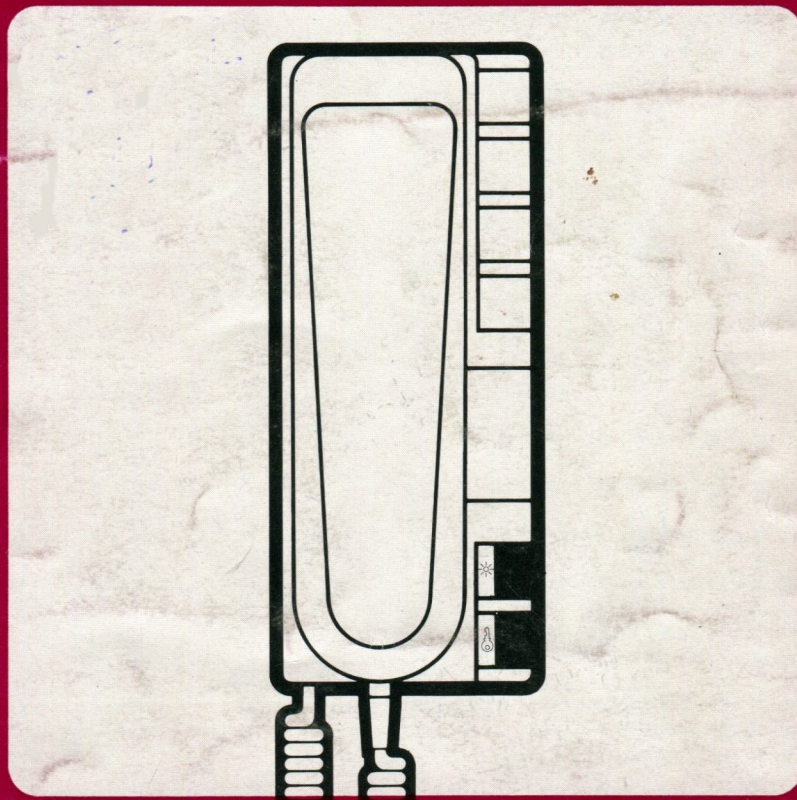


LT TERRANEO

sprint



Technical bulletin n. 10

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Important


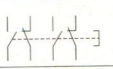


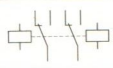




































It is recommended that only original LT accessories be used, particularly our power units. Materials of other manufacturers, even if first class, may not have the characteristics required for proper operation of the equipment described in this brochure.

Due to continuous product improvement, features and specifications may be subject to change without notice.

Table of Audio Door Entry Systems

	System with 4 wires + n with buzzer	System with 1 wire + n with electronic call	
Pushbutton panels	500 series 900 series SM series AV011 - AV016 series Postalbox series Tersystem series (with 2130÷2132, 2141÷2144 modules)	Tersystem series (with 2191/2192/2194 modules) +Art. GE020	Digital pushbutton panel Art. AVD10+Art. GE030+Art. AVD30
Porter Speaker units	Art. 2659 Art. 2160/2161 only for Tersystem series	Art. 2170 for Tersystem series	Incorporated in Art. AVD10
Power supply	Art. 672	Art. TE1218	Art. PS190+Art. DR030
Internal units	Art. 600/600WS/600BR 601/603N/603S/PH630WS	Art. PH620WS Art. 601CE	Art. PH620WS Art. 601CE
Switching unit for intercom	Art. 607	-	-
Two-door switching unit	Art. 608N	Art. BV020	Art. BV030÷BV020
Secrecy	Art. UE611 only with art. 600	Supplied in the system	Supplied in the system
Central porter switchboard	Art. 1400/2N Art. 1500N	-	-
	Technical Bulletin No. 10	Technical Bulletin No. 12	

Table of electrical symbols

	Microphone		Double pole push button contact		Thermistor
	Receiver		Bistable relay		Resistor
	Loudspeaker		Relay		Potentiometer
	AC buzzer		Junction box		Inductor
	DC buzzer		Integral circuit		Transformer
	AC bell		Diode		Transformer with 3 windings
	DC bell		Zener diode		Amplifier
	Lamp		Thyristor		Video distributor
	Fuse		LED Light Emitting Diode		Plug and socket
	Electromagnetic lock-door release		Bridge rectifier		Coaxial cable
	Contact		PNP transistor		Radio receiver
	Pushbutton		NPN transistor		Earth
	Locking pushbutton contact		Electrolytic capacitor		Battery
	Double pole contact		Capacitor		

General

The SPRINT intercommunication system is used in several different types of applications of door entry systems, to satisfy a wide range of requirements.

The installation which can be used can be divided into three different groups:

- BASIC INSTALLATIONS for a sound-only connection between the SPRINT telephone and the entrance call units
- INSTALLATIONS WITH SWITCHBOARD for conversations between entrance call units, switchboard and internal telephones and for the sound-only connection between entrance call units and SPRINT telephones
- INTERCOMMUNICATING INSTALLATIONS which in addition to the basic installations will also permit the internal (non-selective) communication between SPRINT telephones.

With the first and second of these installations it is possible to connect any number of telephone unit; with the third installation up to 7 non-selective intercommunication units can be installed (Art. 600 + Art. 600ETE) with or without an entrance call unit.

It is possible to connect the pushbuttons of the SPRINT units to relays which can operate a number of devices (lights, gates, burglar alarm, automatic gates, boilers, etc.).

This brochure illustrates the most frequent types of application. Special instructions and drawings are available on request for applications not contemplated herein.

Characteristics of the SPRINT power supply unit

The circuits of the Art. 672 power supply unit are protected with PTC thermistors. If a short circuit occurs in the system the PTC will assume a high resistance value which limits the current due to the failure; this condition can continue for an indefinite period and continues for about 1 minute after the power supply unit has been disconnected from the mains supply.

After removing the cause of the system's short circuit it is not necessary to replace any of the components on the power supply unit. To reset the output voltages all that is required is to reconnect Art. 672.

Characteristics of the SPRINT intercom units

The SPRINT telephone units can be grouped in two distinct versions:

- Art. 603N telephone with 1 pushbutton for installations with electric porter and switchboard (series 1500N) with or without entrance call unit
- Art. 600 telephone with 2 pushbuttons with possibility of adding a further 4 pushbuttons (Art. 600ETE) for installations with electric porter and switchboard with or without entrance call unit and up to 6 internal non-selective telephones with an entrance call unit.

The SPRINT telephones can be adapted to every installation possibility with the simple addition of a diode (for use with the switchboard) or by making different types of connections and moving a few jumpers.

Characteristics of the installations which can be obtained with the SPRINT intercom units

BASIC INSTALLATIONS: the call from the entrance call unit is signalled by the buzzer in the telephone. It is sufficient to lift the receiver to communicate. The open-door pushbutton and, if connected, the stairway light relay can be operated even if receiver is on the hook. No secrecy of conversation is provided: anybody can lift the receiver and listen to (and talk with) anybody else already talking with the entrance call unit. Secrecy of conversation with the entrance call unit can be obtained (only with Art. 600) with the addition of the special unit Art. UE611 on each telephone. Any call from the entrance call unit will in this way enable the called telephone only to converse for about 1 minute.

INSTALLATIONS WITH SWITCHBOARD: these can be divided into two groups:

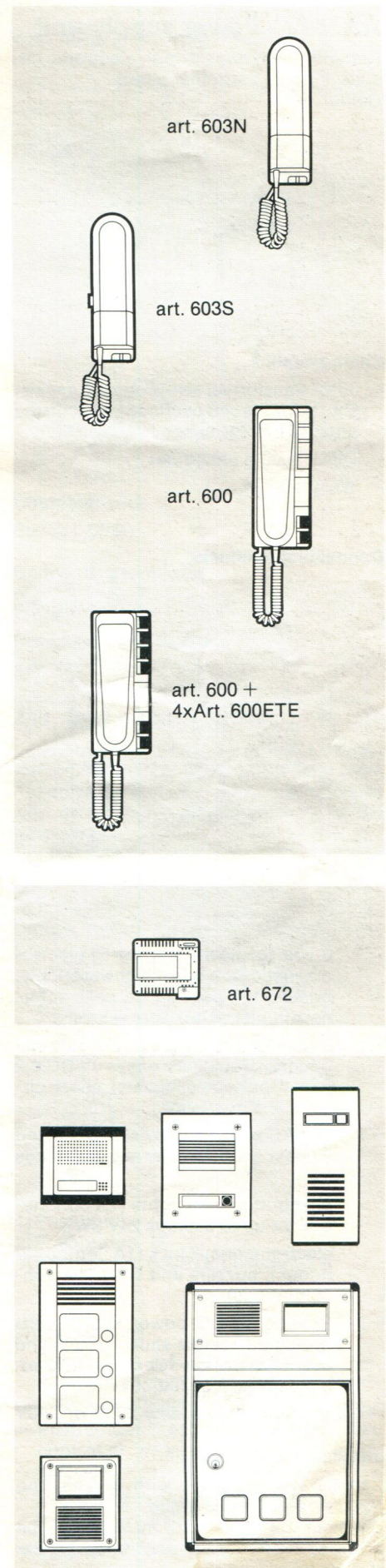
- installations without an entrance call unit with series 1400/2N (2-wire system, 1 common + 1 return for each telephone); it is possible to call the telephone from the switchboard and vice versa. Conversation security is provided.
- installations with an entrance call unit with series 1500/N (4-wire system, 2 commons + 2 returns for each telephone). In the DAYTIME position it is possible to call the telephone from the switchboard or vice versa with privacy of conversation. In the NIGHTTIME position the telephones can talk with the entrance call unit with no privacy of conversation (operation is similar to that of the basic installations). With the switchboard in the DAYTIME position, with the entrance call unit excluded, it is possible to call the porter keeping one pushbutton for this function.

The secrecy of conversation device Art. UE611 cannot be included in either of these installations.

INTERCOMMUNICATING INSTALLATIONS: to call another telephone lift the receiver and push the button corresponding to the required user; the latter will simply lift the receiver and talk. Again, any other user can lift his receiver and find himself in the midst of the conversation, as the calls are not selective.

It is possible to have 1 or more entrance call units: in this case the SPRINT telephone units are normally ready for use, without privacy of conversation with the entrance call units (operation is similar to that of the basic installations). The entrance call unit is automatically excluded when an intercom call is made.

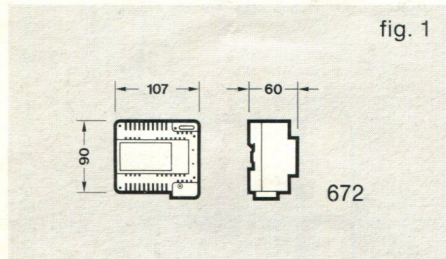
The secrecy of conversation device Art. UE611 cannot be included in either of these installations.



Description of articles

Art. 672 - Power supply unit

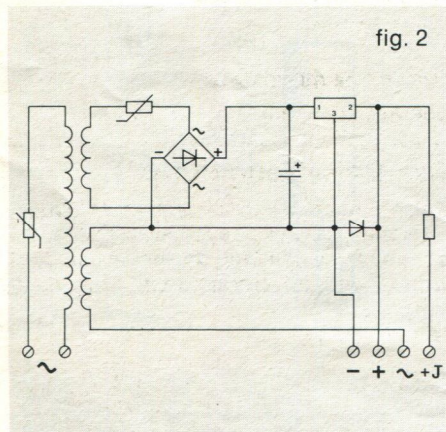
Complete with transformer, electronic circuits, PTC and terminal board.
Colour: grey.



Characteristics:

- 30 VA transformer self-protected against short circuits and overloads both on the primary and the secondary by PTC's
- DIN Housing 6 modules
- Weight 0,8 kg

Connecting terminals:



- 0 volt for power supply to electromagnetic lock, speech power supply, pushbutton pilot lights, calls, internal circuits of auxiliary relays
- + Speech power supply and internal circuits of auxiliary relays 8V DC 0,2 A self-protected against short circuits and overloads
- ~ 12V AC power supply self-protected against short circuits and overloads for:
pushbutton pilot lights (1A continuous for up to 8 lamps 24V 3W);
electromagnetic lock (1A non-continuous); buzzers and bells (1A non-continuous)
- +J Speech 8V DC power supply self-protected against short circuits and overloads for non-selective intercommunicating installations

PRIM. connection to mains 220V or 240V 50/60Hz

Installation alternatives

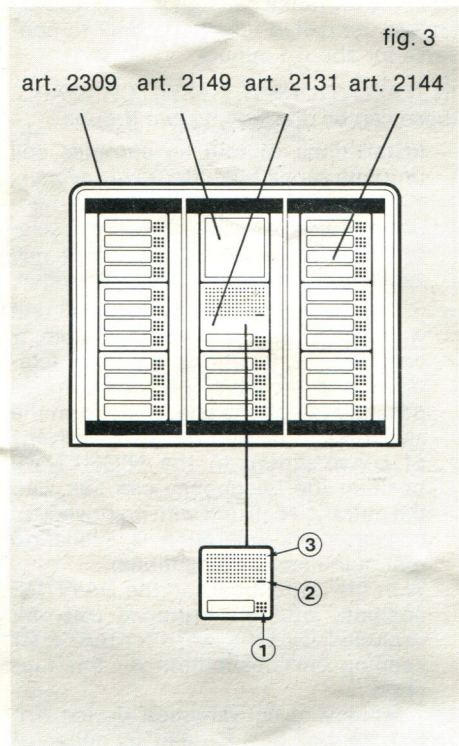
Can be wall-mounted with screws and plugs or on a DIN 35 guide.
Warning: the power unit must always be mounted in a horizontal position for proper ventilation.

Pushbutton panels

These are exhaustively described in the commercial catalogue and are available in various series according to the type required: recessed, surface or gate mounting. The entrance call unit can also have a Post-albox which, in addition to the normal pushbutton function, also includes an anodized aluminium post box. The pushbutton unit should be fastened so that the "Porter" grille is about 150 cm from the ground.

Tersystem 2000 pushbutton panels

These can be assembled in various configurations: with just a limited number of components it is possible to design each and every type of pushbutton panel. Colour: natural anodized aluminium, white, brown.

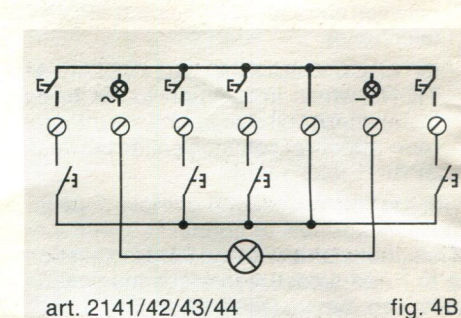
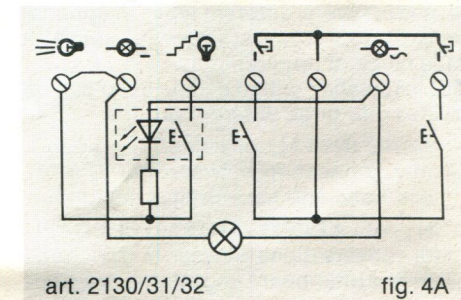


- (1) Call button
- (2) Stairway light relay pushbutton
- (3) "Porter" grille Art. 2659

Characteristics

- The system consists of:
- recess-mounted boxes with aluminium profile plate
 - rain protection housing for recess or gate-mounting
 - modules complete with "Porter" grille Art. 2659 (this is the only one which can be mounted with this type of pushbutton panel), with 1 or 2 pushbuttons
 - modules with 1 to 4 pushbuttons
 - cover modules or with illuminated plate

Connecting terminals:



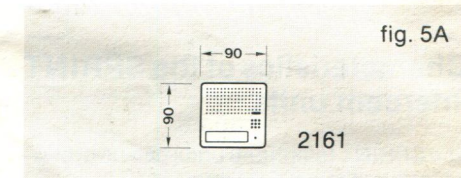
- ⚡ Pushbuttons' output
- ⚡ Module light power supply and LED for pushbutton with ⚡ symbol
- ⚡ Pushbutton common
- ⚡ Stairway light relay control and temporary lighting of pushbutton panel
- ⚡ Module light power supply
- ⚡ Power supply for pushbutton LED with ⚡ symbol

Installation

Recessed surface or gate mounting.

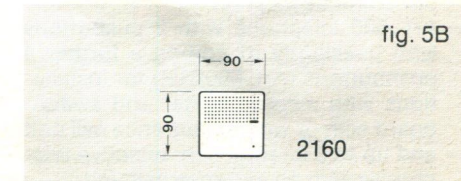
Art. 2161 - Module with Porter speaker and 1 call pushbutton incorporated

Complete with Porter speaker and one pushbutton: It is also equipped with potentiometers for the continuous adjustment of the levels of reception and transmission. Can be mounted as an alternative to the combination module for Porter Art. 2131 + Porter Art. 2659.

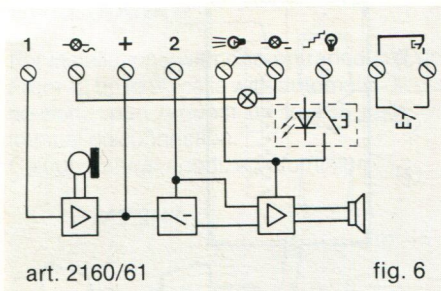


Art. 2160 - Module with Porter incorporated

As for Art. 2161 but without the pushbutton



Connecting terminals and their functions

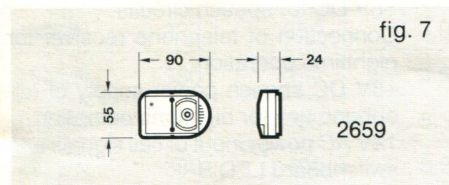


- 1 Microphone output (adjustable)
- ⊗ Power supply for module illumination light and LED for pushbutton with symbol ●⊗
- + +8 V DC power input
- 2 Loudspeaker input (adjustable)
- ⊗ Negative for LED for pushbutton with symbol ●⊗
- ⊗ Negative for module illumination lamp
- ⊗ Control for stairway light relay and temporary panel illumination
- ⊏ Pushbutton output

See connecting diagram on page 12

Art. 2659 - "Porter" Electronic Speaker Unit

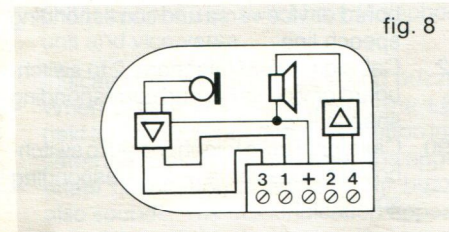
To be used in all pushbutton panels



Characteristics

- Amplified electret microphone and loudspeaker
- Weight 0.130 kg

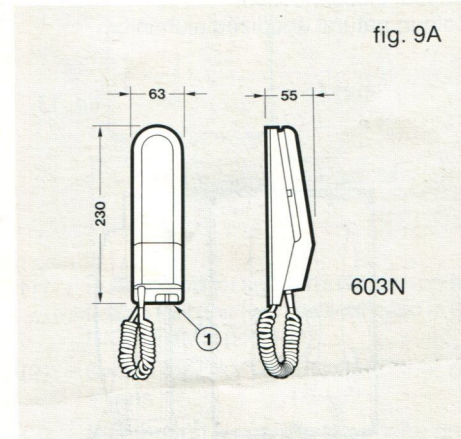
Connecting terminals:



- 3 60% microphone output
- 1 100% microphone output
- + 8V DC power input
- 2 Loudspeaker input
- 4 Loudspeaker adjustment: with jumper 2-4 100% without jumper 2-4 60%

Art. 603N - Telephone

Telephone for electric porter installations, porter switchboard (1500N series) with or without entrance call unit.
Colour: beige

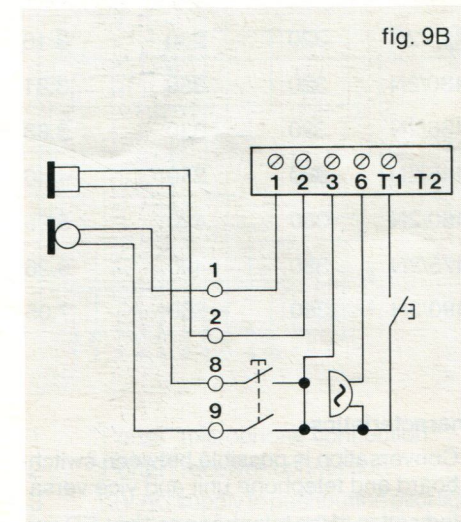


- (1) Pushbutton

Characteristics

- One pushbutton for opening the door for installations with entrance call unit or for calling the switchboard
- Internal buzzer
- Weight 0.320 Kg

Connecting terminals:



- 1 Microphone connection
- 2 Receiver connection
- 3 0 volt for speech circuit, call signals and door opening pushbutton
- 6 Input for call signal from entrance call unit
- T1 Door opening pushbutton

Installation

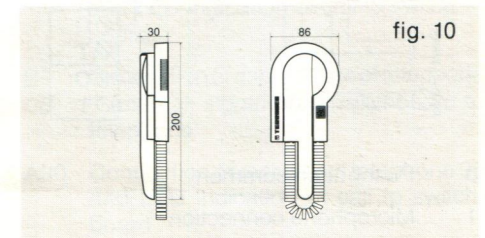
Surface with screws and plugs, on recessed box (Ø 60 mm) or square (distance between holes 83 mm type 503 Ticino).

Art. 603S - Telephone

As for Art. 603N but with manually operated switch on the handset for speech.
Colour: beige.

Art. PH630WS - Telephone

Telephone for electric porter installations, porter switchboard (1500N series) with or without entrance call unit.
Colour: white

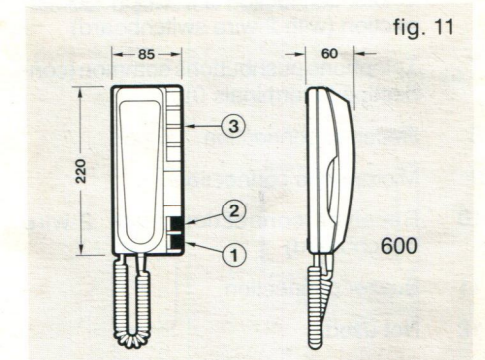


Characteristics:

- One pushbutton for opening the door for installations with entrance call unit or for calling the switchboard
- Internal electronic call generator
- Weight 0.2 Kg

Art. 600 - Telephone

Telephone for electric porter installations, intercommunication systems with or without entrance call unit, porter switchboard with or without entrance call unit, video telephones.
Colour: beige:



- (1) Pushbutton ⊏→
- (2) Pushbutton ⊗
- (3) Knockout for Art. 600ETE pushbuttons

Characteristics

- Pushbutton ⊏→ for door opening control, internal call to interconnected units and call to switchboard
- Pushbutton ⊗ for stairway light relay control or for internal call in intercom systems
- Possibility of adding further 4 pushbuttons Art. 600ETE
- Internal buzzer
- Weight 0.430 kg

Connecting terminals

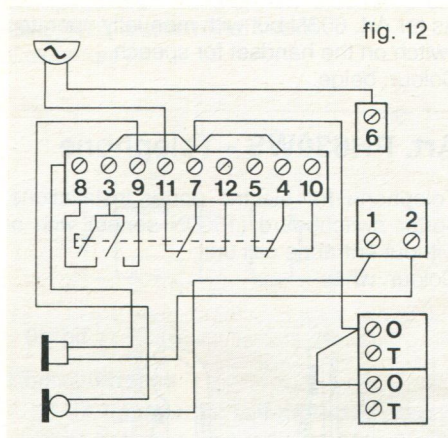


fig. 12

- 0 Pushbutton common
- 1 Microphone connection
- 2 Receiver connection
- 3 0 volt for speech circuit, call signals, stairway light relay and door opening pushbutton
- 4 Call signal speech circuit input for 2-wire switchboard installations; call signal and switching unit Art. 607 control signal in installations with intercom facility
- 5 Diode connection (with 2-wire switchboard) or buzzer connection (for installation with 2 intercommunication units and entrance call unit)
- 6 Call signal input from entrance call unit, buzzer connection or microphone connection (with 2-wire switchboard)
- 7 Telephone pushbuttons common (connection to terminals 0)
- 8 Receiver connection
- 9 Microphone connection
- 10 Receiver connection (with 2-wire switchboard)
- 11 Buzzer connection
- 12 Not used
- T (⏏ pushbutton) door opening pushbutton
- T (⚡ pushbutton) stairway light relay control

Installation

Surface with screws and plugs, on recessed box (Ø 60 mm) or square (distance between hole 83 mm type 503 Ticino).
Table mounted with Art. 600T accessory.

Reception of the call is possible only when the handset is on the hook. It is sufficient to move the wire from terminal 11 to terminal 4 to receive the call also when the handset is off the hook.

