive IN for external unit
- 13B Timing control OUT for call from audio external unit

Notes

General installation requirements

General instructions and tables

In order to simplify connections, it is advisable to use CI060 cable with colour coded wires corresponding to the colours of the terminal blocks and with cross sections proportional to the maximum distances allowed by the system. (see on page 2).

It is also possible to use CI020 cable, on condition that in the installation the distance between external and internal unit is not greater than 200 meters and that the distance between external unit and power supply is not greater than 20 meters. Make sure that PS200 power supply is not connected to the mains during wiring operations.

Electrical door locks with function with voltages other than supplied by the system

For controlling an electric door lock which is supplied with voltages other than those which are available between terminals 17-S of the pushbutton panel, use a relay 40.92 connected as it is showed in diagram Sc. 40.92.107, where the door-opening circuit is indicated.

Lighting of the viewing range with additional lamps

See diagram Sc.40.92.108

Timed light switching-on

For timed switching-on of garden or stairwell lights use art. 40.91 connected as it is showed in diagram Sc. 40.91.104

Testing the installation

The procedures described below should be carried out after all connections have been made in accordance with the installation procedures described previously.

Preliminary procedures

Ensure that the connection of the installation is carried out in accordance with the relevant diagram and that there is at least 12V AC \pm 10% between T and S terminals and about 15V DC between +B and - terminals of the electronic unit in the entrance panel.

For testing the installation, wait about two minutes after connecting the power supply unit.

Video signal testing

Call the internal units from the pushbutton panel, adjusting both brightness and contrast, in order to obtain a good-quality picture.

Audio signal testing

The "Porter" is equipped with two potentiometers, one for adjusting the transmission \curvearrowright and the other for balancing \curvearrowleft .

Calibration procedure

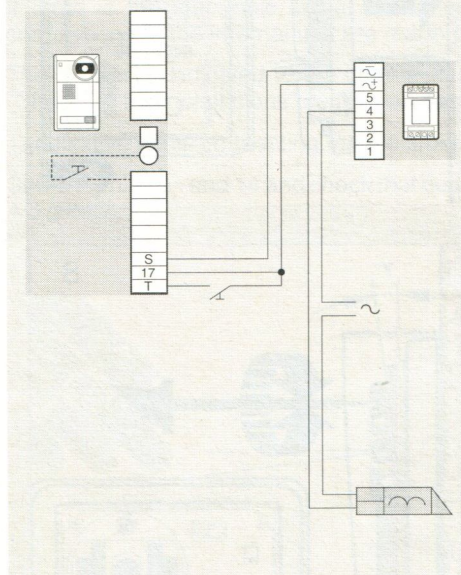
- 1) Adjust the balance potentiometer with symbol \curvearrowleft at about half way
- 2) Increase the transmission potentiometer with symbol \curvearrowright up to the beginning of the whistle (Larsen-effect)
- 3) Adjust the balance potentiometer (pos. 1) until the whistle disappears
- 4) In case this does not happen, reduce the transmission level by means of potentiometer of pos. 2.

TABLE WITH CROSS-SECTION OF INTERCONNECTING CABLES

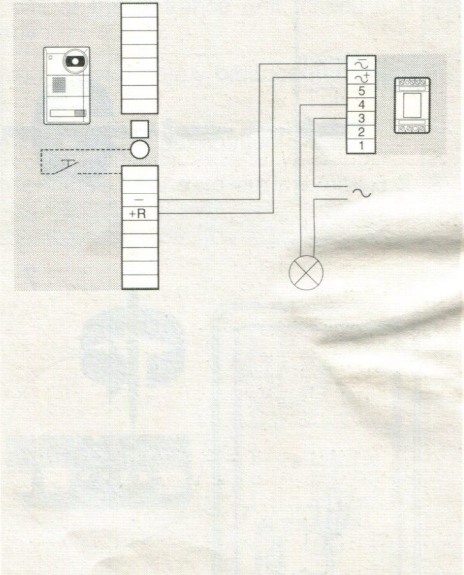
Distance m.	cables from entrance call unit to:			
	Power supply RL \leq 0.75 Ω	Internal units RL \leq 2.1 Ω	Call term. P RL \leq 7.5 Ω	Twisted cable
50	1.5 mm ²	0.5 mm ²	0.28 mm ²	0.28 mm ²
100	2.5 mm ²	1 mm ²	0.28 mm ²	0.28 mm ²
200	-	1.5 mm ²	0.5 mm ²	0.28 mm ²
300	-	2.5 mm ²	1 mm ²	0.28 mm ²

Note: The line resistance (RL) indicated in the table below refers to each single conductor.

