Telephone Interface

IT-4N

INTERFAZ TELEFONICO
TELEPHONE INTERFACE

input
~ ~ ≈12V 50Hz 700mA

P1 10 5 3 0/7 M

PD - DA RA RB

LA LB PA PB

Instructions manual

INSTALLATION DIRECTIVES

⚠ **IMPORTANT** ⚠

☞ This unit must be installed within a fire-resistant casing which must be made of a plastic material with a 94-5VB rating or higher so as to comply with Regulation EN-60950.

☞ Power must be supplied to the primary of the "TF-104" transformer via a thermo-magnetic circuit breaker. This not only protects the whole system, but also serves as its on/off switch.

☞ Do not tamper with this system, in case of anomalies or enquiries please contact our technical support service.

First of all we would like to thank and congratulate you for the purchase of this product manufactured by Golmar.

The commitment to reach the satisfaction of our customers is stated through the ISO-9001 certification and for the manufacturing of products like this one.

Its advanced technology and exacting quality control will do that customers and users enjoy with the legion of features this system offers. To obtain the maximum profit of these features and a properly wired installation, we kindly recommend you to expend a few minutes of your time to read this manual.

SYSTEM CHARACTERISTICS

☞ Telephone interface for conventional 4+N systems (for both electronic calls and buzzers).

☞ It permits the connection of a 4+N audio door entry system to the subscriber loop of the corresponding apartment, allowing a conventional fixed-line telephone to take on the functionality of a 4+N handset. This allows the following combinations:

 ➲ Communication from the audio door entry system to the apartment's telephone.
 ➲ Communication from the audio door entry system to the apartment's telephone with an ADSL line.
 ➲ Connection from the audio door entry system to telephone extensions in analogue PABXs.

☞ It allows calls from the audio door entry system to be received on standard tone dial telephones that work on fixed-line network "PSTN". For this, they must be installed on the local subscriber loop of the IT-4N telephone interface. A maximum of 4 telephones can be installed.

☞ Divert function for calls originating from the audio door entry system to any telephone on the fixed-line or cellular networks. A maximum of 3 telephone numbers can be programmed.

☞ An acoustic indicator in the handset of the local subscriber loop informs of any calls from the audio door entry system or from the telephone line.

☞ Allows switching between calls from the subscriber loop and the audio door entry system using the telephone's keypad, keeping both connections active.

☞ Compatible with analogue PABXs, allowing the interface to be connected to the PABX's input line or to its extensions.

☞ Compatible with ADSL lines and with the splitters supplied by the ISP.

☞ Allows the activation of functions and commands via the keypad of the telephone on the local subscriber loop.

☞ It has an input for enabling the call divert mode via an external switch.

☞ It has a 12 Vcc/40mA output to indicate that the call divert mode is enabled.

☞ It has a potential-free auxiliary output, NO/NC 30 Vdc/Vac 1A.

☞ Operation LEDs that indicate the current state and mode of the interface.

The telephone interface makes the functions of a 4+N audio door entry system compatible with a fixed-line telephone, being possible to divert calls to the fixed-line or mobile networks.
Depending upon its programming, the interface can differentiate between calls from the audio door entry system and from the telephone line, selecting between 3 types of cadence.

The interface allows three types of communication:

Communication with the audio door entry system:

☞ When a call is made from the audio door entry system it will be received on the apartment's fixed-line telephone. Audio communication with the door entry system will be established upon picking handset up.

☞ During communication it is possible to send the following commands using the telephone's keypad:

➲ "5" Door opening.
➲ "0" Triggers the auxiliary relay used for activating auxiliary devices (bells, lights, ...).

☞ The volume levels of the microphone and speaker can be adjusted during communication with the audio door entry system using the telephone's keypad:

➲ "1" Increases the audio door panel's speaker volume.
➲ "7" Lowers the audio door panel's speaker volume.
➲ "4" Confirms and memorises the changed volumes for the audio door panel's speaker.
➲ "3" Increases the telephone's speaker volume.
➲ "9" Lowers the telephone's speaker volume.
➲ "6" Confirms and memorises the changed volumes for the telephone's speaker.

☞ When a call is received from the telephone line during communication with the audio door entry system, a tone from the telephone's speaker will be heard. Audio communication can be switched between the door entry system and the telephone line call using the telephone's keypad:

➲ "2" Switch communication to the audio door entry system.
➲ "8" Switch communication to the telephone line call.