Art. Series 1400/2N - Porter switchboard

For installations without entrance call unit from 12 up to 90 calls with automatic disconnection; upon request up to 135 calls with manual disconnection.
Colour: natural anodized aluminium

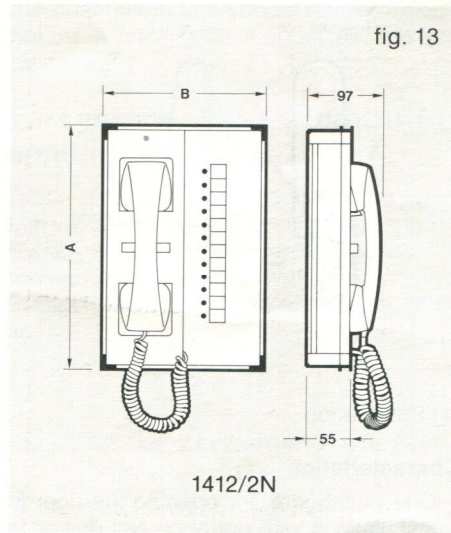


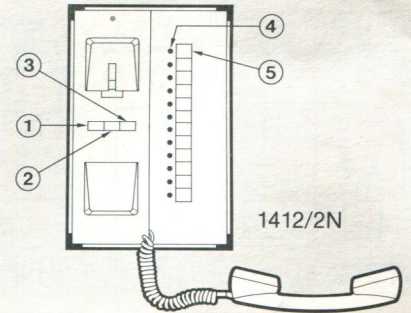
fig. 13

Art.	A (mm)	B (mm)	Weight Kg
1412/2N	320	210	2.49
1420/2N	320	280	3.17
1424/2N	320	280	3.16
1430/2N	320	350	3.81
1436/2N	320	350	3.88
1445/2N	380	350	4.46
1460/2N	380	420	5.25
1475/2N	380	490	6.26
1490/2N	380	560	7.05

Characteristics

- Conversation is possible between switchboard and telephone unit and vice versa
- Indication of the telephone call by LED and buzzer. When a user lifts the receiver, the buzzer sounds and the LED next to the corresponding pushbutton gives an indication of the user calling. Both the sound and the LED indication appear even if the switchboard is already engaged and remain on until the user replaces the receiver
- Privacy of conversation between switchboard and telephones
- Two modes of operation: DAYTIME and NIGHTTIME
- Diodes for telephones

fig. 14



- (1) Switch for DAYTIME position
- (2) Switch for NIGHTTIME position
- (3) Pushbutton for calling telephones
- (4) LED to indicate calling telephones
- (5) Pushbutton for connecting telephone

Connecting terminals

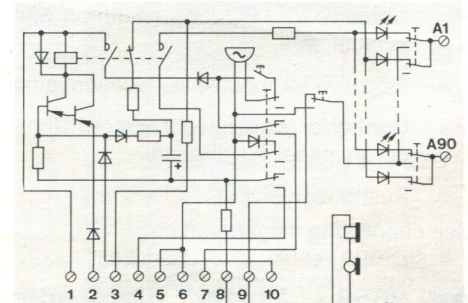


fig. 15

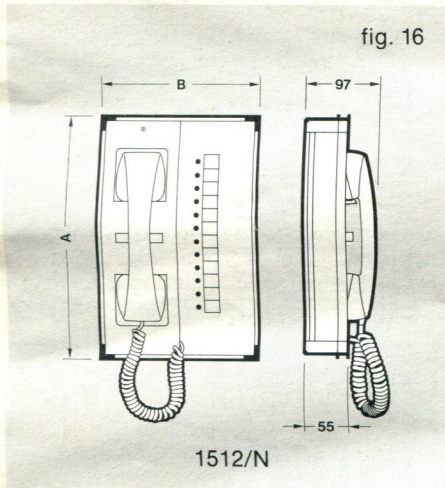
- 1 0 volt for call signals and speech circuits
- 2 +8V DC for speech circuits
- 3 Connection of telephone receiver for nighttime operation
- 4 +8V DC speech power supply of telephone unit for nighttime operation
- 5 12V AC power input of call signals and switchboard LED'S
- 6 12V AC telephone buzzer for nighttime operation
- 7 0 Volt telephone call signal for nighttime operation
- 8 Switchboard microphone connection
- 9 Switchboard receiver connection
- 10 +8V DC call relay lock
- A1 Call signal from telephone 1 to switchboard or vice versa and corresponding speech line
- A2 Call signal from telephone 2 to switchboard or vice versa and corresponding speech line
- A90 Call signal from telephone 90 to switchboard or vice versa and corresponding speech line

Installation

- Recessed: the switchboard is recessed into the wall
- Surface: the switchboard is fastened with screws and plugs
- Desk installation: the switchboard is recessed in the corresponding hole in the desk

Art. Series 1500/N - Porter switchboard

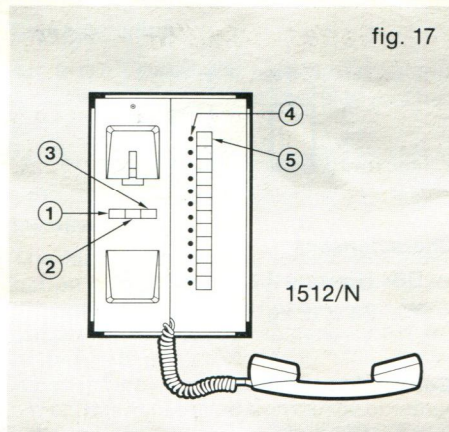
For installations with one entrance call unit. From 12 up to 90 calls with automatic disconnection; upon request up to 135 calls with manual disconnection.



Art.	A (mm)	B (mm)	Weight kg
1512/N	320	210	2.53
1520/N	320	280	3.21
1524/N	320	280	3.20
1530/N	320	350	3.88
1536/N	320	350	3.96
1545/N	380	350	4.51
1560/N	380	420	5.30
1575/N	380	490	6.31
1590/N	380	560	7.20

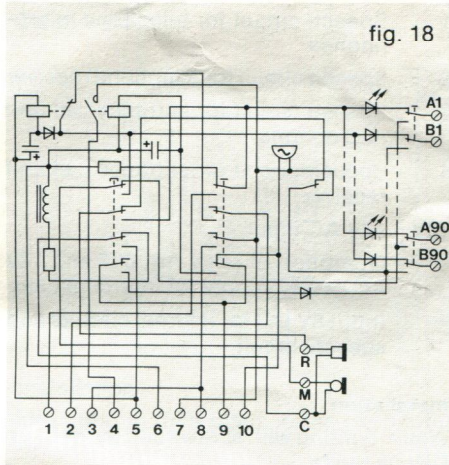
Characteristics

- Conversation is possible between: entrance call unit/switchboard; entrance call unit/telephone unit; switchboard/telephone unit and vice versa
- Indication of the call by LED and buzzer. When a user lifts the receiver, the LED next to the corresponding pushbutton indicates the user calling and when the appropriate pushbutton is pressed the buzzer also sounds. The LED indication appears even if the switchboard is already engaged and remains on until the user replaces the receiver
- Privacy of conversation between switchboard and telephones
- Two modes of operation: DAYTIME and NIGHTTIME
- Diodes for telephones



- (1) Pushbutton for speech insertion on entrance call unit (with switchboard in the NIGHTTIME position)
- (2) Switch for DAYTIME/NIGHTTIME positions
- (3) Pushbutton for calling telephone units and for opening electromagnetic lock (when the switchboard is in the NIGHTTIME position and with the pushbutton (1) depressed)
- (4) LED to indicate calling telephone
- (5) Pushbutton for telephone connection

Connecting terminals



- 1 "Porter" microphone connection
- 2 "Porter" receiver connection
- 3 12V AC power supply for pushbutton pilot light (with switchboard in NIGHTTIME position)
- 4 12V AC for open door control (with switchboard in NIGHTTIME position)
- 5 0 volt for speech power supply and internal switchboard circuits
- 6 8V DC for LED and speech switchboard power supply
- 7 12V AC input for open door control, pushbutton panel pilot lights and call signals
- 8 12V AC common power supply of entrance call unit pushbuttons (with switchboard in NIGHTTIME position)

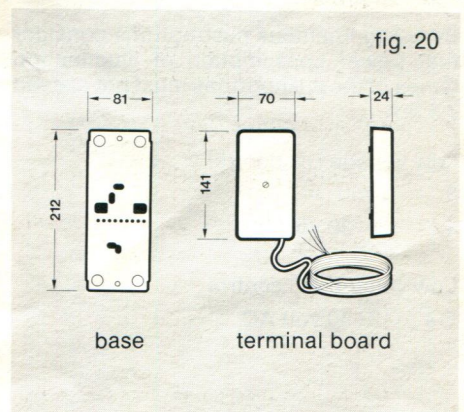
- 9 0 volt for switchboard call signal (in DAYTIME position) and for open door control (in NIGHTTIME position)
- 10 Connection for switchboard call even in NIGHTTIME position
- R Switchboard receiver connection
- C Switchboard receiver and microphone common
- M Switchboard microphone connection
- A1 Connection of receiver of telephone 1 and LED indication of call to switchboard
- B1 Connection of microphone of telephone 1 and call signal from switchboard to telephone
- A90 Connection of receiver of telephone 90 and LED indication of call to switchboard
- B90 Connection of microphone of telephone 90 and call signal from switchboard to telephone

Installation

See Art. series 1400/2N

Art. 600T - Base + terminal board

Weighted base complete with terminal board and cable 2.5 m long for table installation of telephones Art. 600. Colour of terminal board, black.



Characteristics

- Steel base 2.5 mm thick weight 0.310 kg
- 11-wire connecting cable

Connecting terminals

See Art. 600

Installation

Wall mounting with screws and plugs.

Art. 40.91

Relay with timer for stairway light control

The timer can be operated both by the 220V mains and by the 12÷30V circuit (AC or DC) and also simultaneously by both. Continuous adjustment from 15 seconds to 10 minutes. The timing can be reset at any time.

Colour: grey.

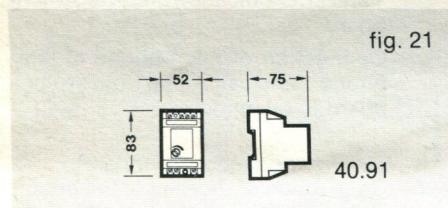


fig. 21

Characteristics

- Power supply 220V 50Hz
- Contacts 220V 50Hz 10A
- Timing 15" ÷ 10'
- Operation 220V AC or 12÷30V DC or AC
- DIN Housing 3 modules
- Weight 0.2 kg

Connecting terminals

- 1 Time relay contact, close
- 2 Time relay contact, close
- 3 220V AC operation
- 220 Art. 40.91 power supply

By using luminous pushbuttons consider that power consumption of illumination lamps of the pushbuttons must not exceed 7.5 mA.

Low voltage DC control

- 5 0 volt
- 4 12÷30 volt DC

Low voltage AC control

- 5-4 12÷30 volt AC

Installation

Wall mounting with screws and plugs or on DIN 35 guide.

Art. 607 - Switching unit

Switching unit for intercom installations with entrance call unit. Art. 607 excludes the entrance call unit when a telephone makes an internal call.

Colour: grey.

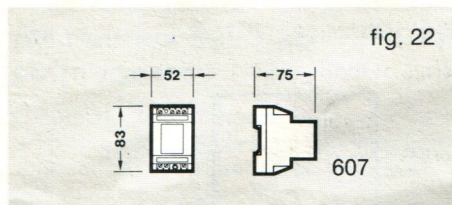


fig. 22

Characteristics

- DIN Housing 3 modules
- Weight 0.12 kg

Connecting terminals

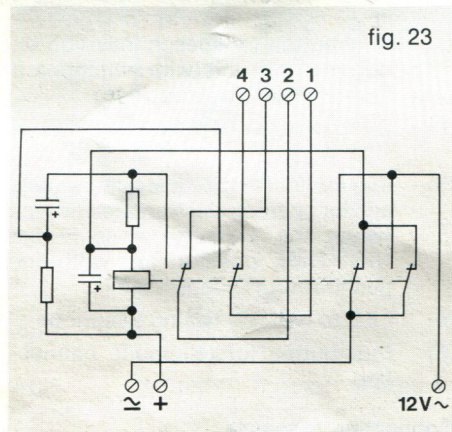


fig. 23

- 1 Speech circuit for telephone microphones
- 2 Speech circuit for telephone receiver
- 3 Speech circuit for entrance call unit microphone
- 4 Speech circuit for entrance call unit receiver
- 12V~ 12V AC input
- ≈ Operation of relay Art. 607 and 12V AC power supply for intercom calls
- + Input 8V DC for internal circuits and speech circuit

Installation

Wall mounting with screws and plugs or on DIN 35 guide.

Art. 608 - Switching unit

Switching unit for installations with two or more entrance call units. Art. 608 enables the speech connections and the open door control of the entrance call unit from which the call originates.

Colour: grey.

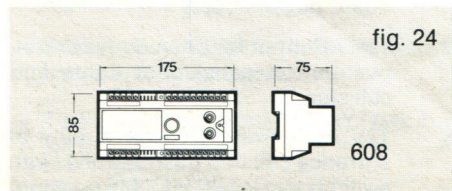


fig. 24

Characteristics

- Timed lock of the call on the entrance call units for about 1 minute
- DIN Housing 10 modules
- Weight 0.31 kg

Connecting terminals

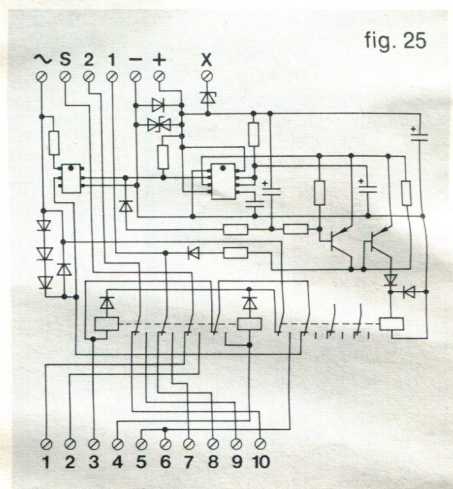


fig. 25

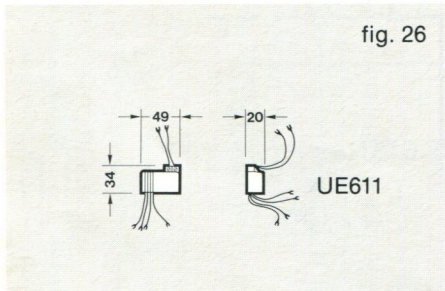
- ~ 12V AC input for internal circuits and call signal
- S Open door control input
- 2 Speech circuit for receivers of internal units
- 1 Speech circuit for microphones of internal units
- 0 volt for internal circuits
- + 7÷10 volt power supply for internal circuits
- X Not used
- 1 Electromagnetic lock power supply, entrance call unit 1
- 2 Electromagnetic lock power supply, entrance call unit 2
- 3 Input of switch relay control and call signal from entrance call unit 1
- 4 Input of switch relay control and call signal from entrance call unit 2
- 5 Power supply output for "Please wait" lamp at entrance call unit 1
- 6 Power supply output for "Please wait" lamp at entrance call unit 2
- 7 Speech circuit of loudspeaker at entrance call unit 2
- 8 Speech circuit of loudspeaker at entrance call unit 1
- 9 Speech circuit of microphone at entrance call unit 2
- 10 Speech circuit of microphone at entrance call unit 1

Installation

Wall mounting with screws and plugs or on DIN 35 guide.

Art. UE611 - Secrecy unit

With this device it is possible to have secrecy of conversation between an entrance call unit and a telephone in installations with telephones art. 600.
Colour: beige.



Characteristics

- Speech connection, with conversation security, timed for about 1 minute

Connecting terminals

- 12 0 volt through cradle contact
- 1 + power supply
- 3 0 volt
- 6 12V AC timer operation
- 8 0 volt for telephone unit loudspeaker (through cradle contact)
- 9 0 volt for telephone unit microphone (through cradle contact)

Installation

Installation inside the telephones Art. 600.
Installation with telephones Art. 603N is not possible.

Art. 9.1, art. 6, art. SM010, art. SL010-Illuminated signals with sign "Please wait"

These can be used in installations with more entrance call units to signal that a conversation is being held from one of the other entry points.

Characteristics

- Art. 9.1:** for series 900 pushbutton panels, complete with aluminium bracket and torpedo lamp bulb.
- Art. 6:** for series 500 pushbutton panels.
- Art. SM010:** for series 1000 pushbutton panels.

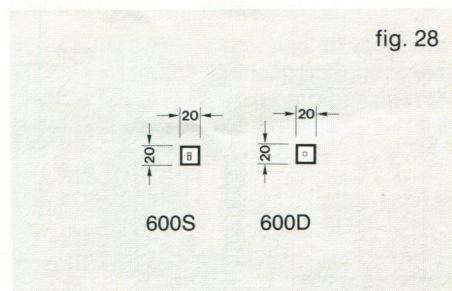
Installation

The pilot lights are mounted instead of a pushbutton and it is therefore necessary for the entrance call units to have an extra pushbutton which must be replaced by Art. 9.1, Art. 6, Art. SM010 or by Art. SL010.

With the Tersystem 2000 series pushbutton panels this illuminated sign can be obtained with the name plate module Art. 2149 with the sign "Please wait".
The entrance call unit must therefore have an extra module which will be used for Art. 2149.

Art. 600S and Art. 600D

Accessories for excluding a call and luminous signalling
With switch 600S it is possible to exclude the buzzer incorporated in the telephone Art. 600; with LED 600D an illuminated signal can be made.
Colour: black.

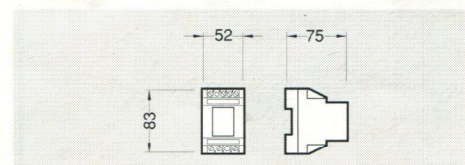


Installation

Mounting in the present place in the telephones Art. 600.

Art. 40.92 - Relay

Relay with a closed contact and a change-over contact to be used to control: illuminating lamps, additional bells, electronic locks supplied with voltages other than those supplied from the power supply unit.



Characteristics

- Power supply 12V AC or DC
- Contacts 5A 220V
- DIN housing 3 modules

Connecting terminals

- +/- 12V AC or DC
- /~ 12V AC or DC
- 3/4 contact normally open
- 1/5 exchange contact normally closed
- 1/2 exchange contact normally open

Installation

Wall mounting with screws and plugs or on DIN 35 guide.

Note: All items previously described with a power supply of 220V 50/60Hz can also be supplied on request with different characteristics (240V 50Hz; 110V 50/60 Hz; etc.).

Art. SM030 - Flat cable with connector and junction box

It allows the connection of an additional pushbutton panel (Art. SM404 or Art. SM406) by carrying out the connections to the installations with the basic unit (Art. SM501/502/504).

To achieve this, insert the connector into the socket in the pushbutton panel and place the junction base in the mounting provided in the basic unit (Art. SM501/502/504).

This device is planned for being used with pushbutton panels side by side or one on top of another.

See instructions on page 15.

Art. SM040 - Connection box

This unit is a flush mounted back box which allows 2, 3 or 5 SM series pushbutton panels to be linked to a speaker panel.

The back box creates the space so that wiring between the panels is more readily accomplished.

The back box also permits the use of Art. SM030, which is a ribbon cable complete with connectors, therefore making the installation of those panels even easier.

General installation requirements

General instructions and Tables

- Check that during cabling operations the power supply unit Art. 672 is not connected to the mains supply
- Check that the cross section of the cables is not less than the data indicated below

Cross sections for connecting cables between power supply unit and the furthest SPRINT telephone or between power supply unit and entrance call unit:

Distance (m)	cross section (mm ²)	
	Speech signal	Power supply (wires in boldface on the diagram)
up to 50	0.3 (Ø 6/10)	0.8 (Ø10/10)
up to 100	0.5 (Ø 8/10)	1.5 (Ø14/10)
100 ÷ 200	0.8 (Ø10/10)	2.5 (Ø18/10)

- Check that all telephones have the receiver properly on the hook
- When the installation is complete, connect the power supply unit after checking that the voltage indicated on the identification plate corresponds to the mains supply voltage.

Pushbutton Unit Illumination

The power supply unit Art. 672 can handle up to a maximum of 8 pilot lights each 24V 3W for illuminating the pushbutton panel. If the pushbutton panel has more than 8 pilot lights, an auxiliary transformer must be installed.

Additional Bells

In case additional bells must be mounted with SPRINT telephone units in noisy surroundings, a relay Art. 40.92 must be used and connected as shown in fig. 29 for Art. 600 telephones and as shown in fig. 30 for Art. 603N or 603S telephones. The buzzer can be disconnected.

Secrecy of conversation unit

The following operation must be executed for connecting the Art. UE611 in the Art. 600 telephones to achieve the circuits shown in fig. 31:

- remove the jumpers 7-3 and 7-4 from the telephone
- move the wire connected to terminal 8 of the telephone to terminal 3 and that connected to terminal 9 to terminal 4
- connect the wires 12, 1, 6, 8 of Art. UE611 to the corresponding terminals of the telephone
- connect the wire 3 of Art. UE611 with terminal 7 of the telephone
- connect the wire 9 of Art. UE611 to terminal 10 of the telephone
- for installations with 2 entrance call units, connect the wire 1 of Art. UE611 with terminal 2 of the telephone instead of terminal 1 (fig. 32)
- connect the 0 volt of the installation to terminal 7 of the telephone instead of terminal 3

fig. 29

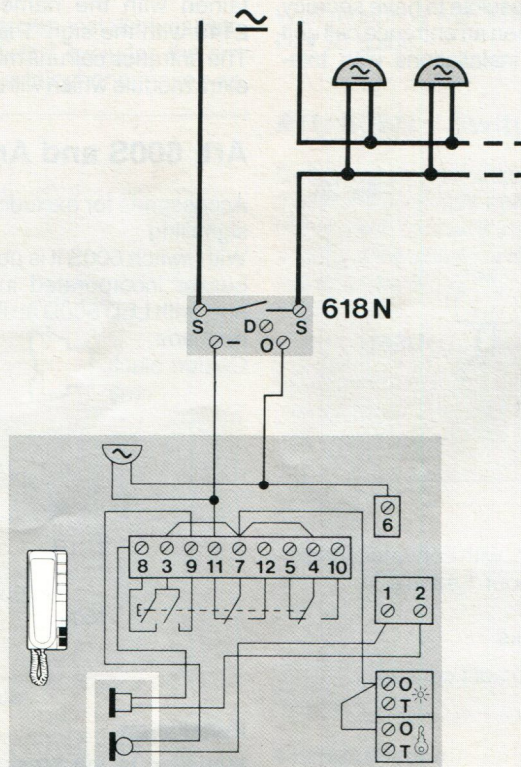


fig. 30

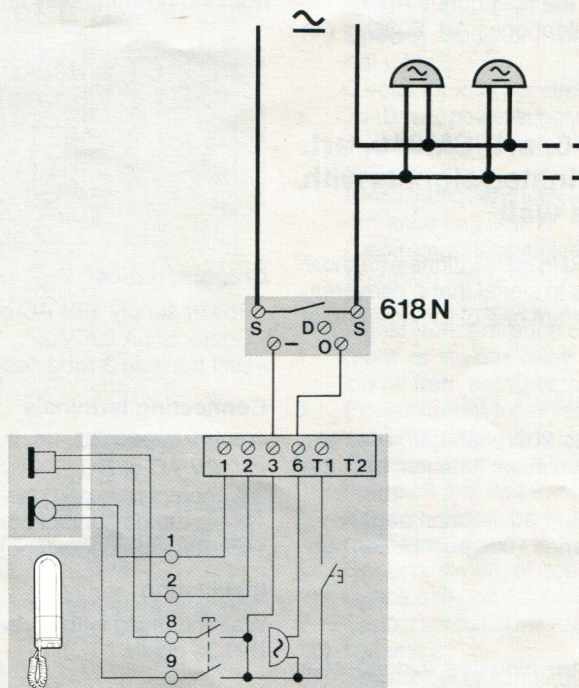
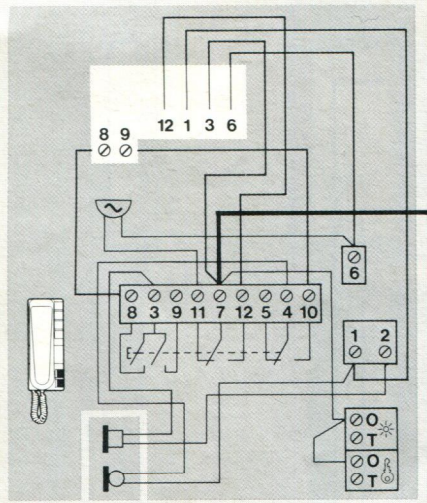


fig. 31



Excluding a call

The buzzer incorporated in the telephone can be disabled by connecting the switch Art. 600S as shown in fig. 33.

Pilot lights

Pilot lights are used to signal various events, such as an open door (add a wire to the riser) by using art. 600D. If more than 10 Art. 600D are installed, use a 0 volt through the telephone contact: any signal is present with the receiver off the hook.

Electromagnetic locks

Use a relay Art. 618N connected as shown in fig. 34 for controlling electromagnetic locks which operate at a voltage other than that available between the terminals -/- of the power supply unit Art. 672.

fig. 33

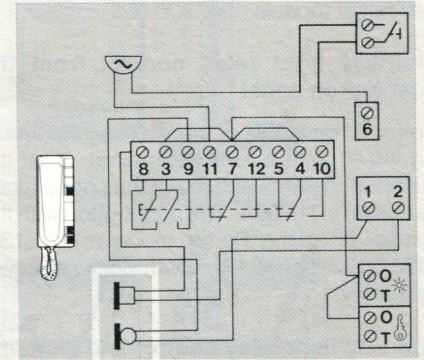


fig. 32

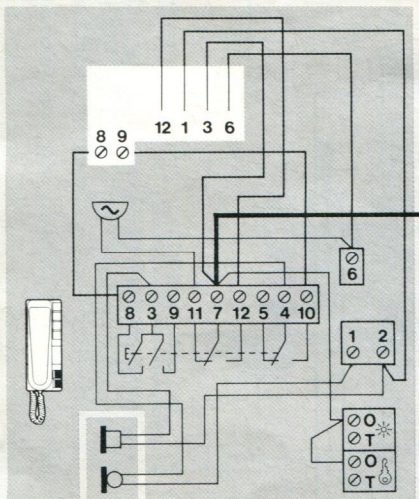
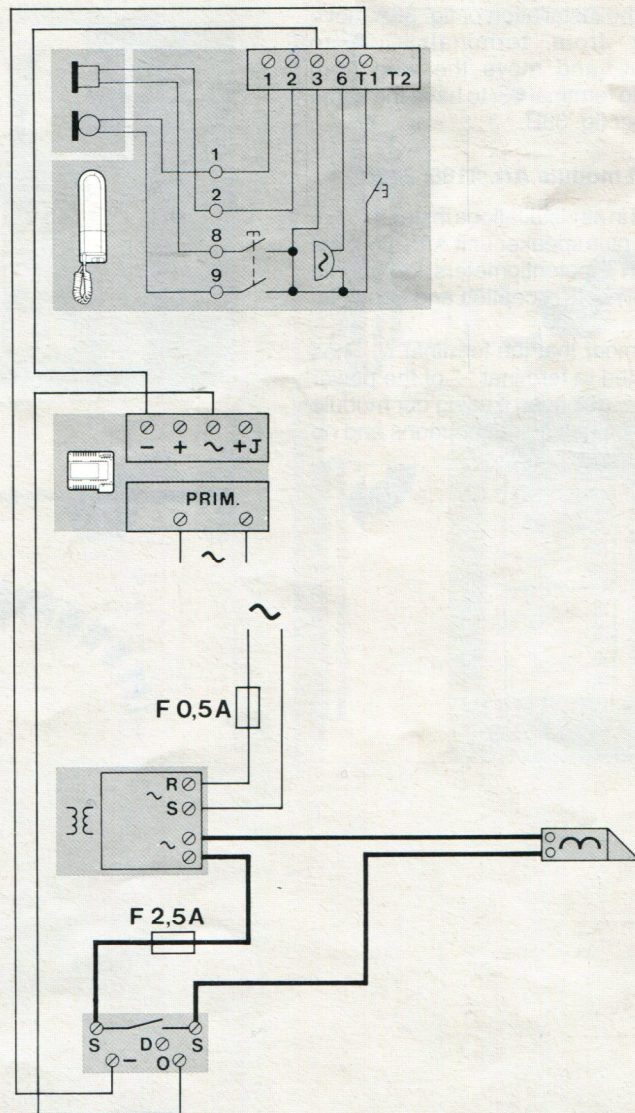


fig. 34



Tersystem 2000 Pushbutton panels

These units can be built up and the following can be obtained, as opposed to the more traditional models 500, 900 etc.