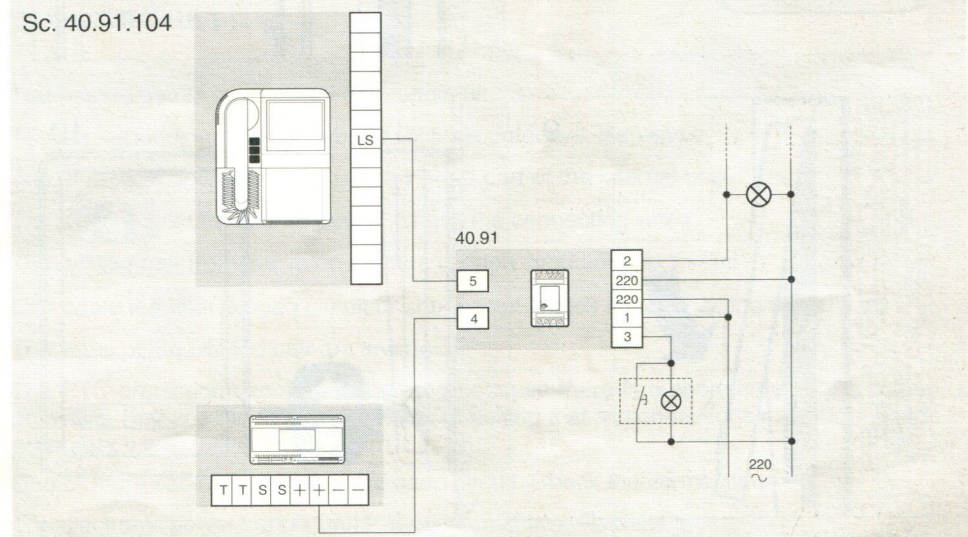
Sc. 40.92.107



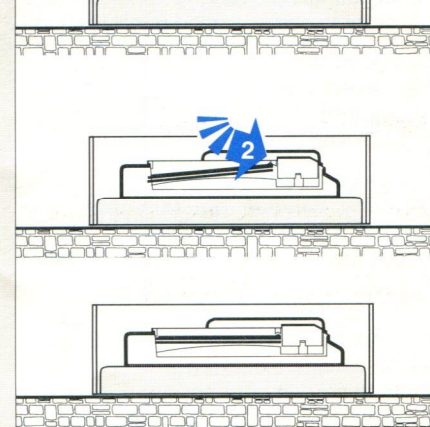
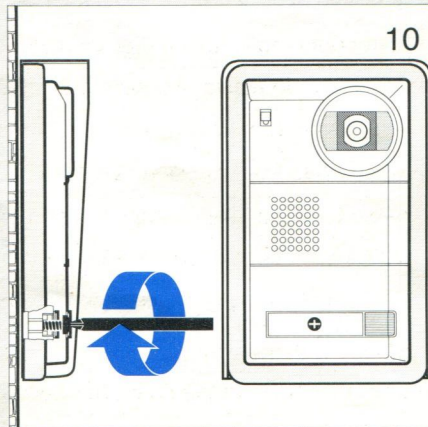
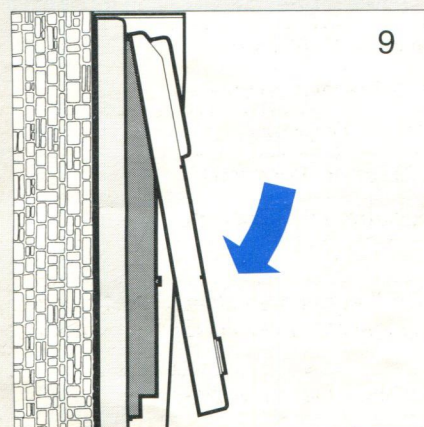
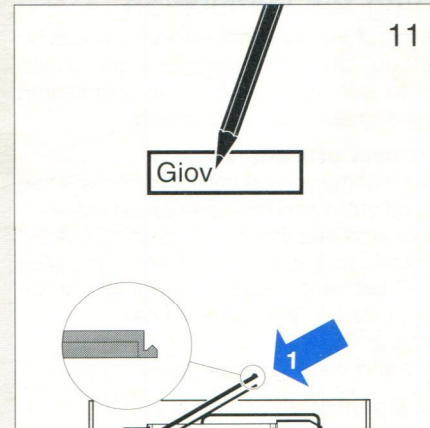
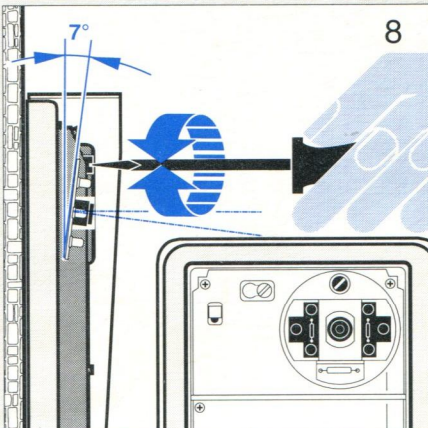
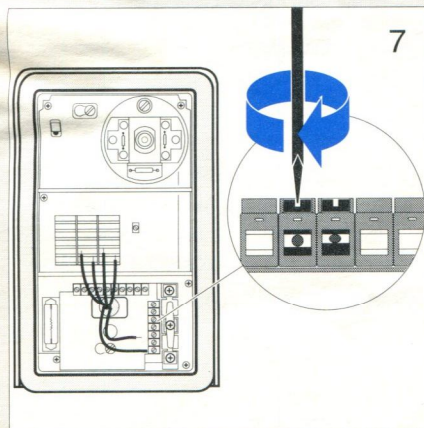
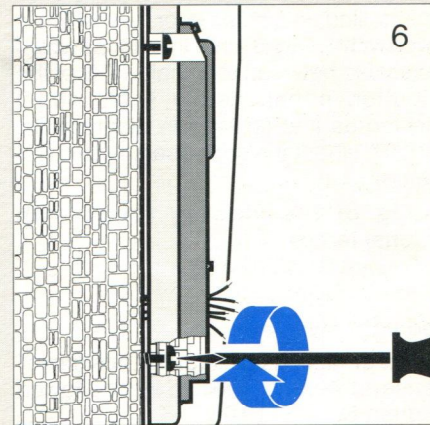
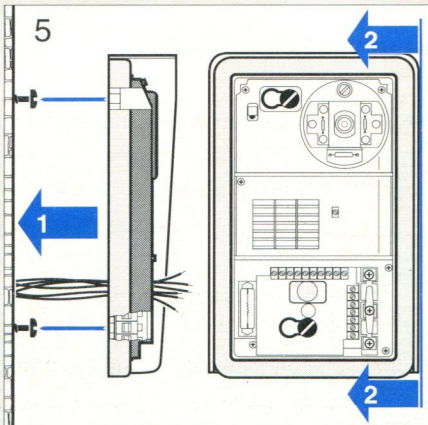
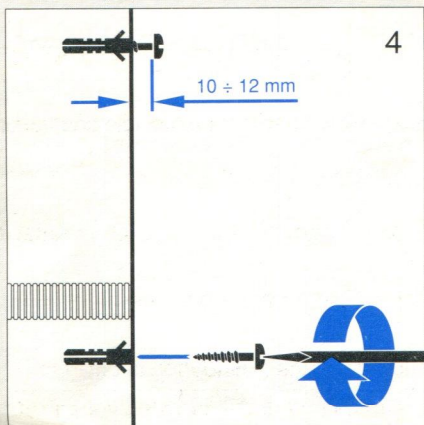
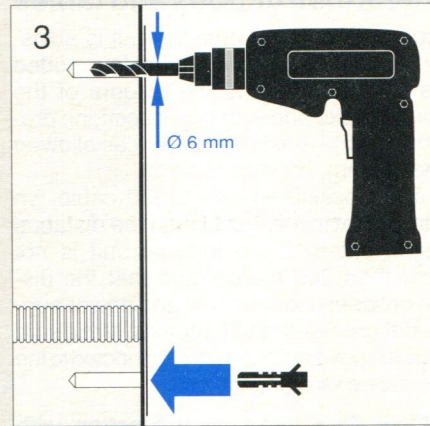
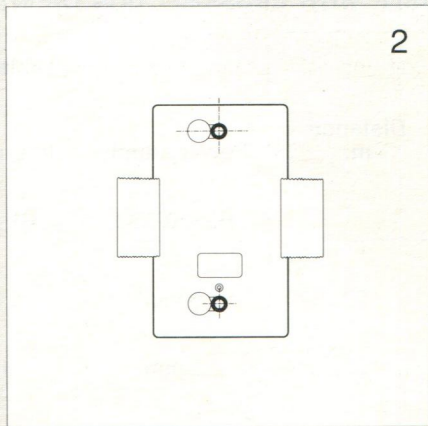
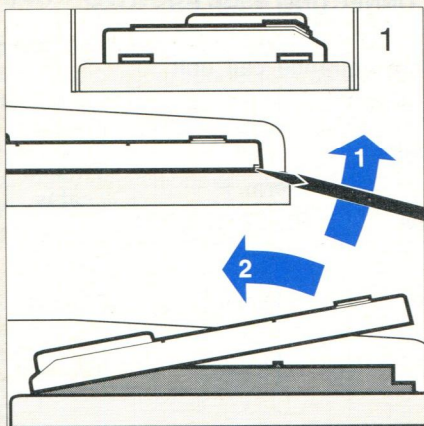
Sc. 40.92.108



Sc. 40.91.104



Mounting instructions for internal unit



Troubleshooting

Should any malfunction occur during operation, carry out the following preliminary checks:

- check that the power supply unit is connected

to the mains and that the mains voltage is not less than 10% of the nominal value.

- Check the output voltages on the external unit and refer to the chapter concerning

the description of the articles on page 2.
- Check that the cross sections of the wires used are in accordance with the table on page 4.

TROUBLESHOOTING TABLES

Audio section

DEFECT

Reception is faulty at the entrance call unit from one internal unit

Reception is faulty at both internal units from the entrance call unit

A 50Hz background noise can be heard in the entire installation

The call from the entrance call unit does not get to the internal unit

A whistle is heard at the entrance call unit (Larsen effect)

The electromagnetic lock does not work

PROBABLE FAULT

The internal unit is defective

The "Porter" loudspeaker is adjusted to too low level of gain. Consult the "Testing the installations" section on page 4

The connecting wires have been channelled for a long stretch with other conductors carrying high-load alternating currents

The handset is not properly replaced on the hook

If there is the electronic signal confirming a call at the entrance unit, check that the connections to the internal unit are made properly

The "Porter" is adjusted to too high level of gain (or not properly balanced). Consult the "Checking the installations" section on page 4

The flexible cable connecting the electromagnetic lock to the pushbutton is cut

Shunt terminals - and 14 and check that between terminals 17 and -- there is a voltage of 12V AC (RMS)

Video section

DEFECT

One monitor is on with no picture

Both monitors are on but there is no picture

Both monitors are on but the picture is out of focus

One monitor does not switch on

No monitors are on.

PROBABLE FAULT

The twisted pair is open circuit or shortcircuit

The corresponding video distributor DE50 is defective. Replace it

The monitor is defective. Replace the video part of the internal unit

The video distributor has no power. Check the connecting wires

The twisted pair from the video camera is open circuit or shortcircuit

One cable terminal is open circuit or shortcircuit; check the connecting wires

The wires of the twisted pair are inverted

The PTC protection circuit has operated because there is a shortcircuit or the screen is defective. Replace the internal unit after checking that all connections have been made in accordance with the wiring diagram

One or more cables in the riser are open circuit. Check the connections

The electronic power supply unit PS200 is defective. Replace it

One-way installations equipped with VK10

One-way installation

Performances

With this installation it is possible to establish both an audio and video link between the internal unit and the entrance call unit.

When a visitor presses a pushbutton on the pushbutton panel at the entrance to the building, an electronic call signal is sent to the internal unit and, after approximately two seconds, the monitor will show the picture of the person who is calling. If the person called so wishes, the handset can be lifted off the hook and a conversation may be started which will last for approximately 60-70 seconds. The internal unit is also equipped with a preview pushbutton (symbol ●) which will activate the camera and the monitor without a call being made.

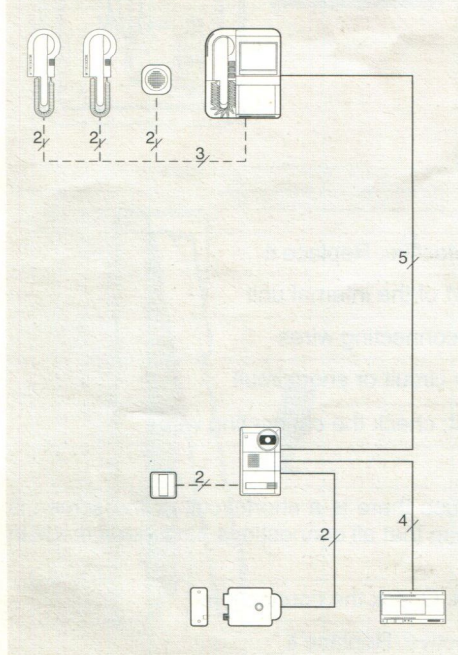
Installation

- Lay the wires in accordance with the single-wire diagram Sc. SM601.003 which shows the number of conductors required for connecting the different items
- Install and connect the units as shown in the diagram Sc. SM601.004 in accordance with the installation requirements on page 4.
- Test the installation as described on page 4.