☞ To end communication, replace the telephone handset.

Communication with the telephone line, incoming call:

☞ When a call is received from the audio door entry system while a telephone line call is taking place, a tone from the telephone's speaker advising of the incoming call will be heard. The user can switch between both calls using the telephone's keypad:

➲ "2" Switch communication to the audio door entry system.
➲ "8" Switch communication to the telephone line call.

☞ During communication with the door entry system, it is possible to execute the commands described in the "Communication with the audio door entry system" point.

☞ To end communication, replace the telephone handset.

Communication with the telephone line, outgoing call, call divert:

☞   When the interface has the call divert function enabled, any calls made from the door entry system to the apartment will be diverted to the telephone numbers previously programmed in the interface. A maximum of three telephone numbers can be programmed. The calls are made in a cyclic order whereby the first number programmed is called, and if it is not answered, then the second number is called, and so on.

☞   To initiate communication when the programming field "72" (pickup detection) is set to "1", pick the handset up, and press the "*" key.

☞   Audio communication with the door entry system is established when the call is answered, and the following commands can be sent using the telephone's keypad:

  ➲ "5" Door opening.
  ➲ "0" Triggers the auxiliary relay used for activating auxiliary devices (bells, lights, ...).

☞   The volume levels of the microphone and speaker can be adjusted during communication with the audio door entry system using the telephone's keypad:

  ➲ "1" Increases the audio door panel's speaker volume.
  ➲ "7" Lowers the audio door panel's speaker volume.
  ➲ "4" Confirms and memorises the changed volumes for the audio door panel's speaker.
  ➲ "3" Increases the telephone's speaker volume.
  ➲ "9" Lowers the telephone's speaker volume.
  ➲ "6" Confirms and memorises the changed volumes for the telephone's speaker.

☞   When a call is received from the telephone line during communication with the audio door entry system, a tone from the telephone's speaker will be heard. Use the corresponding functions of this telephone to switch between the call from the door entry system and the current call.
To realize this function, the user must have the service of call waiting.

☞   In noisy locations where fluent communication is difficult, the user can press the "8" key to activate the function "talk/listen" between the audio door panel and the telephone. Press the "8" key to toggle the communication channel.

☞   To end communication, replace the telephone handset.

☞   To end communication when the programming field "71" (divert type) is set to "1", press the "*" key then replace the handset.

Notes:

☞   Calls can be diverted to telephones on fixed-line or cellular networks, or to extensions on private telephone networks, with this last option requiring the PABX to be installed in the same system as the telephone interface.

☞   The quality of the audio communication in call divert mode will depend on the network and the type of terminal that receives the call, and if the call is diverted to a cellular telephone which is in a noisy location, this will also have an influence.

Depending on the functionality desired, the installation of the telephone Interface for 4+N audio door entry systems can be done in different ways.

The most common configurations follow:

Connection to the telephone line:

In an apartment with a Telefonica fixed-line, the interface can be connected under the following configurations:

Typical configuration

The apartment's telephone is connected to the interface's local subscriber loop, where it performs the functions of telephone and audio door entry system.
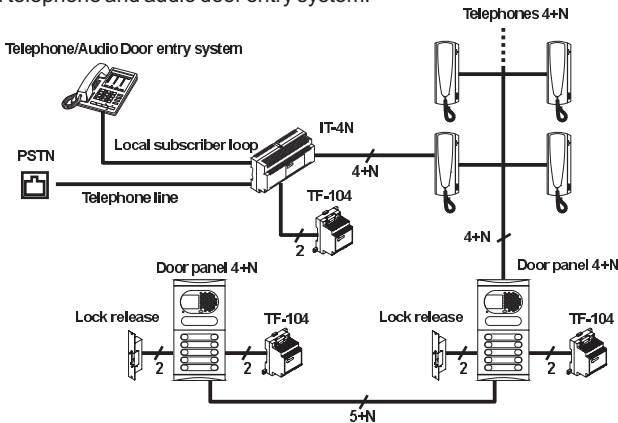