Stairway light relay control from the pushbutton panel

Connect terminal 5 of the stairway light relay Art. 40.91 with a wire to terminal \ominus of the pushbutton panel and make the connections as shown in fig. 35A. The pushbutton with the symbol $\bullet \leftarrow$ of the "Porter" modules Art. 2130/2131/2132/2160/2161 controls the stairway light relay.

Stairway light relay control and illumination of the pushbutton panel only while the pushbutton $\bullet \leftarrow$ is pressed

In this configuration only the pushbutton with symbol $\bullet \leftarrow$ is illuminated, with which it is possible not only to control the stairway light relay, but also to illuminate the nameplates simultaneously (as long as the pushbutton is pressed). In the installation of fig. 35A move the jumper from terminals $\otimes \bullet \leftarrow$ to terminals $\ominus \otimes$ and move the wire from terminal \otimes to terminal $\bullet \leftarrow$ to have the same diagram as per fig. 35B.

Speaker unit module Art. 2160, 2160

It can be used in all installations instead of Art. 2130 or 2132 plus speaker unit Art. 2659; it is equipped with 2 potentiometers for volume adjustment, for both reception and transmission [page 4].

Please remember that the terminal \otimes has to be connected to terminal "-" of the power supply unit Art. 672 even if using our module Art. 2160, which has no pushbuttons and no illumination bulb.

fig. 35A

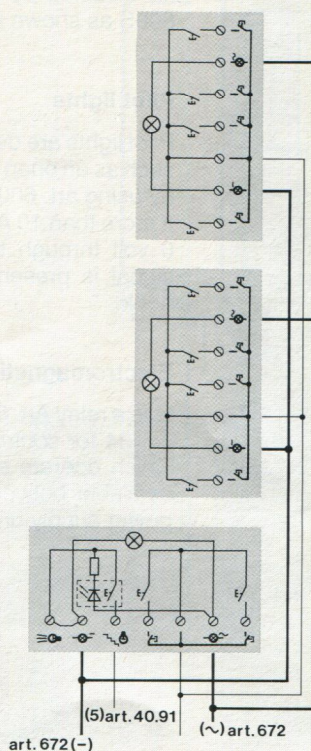
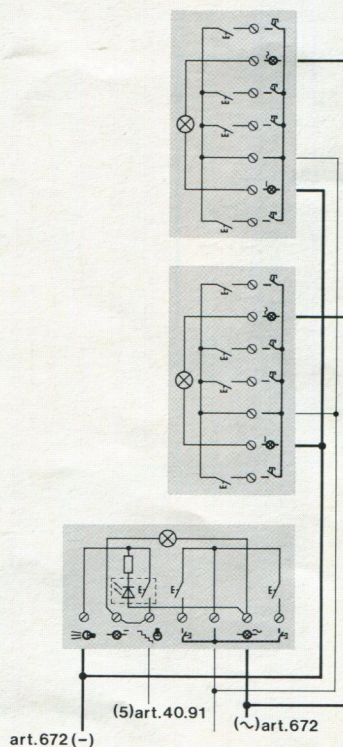
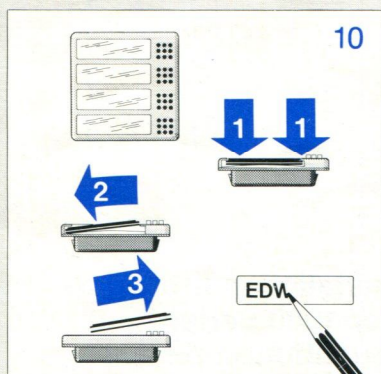
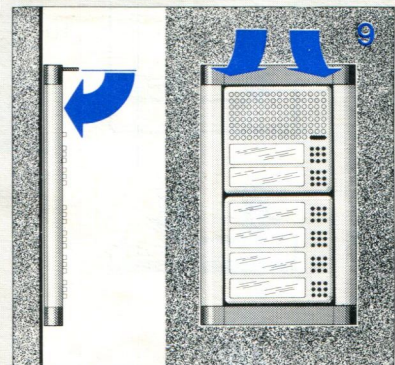
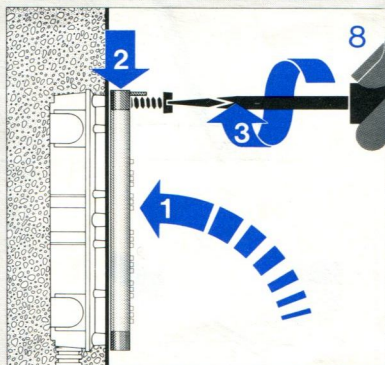
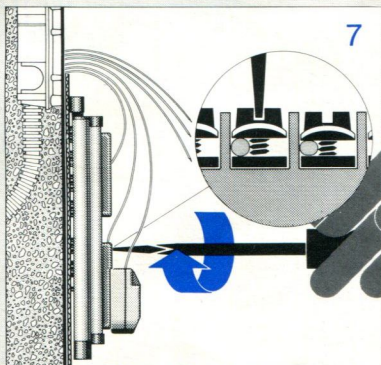
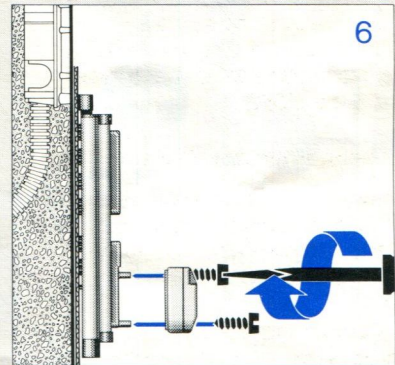
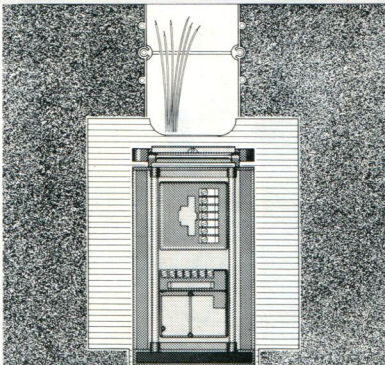
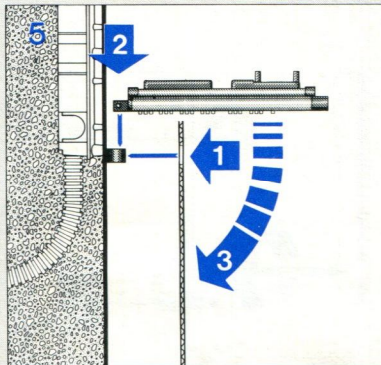
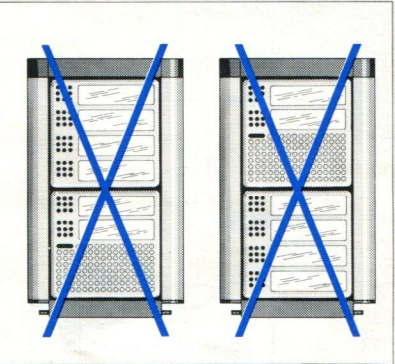
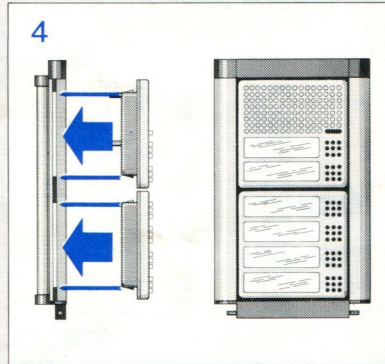
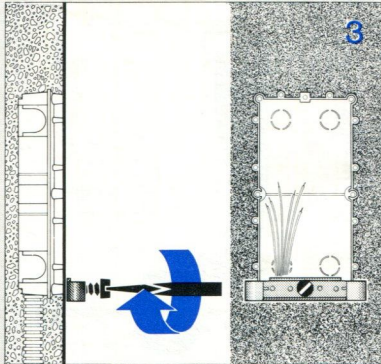
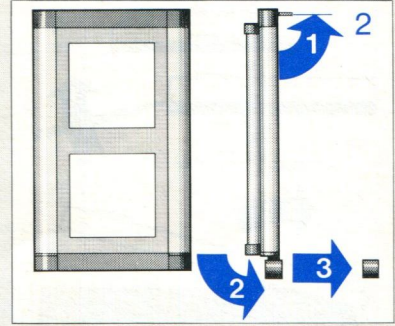
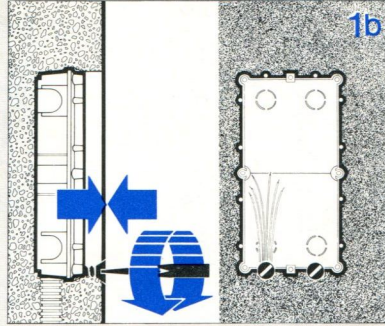
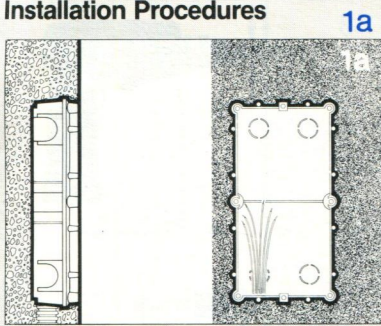


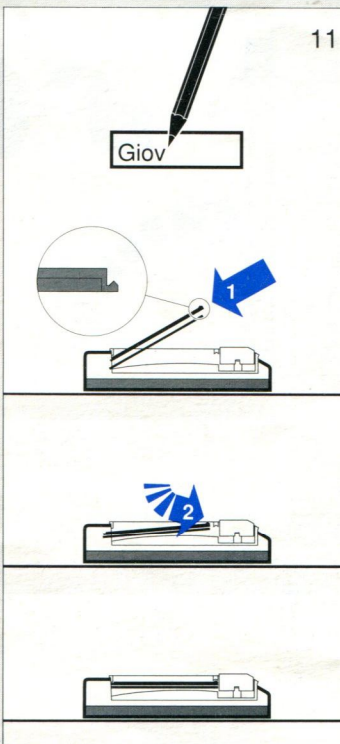
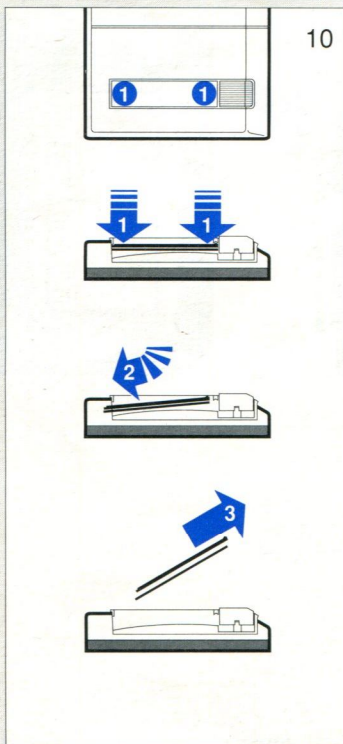
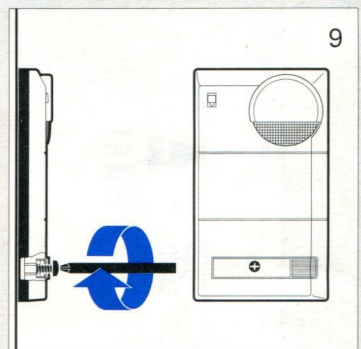
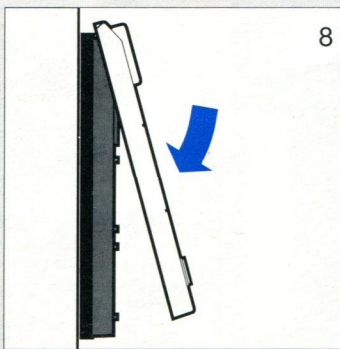
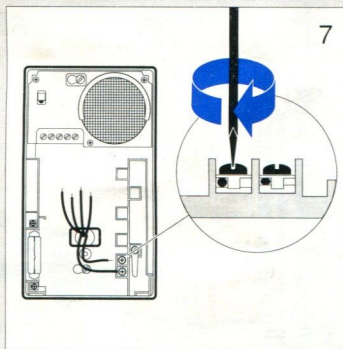
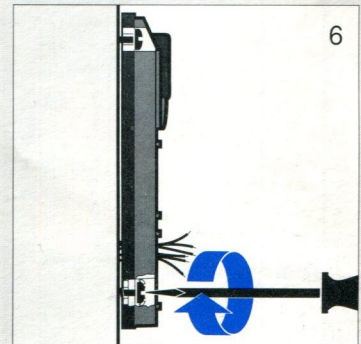
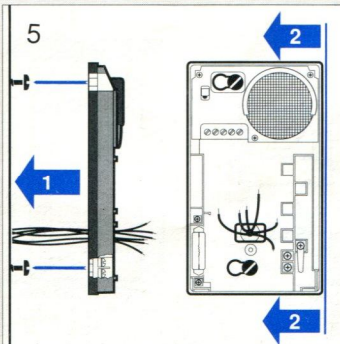
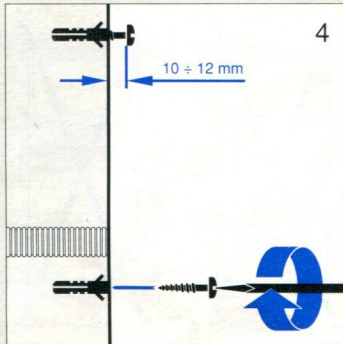
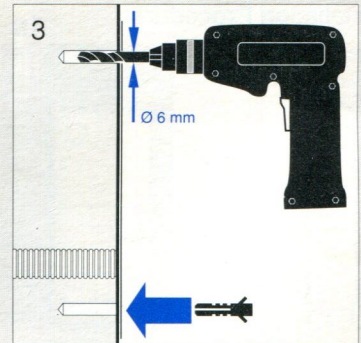
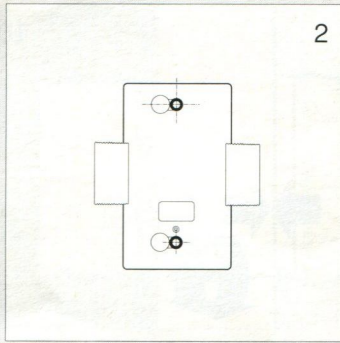
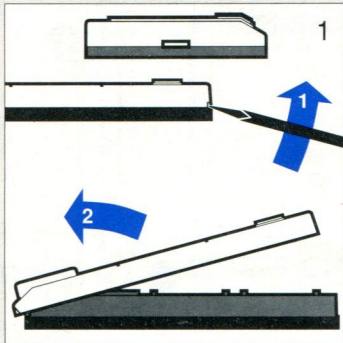
fig. 35B



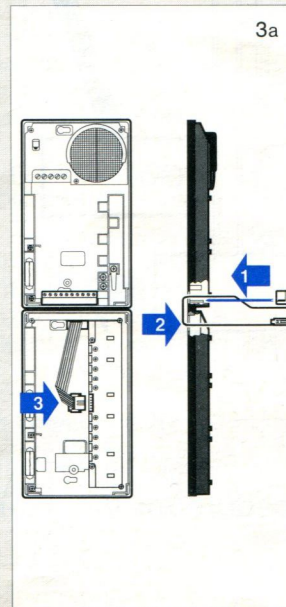
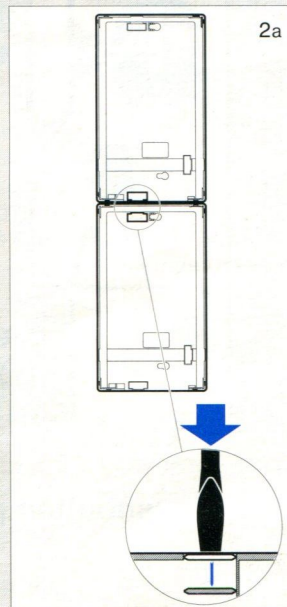
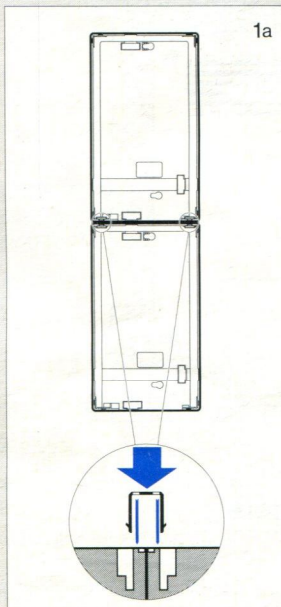
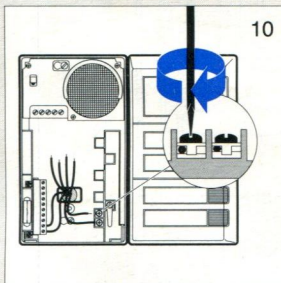
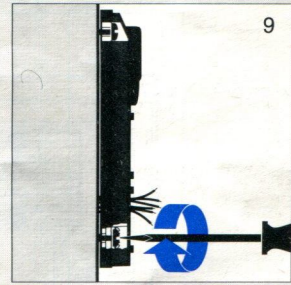
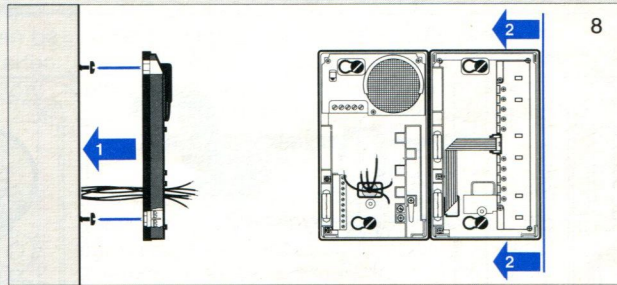
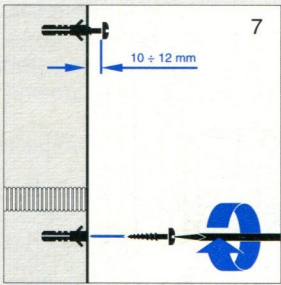
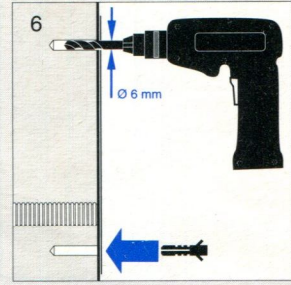
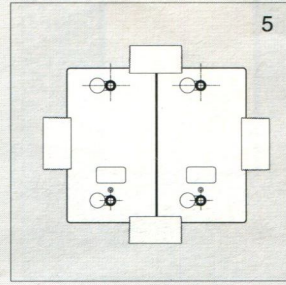
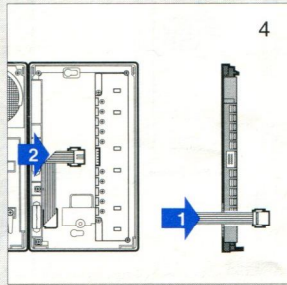
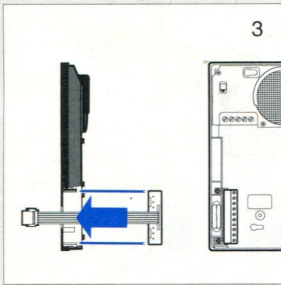
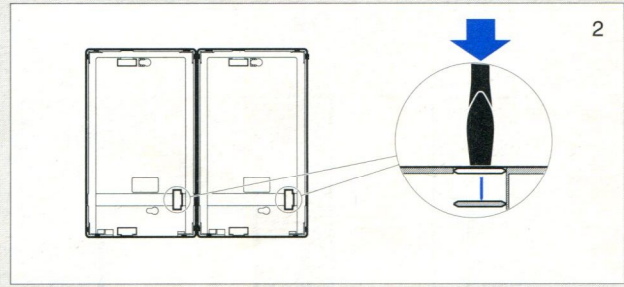
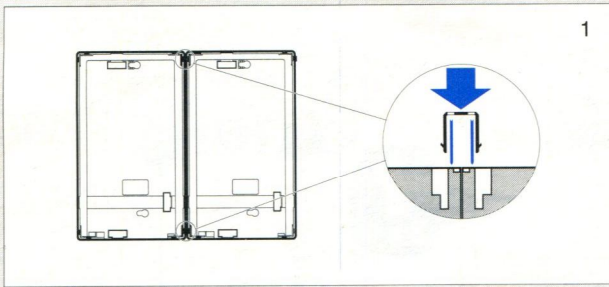
Installation Procedures



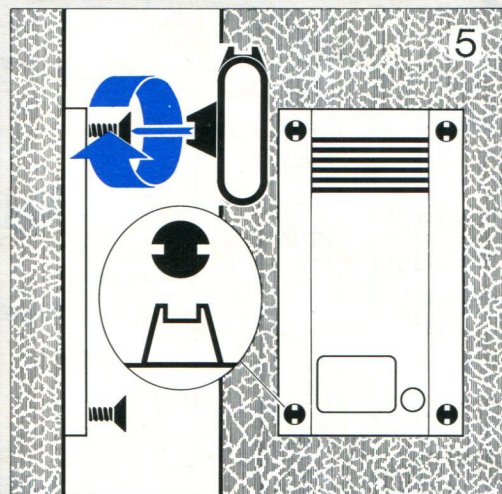
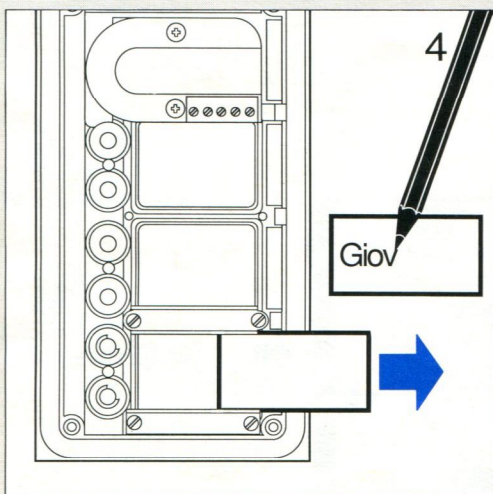
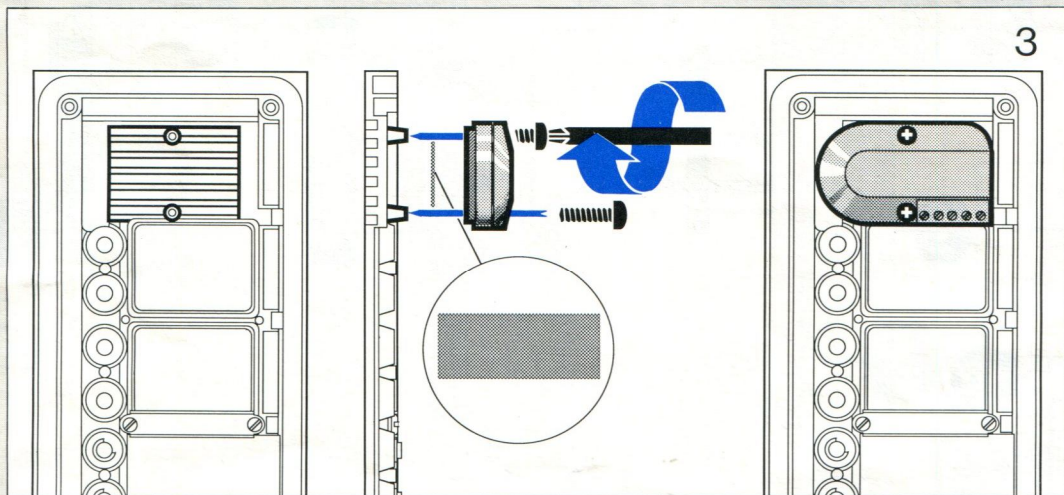
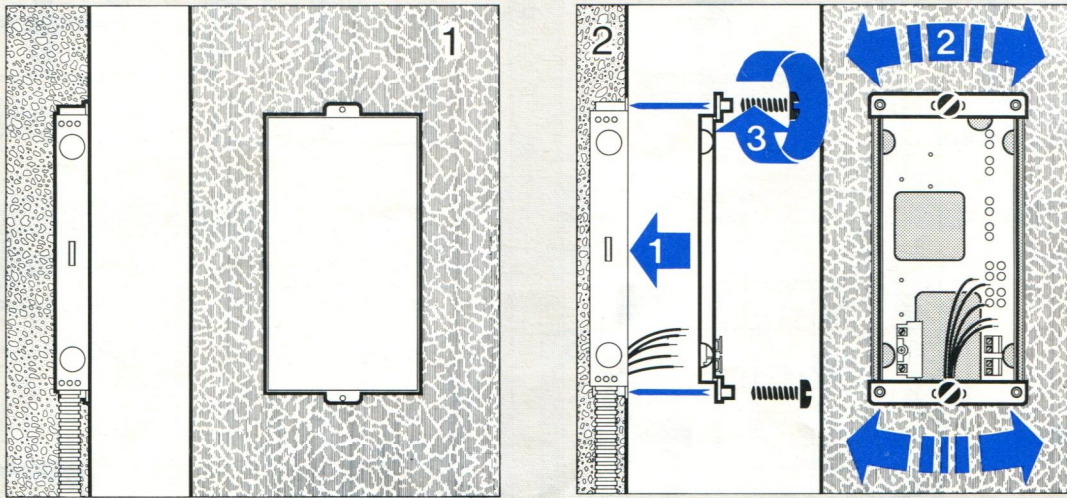
Tersystem 2000 Pushbutton Panels



Installation procedure
for 1000 Series
pushbutton panels



Installation procedure
for two 1000 Series
pushbutton panels
with SM030



Installation procedure for Vandal-resistant pushbutton panels

Testing the Installation

The operations described below must be carried out after all connections have been made in accordance with the installation procedures already described.