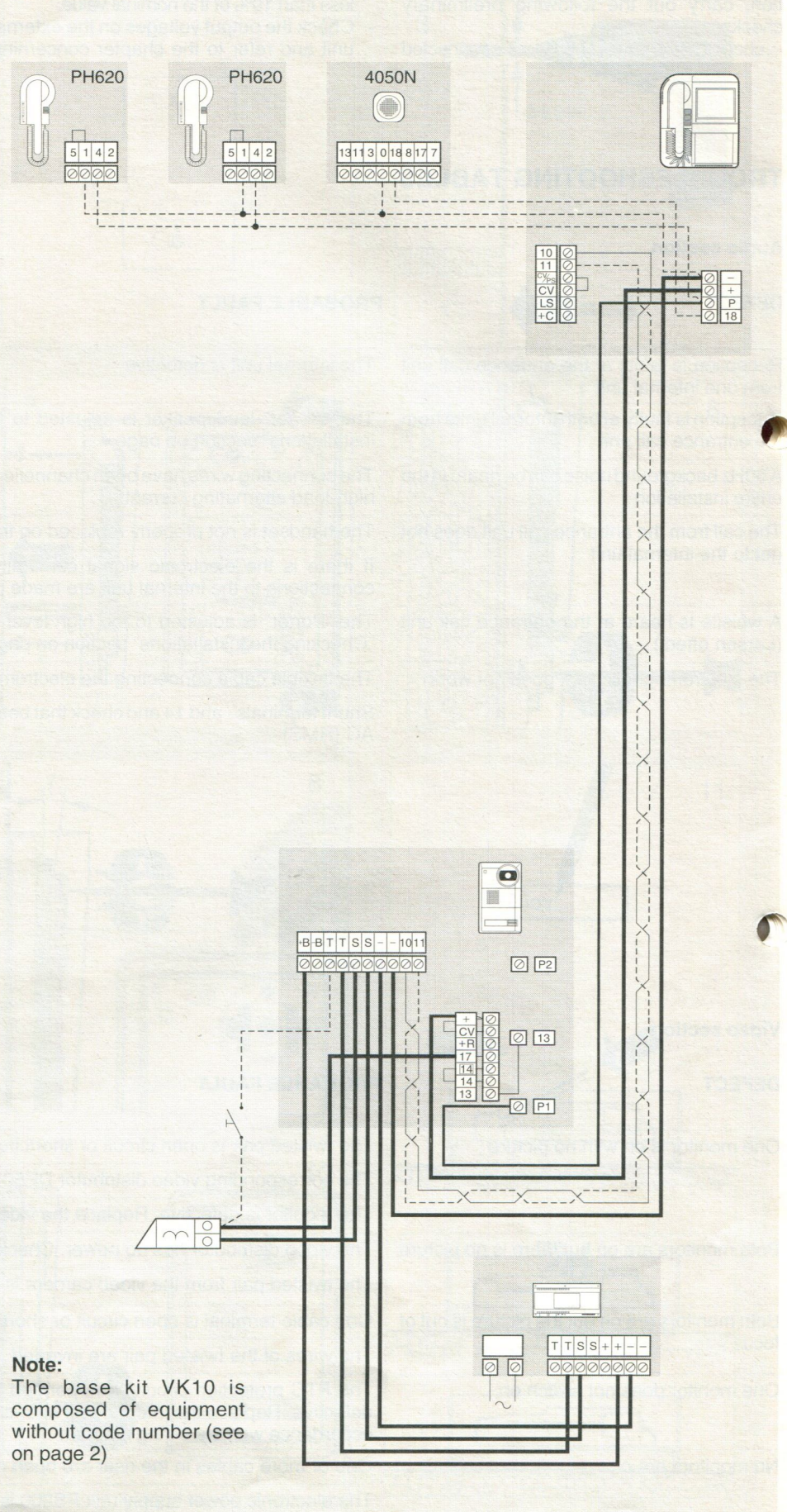
The diagram shows as a dotted line the optional connection for an audible sounder 40.50N (for repeating the call in other rooms) and also PH620WS telephones in parallel to the monitor. Up to 3 audible sounders or telephones can be connected to each internal unit. In addition, the installation can be carried out with several video internal units in parallel (up to 3 units besides the main one). The call reaches all the monitors, whilst the image appears only on the main internal unit.

For the image transfer it is necessary to press pushbutton ● on the monitor where the image will appear. The riser must be provided with an additional wire in order to carry out this installation. See diagram on page 9.

Sc. SM601.003



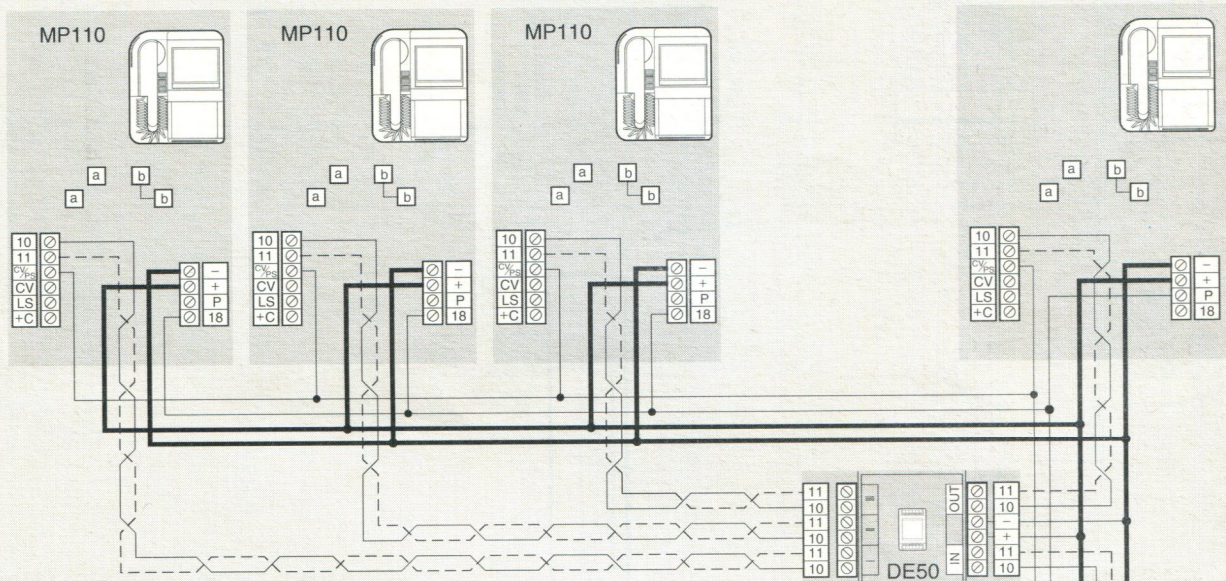
Sc. SM601.004



Note:
The base kit VK10 is composed of equipment without code number (see on page 2)

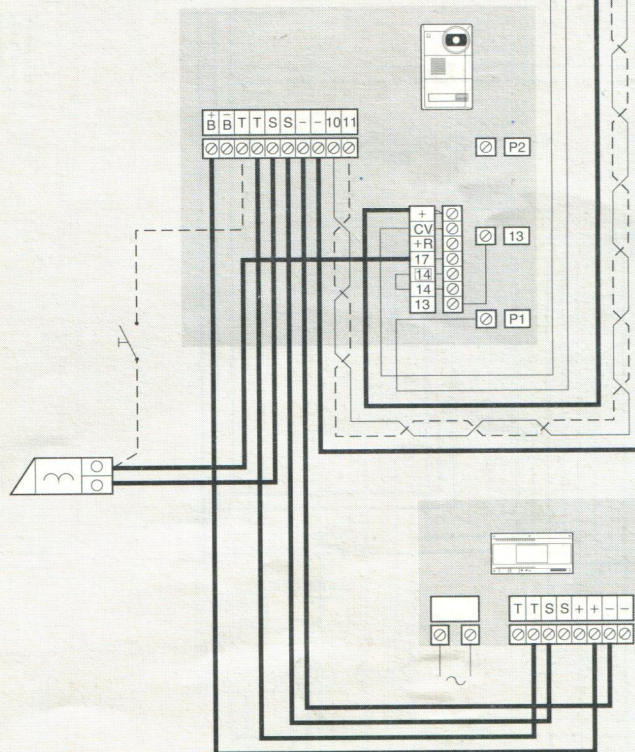
One-way installation with 3 internal units in parallel to the main internal unit