Mixed configuration

The installation has various telephones, one connected to the interface's local subscriber loop performing the functions of telephone and audio door entry system, and the other connected to the telephone line, before the interface, performing the function of telephone only.
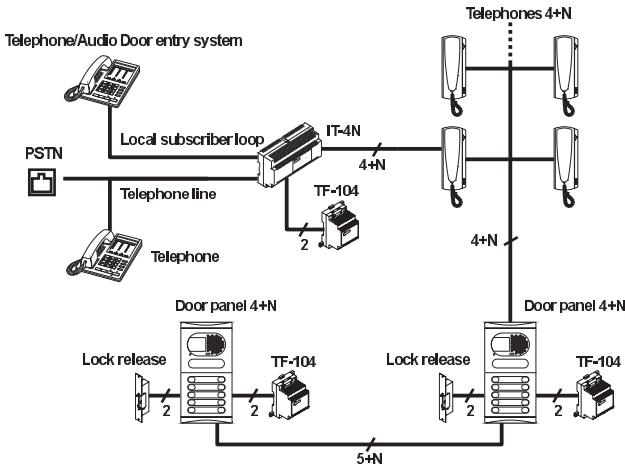
Connection to an ADSL line:

In apartments with ADSL lines, the interface should be connected via the splitter supplied by the ISP. ADSL is not available after the interface.
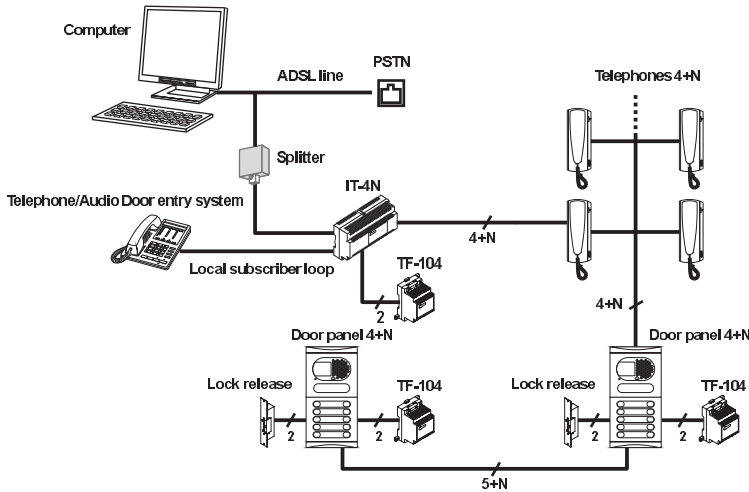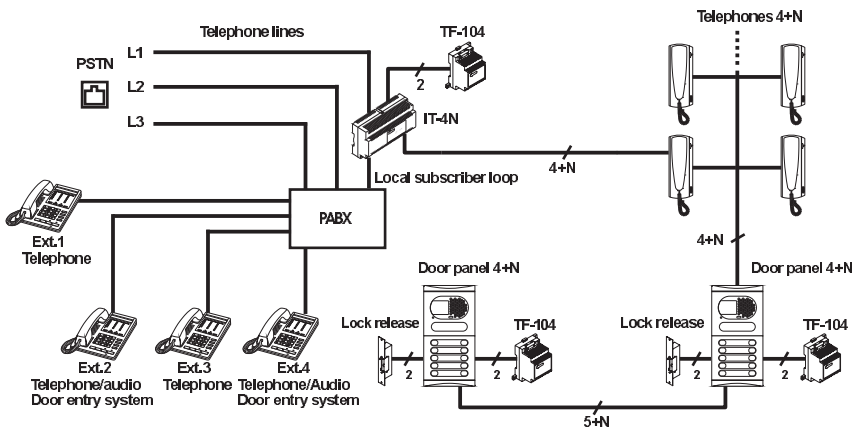

Connection to PABXs:

As shown in the following examples, the telephone interface can also be connected to a PABX's input line, or to its extensions, as long as these are analogue lines:

Connection to a PABX's input line

The extensions that receive calls originating from line 1 are configured in the PABX to receive calls from the PSTN line and calls from the audio door entry system.