Preliminary Operations

Check that the connections of the equipment have been made in accordance with the corresponding diagram and that the power unit 672 is properly connected to the mains supply. Check with a tester that there is a proper 8V DC voltage between the + and - terminals of the power supply unit.

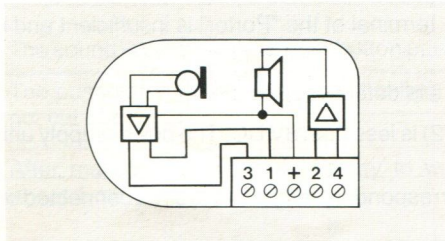
For installations with entrance call unit

In addition to the test already described check the speech connection with the entrance call unit and the operation of the electromagnetic lock.

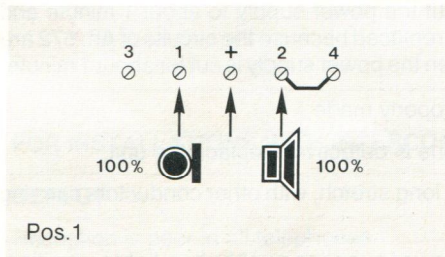
Testing of the speech circuit:

- Consult the indicators below for the adjustment of the "Porter" volume: this can be considered best when there is no interference and communication is satisfactory

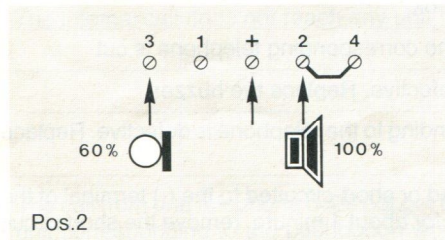
Internal Diagram



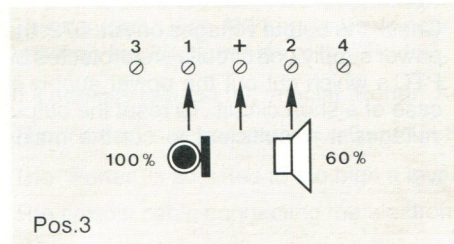
Volume adjustment



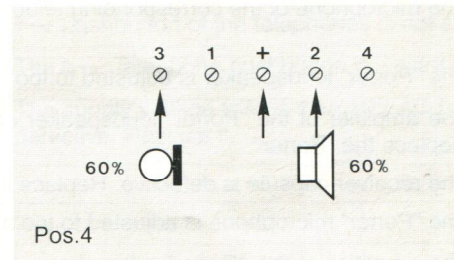
As indicated on all wiring diagrams of installations with an electric porter, the terminal + must be connected to the positive pole of the power supply unit while terminals 1 and 2 are connected to the common wires of the riser.



If a whistling sound occurs, the microphone power must be reduced to 60%. Starting from position 1, move the wire connected with terminal 1 to terminal 3



As an alternative to position 2 the loudspeaker power can be turned down to 60%. Starting from position 1 remove the jumper between terminals 2 and 4.



If whistling persists it is necessary to reduce to 60% the power of both the microphone and the loudspeaker. Starting from position 1 move the wire from terminal 1 to 3 and remove the jumper between terminals 2 and 4.

It may occur, in fact quite infrequently, that the whistling persists even after executing the connection as indicated at position 4 (minimum gain for both channels). Should the disturbing signals continue, return to position 3 and insert a resistance of 200 ÷ 500 Ohm in series with the wire connected to terminal 1.

Check the Audio Circuit of Modules with "Porter" Art. 2160/2161

The "Porter" modules Art. 2160 and Art. 2161 have two potentiometers for the adjustment of the power of both the microphone and the loudspeaker.

- If a feedback is experienced, reduce first the power of the microphone by using a screwdriver to turn the corresponding potentiometer until a satisfactory level is reached. If feedback persists, turn the loudspeaker potentiometer until the noise is eliminated.
- If the volume is too low increase first the volume of the loudspeaker and, if necessary, the volume of the microphone. Bear in mind that it is better to have a clear transmission with no interference rather than one which is at the feedback limit.

For installations with intercom units

Wire up the different internal units. If proper operation is not attained consult the "Trouble shooting" chapter.

Notes

Trouble shooting

In case of any defect in the operation of a SPRINT installation, always carry out first the following preliminary checks:

- Check that the power supply unit is connected to the mains

- Check the output voltages on Art. 672: the power supply unit circuits are protected by PTC's which cut out the power supply in case of a short circuit. To reset the output voltages it is sufficient to cut the mains

- supply for about 1 minute and, after removing the short circuit, to reconnect Art. 672 again.
- Check that the cross sections of the wires used are in accordance with the table on page 10.

FOR ALL TYPES OF INSTALLATION

DEFECT

PROBABLE FAULT

Reception is faulty at an external unit from one telephone

The microphone of the corresponding telephone is defective. Replace it.

Reception is faulty at an external unit from all telephones

The "Porter" loudspeaker is adjusted to too low a level of gain

The amplifier of the "Porter" loudspeaker does not work properly because it is defective. Replace the "Porter".

Reception is faulty at one telephone

The receiver capsule is defective. Replace it.

Reception is faulty at all telephones from the external unit

The "Porter" microphone is adjusted to too a low level of gain

The amplifier of the "Porter" microphone does not work properly because it is defective. Replace the "Porter".

Reception between the external unit and all the telephones is faulty both ways.

The "Porter" is adjusted to too low a level of gain.

The conductors connected to terminals 1 and 2 of the "Porter" are inverted

Some telephones have not been properly placed on the hook

The cross section of the wire connected to the + terminal of the "Porter" is insufficient and it does not amplify properly

The "Porter" does not amplify properly because it is defective. Replace it.

The speech power supply (+/- terminals of Art. 672) is less than 8V DC. The power supply unit is defective. Replace it.

No reception on one telephone

The wires connected to terminals 1-2-3 of the corresponding telephone are not connected or are cut.

No reception anywhere

The wires connected to the +/- terminals of the power supply unit are not connected or are cut

There is a short circuit in the speech section. Cut the power supply for about 1 minute and remove the short circuit. There are no fuses to be replaced because the circuits of Art. 672 are protected by PTC's which reset automatically when the power supply is cut for about 1 minute.

Background noise can be heard in one telephone

Microphone and receiver connections are not properly made

The cradle contact of the corresponding telephone is defective. Replace the unit.

A 50Hz background noise can be heard in all the system

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

The speech circuit and the auxiliary circuits (power supplies pushbutton lights, auxiliary relays, etc.) are connected to the (-) terminal of the power supply unit with a single wire. Separate the two circuits with two different wires.

The speech power supply (terminals +/- of Art. 672) has too high an alternating component. The power supply unit is defective. Replace it.

The call from an entrance call unit does not get to one telephone

The telephone is not properly replaced on the hook

The wire connecting the entrance call unit and the corresponding telephone is cut

The buzzer of the corresponding telephone is defective. Replace the buzzer

The pushbutton of the entrance call unit corresponding to the telephone is defective. Replace the pushbutton.

The call from the entrance call unit does not arrive at any telephone

The wire connected to the ~ terminal is interrupted or short-circuited to the (-) terminal of the power supply unit Art. 672. Cut the power supply for about 1 minute, remove the short circuit and reconnect the power supply; the PTC protection resets automatically when power is cut for about 1 minute.

The power supply voltage (terminals -/~ of Art. 672) is less than 12V AC. The power supply unit is defective. Replace it.

Radio reception at the entrance call unit and/or telephones	This can occur if an AM transmitter is near the installation. Connect a capacitor of 0.1-0.5 μ F between the 2/+ terminals of the "Porter" If it persists request the special "Porter" Art. 659G
A whistle is heard at the entrance call unit (Larsen effect)	The "Porter" is not properly positioned in the pushbutton housing The "Porter" is adjusted to too high a level of gain (100%)
The electromagnetic lock does not work	The flexible cable connecting the electromagnetic lock to the junction box is cut The wire connected to the ~ terminal is cut or short-circuited with the wire connected to the (-) terminal of the power supply unit Art. 672. Cut the power supply for about 1 minute, remove the short circuit and reconnect the power supply; the PTC protection resets automatically when the power supply is cut for about 1 minute The cross section of the wires connected to the ~ terminal of the power supply unit and to the 0- \rightarrow pushbutton of the telephones is not sufficient The 0- \rightarrow telephone pushbutton does not operate. Replace the pushbutton The supply voltage is less than 12V AC (-/~ terminals of Art. 672). The power supply unit is defective. Replace it.

FOR INSTALLATIONS WITH TWO ENTRANCE CALL UNITS

DEFECT

One pushbutton panel is always cut out

The sound is on the cut out pushbutton panel

The pushbutton panel which is not calling is not cut out

After making a call it is necessary to wait about 1 minute before repeating it

PROBABLE FAULT

The switching unit Art. 608N does not switch because it is defective. Replace it.

The call wire from the pushbutton panel is cut or is not properly connected.

The speech connection wires have been inverted (terminals 8-10 with 7-9 of Art. 608N)

No power supply on the + terminal of the Art. 608N

The Art. 608N is defective. Replace it.

The telephone of one unit is not properly replaced. After the first call the 0 volt sent from this unit inserts the timed cut out of Art. 608N.

FOR INSTALLATIONS WITH INTERCOMMUNICATING UNITS

DEFECT

Reception is poor in all telephones

Reception at one telephone is poor from all other units

The internal call does not reach any unit

The call from one telephone does not get the unit corresponding to the pushbutton which has been pressed

During intercommunication the entrance call unit is not cut out

PROBABLE FAULT

Some telephones have not been properly placed on the hook

In installations without an entrance call unit with more than two telephones, the +8V DC speech power supply is obtained between the terminals -/+ of the power supply unit instead of between the -/+ J terminals.

The speaker of the corresponding telephone is defective. Replace it

The wire connected to the ~ terminal is cut or shorted with the (-) terminal of Art. 672 power supply unit. Cut the power supply for about 1 minute, remove the short circuit and reconnect the power supply; the PTC protection resets automatically when the power supply is cut for about 1 minute.

The supply voltage is less than 12V AC (-/~ terminals of Art. 672). The power supply unit is defective. Replace it.

The wires connecting the pushbuttons which select the buzzer line have not been connected in the proper sequence

Art. 607 relay does not switch because the call is made with the telephone on the hook

Art. 607 relay does not switch because it is defective. Replace it.

Description of installations

Electric Porter Installations

Performances

With this installation it is possible to talk between the internal units and the external pushbutton panel without privacy of conversation. When a visitor presses a pushbutton on the pushbutton panel at the entrance to the building, the buzzer of the selected internal unit signals the call.

The internal telephone can now be lifted and it is possible to start a conversation which has no time limits.

The door opening pushbutton (\rightarrow pushbutton) and the stairway light relay control (\star pushbutton) can be operated even if the telephone is on the hook.

Secrecy of conversation between the internal units and the external pushbutton panel can be achieved (except for installations with telephones Art. 603N and Art. 603S) using a unit Art. UE611 (see fig. 26 on page 9) for each telephone.

When a pushbutton on the pushbutton panel is pressed only the Art. UE611 on the selected telephone is activated and a conversation limited to about 1 minute can take place. For a higher speech quality it is possible to use the module Art. 2160 or 2161 instead of Art. 2130 or 2131 plus "Porter" electronic unit Art. 2659. See diagram on page 12.

Installation

a) Select the articles required by consulting Table 1.

The diagram shows one telephone Art. 600 and one Art. 603N; Art. 603N and Art. 603S have the connecting terminals arranged differently even though the numbers correspond to the same functions as for Art. 600.

b) Lay the wires in accordance with the single-wire diagram Sc 600.106 which shows the number of conductors required for connecting the different items.

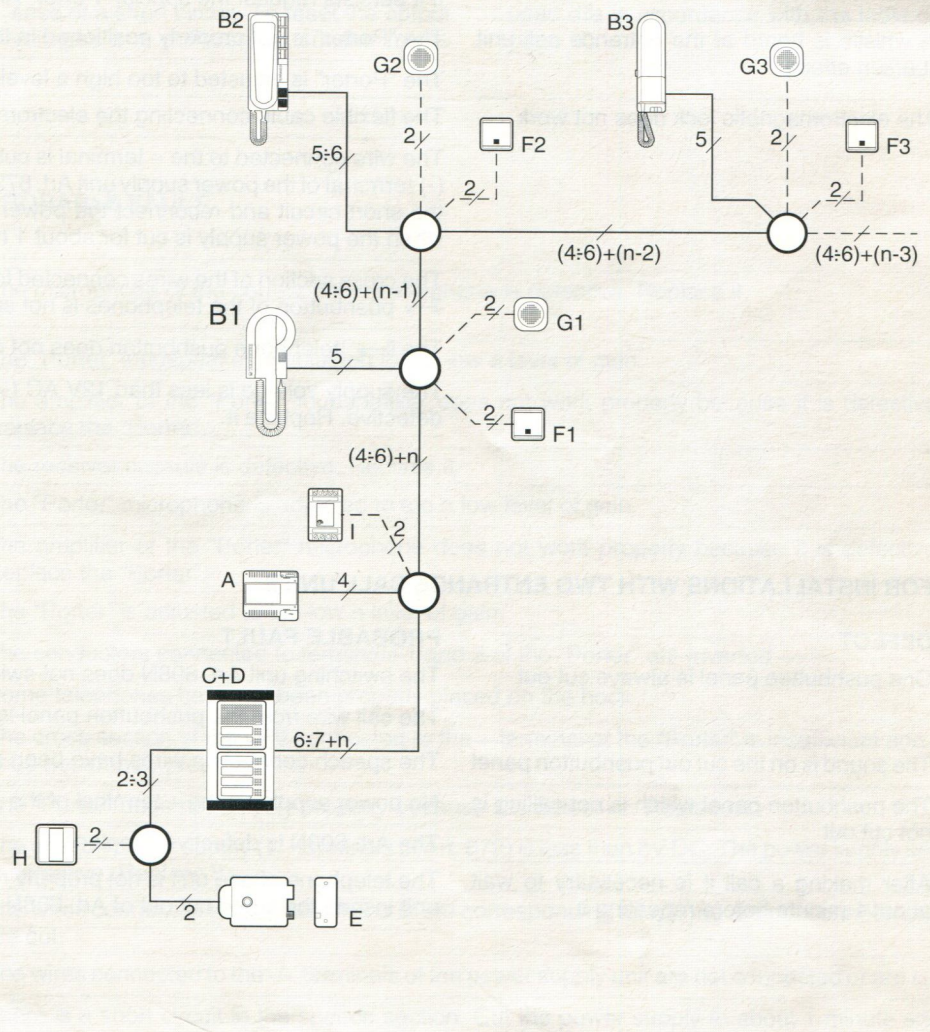
Remember that:

- the speech circuit and the auxiliary one (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
 - the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.
- c) Install and connect the units as shown in the diagram Sc 600.107 in accordance with the installation requirements on page 10.
- d) Test the installation as described on page 17.

The diagram shows as dotted lines the connection of the following optional services:

- Pushbutton F for calling from the individual dwelling with an additional bell G (add a wire to the riser)
- Pushbutton H for operating the electromagnetic lock at the entrance
- Stairway light relay control (add a wire to the riser).

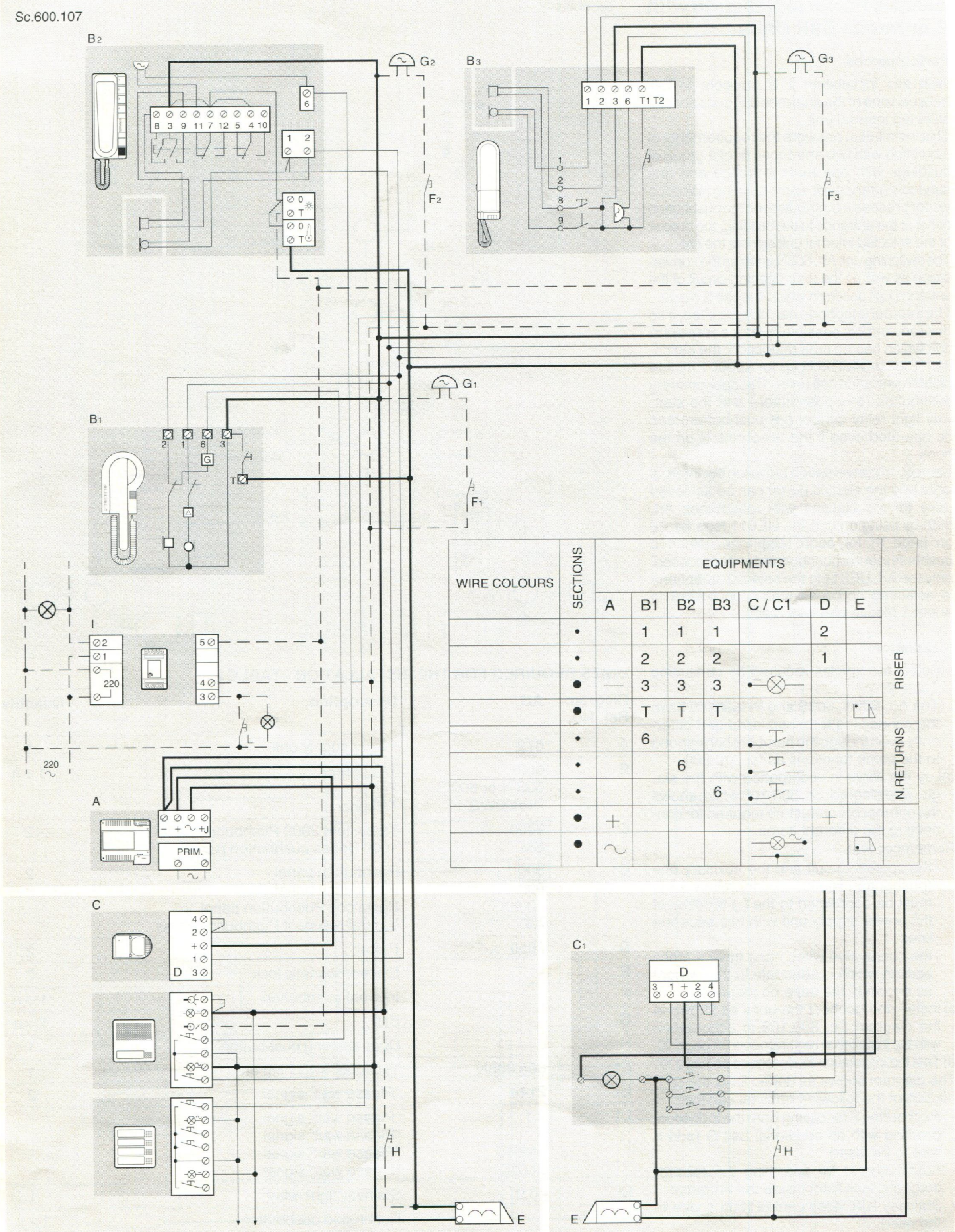
Sc. 600.106



UNITS REQUIRED FOR THE INSTALLATION - TABLE 1

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600 603 N or 603 S PH630WS	Telephone Telephone Telephone	1 ÷ n
C	2000	Tersystem 2000 Pushbutton panel	1
C1	500 900 3000 40.60/70 AV	Pushbutton panel Pushbutton panel Composit Pushbutton panel Postalbox Pushbutton panel Vandal-resistant Pushbutton panel	1
D	2659	Porter	1
E	-	Electromagnetic lock	1
F	-	Internal pushbutton	1 ÷ n
G	-	Bell	1 ÷ n
H	-	Open door pushbutton	1
I	40.91	Stairway light relay	1
L	-	Illuminated pushbutton	1

Sc.600.107



WIRE COLOURS	SECTIONS	EQUIPMENTS							
		A	B1	B2	B3	C / C1	D	E	
•			1	1	1		2		RISER
•			2	2	2		1		
•			3	3	3	⊗			
•			T	T	T			□	N.RETURNS
•			6			⊗			
•				6		⊗			
•					6	⊗			
•	+						+		
•	~					⊗		□	

Electric Porter Installation with 2 Entrance Call Units

Performances

With this installation it is possible to talk between one of the entrance call units and the selected internal unit.

This installation answers the requirements of a building with two entrances or of a group of buildings with one main entrance and one service entrance for each building. When a visitor presses a pushbutton on the pushbutton panel at the entrance to the building, the buzzer of the selected internal unit signals the call.

The switching unit Art. 608N enables the conversation as well as the door opening circuit of the entrance call unit from which the call is made.

The internal telephone can now be lifted, if so desired, and it is possible to start a conversation which has no time restriction; the indication "Please wait" is lit up for about 1 minute on both entrance call units. The door opening pushbutton (0 → pushbutton) and the stairway light relay control (* pushbutton) can be operated even if the telephone is on the hook.

Secrecy of conversation between the internal units and the electric porter can be achieved (only for installations with telephones Art. 600) by using a unit Art. UE611 (see fig. 26 on page 9) for each telephone. When a pushbutton in the pushbutton panel is pressed, only the Art. UE611 in the selected telephone is activated and a conversation limited to about 1 minute can take place.

Installation

a) Select the articles required by consulting Table 2.
The Art. 603N, 603S and PH630WS have the connecting terminals arranged differently even though the numbers correspond to the same functions as for Art. 600.

b) Lay the wires in accordance with the single-wire diagram Sc. 600.108 which shows the number of conductors required for connecting the different items.

Remember that:

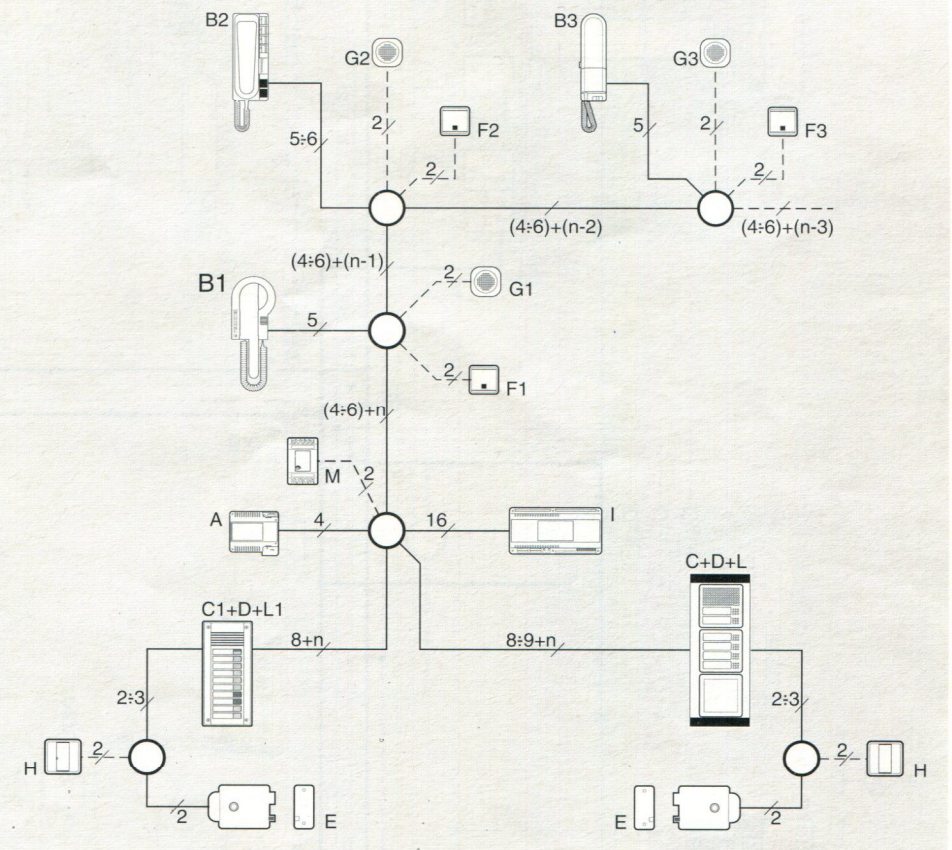
- the speech circuit and the auxiliary one (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
- the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.

c) Install and connect the units as shown in the diagram Sc. 600.109 in accordance with the installation requirements on page 10.

d) Test the installation as described on page 17. The diagram shows as dotted lines the connection of the following optional services:

- Pushbutton F for calling from the individual dwelling with an additional bell G (add a wire to the riser)
- Pushbutton H for operating the electromagnetic lock from inside the entrance
- Stairway light relay control (add a wire to the riser).