Sc. SM601.007



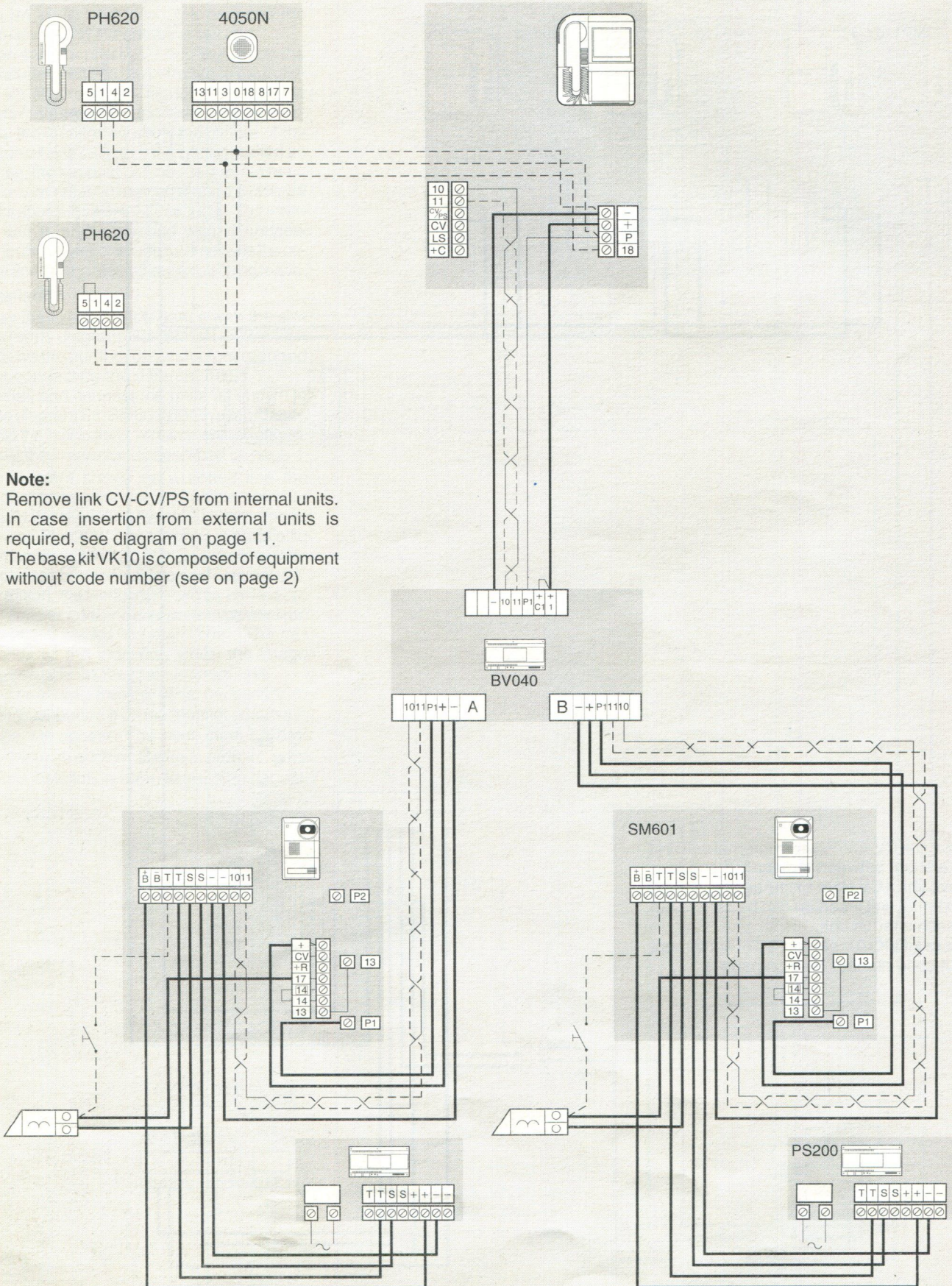
Note:

Remove link CV-CV/PS from internal unit and make a shunt between terminals b and b.
 Remove link +CV from external unit.
 The external unit insertion can be carried out from each internal unit.
 The base kit VK10 is composed of equipment without code number (see on page 2)



One-way installation with 2 external video units

Sc.SM601.020

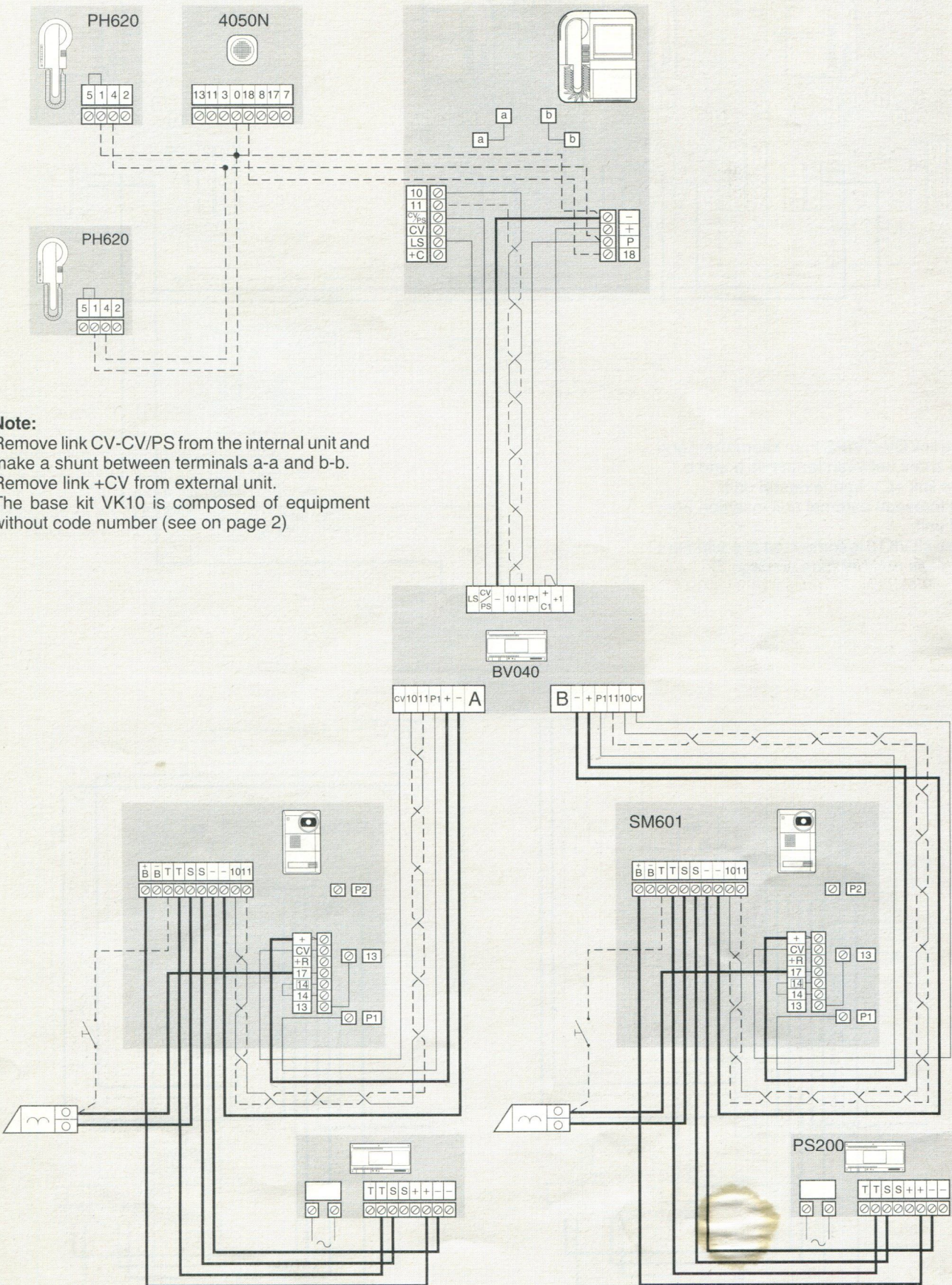


Note:

Remove link CV-CV/PS from internal units.
 In case insertion from external units is required, see diagram on page 11.
 The base kit VK10 is composed of equipment without code number (see on page 2)

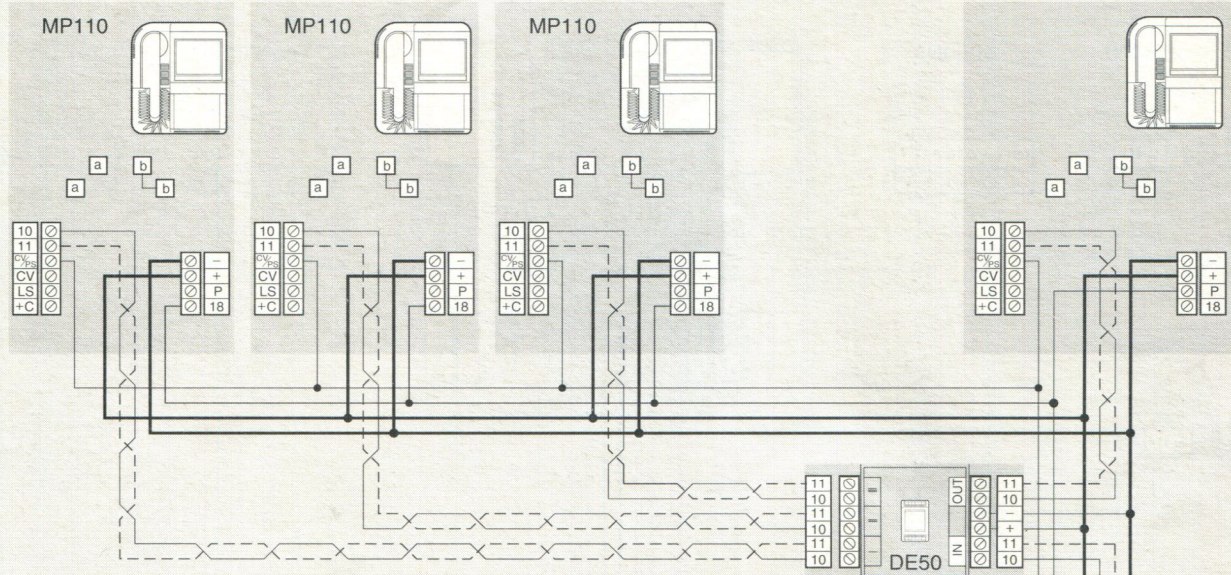
One-way installation with 2 external video units and possibility of external units operation with pushbutton ● and ●