Connection to a PABX extension

The extension that is connected to the interface's local subscriber loop will have both telephone and audio door entry system functionality. With the call divert mode enabled, the extensions that are connected to the subscriber loop can be configured in the interface to receive calls from the telephone line and from the audio door entry system. A maximum of three telephones can be configured.
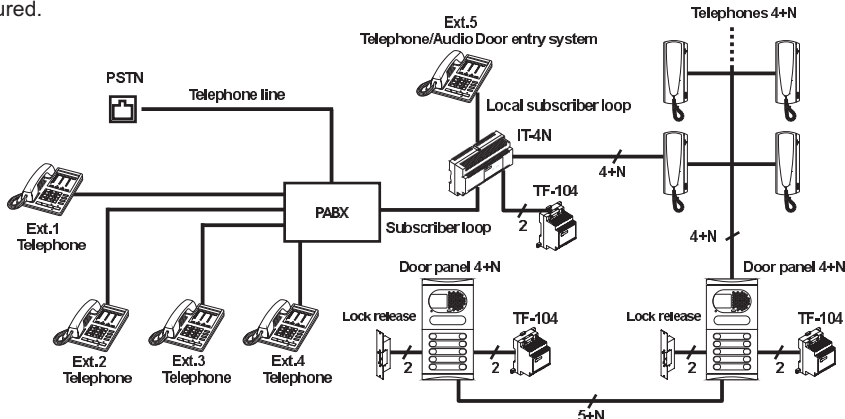
Connection to a PABX extension with divert mode always enabled

In this type of installation no telephone is connected to the local subscriber loop given that in this mode of operation, the audio door entry system will always be connected to the PABX and call diverting will always be enabled.

In this mode of operation, when a call is received from the audio door entry system the interface will divert it to the programmed telephones, which could be extensions of the PABX or other telephones on exterior lines.
The interface can be configured for divert mode always enabled via an exterior configuration dip switch which the installer can access without having to open the cover.
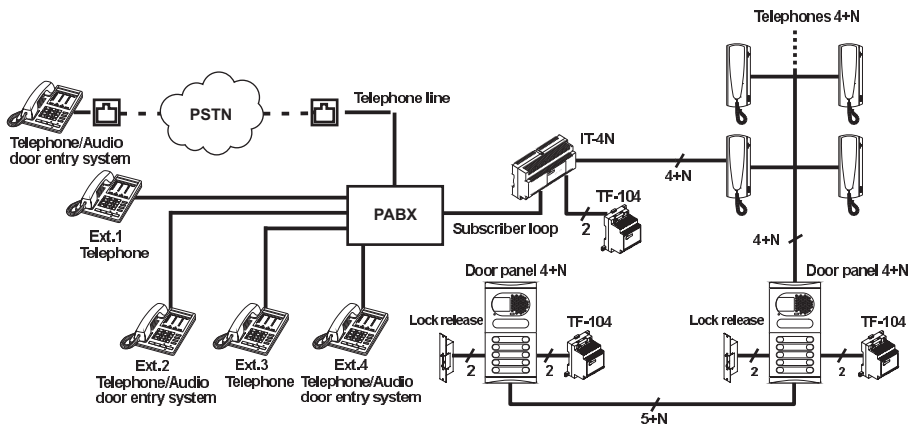
D escription of the interface.

Connection block

Operation LEDs
DIN rail latch release
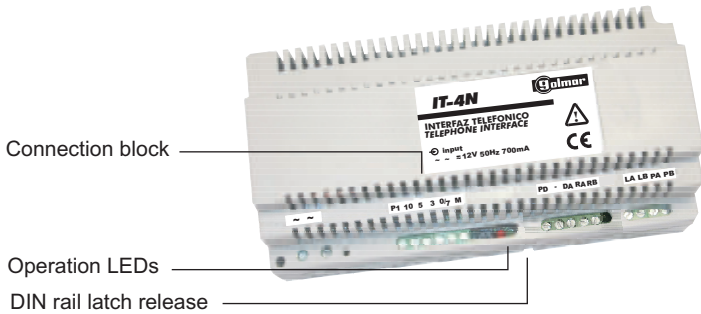
D escription of the operation LEDs.

The operation LEDs are beside the
configuration dip switch.

Green LED
On: Divert mode enabled.
Off: Divert mode disabled.

Red LED
On: Power on.
Blinking: Programming mode.
Off: Power off.
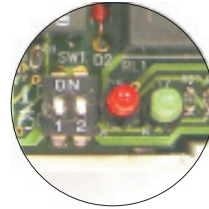
INSTALLATION

D etail of the interface's installation.