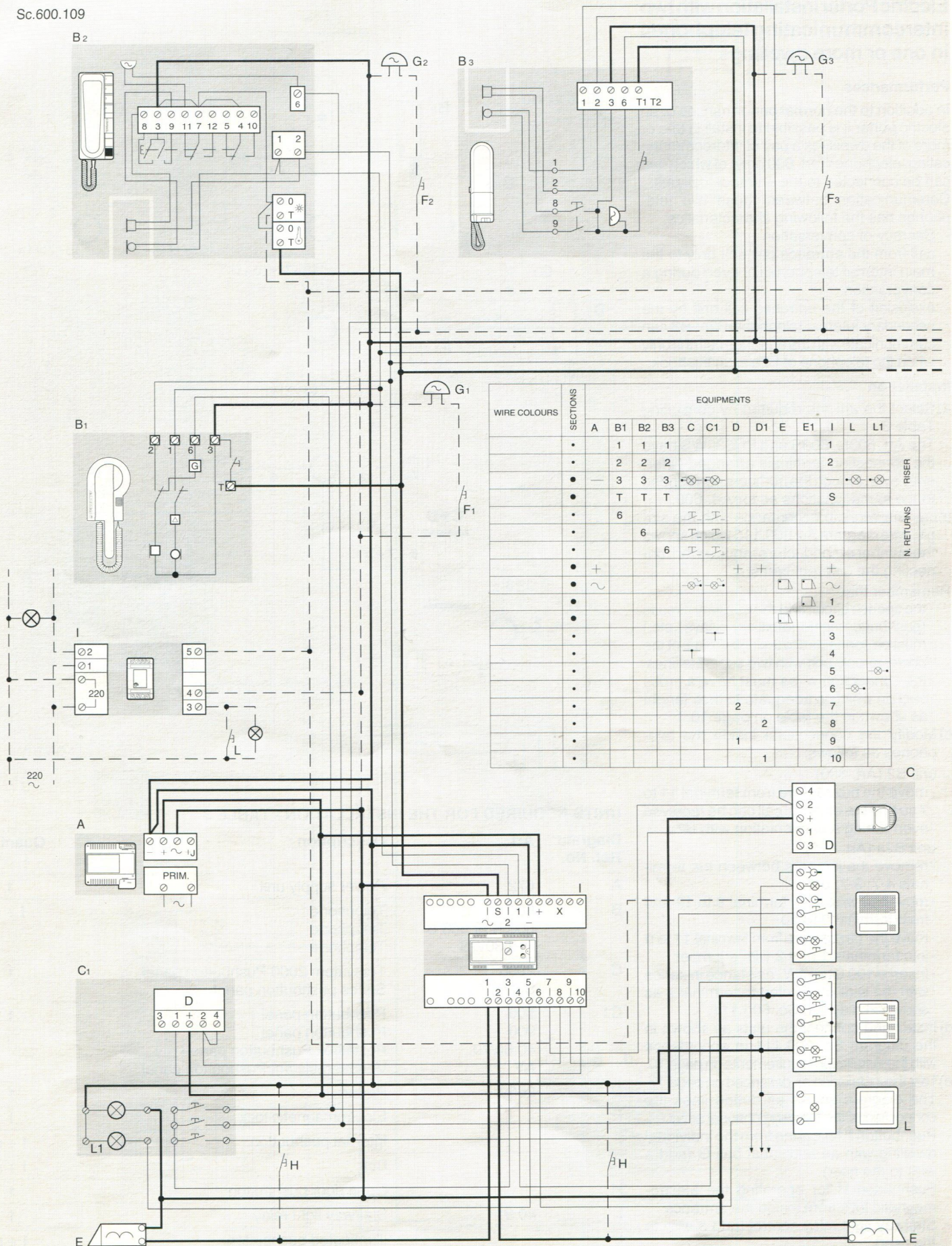
Sc. 600.108



UNITS REQUIRED FOR THE INSTALLATION - TABLE 2

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600 603 N or 603 S PH603WS	Telephone Telephone Telephone	1 ÷ n
C	2000 SM	Tersystem 2000 Pushbutton panel 1000 Series pushbutton panel	2
C1	500 900 40.60/70 AV	Pushbutton panel Pushbutton panel Postalbox Pushbutton panel Vandal-resistant Pushbutton panel	2
D	2659	Porter	2
E	-	Electromagnetic lock	2
F	-	Internal pushbutton	1 ÷ n
G	-	Bell	1 ÷ n
H	-	Door opening pushbutton	1
I	608.608N	Two-door switching unit	1
L	2149	"Please wait" signal	2
L1	9.1 6 SM010 SL010	"Please wait" signal "Please wait" signal "Please wait" signal "Please wait" signal	
M	40.91	Stairway light relay	1
N	-	Illuminated pushbutton	1 ÷ n

Sc.600.109



WIRE COLOURS	SECTIONS	EQUIPMENTS													
		A	B1	B2	B3	C	C1	D	D1	E	E1	I		L	L1
•			1	1	1							1			RISER
•			2	2	2							2			
•			3	3	3	⊗	⊗					⊗	⊗		
•			T	T	T							S			
•			6											N. RETURNS	
•			6			⊗	⊗								
•	+							+	+			+			
•	~					⊗	⊗			⊗	⊗	~			
•										⊗	⊗	1			
•												2			
•												3			
•												4			
•												5	⊗		
•												6	⊗		
•												7			
•									2			8			
•									1			9			
•										1		10			

Electric Porter Installation with two intercommunicating telephones in one or more dwellings

Performances

In addition to the normal performances of an electric porter it is possible to install in one or more of the dwellings a pair of intercommunicating telephones (art. 600 only) of which one can be connected to the entrance call unit. Communication between these two telephones has the following characteristics:

- Secrecy of conversation
- call from the entrance call unit only to the main internal telephone B2 even during a conversation
- exclusion of the entrance call unit by the secondary internal telephone B2a: B2 can communicate with the entrance call unit only when the telephone of B2a is on the hook.

Installation

- a) Select the articles required by consulting Table 3.

The Art. 603N, 603S and PH630WS have the connecting terminals arranged differently even though the numbers correspond to the same functions as for Art. 600.

- b) Lay the wires in accordance with the single-wire diagram Sc. 600.110 which shows the number of conductors required for connecting the different items.

Remember that:

- the speech circuit and the auxiliary circuits (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
- the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.

- c) Modify the connections inside the telephones as follows:

unit B2 (Art. 600)

- move the buzzer wire from terminal 11 to 7 so that the external call can be received even during a conversation with B2a.

unit B2a (Art. 600)

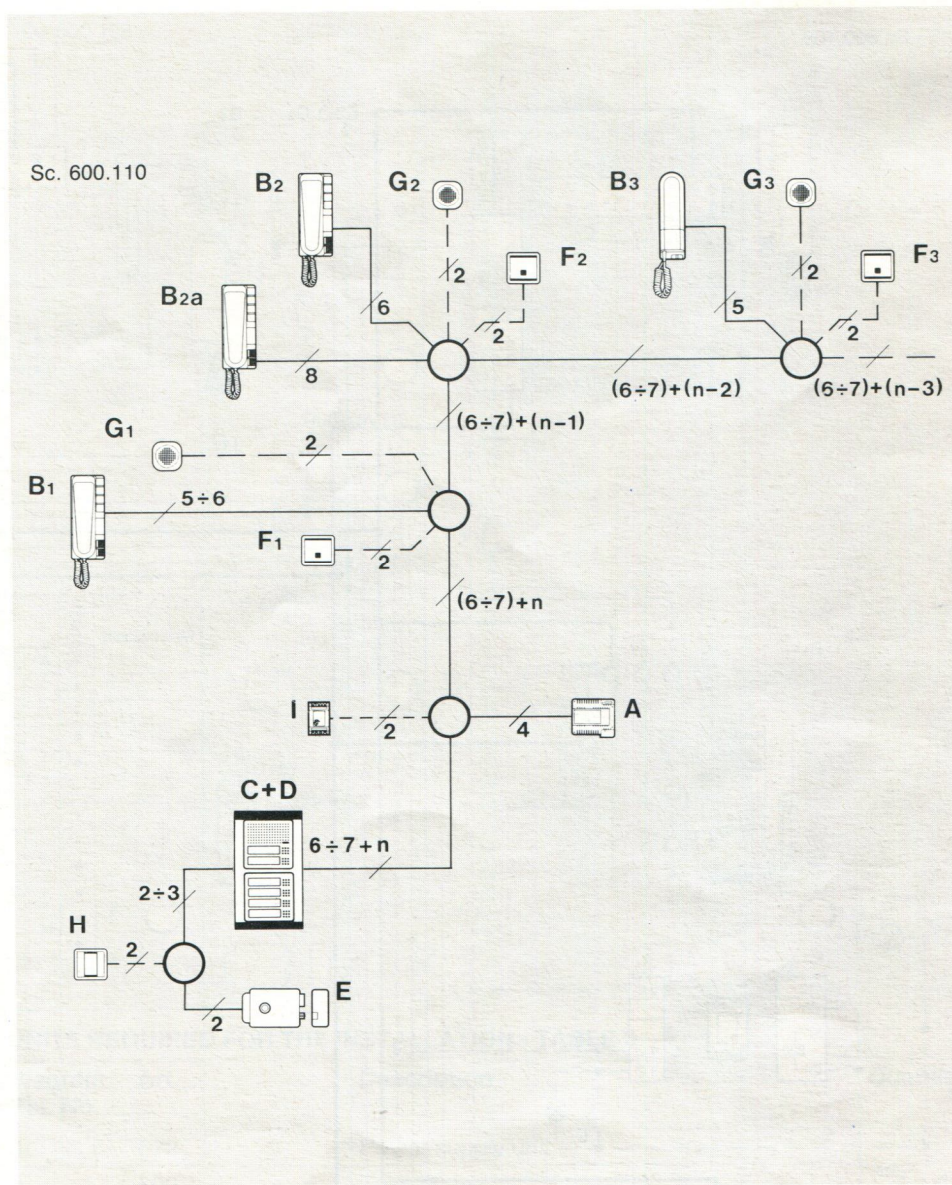
- remove the jumpers between the terminals 4-7; 3-7; 0-7
- move the wire from terminal 8 to 12 and from terminal 9 to 10
- move the buzzer wire from terminal 11 to 0
- join terminals 1 and 2 with a jumper
- insert a 100 Ohm 1W resistance in series with the wire connected to terminal 2 as shown in diagram Sc. 600.111.

- d) Install and connect the units as shown in the diagram Sc. 600.111 in accordance with the installation requirements on page 10.

- e) Test the installation as described on page 17.

The diagram shows as dotted lines the connection of the following optional services:

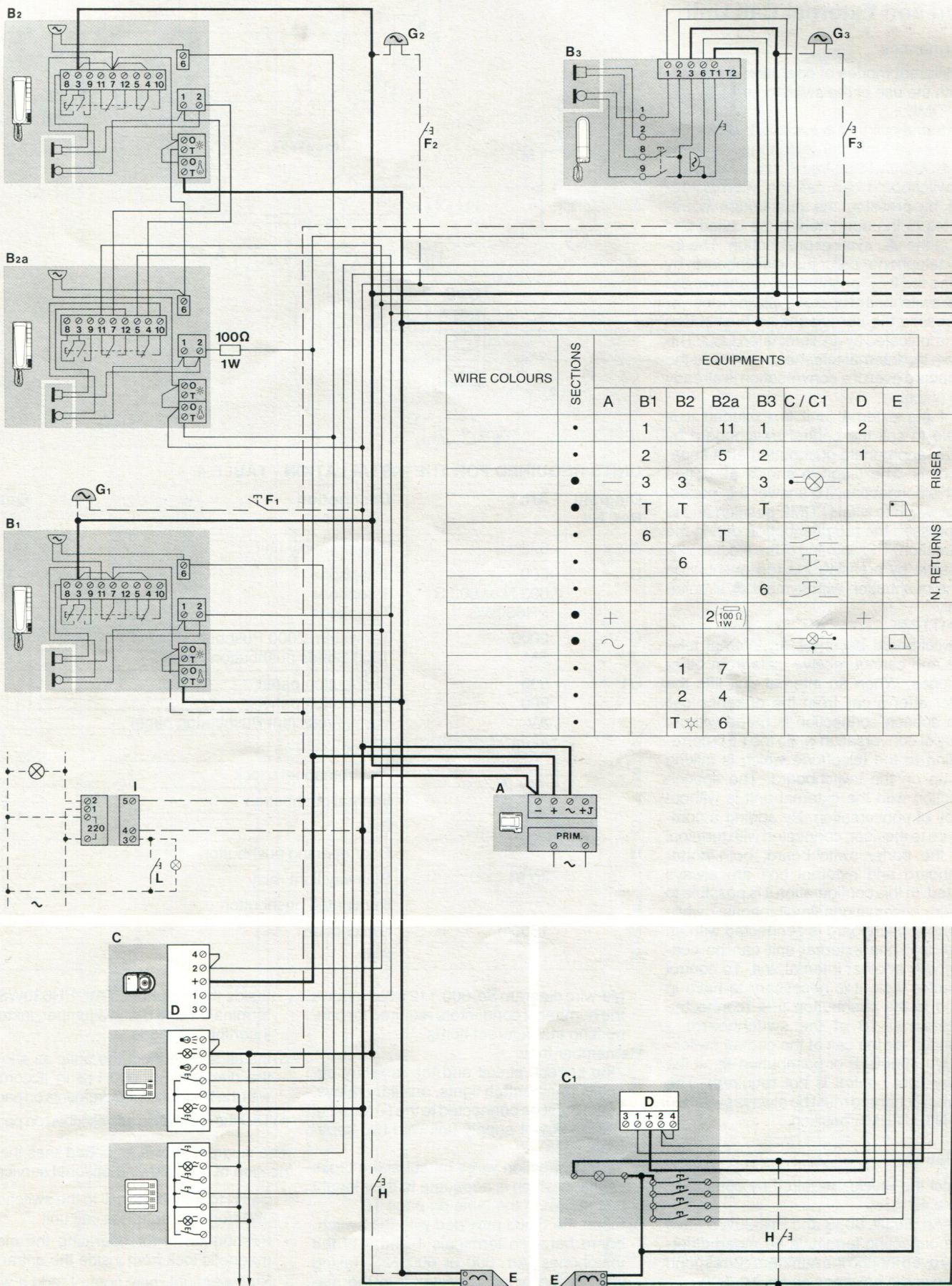
- Pushbutton F for calling from the individual dwelling with an additional bell G (add a wire to the riser)
- Pushbutton H for operating the electromagnetic lock from inside the entrance
- Stairway light relay control (add a wire to the riser).



UNITS REQUIRED FOR THE INSTALLATION - TABLE 3

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600	Telephone	1 ÷ n
	603 N or 603 S	Telephone	
	PH630WS	Telephone	
C	2000	Tersystem 2000 Pushbutton panel	1
	SM1000	Series pushbutton panel	
C1	500	Pushbutton panel	1
	900	Pushbutton panel	
	40.60/70	Postalbox Pushbutton panel	
	AV	Vandal-resistant Pushbutton panel	
D	2659	Porter	1
E	-	Electromagnetic lock	1
F	-	Internal pushbutton	1 ÷ n
G	-	Bell	1 ÷ n
H	-	Open door pushbutton	1
I	40.91	Stairway light relay	1
L	-	Illuminated pushbutton	1 ÷ n

Sc. 600.111





WIRE COLOURS	SECTIONS	EQUIPMENTS								
		A	B1	B2	B2a	B3	C / C1	D		E
•			1		11	1		2		RISER
•			2		5	2		1		
•			3	3		3	⊗			
•			T	T		T			□	N. RETURNS
•			6		T		⌈			
•				6			⌈			
•						6	⌈			
•			+		2 (100Ω / 1W)			+		
•			~				⊗		□	
•				1	7					
•				2	4					
•				T ☆	6					


Installation with Porter Switchboard and External Call Unit

Performances



Two different modes of operation are possible with the use of the switchboard:

- DAYTIME

the external call unit is excluded; conversations between internal telephones and the switchboard and vice versa can take place. The switchboard can call the internal telephone by pressing the pushbutton corresponding to the apartment to be called and pushing the  symbol pushbutton. The internal telephone calls the switchboard by pressing the  pushbutton; to answer the call the switchboard operator lifts the receiver and presses the corresponding pushbutton which is indicated by an illuminated LED. The call from the internal telephone arrives at the switchboard even if a conversation is already taking place.

Even if the external unit is excluded it is possible to call the central switchboard by using an appropriate pushbutton and a separate bell N. The diagram shows as dotted lines this connection. To answer it is necessary to switch to NIGHTTIME position and to keep pressed the red pushbutton during the conversation. The opening of the electric lock is possible by pressing the red pushbutton and the pushbutton with symbol  simultaneously.

- NIGHTTIME

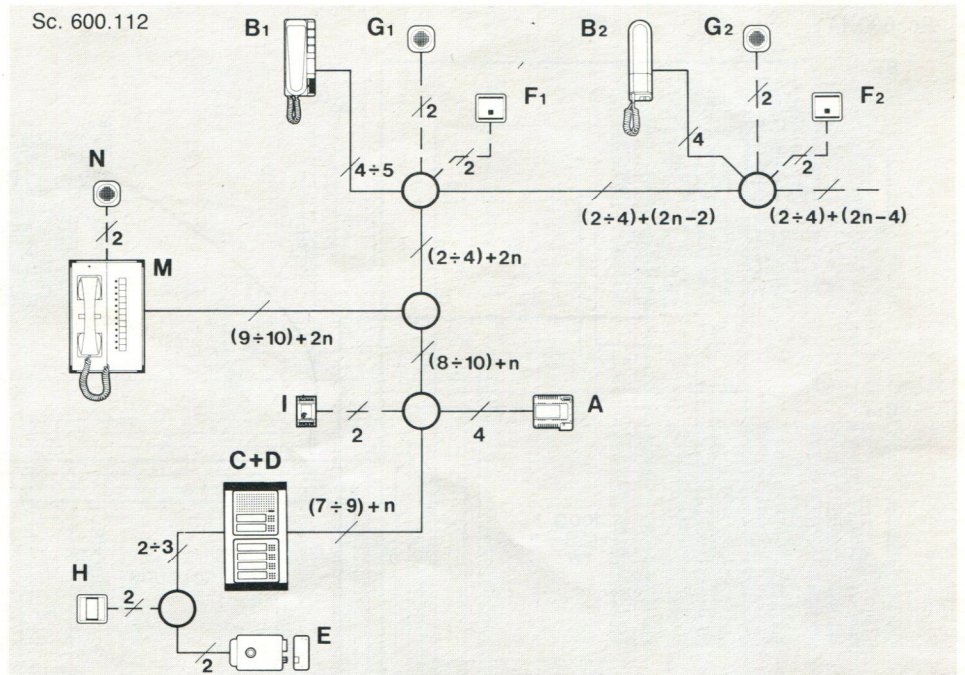
the switchboard becomes an internal telephone and cannot receive calls from other telephones. When an internal unit lifts the receiver after a call from the entrance call unit, a speech connection is made without secrecy of conversation while the LED corresponding to the telephone which is talking lights up on the switchboard. The speech connection with the external unit is without secrecy of conversation. By adding a common wire to the riser, connected with terminal 10 of the porter switchboard, both porter switchboard and external unit are always activated. In this configuration it is possible to have two conversations simultaneously: while the porter switchboard is connected with an internal unit, the external unit can be connected with another internal unit. To control the electric lock, it is necessary to have in addition to the pushbutton  (connected with terminal 10 of the switchboard) a pushbutton for the call of the central switchboard (Art. 600ETE or pushbutton , if the stairway light control is not required). The central switchboard must be always switched to the NIGHTTIME position.

Installation

a) Select the articles required by consulting Table 4.

The Art. 603N, 603S and PH630WS have the connecting terminals arranged differently even though the numbers correspond to the same functions as for Art. 600.

b) Lay the wires in accordance with the sin-



UNITS REQUIRED FOR THE INSTALLATION - TABLE 4

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600 603 N or 603 S PH630WS	Telephone Telephone Telephone	1 ÷ 90
C	2000 SM	Tersystem 2000 Pushbutton panel 1000 Series pushbutton panel	1
C1	500 900 AV	Pushbutton panel Pushbutton panel Vandal-resistant Pushbutton panel	1
D	2659	Porter	1
E	-	Electromagnetic lock	1
F	-	Internal pushbutton	1 ÷ n
G	-	Bell	1 ÷ n
H	-	Door opening pushbutton	1
I	40.91	Stairway light relay	1
L	-	Illuminated pushbutton	1 ÷ n
M	1500/n	Switchboard	1
N	-	Bell	1

gle-wire diagram Sc. 600.112 which shows the number of conductors required for connecting the different items.

Remember that:

- the speech circuit and the auxiliary circuits (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines

- the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.

c) Insert the diode provided with the switchboard between terminals 1 and 6 of the telephones, Art. 600 or 6003N/S, taking care of the polarity indicated in the diagram Sc. 600.113.

Inside the telephones Art. PH630WS, join terminals 1 and 6 with a jumper, instead of inserting the diode.

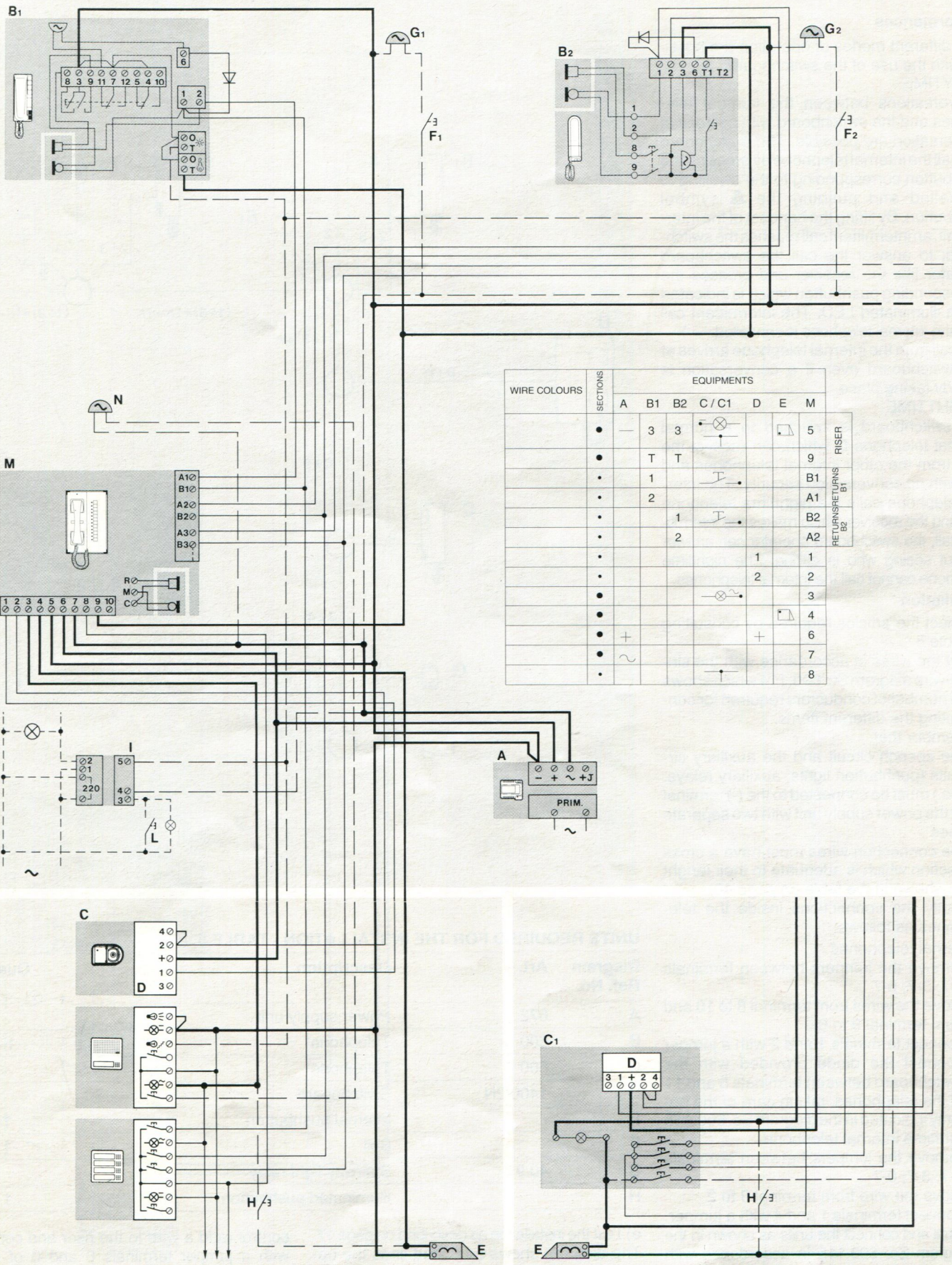
d) Install and connect the units as shown in the diagram Sc. 600.113 in accordance with the installation requirements on page 10.

e) Test the installation as described on page 17.

The diagram shows as dotted lines the connection of the following optional services:

- Bell N for nighttime call to the switchboard and from the entrance call unit
- Pushbutton H for operating the electromagnetic lock from inside the entrance
- Stairway light relay control (add a wire to the riser).

Sc. 600.113



WIRE COLOURS	SECTIONS	EQUIPMENTS						RETURN/RETURNS	
		A	B1	B2	C / C1	D	E		M
•			3	3	⊗		□	5	RISER
•			T	T				9	
•			1		⊗			A1	
•			2					B2	
•				1	⊗			A2	
•				2				1	
•						1		2	
•					⊗			3	
•							□	4	
•	+					+		6	
•	~							7	
•					⊗			8	

Installation with Porter Switchboard with 2 wires (1+1)

Performances

Two different modes of operation are possible with the use of the switchboard:

- DAYTIME

Conversations between the internal telephones and the switchboard with secrecy of conversation are possible. The switchboard can call the internal telephone by pressing the pushbutton corresponding to the dwelling to be called and pushing the \blacktriangle symbol pushbutton. By lifting the handset of the internal unit, an intermittent call reaches the switchboard; to answer the call the switchboard operator lifts the receiver and presses the corresponding pushbutton which is indicated by an illuminated LED. The intermittent call from the internal telephone is cancelled.

The call from the internal telephone arrives at the switchboard even if a conversation is already taking place.

- NIGHTTIME

The switchboard is switched to a normal internal telephone C which can receive the calls from the other internal telephones and talk with no conversation security. The internal telephone calls the nighttime telephone by lifting the receiver which makes the intermittent call, the switchboard operator can answer without seeing who is calling. The nighttime telephone cannot call the internal telephones.

Installation

a) Select the articles required by consulting Table 5.

b) Lay the wires in accordance with the single-wire diagram Sc. 600.114 which shows the number of conductors required for connecting the different items.