Sc.SM601.013



One-way installation with 2 external video units and 3 internal units in parallel to the main internal unit

Sc.SM601.017



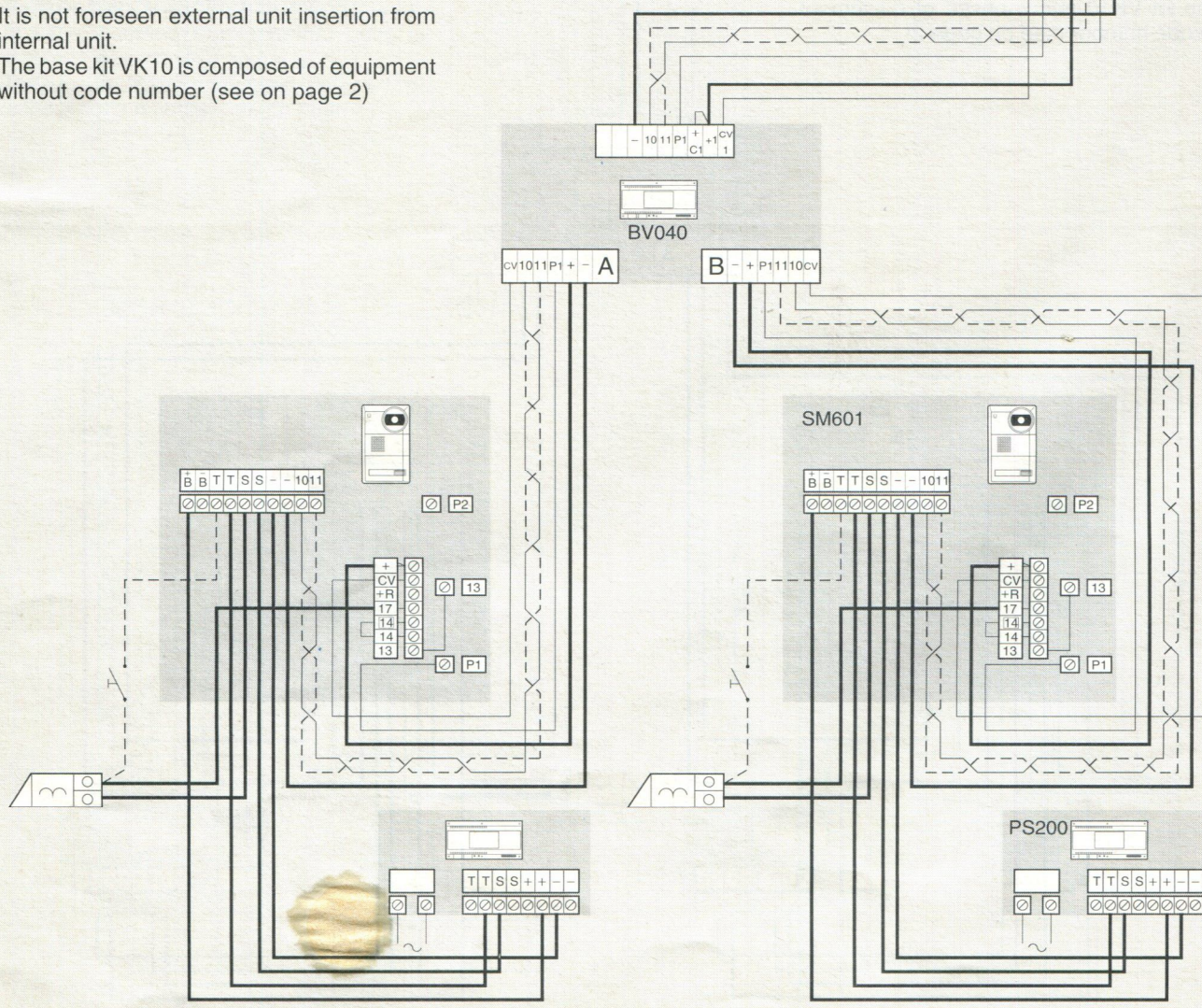
Note:

Remove link CV-CV/PS from internal unit and make a shunt between terminals b and b.

Remove link +CV from external unit.

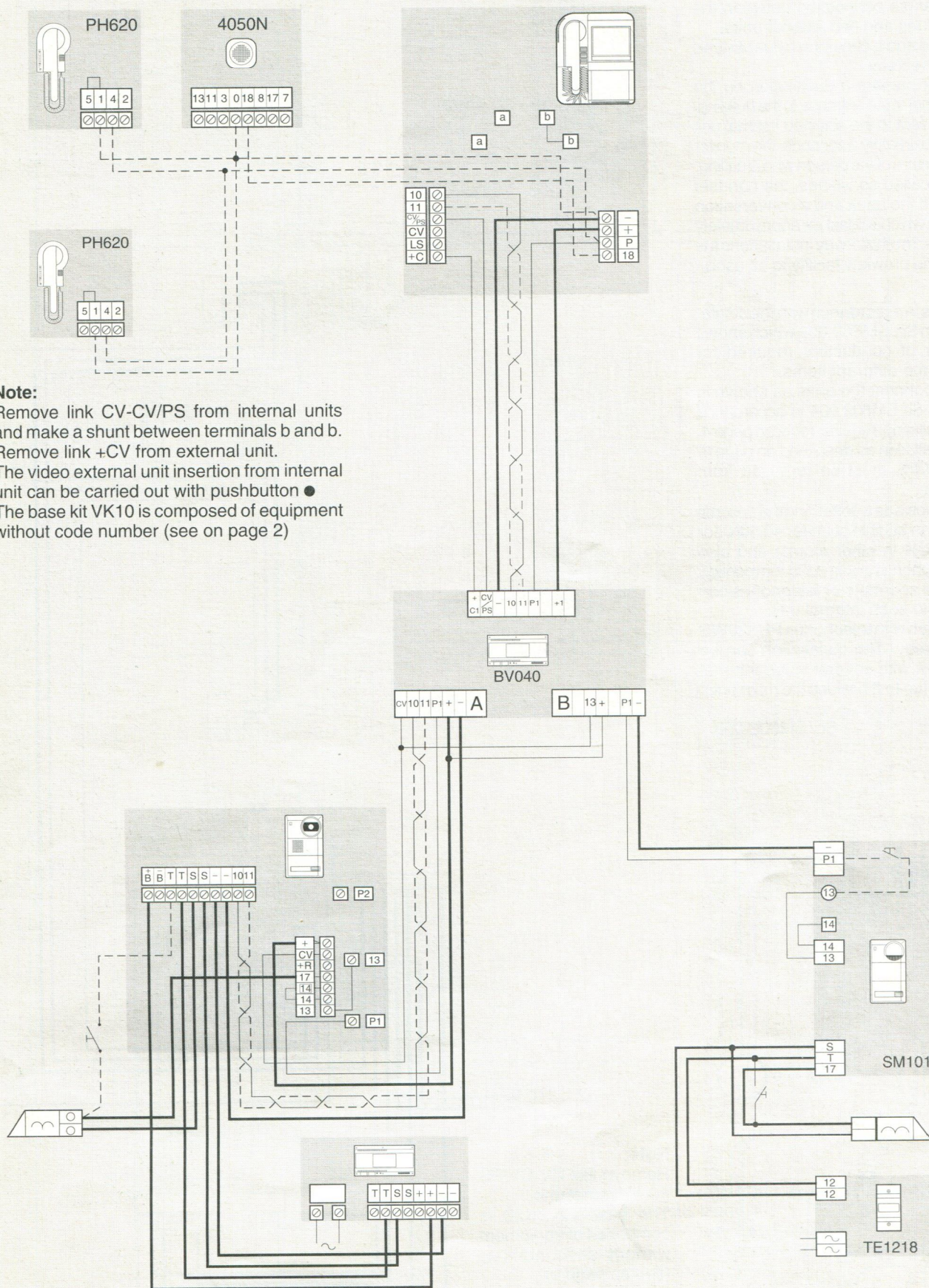
It is not foreseen external unit insertion from internal unit.

The base kit VK10 is composed of equipment without code number (see on page 2)



One-way installation with 2 external units, one of which video and one audio

Sc.SM601.019



Note:

Remove link CV-CV/PS from internal units and make a shunt between terminals b and b.
 Remove link +CV from external unit.
 The video external unit insertion from internal unit can be carried out with pushbutton ●
 The base kit VK10 is composed of equipment without code number (see on page 2)

Two-way installations with VK20

Two-way installation

Performances

With this installation it is possible to establish a video and audio connection between the entrance call unit and two internal units.

Both video and audio circuits are guaranteed for complete secrecy.

When a visitor presses a pushbutton on the pushbutton panel at the entrance to the building, a call signal is sent to the selected internal unit and, after approximately 2 seconds, the monitor will show the picture of the person who is calling. If the person called so wishes, the handset can be lifted off the hook and a conversation may be started which will last for approximately 60-70 seconds. In all two-way installations it is not usual for the preview facility to be used.