The interface can be installed on a DIN guide (10
elements) by gently pressing it in. To extract the interface
from the DIN guide, use a plain screwdriver to lever the
flange as shown in the picture.

DIN 46277

φ3,5 x 45
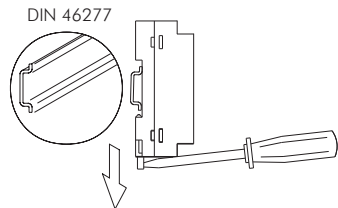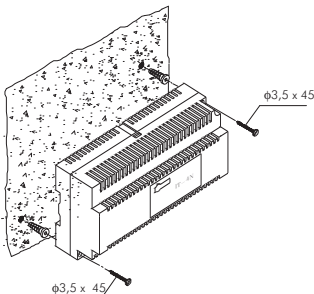
To install the interface directly on the wall, drill two holes of
Ø6mm. and insert the wallplugs. Fix the interface
with the specified screws.

Install the interface in a dry, protected place.

φ3,5 x 45

D escription of the dip switches:

The telephone interface has two dip switches beside the operation LEDs, which the installer can access and configure without having to open the cover:

▷ Dip switch 1:
  ➲ * OFF: Normal mode.
  ➲ ON: Divert mode always enabled.
▷ Dip switch 2:
  ➲ * OFF: No function.
  ➲ ON: Changes the PIN to the factory standard.

    * Factory default.

PROGRAMMING

Programming the interface:

▷ This unit needs to be programmed so as to configure the adjustable parameters of the system to the needs of the user and the installation.

▷ With the system in standby, access the programming mode by picking the handset up of the telephone and entering the PIN with the telephone keypad using the following sequence:

  ➲ "##0 + PIN".

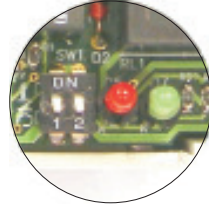▷ Once the programming mode is accessed, the programming sequence will be done by fields. See the table on page 51.

▷ To verify the state of programming, and if the sequence is correct or not, the handset's speaker will emit the following tones:

  ➲ Programming mode accessed: Five short tones.
  ➲ Correct field code: Two medium-duration tones.
  ➲ Correct code value: Four medium-duration tones.
  ➲ Error: One long-duration tone.

▷ To ensure a correct programming of the system, calls should not be made from either the audio door entry system or from the telephone line while in programming mode.

▷ If no keys are pressed during one minute the system will save the entered data and exit the programming mode.

▷ When finished, exit the programming mode by replacing the handset.

▷ The adjustments will be automatically saved.

Programming the interface, "*Divert always enabled mode"*:

▫ **Important**, This programming procedure is only for the "*Divert always enabled*" operation mode

▫ This unit needs to be programmed so as to configure the adjustable parameters of the system to the needs of the user and the installation.

▫ With the system in standby, access the "divert always enabled" programming mode by calling the extension of the IT-4N interface from a telephone on the PABX. "Autoswitch-on mode" audio communication will be established (4+N CO systems don't have autoswitch-on), and the PIN can then be entered with the telephone keypad using the following sequence:

   ➲ "##0 + PIN".

▫ Once the programming mode is accessed, the programming sequence will be done by fields. See the table on page 51.

▫ To verify the state of programming, and if the sequence is correct or not, the handset's speaker will emit the following tones:

   ➲ Programming mode accessed: Five short tones.
   ➲ Correct field code: Two medium-duration tones.
   ➲ Correct code value: Four medium-duration tones.
   ➲ Error: One long-duration tone.

▫ To ensure a correct programming of the system, calls should not be made from either the audio door entry system or from the telephone line while in programming mode.

▫ If no keys are pressed during one minute the system will save the entered data and exit the programming mode.

▫ When finished, exit the programming mode by pressing "* " , then replace the handset.

▫ The adjustments will be automatically saved.

Programming fields:

☞ Adjustable system parameters.