Remember that:

- the speech circuit and the auxiliary circuits (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
- the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.

c) Modify the connections inside the telephones as follows:

internal telephones

- remove the jumpers between terminals 4-7; 3-7; 0-7

- move the wires from terminal 8 to 10 and from terminal 9 to 6

- connect terminals 1 and 2 with a jumper
- connect the diode provided with the switchboard between terminals 5 and 11 of the telephones, taking care of the polarity indicated in the diagram Sc. 600.115

nighttime internal telephone

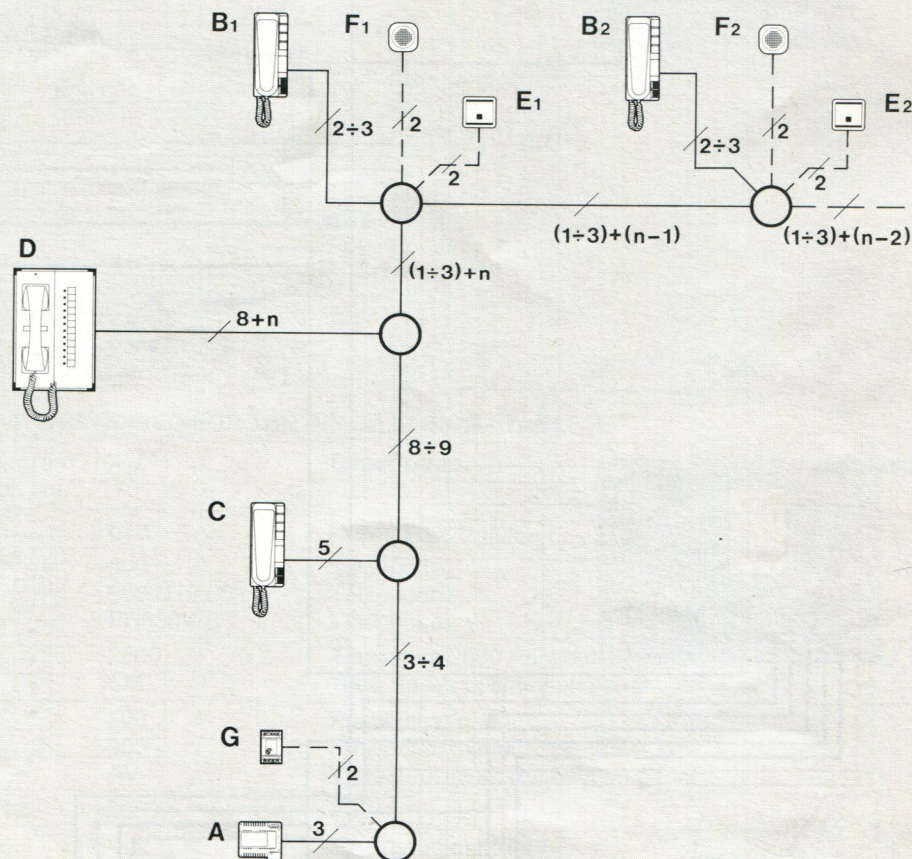
- remove the jumpers between terminals 4-7; 3-7; 0-7

- move the wire from terminal 9 to 2

- connect terminals 1 and 4 with a jumper.

d) Install and connect the units as shown in the diagram Sc. 600.115 in accordance with the installation requirements on page 10.

Sc. 600.114



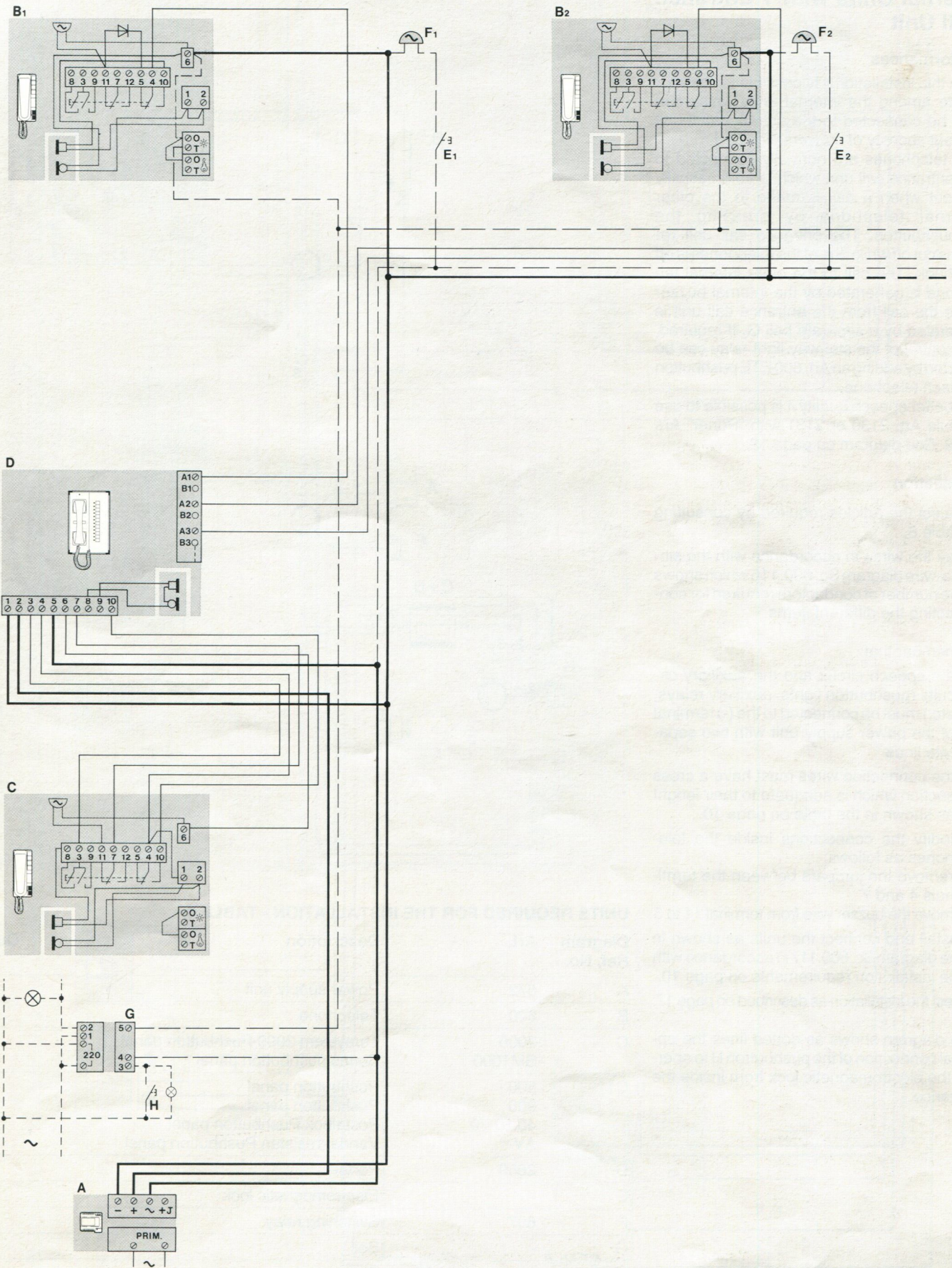
UNITS REQUIRED FOR THE INSTALLATION - TABLE 5

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600	Telephone	1 ÷ 90
C	600	Telephone	1
D	1400/2N	Switchboard	1
E	-	Internal pushbutton	1 ÷ n
F	-	Bell	1 ÷ n
G	40.91	Stairway light relay	1
H	-	Illuminated pushbutton	1 ÷ n

e) Test the installation as described on page 17. The diagram shows as dotted lines the optional connection of the staircase light relay

control (add a wire to the riser and connect with a jumper terminals 6 and 0 of each internal telephone).

Sc. 600.115



Intercom Installation for up to 2 Internal Units with 1 Entrance Call Unit

Performances

With this installation it is possible to communicate among the internal units which can also be connected to the entrance call unit without secrecy of conversation.

The telephones are normally connected to the entrance call unit which is automatically cut out when a call is made to the other internal telephone by pressing the * pushbutton. The entrance call unit remains cut off while one of the telephones is off the hook. The call to the other internal telephone is generated by the internal buzzer while the call from the entrance call unit is generated by a separate bell G. If required, the control of the stairway light relay can be effected by adding an Art. 600 ETE pushbutton on each telephone.

For better speech quality it is possible to use module Art. 2130 or 2131 with "Porter" Art. 2659. See diagram on page 12.

Installation

- Select the articles required by consulting Table 6.
- Lay the wires in accordance with the single-wire diagram Sc. 600.116 which shows the number of conductors required for connecting the different items.

Remember that:

- the speech circuit and the auxiliary circuits (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
- the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.

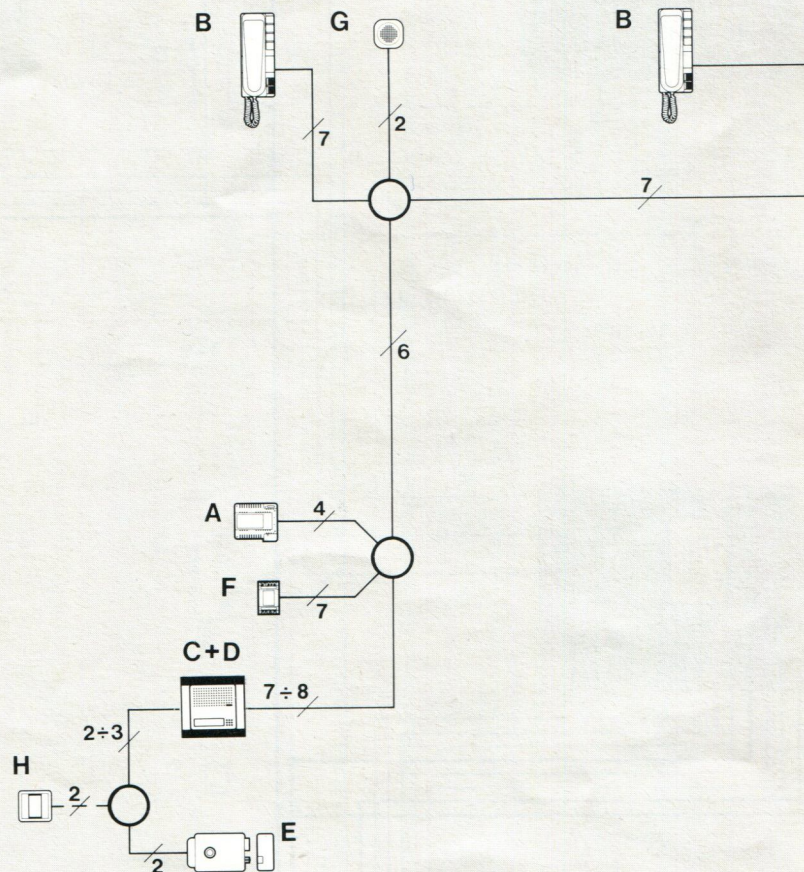
- Modify the connections inside the telephones as follows:
 - remove the jumpers between the terminals 4 and 7
 - move the buzzer wire from terminal 11 to 5

- Install and connect the units as shown in the diagram Sc. 600.117 in accordance with the installation requirements on page 10.

- Test the installation as described on page 17.

The diagram shows as dotted lines the optional connection of the pushbutton H to operate the electromagnetic lock from inside the entrance.

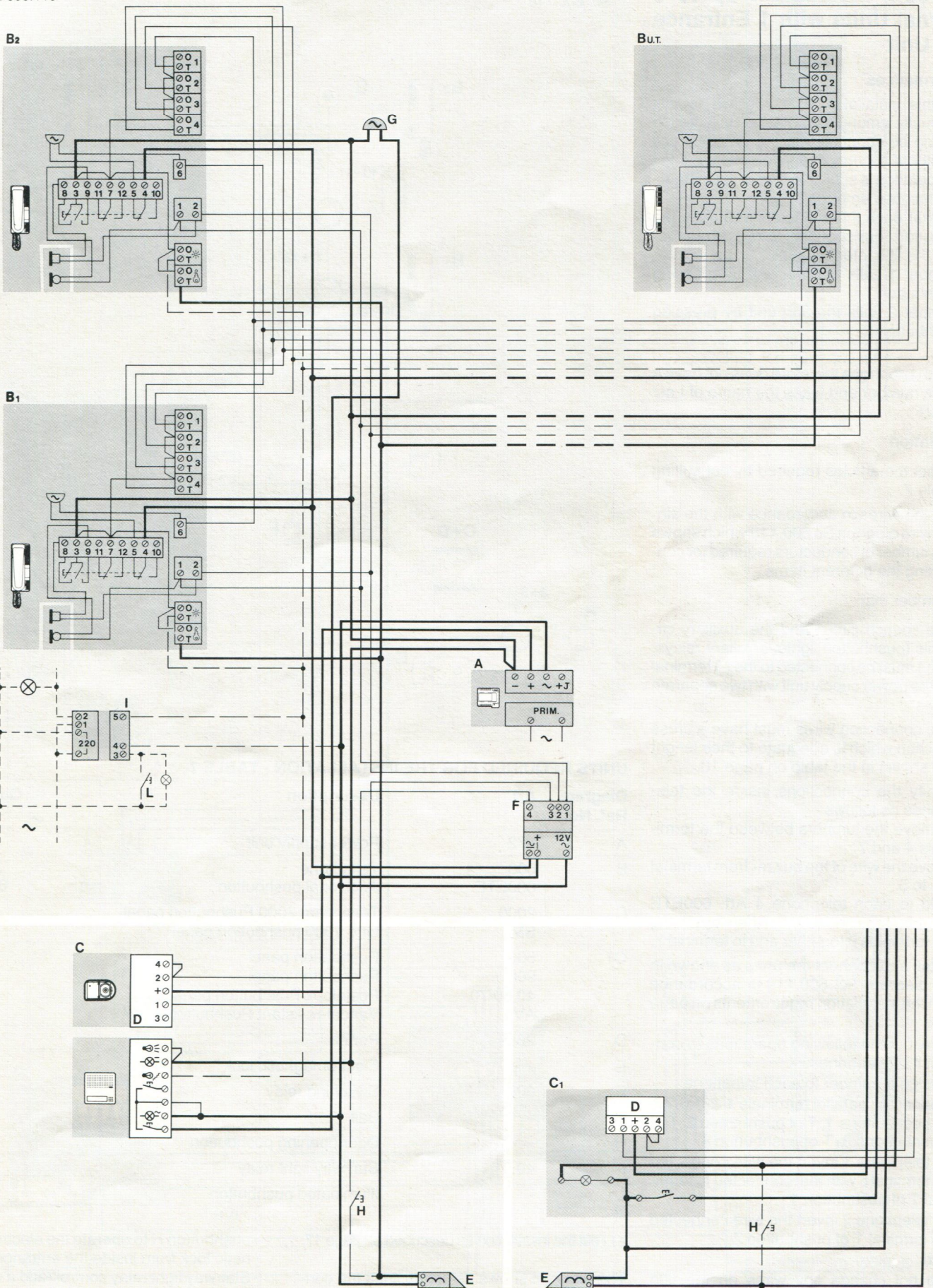
Sc. 600.116



UNITS REQUIRED FOR THE INSTALLATION - TABLE 6

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600	Telephone	2
C	2000 SM1000	Tersystem 2000 Pushbutton panel Series pushbutton panel	1
C1	500 900 40.60/70 AV	Pushbutton panel Pushbutton panel Postalbox Pushbutton panel Vandal-resistan Pushbutton panel	1
D	2659	Porter	1
E	-	Electromagnetic lock	1
F	607	Switching relay	1
G	-	Bell	1
H	-	Door opening pushbutton	1

Sc. 600.119



Intercom Installation up to 5 Internal Units with 1 Entrance Call Unit

Performances

With this installation it is possible to talk individually among the internal units which can also be connected to the entrance call unit without secrecy of conversation.

The operation is similar to that of the installation described on page 30.

Note that each internal telephone uses the pushbutton corresponding to its own number to call the fifth internal unit:

- number 1 calls the fifth unit by pressing pushbutton 1
- number 2 calls the fifth unit by pressing pushbutton 2
- etc.

The fifth telephone therefore does not have a definite number and takes the name of Last Unit (UT).

Installation

- a) Select the articles required by consulting Table 7.
- b) Lay the wires in accordance with the single-wire diagram Sc 600.118 which shows the number of conductors required for connecting the different items.

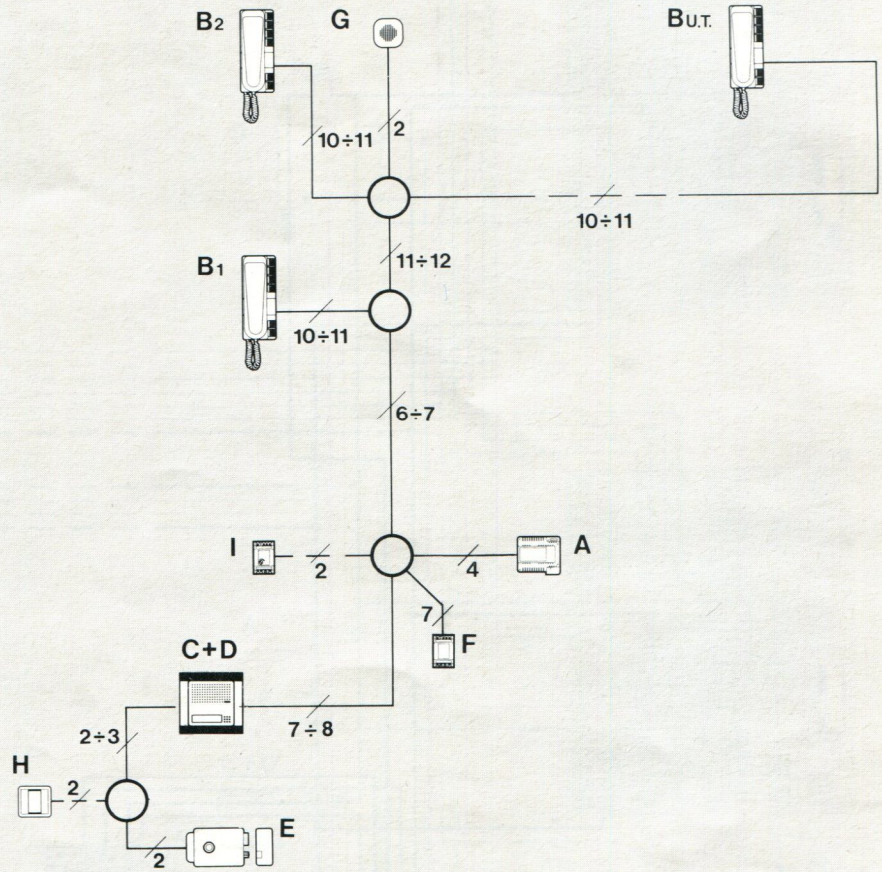
Remember that:

- the speech circuit and the auxiliary circuits (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
 - the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.
- c) Modify the connections inside the telephones as follows:
 - remove the jumpers between the terminals 4 and 7
 - move the wire of the buzzer from terminal 11 to 5
 - add to each telephone 4 Art. 600ETE pushbuttons and connect them by joining all terminals 0 together and to terminal 7.
 - d) Install and connect the units as shown in the diagram Sc. 600.119 in accordance with the installation requirements on page 10.

Carry out the following operations to connect the telephones:

- assign a number to each telephone
- connect in parallel terminals 1-2-3-6-7 T of pushbuttons 1, T of pushbutton 2, T of pushbuttons 3, T of pushbutton 4
- in telephone 1 invert the wire connected to terminal 6 with that connected to terminal T of pushbutton 1
- in telephone 2 invert the wire connected to terminal T of pushbutton 2
- etc.
- do not change any wires on the fifth telephone (UT).

Sc. 600.118



UNITS REQUIRED FOR THE INSTALLATION - TABLE 7

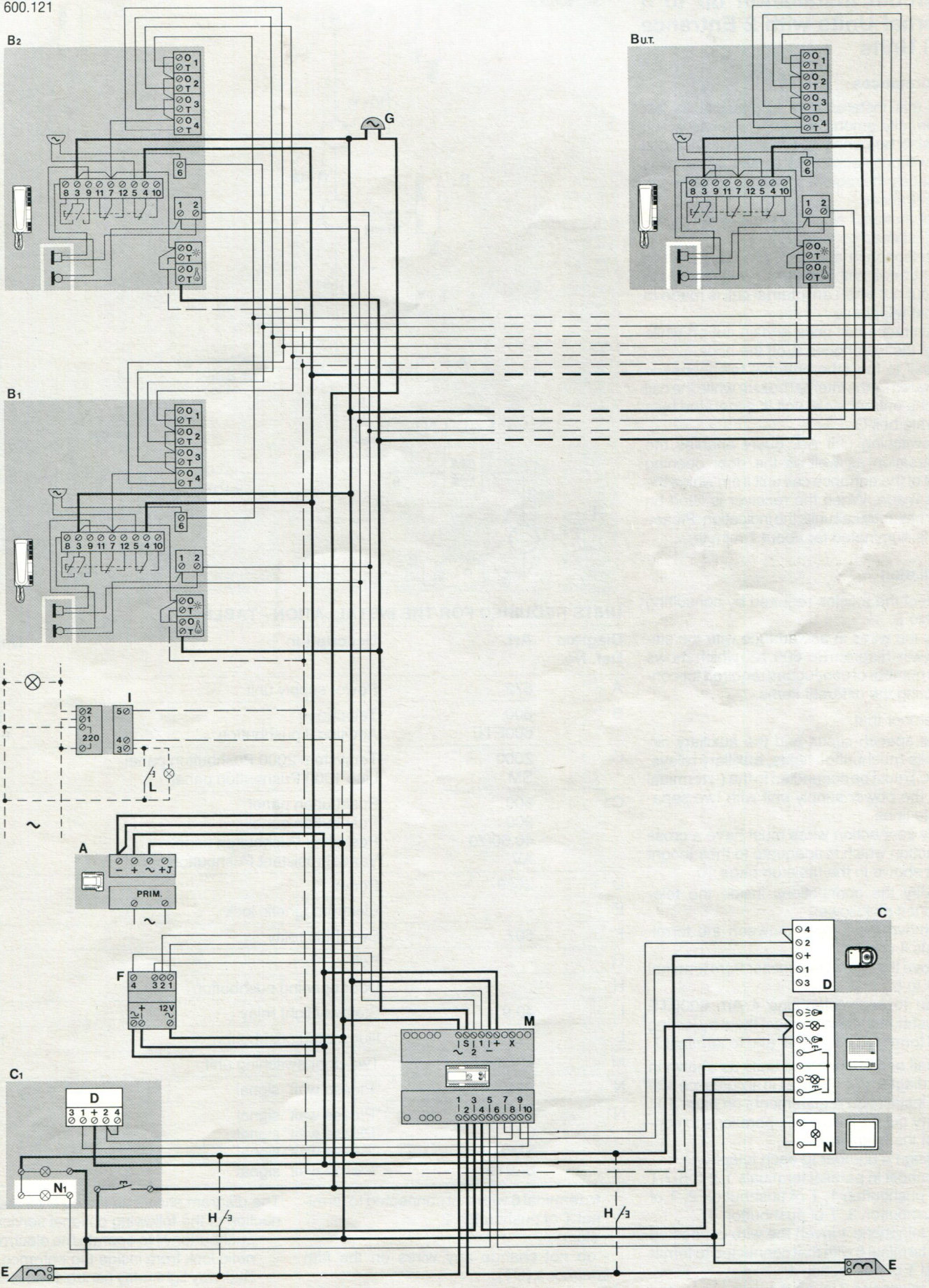
Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600 600ETE	Telephone Additional pushbutton	3 ÷ 5 6 ÷ 20
C	2000 SM	Tersystem 2000 Pushbutton panel Line 1000 pushbutton panel	1
C1	500 900 40.60/70 AV	Pushbutton panel Pushbutton panel Postalbox Pushbutton panel Vandal-resistant Pushbutton panel	1
D	2659	Porter	1
E	-	Electromagnetic lock	1
F	607	Switching relay	1
G	-	Bell	1
H	-	Door opening pushbutton	1
I	40.91	Stairway light relay	1
L	-	Illuminated pushbutton	1 ÷ n

e) Test the installation as described on page 17.

The diagram shows as dotted lines the connection of the following optional services:

- pushbutton H to operate the electromagnetic lock from inside the entrance.
- Stairway light relay control (add a wire to the riser).

Sc. 600.121



Intercom Installation up to 5 Internal Units with 2 Entrance Call Units

Performances

With this installation it is possible to talk individually among the internal units which can also be connected to the entrance call unit without secrecy of conversation. This can satisfy the requirements of a building with two entrances.

The operation is similar to that of the installation described on page 32.

The telephones are normally connected to the entrance call units which are automatically cut out when an internal call is made to another telephone.

The entrance call units remain cut off while one of the telephones is off the hook.

The call to the other internal telephones is generated by the internal buzzer while the call from the entrance call unit is generated by a separate bell G.

The switching unit Art. 608N enables the conversation as well as the door opening circuit of the entrance call unit from which the call is made. When the receiver is lifted on either entrance call units the indication "Please wait" is illuminated for about 1 minute.

Installation

- Select the articles required by consulting Table 8.
- Lay the wires in accordance with the single-wire diagram Sc. 600.120 which shows the number of conductors required for connecting the different items.

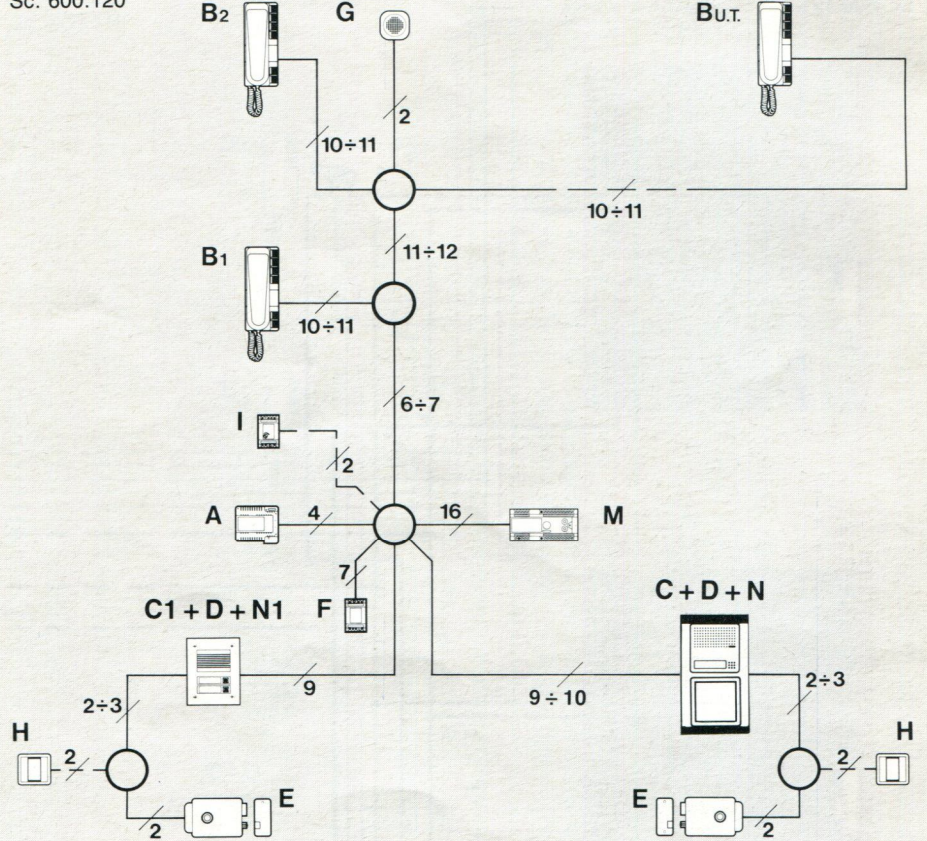
Remember that:

- the speech circuit and the auxiliary circuits (pushbutton lights, auxiliary relays, etc.) must be connected to the (-) terminal of the power supply unit with two separate lines
 - the connection wires must have a cross section which is adequate to their length as shown in the table on page 10.
- Modify the connections inside the telephones as follows:
 - remove the jumper between the terminals 4 and 7
 - move the wire of the buzzer from terminal 11 to 5
 - add to each telephone 4 Art. 600ETE pushbuttons and connect them by joining all terminals 0 together and to terminal 7.