Installation

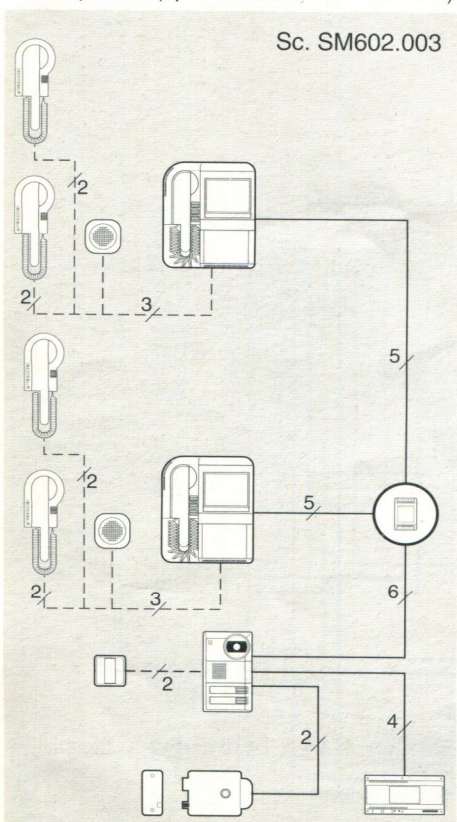
a) Lay the wires in accordance with the single-wire diagram Sc. SM602.003 which shows the number of conductors required for connecting the different items.

b) Install and connect the units as shown in the diagram Sc SM602.004 in accordance with the installation requirements on page 4.

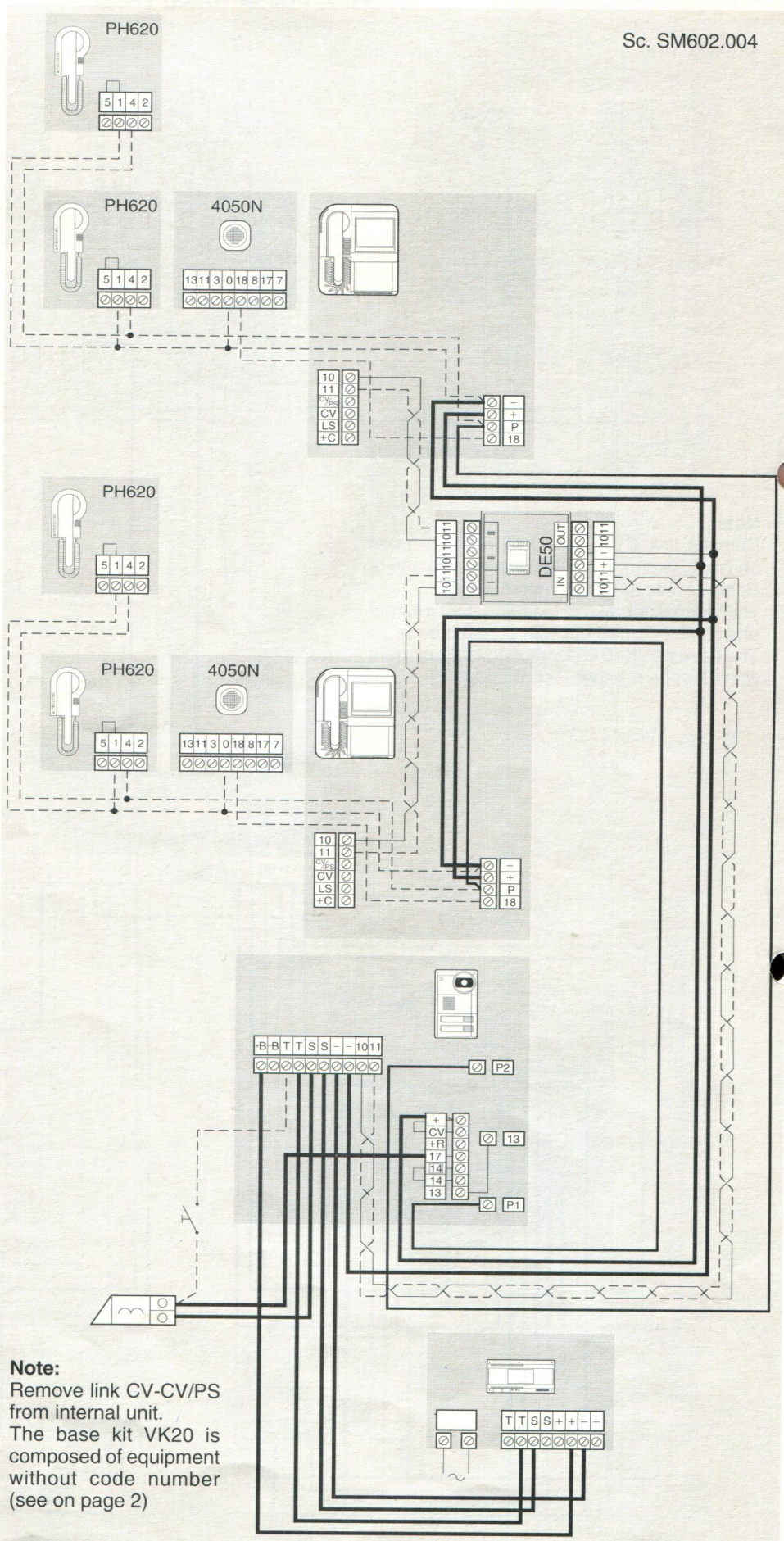
c) Test the installation as described on page 4. Link CV-CV/PS must be removed from internal units.

The diagram shows as a dotted line the optional connection for an audible sounder 40.50N (for repeating the call in other rooms) and also PH620WS telephones in parallel to the monitor. Up to 3 audible sounders or telephones can be connected to each internal unit.

The conversation with telephones PH620WS is without secrecy. The installation can be also carried out with several video internal units in parallel (up to 3 besides the main unit).