- Install and connect the units as shown in the diagram Sc. 600.121 in accordance with the installation requirements on page 10. Carry out the following operations to connect the telephones:

- assign a number to each telephone
- connect in parallel terminals 1-2-3-6-7 T of pushbutton 1, T of pushbutton 2, T of pushbutton 3, T of pushbutton 4
- in telephone 1 invert the wire connected to terminal 6 with that connected to terminal T of pushbutton 1
- in telephone 2 invert the wire connected

Sc. 600.120



UNITS REQUIRED FOR THE INSTALLATION - TABLE 8

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600 600ETE	Telephone Additional pushbutton	3 ÷ 5 6 ÷ 20
C	2000 SM	Tersystem 2000 Pushbutton panel Line 1000 Pushbutton panel	2
C1	500 900 40.60/70 AV	Pushbutton panel Pushbutton panel Postalbox Pushbutton panel Vandal-resistant Pushbutton panel	2
D	2659	Porter	2
E	-	Electromagnetic lock	2
F	607	Switching relay	1
G	-	Bell	1
H		Door opening pushbutton	2
I	40.91	Stairway light relay	1
L		Illuminated pushbutton	1 ÷ n
M	608-608N	Two-door switching unit	1
N	2149	"Please wait" signal	2
N1	9.1 6 SM010 SL010	"Please wait" signal "Please wait" signal "Please wait" signal "Please wait" signal	2

to terminal 6 with that connected to terminal T of pushbutton 2

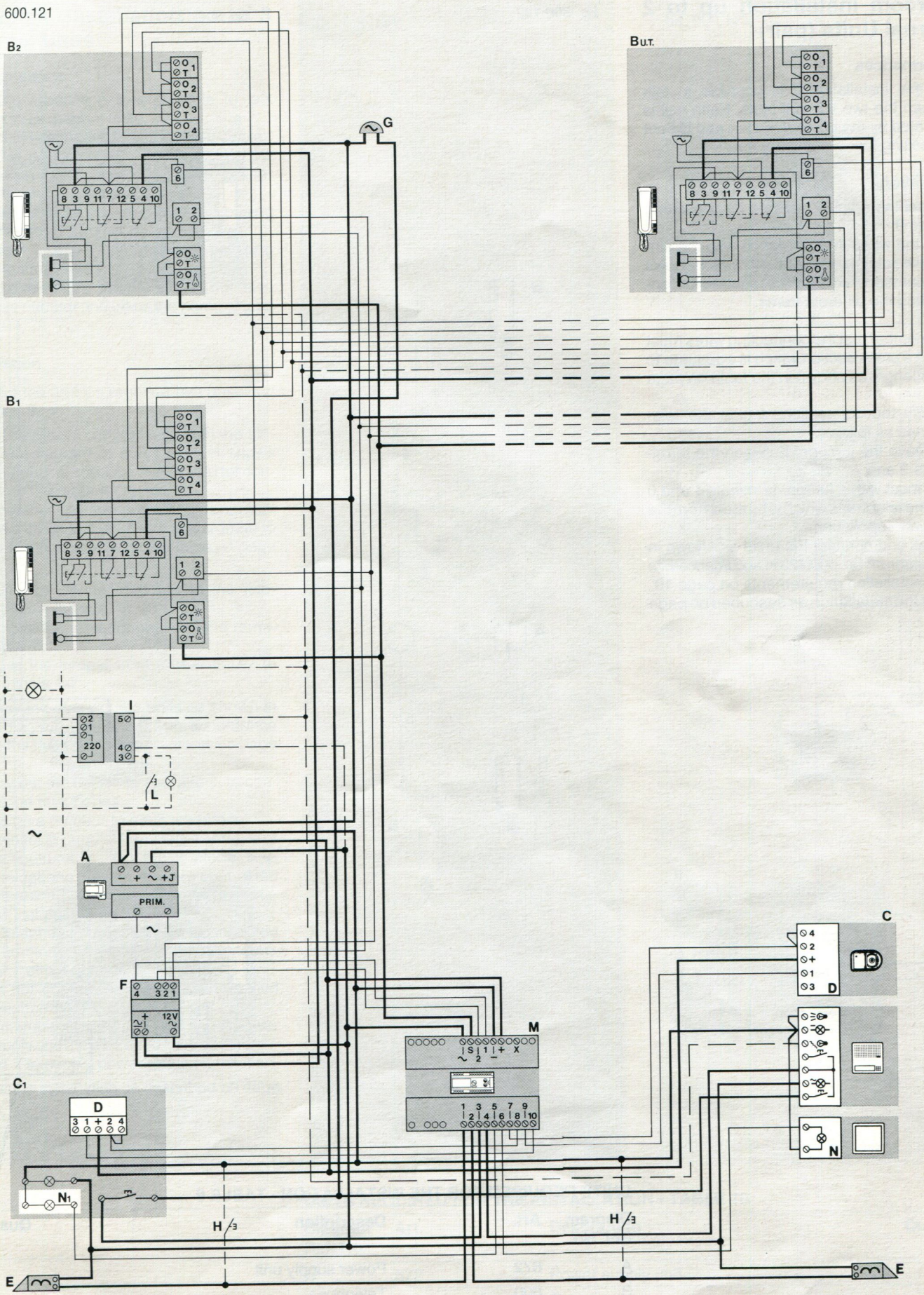
- etc.
- do not change any wires on the fifth telephone (UT).

- Test the installation as described on page 17.

The diagram shows as dotted lines the connection of the following optional services:

- pushbutton H to operate the electromagnetic lock from inside the entrance.
- Stairway light relay control (add a wire to the riser).

Sc. 600.121



Intercom Installation up to 3 Internal Units

Performances

With this installation it is possible to talk among three internal units.

Each call is generated by the internal buzzer. Note that each internal telephone uses the pushbutton corresponding to its own number to call the third internal unit:

- number 1 calls the third unit by pressing pushbutton 1
- number 2 calls the third unit by pressing pushbutton 2

The third telephone therefore does not have a definite number and takes the name of Last Unit (UT).

Installation

a) Select the articles required by consulting Table 10.

b) Lay the wires in accordance with the single-wire diagram Sc. 600.124 which shows the number of conductors required for connecting the different items.

Remember that the connecting wires must have a cross section which is adequate to their length as shown in the table on page 10.

c) Modify the connections inside the telephones as follows:

- remove the jumpers between the terminals 3-7
- move the jumper from terminals 0-7 to terminals 1-7

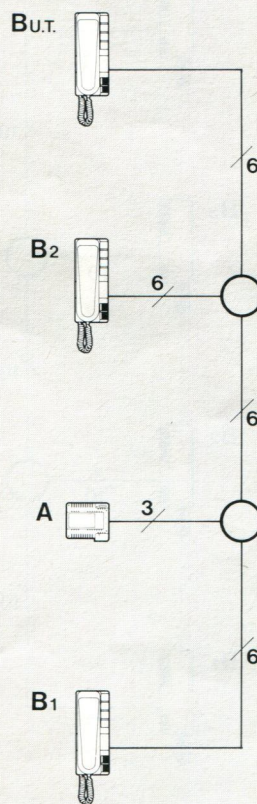
d) Install and connect the units as shown in the diagram Sc. 600.125 in accordance with the installation requirements on page 10.

Carry out the following operations to connect the telephones:

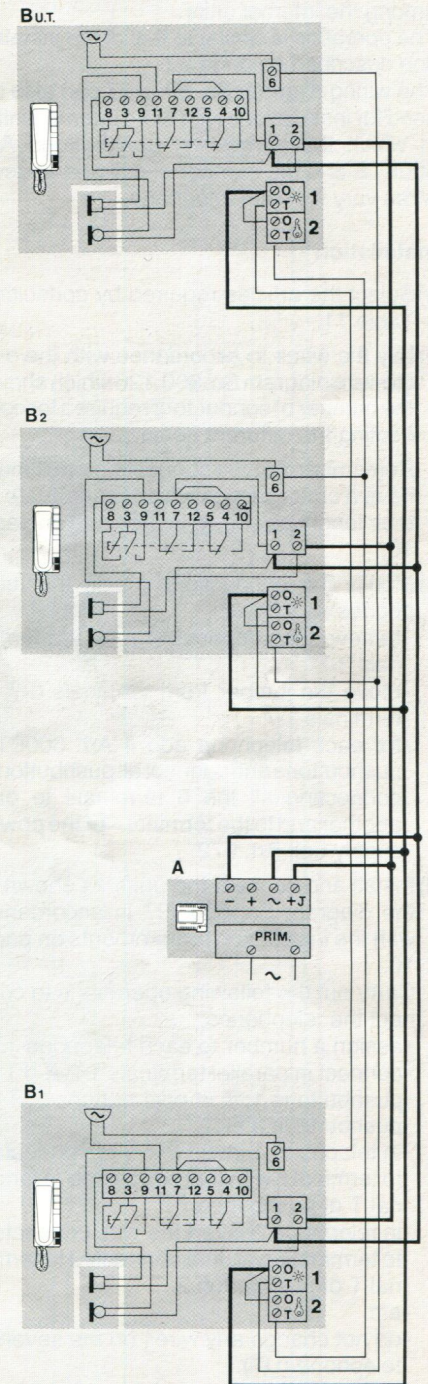
- assign a number to each telephone
- connect in parallel terminals 1-2-6-0 T of pushbuttons * , T of pushbuttons 0 → *
- in telephone 1 invert the wire connected to terminal 6 with that connected to terminal T of pushbutton *
- in telephone 2 invert the wire connected to terminal 6 with that connected to terminal T of pushbutton 0 → *
- do not change any wires on the third telephone (UT).
- remember that the terminal + J of power supply unit must be used instead of terminal + to supply power to the installation.

e) Test the installation as described on page 17.

Sc. 600.124



Sc. 600.125



UNITS REQUIRED FOR THE INSTALLATION - TABLE 10

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600	Telephone	3

Intercom Installation up to 7 Internal Units

Sc. 600.126

Performances

With this installation it is possible to talk among the internal units.

The operation is similar to that of the installation described on page 32.

The wiring diagram Sc. 600.127 can also be used for installations with 6/5/4 internal units, in which the number of upshbuttons Art. 600ETE and the number of call and speech wires vary for each telephone.

Installation

a) Select the articles required by consulting Table 11.

b) Lay the wires in accordance with the single-wire diagram Sc. 600.126 which shows the number of conductors required for connecting the different items.

Remember that the connecting wires must have a cross section which is adequate to their length as shown in the table on page 10.

c) Modify the connections inside the telephones as follows:

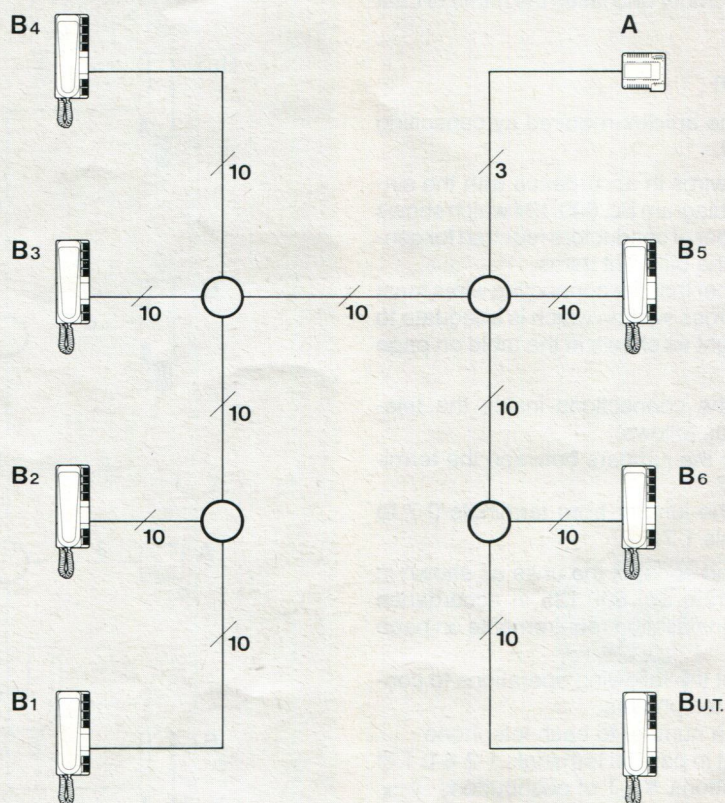
- remove the jumpers between the terminals 3-7
- move the jumper from terminals 0-7 to terminals 1-7
- for each telephone add 4 Art. 600ETE pushbuttons and connect all pushbuttons, connecting all the 0 terminals to one another and to the terminal ~ of the power supply unit Art. 672.

d) Install and connect the units as shown in the diagram Sc. 600.127 in accordance with the installation requirements on page 10.

Carry out the following operations to connect the telephones:

- assign a number to each telephone
- connect in parallel terminals 1-2-6-0 T of pushbuttons 1, T of pushbuttons 2, T of pushbuttons 3 etc.
- in telephone 1 invert the wire connected to terminal 6 with that connected to terminal T of pushbutton 1
- in telephone 2 invert the wire connected to terminal 6 with that connected to terminal T of pushbutton 2
- etc.
- do not change any wires on the seventh telephone (UT).
- remember that the terminal + J of power supply unit must be used instead of terminal + to supply power to the installation.

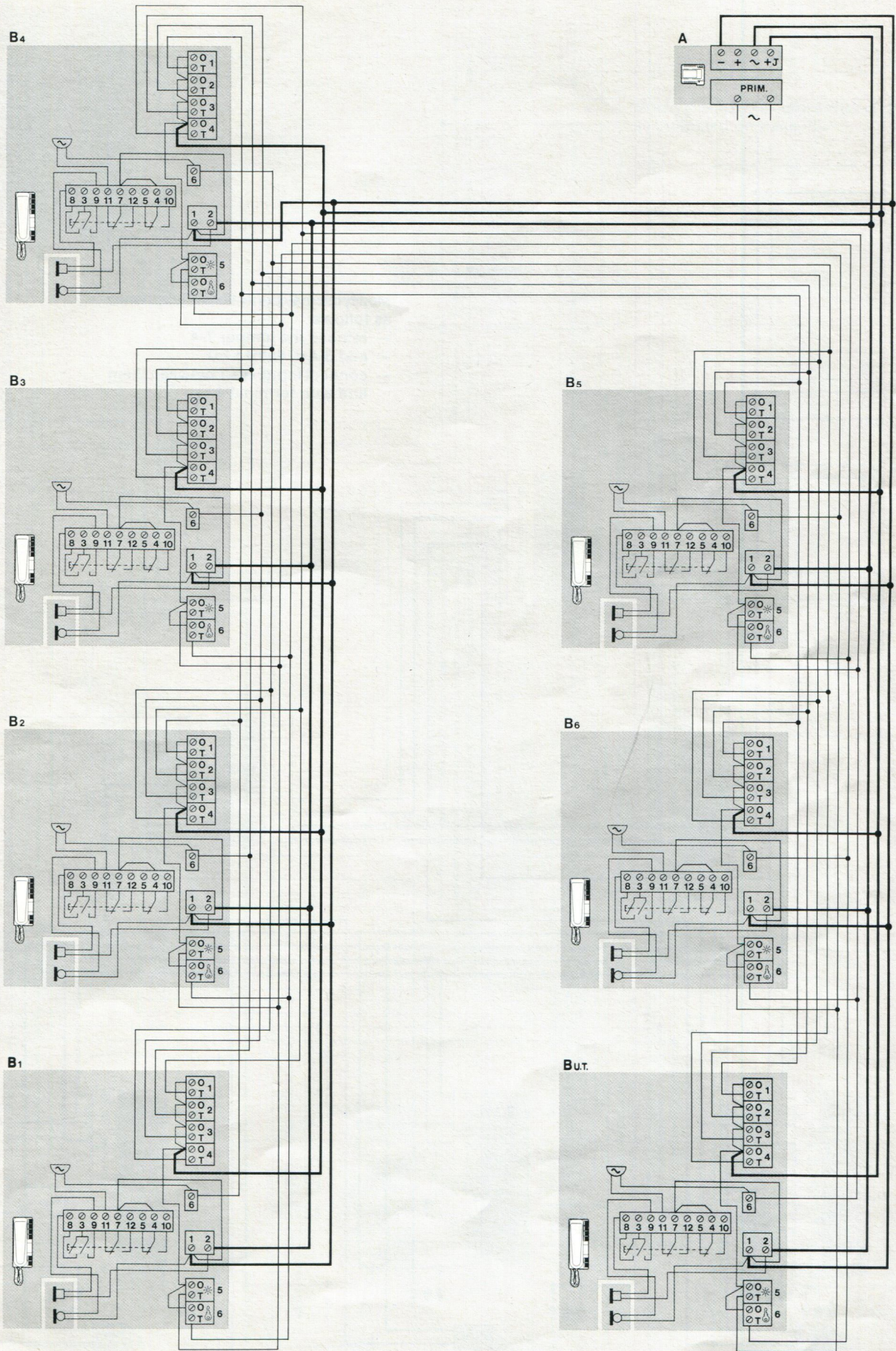
e) Test the installation as described on page 17.



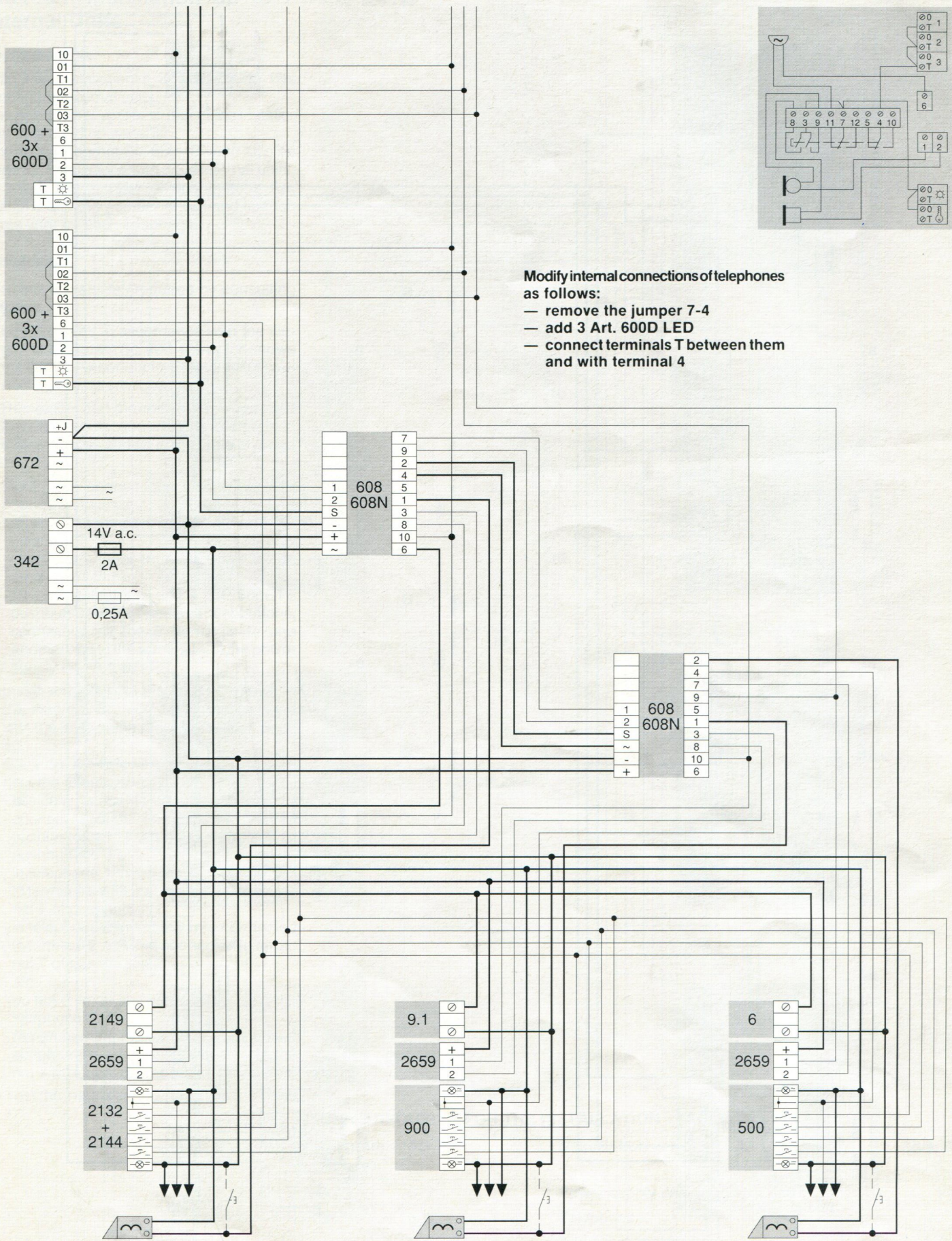
UNITS REQUIRED FOR THE INSTALLATION - TABLE 11

Diagram Ref. No.	Art.	Description	Quantity
A	672	Power supply unit	1
B	600	Telephone	4÷7
	600ETE	Additional pushbutton	4÷28

Sc. 600.127

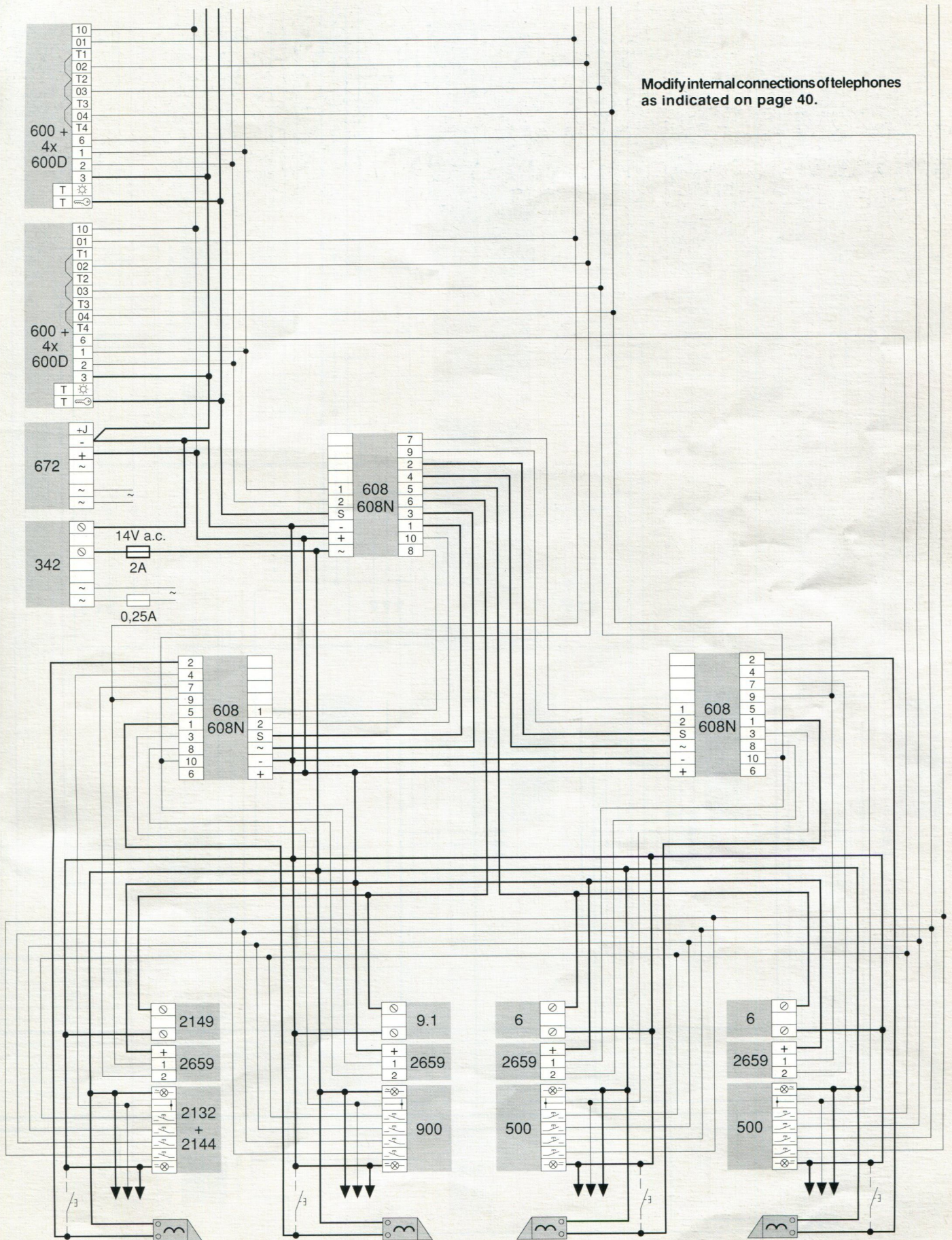


Electronic Porter Installation with 3 Entrance Call Units

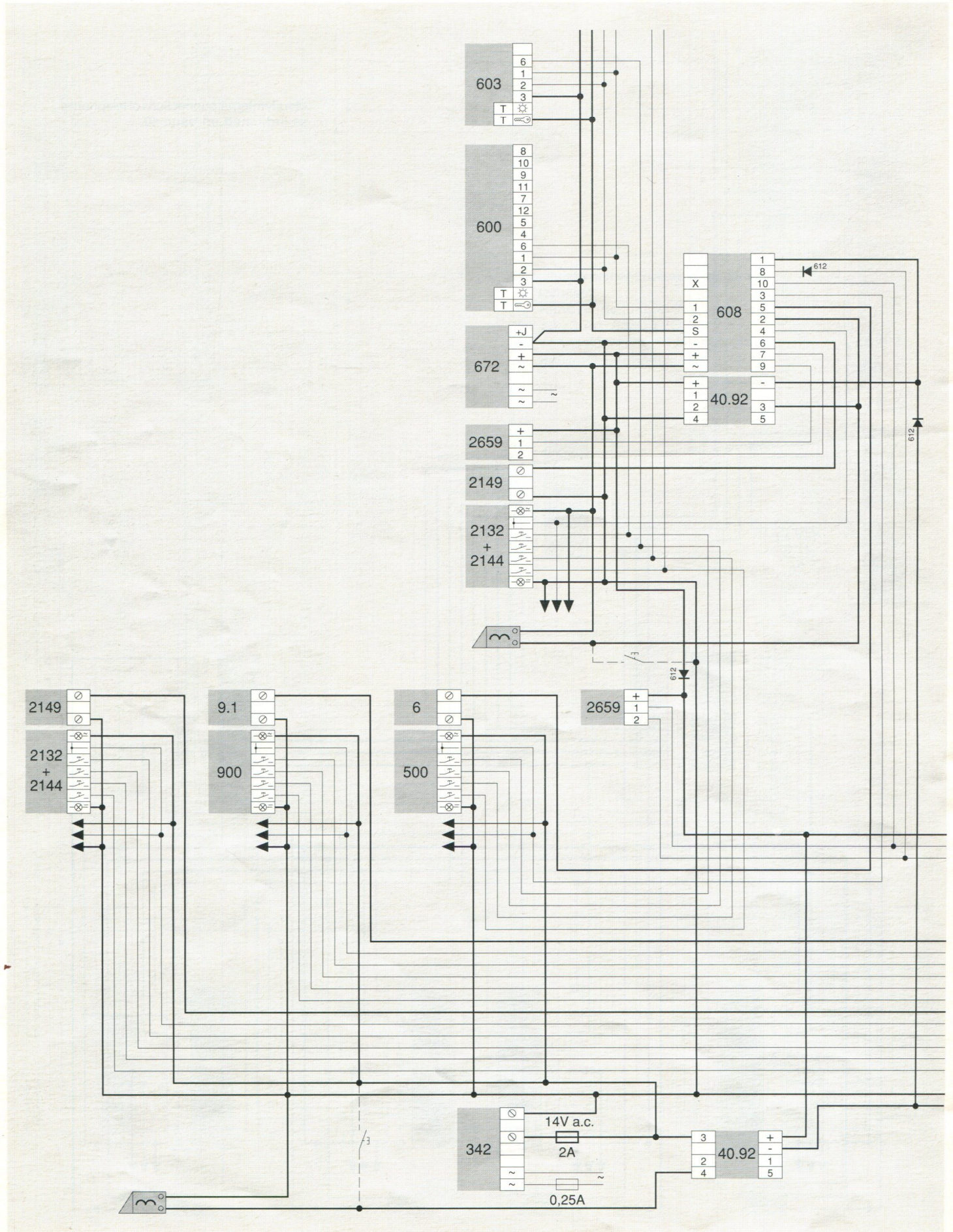


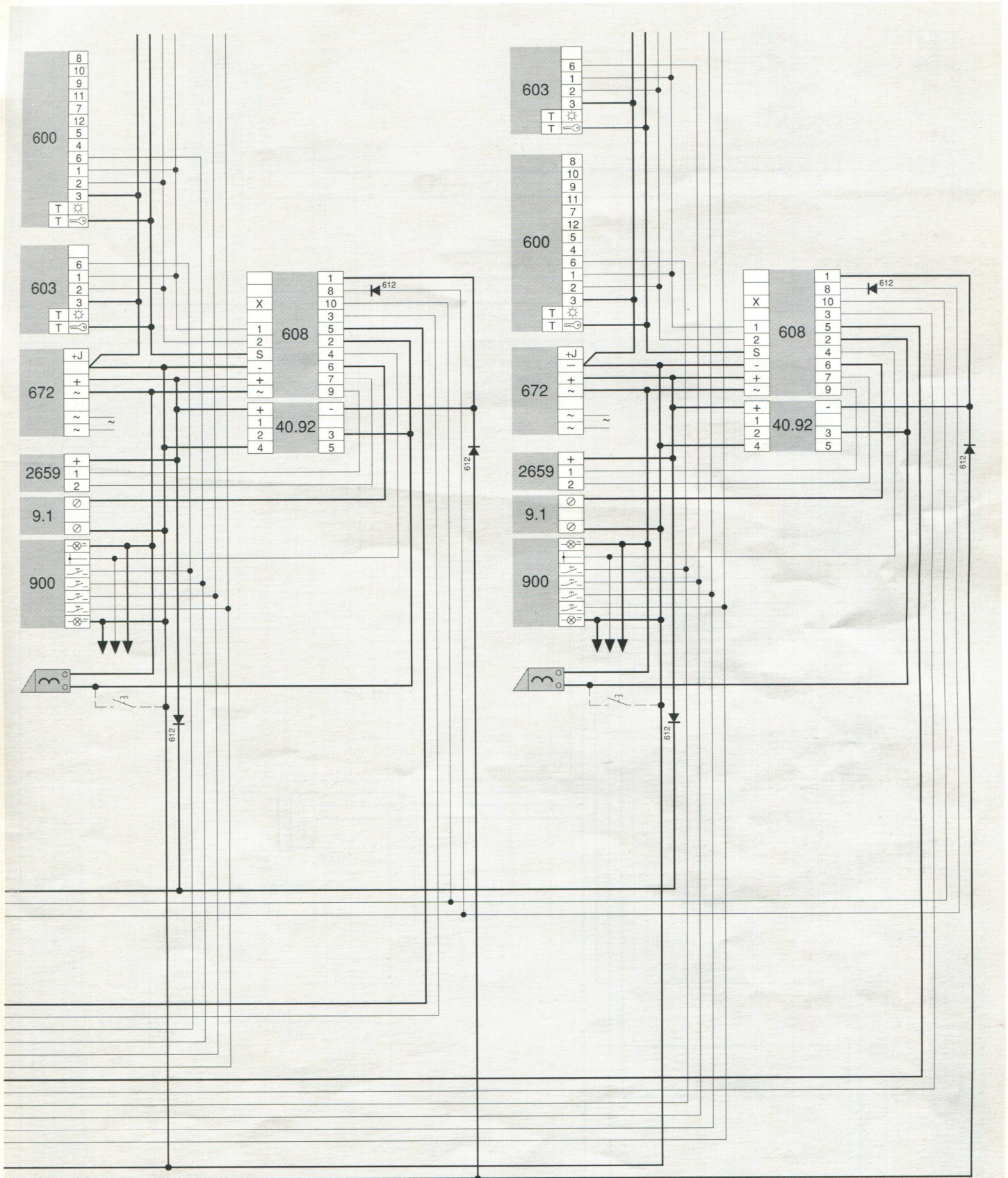
Electronic Porter Installation with 4 Entrance Call Units

Modify internal connections of telephones as indicated on page 40.

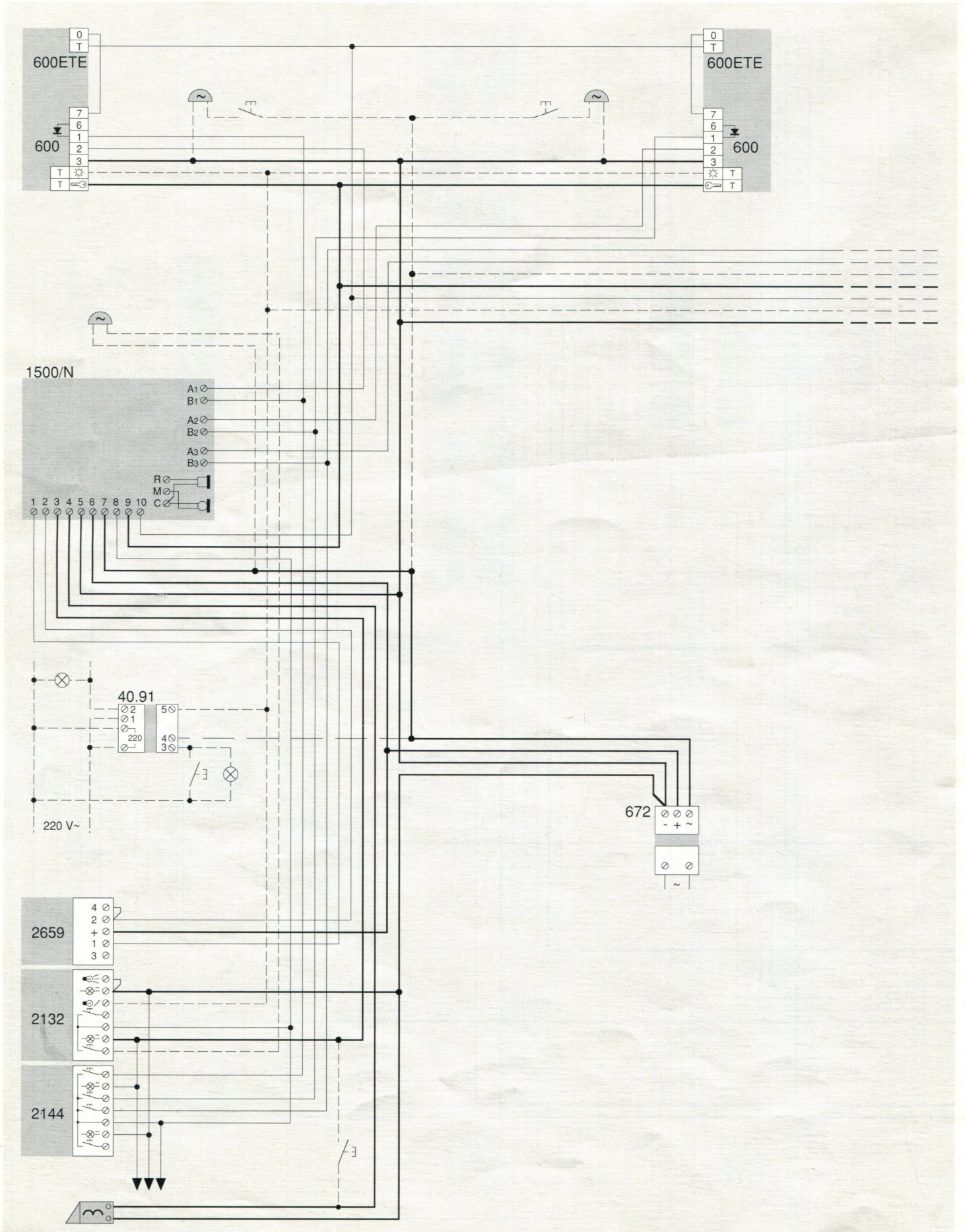


Electronic Porter Installation with 3 risers each with 1 Entrance Call Unit, plus 1 common Entrance

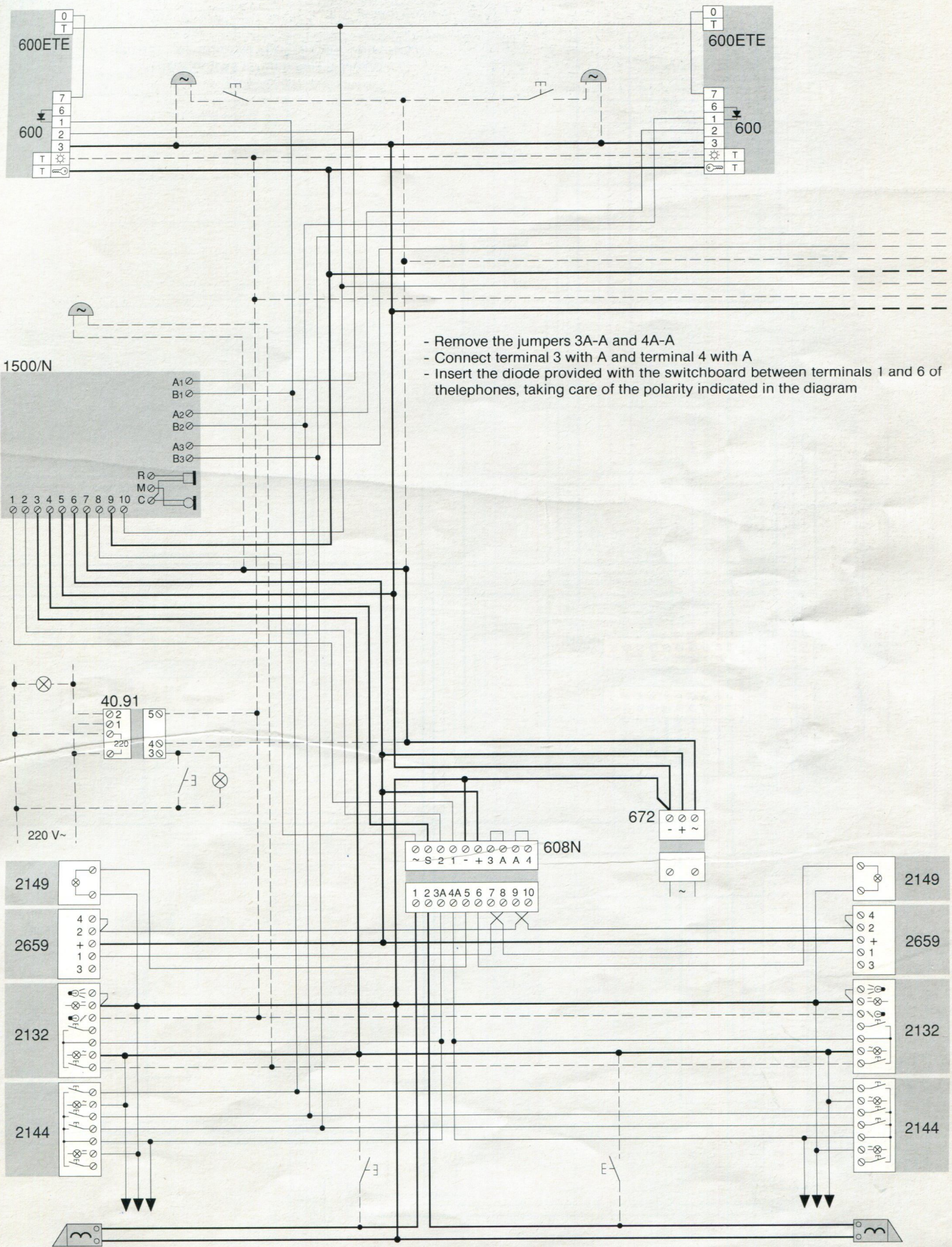




Installation with Porter Switchboard and Entrance Call Unit with Simultaneous Conversation between Porter Switchboard/Telephone and Entrance Call Unit/Telephone

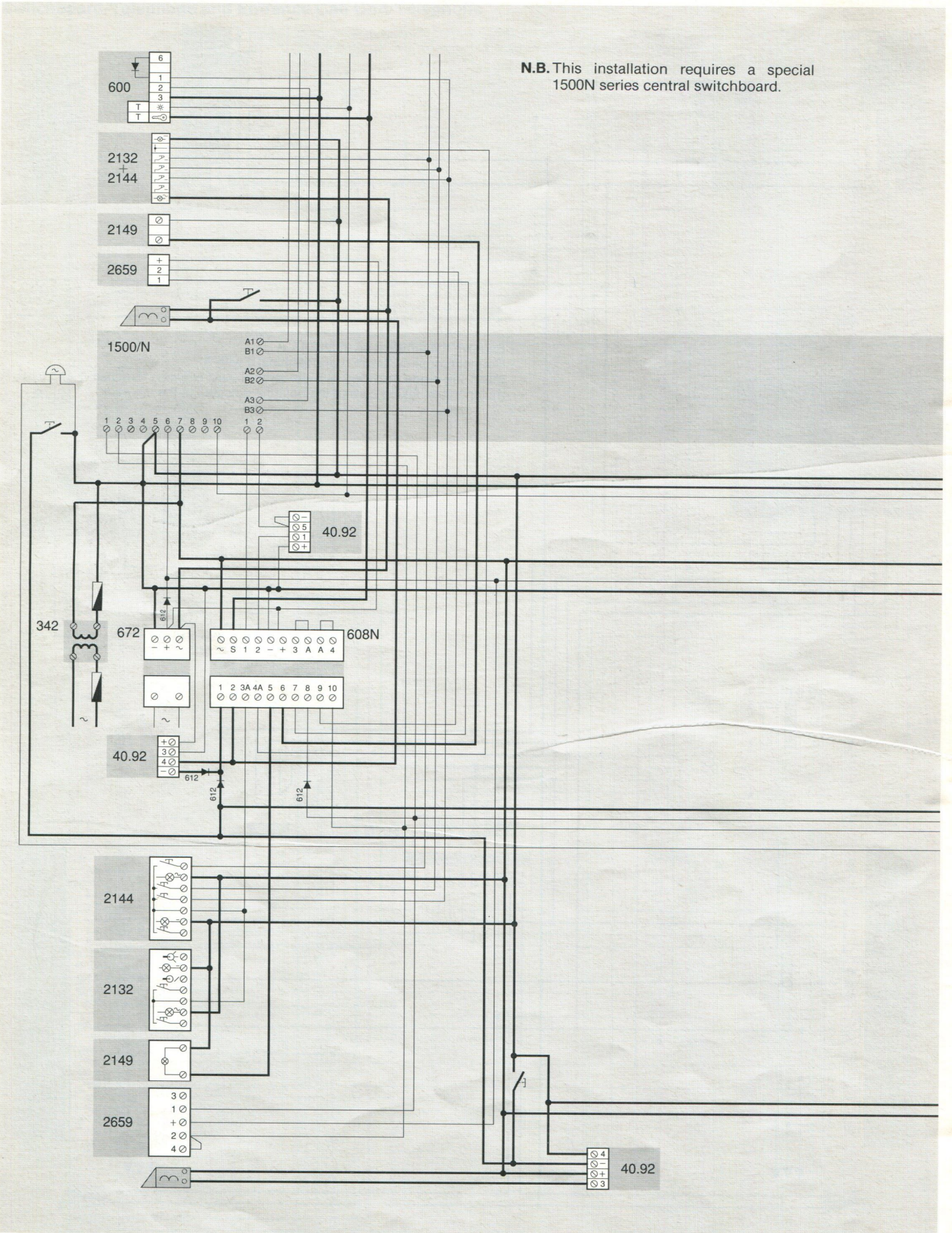


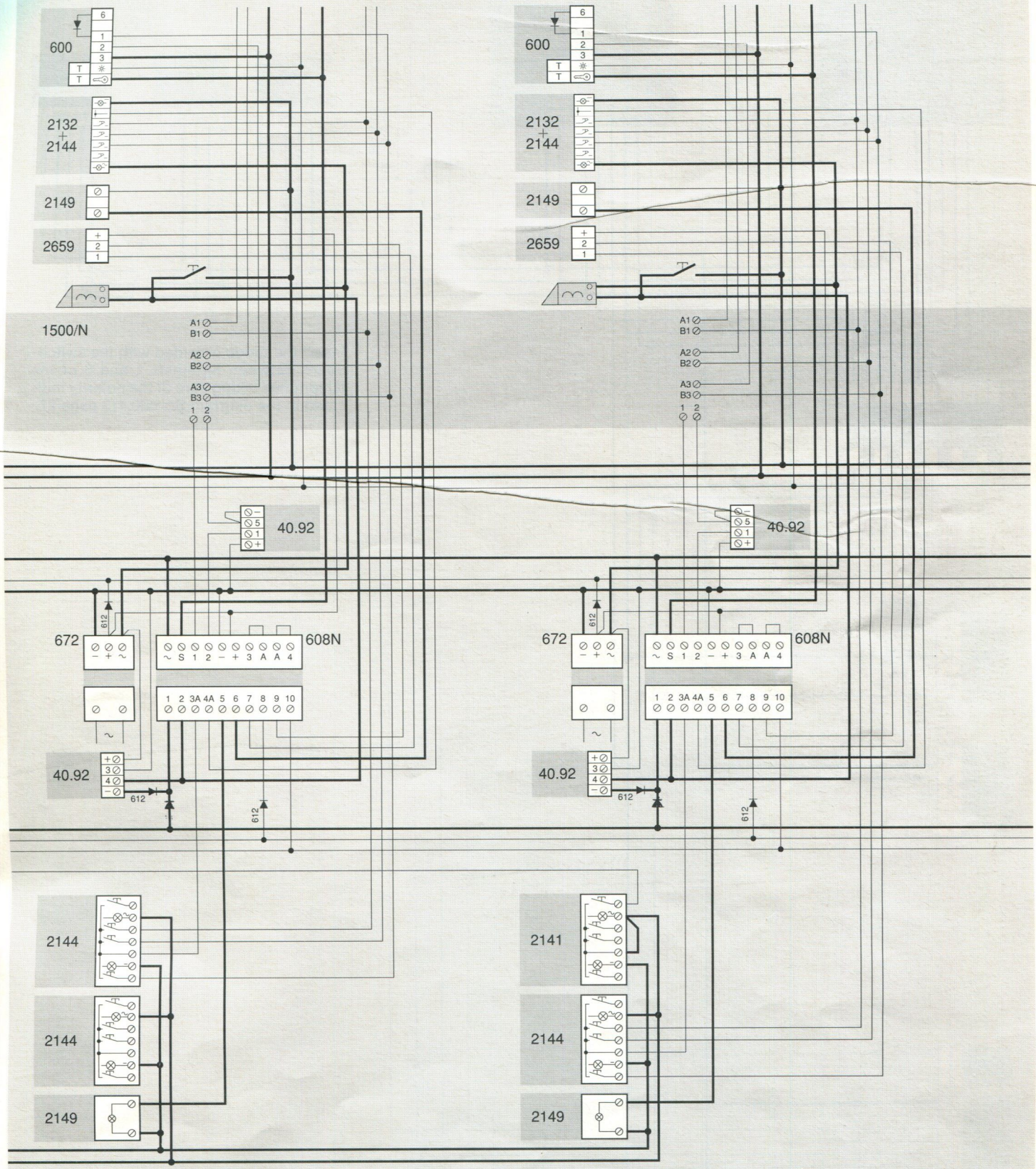
Installation with Porter Switchboard and 2 Entrance Call Units, with Simultaneous Conversation between Porter Switchboard/Telephone and Entrance Call Unit/Telephone



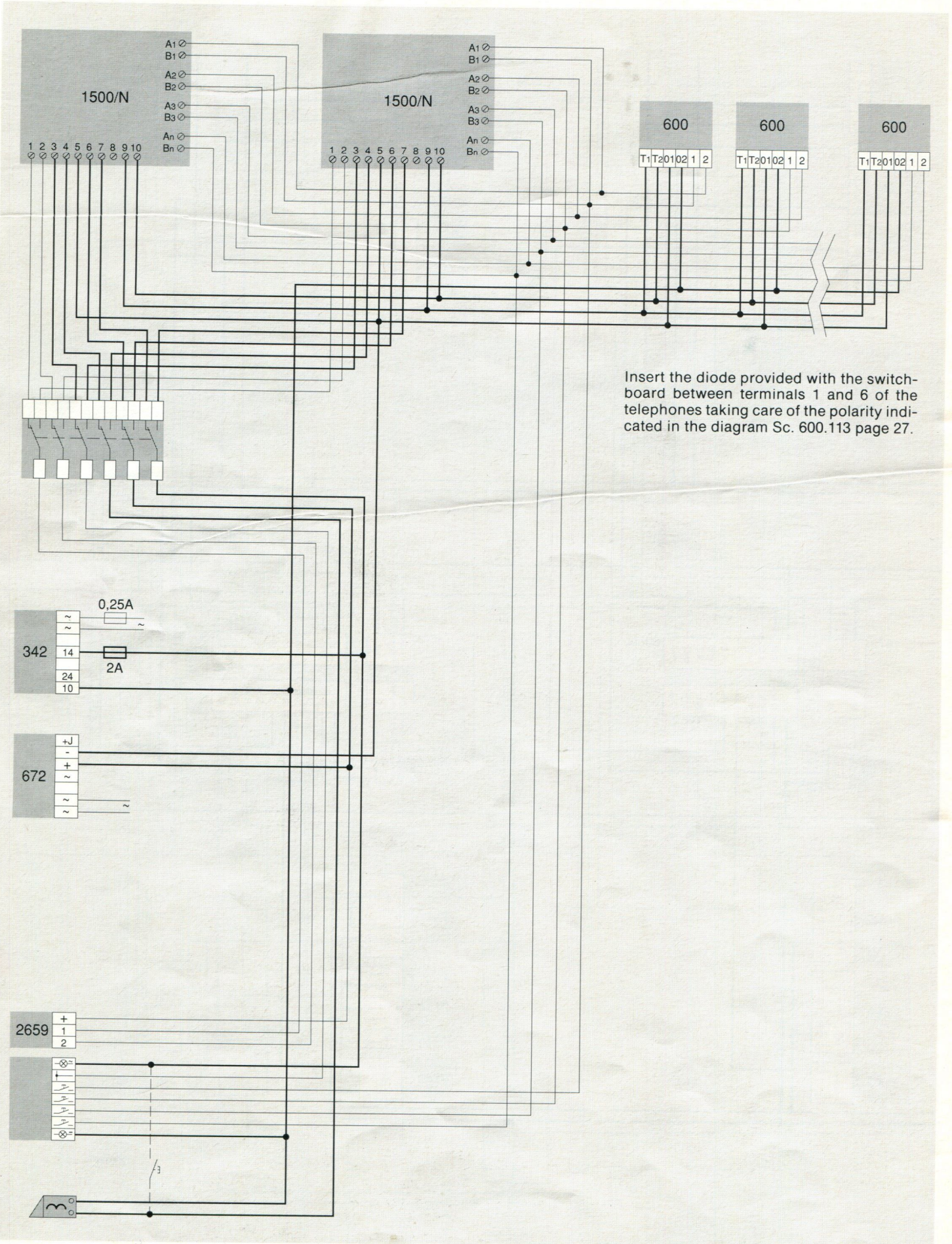
- Remove the jumpers 3A-A and 4A-A
- Connect terminal 3 with A and terminal 4 with A
- Insert the diode provided with the switchboard between terminals 1 and 6 of telephones, taking care of the polarity indicated in the diagram

Electronic Porter Installation with 3 risers each with 1 Entrance Call Unit, plus 1 common Entrance, with Porter Switchboard to be switched on an Entrance Call Unit





Installation with 2 Porter Switchboard switching between them and on an Entrance Call Unit



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