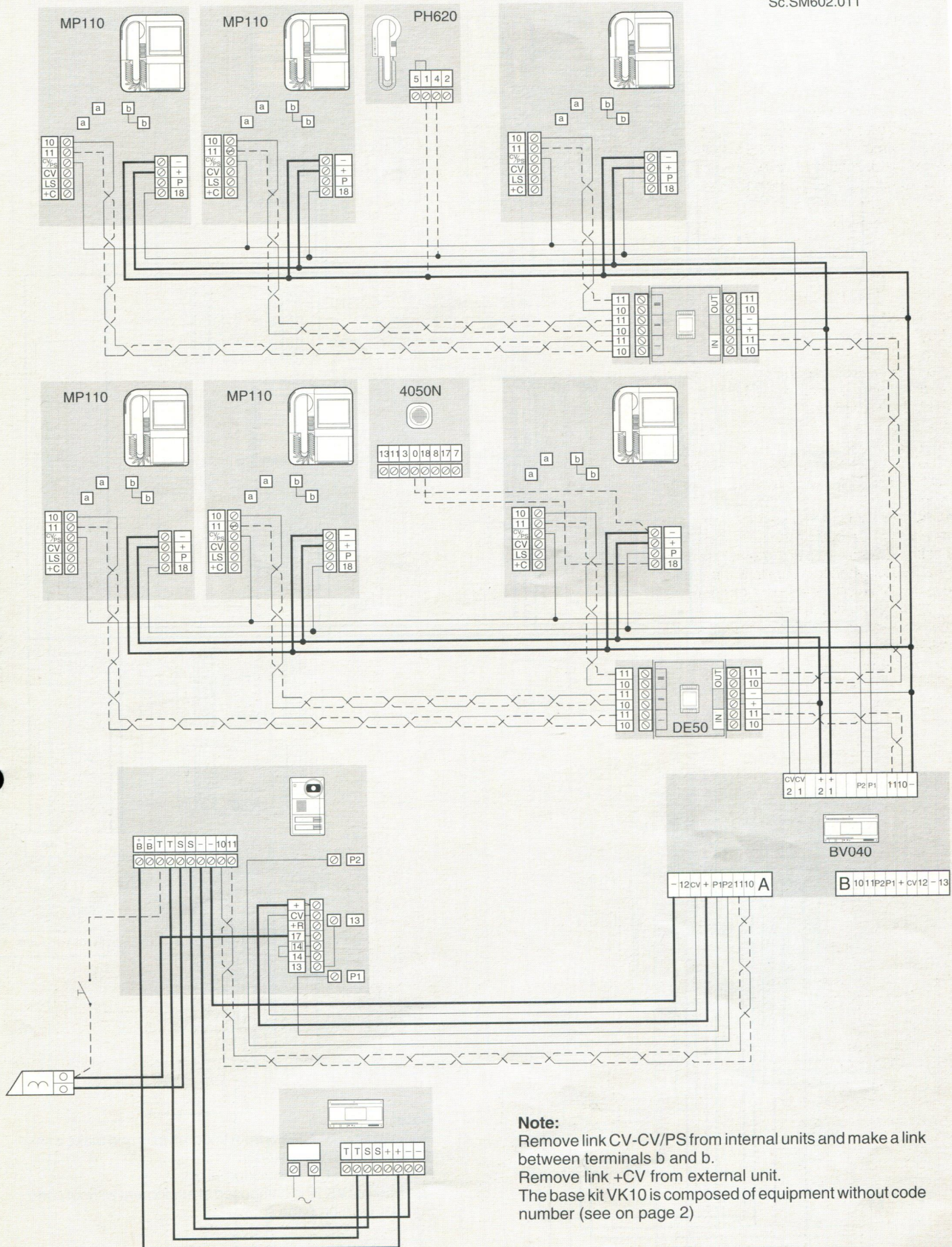


Sc. SM602.004



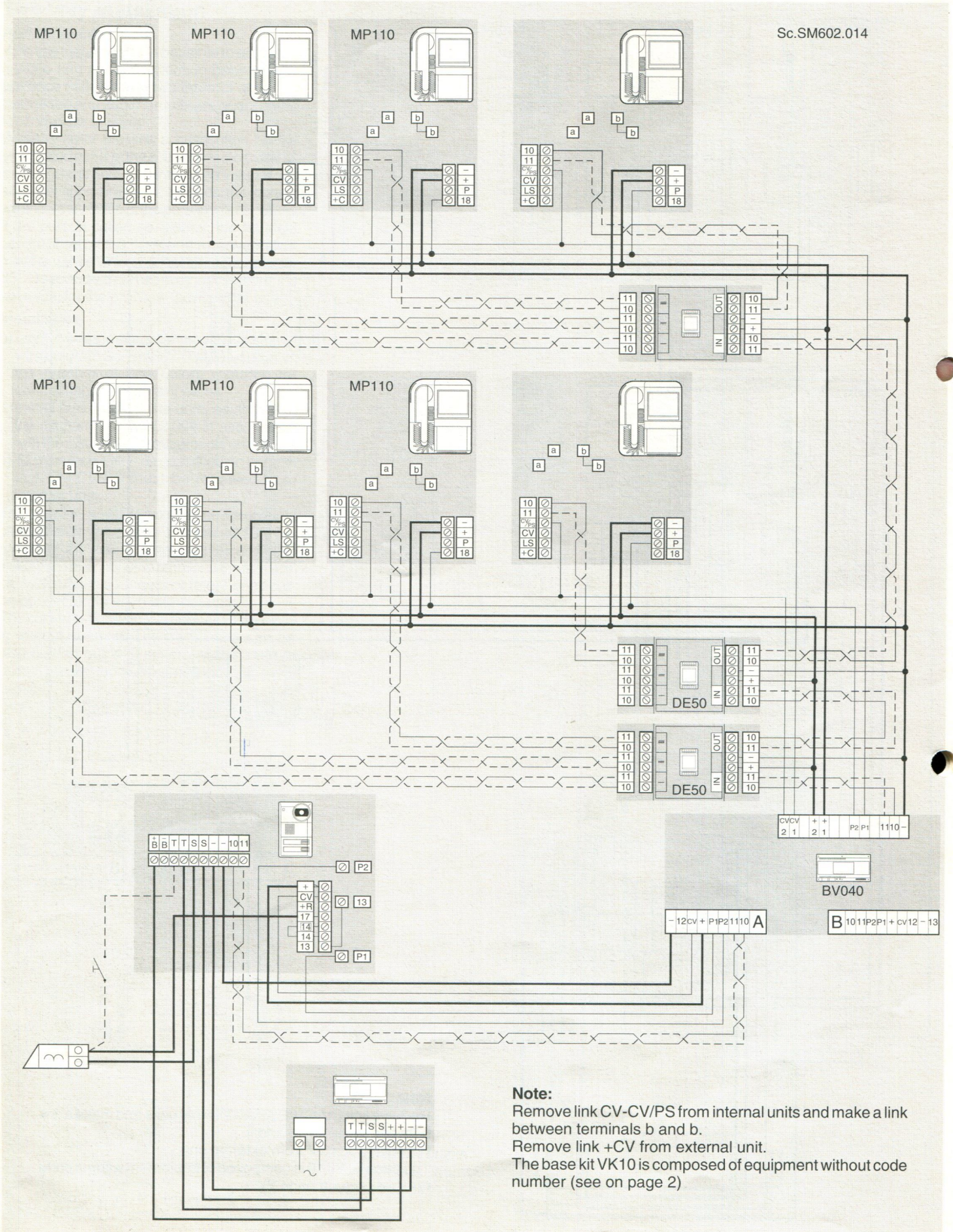
Two-way installation with 2 internal units in parallel to each main internal unit

Sc.SM602.011



Note:
 Remove link CV-CV/PS from internal units and make a link between terminals b and b.
 Remove link +CV from external unit.
 The base kit VK10 is composed of equipment without code number (see on page 2)

Two-way installation with 3 internal units in parallel to each main internal unit



Sc.SM602.014

Note:
 Remove link CV-CV/PS from internal units and make a link between terminals b and b.
 Remove link +CV from external unit.
 The base kit VK10 is composed of equipment without code number (see on page 2)

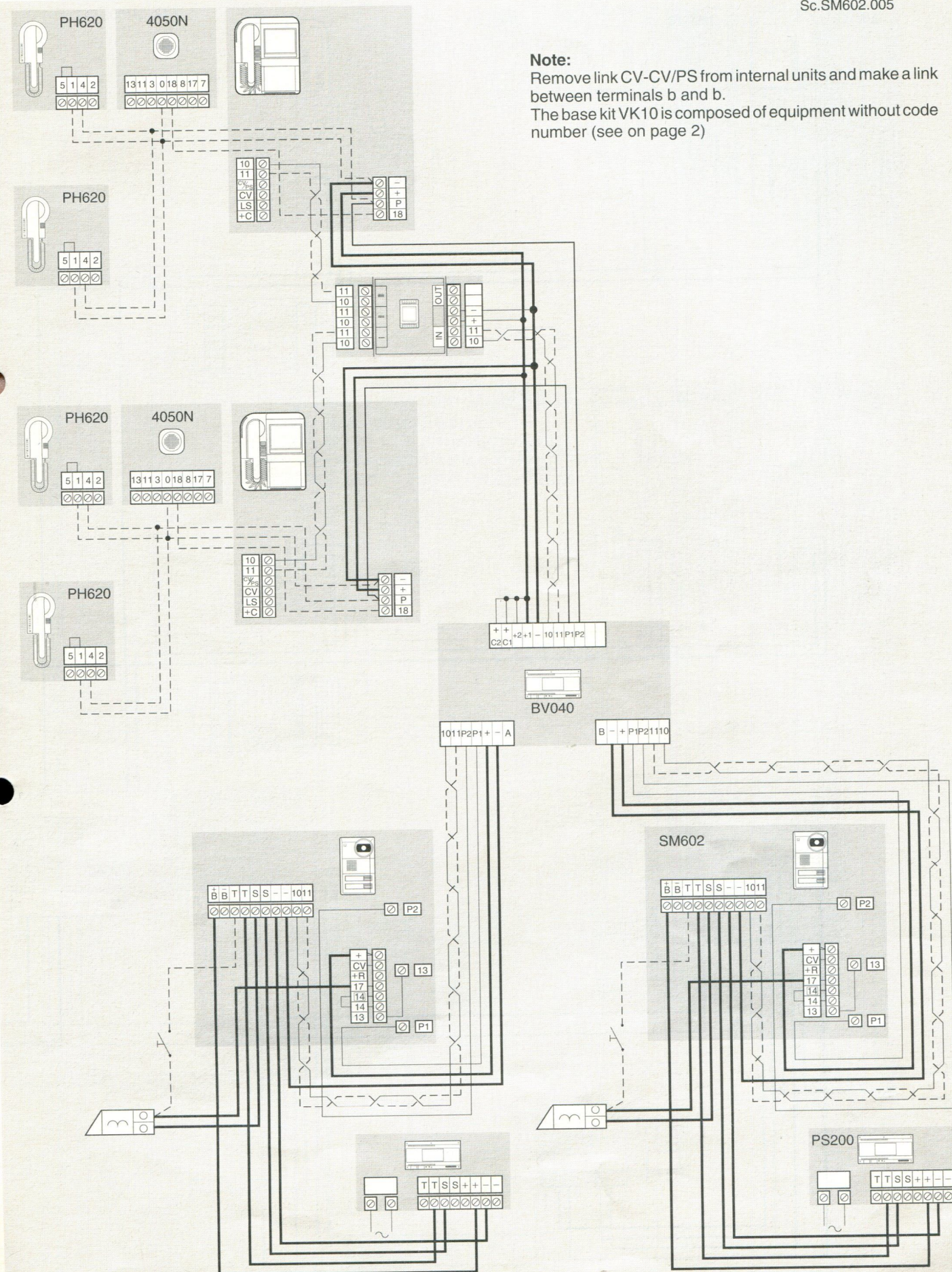
Two-way installation with 2 external video units

Sc.SM602.005

Note:

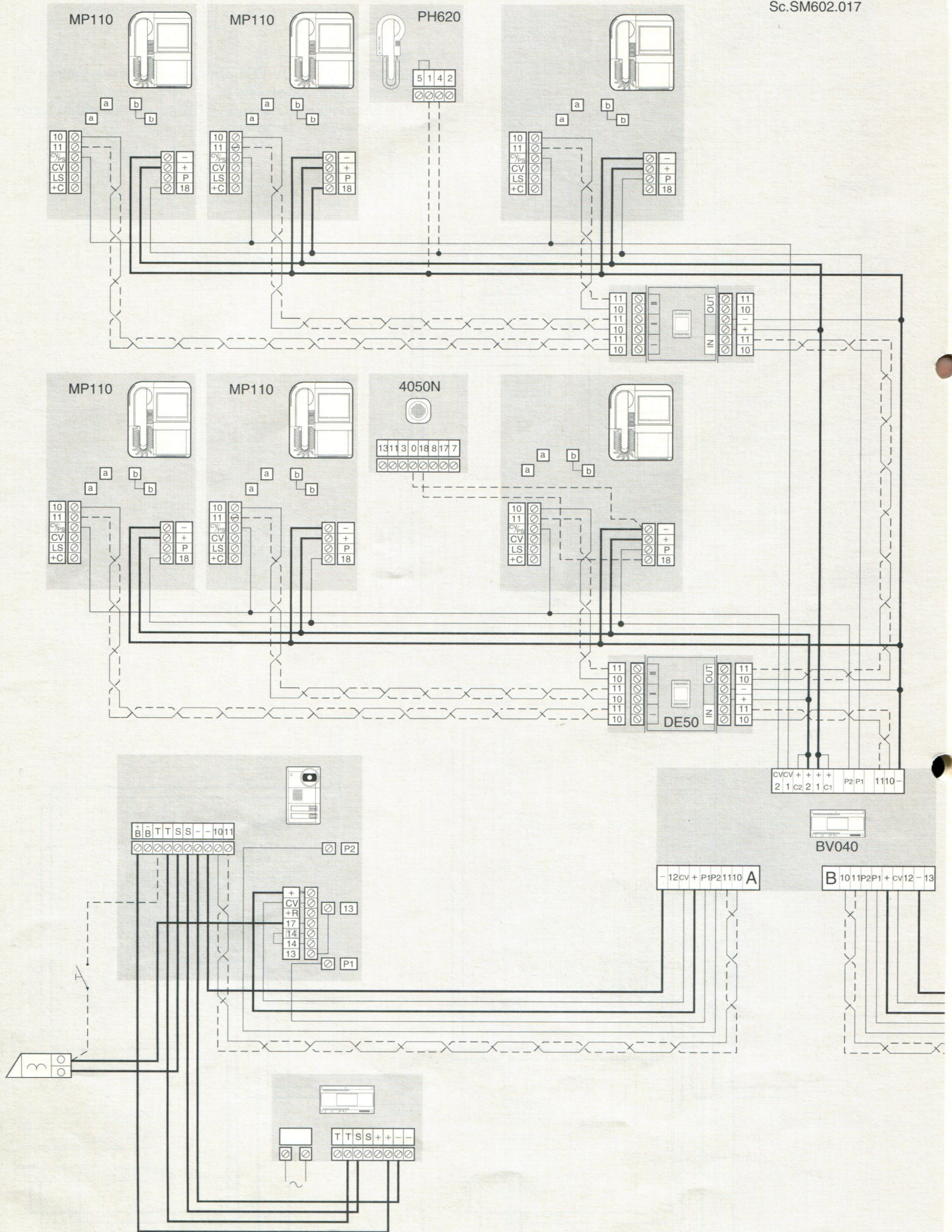
Remove link CV-CV/PS from internal units and make a link between terminals b and b.

The base kit VK10 is composed of equipment without code number (see on page 2)



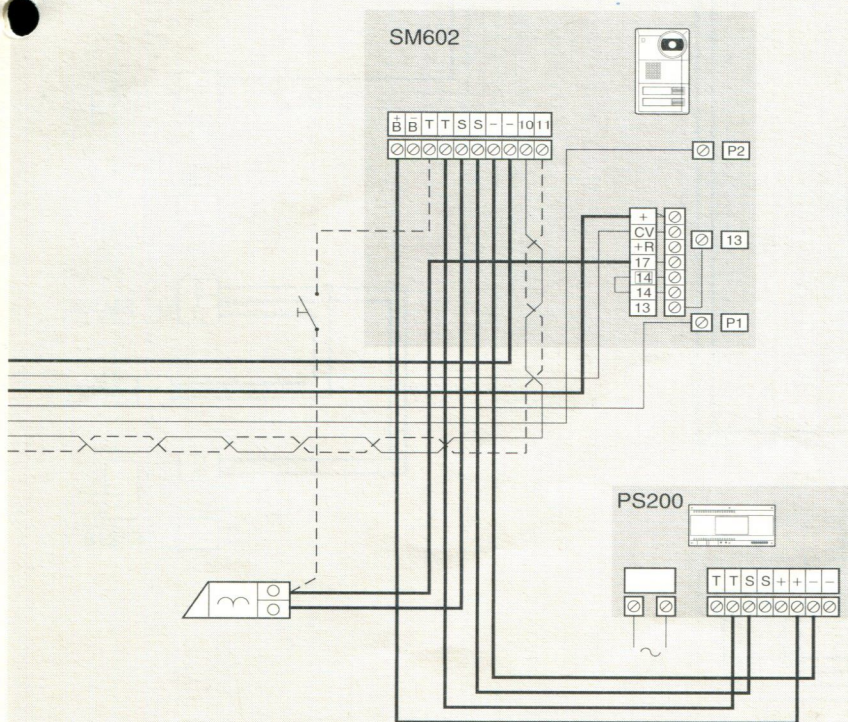
Two-way installation with 2 video external and 2 internal units in parallel to each main internal unit

Sc.SM602.017



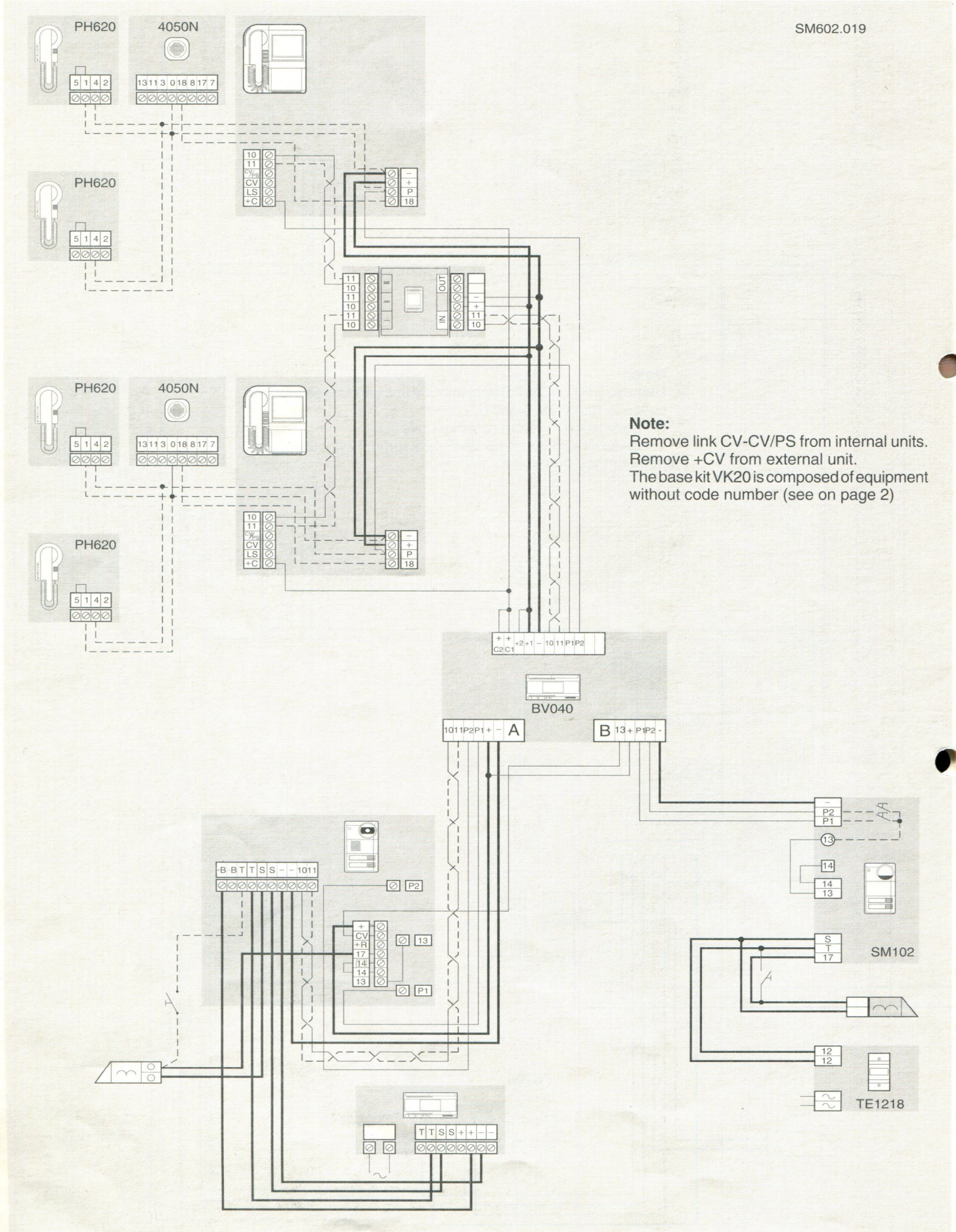
Note:

Remove link CV-CV/PS from internal units and make a link between terminals b and b.
 Remove link + CV from external units.
 The base kit VK10 is composed of equipment without code number (see on page 2)



Two-way installation with 2 external units, one of which is video and one audio

SM602.019



LT Terraneo spa

Via L. Manara, 4
22036 Erba Como Italy
Tel. 031.641438 r.a.
Tel. Export Dep. 031.645280
Telex 380510 ELLETI I
Fax 031.645037