Field	Code	Field value
PIN entry	"##0"	The PIN has three digits.
PIN change	"00"	New PIN <3 digits>, repeat the PIN <3 digits>
Divert telephone 1	"10"	Enter the telephone number, 16 digits maximum.
Divert telephone 2	"11"	Enter the telephone number, 16 digits maximum.
Divert telephone 3	"12"	Enter the telephone number, 16 digits maximum.
Divert mode	"15"	"0": Disabled; "1": Enabled.
Number of divert	"16"	"1": Divert to one ph.; "2": Divert to two ph.; "3": Divert to three ph.
Call (divert mode)	"17"	Calling order: "1"; "2"; "3".
Lock release time	"20"	Between "01" and "60" seconds.
Auxiliary relay: Type	"30"	"0": Monostable; "1": Bistable.
Auxiliary relay: Monostable time	"31"	Between "01" and "60" seconds.
Auxiliary relay: State	"32"	"0": Normally open; "1": Normally closed.
Ring type	"40"	"1": Cadence type; "2": Cadence type; "3": Cadence type.
Reset local telephone volume	"51"	Volume to default value, local telephone
Reset volume of divert telephone	"52"	Default volume, divert telephone "1"; "2"; "3" according to ph.
Door entry system sensitivity	"60"	"1": High; "2": Medium; "3": Low.
System compatibilities	"70"	"0": 4+N or 4+N Busy channel; "1":Plus System
Divert type	"71"	"0": Normal Operation; "1": PABX, non-transparent.
Pick up detection	"72"	"0": Automatic; "1": Manual.

Description of the programming fields:

PIN entry:

☞ To access the programming menu enter "##0" followed by the PIN "123".
☞ This PIN has three digits.
☞ This field stores the corresponding PIN.

PIN change:

☞ The user can change the PIN in this field by accessing the programming mode and entering the new PIN two times. If the new PIN is not repeated correctly the process will have to be done again.

Divert telephone:

☞ Each field stores a phone number which the audio door panel will call when the system has the divert mode enabled.
☞ Up to 16 digits from the sequence "0,1,2,3,4,5,6,7,8,9,#,*" can be used
☞ The "#" character creates a pause in the dialling (when calls are made via a PABX, certain models may require this).
☞ The "*" character indicates the end of the programmed telephone number.
☞ If the call is not answered, the next programmed telephone number is called, and so on until a maximum of three numbers is reached.
☞ Calls can be diverted to telephones on fixed-line or cellular networks, or to extensions on private telephone networks, with this last option requiring the PABX to be installed in the same system as the telephone interface.

Divert mode:

↪ This field enables or disables call diverting.

↪ For the user's convenience, the interface has an input for connecting an optional external switch. This switch allows call diverting to be easily enabled or disabled.

Number of divert:

↪ This field configures the number of telephones that the interface will try to call when call diverting is enabled.

↪ Can be configured for one, two or three telephones.

↪ Maximum of 3 diverts in 4+N systems.

↪ Maximum of one divert in 4+N CO systems.

↪ No more than 2 diverts are recommended for Plus systems.

Priority call (Divert mode):

↪ If a divert call occurs, and the number of diverts available is greater than one, this field will indicate the order in which the calls are made.

↪ Depending on the configured field value, one of the following call sequences will be used:

  ➲ Field value "1": Phone.1, Phone.2, Phone.3
  ➲ Field value "2": Phone.2, Phone.3, Phone.1
  ➲ Field value "3": Phone.3, Phone.1, Phone.2

↪ The automatic dialling sequence ends when one of the calls is answered.

↪ The automatic dialling sequence ends when none of the calls are answered.

Lock release time:

↪ The opening time of the lock release can be configured to have an activation interval between "01" and "60" seconds.

↪ This function is only applicable to 4+N audio door entry systems.

Auxiliary relay type:

↪ The telephone interface has a potential-free relay output which can actuate auxiliary devices of the audio door entry system installation such as (bells, lights,...) .

↪ This relay output can be configured with the following field values:

  ➲ "0" monostable type. In this option the user activates the relay (see page 55) and the interface automatically deactivates it after the time configured in the "monostable time" field passes.
  ➲ "1" bistable type. In this option the user activates and deactivates the relay (see page 55).

Auxiliary relay monostable time:

↪   This option is only available if the auxiliary relay has been configured as monostable in the "auxiliary relay type" configuration field.

↪ Establishes the time that the relay remains active, this time can be configured between "01" and "60" seconds.

Auxiliary relay state:

☞ This option is only available if the auxiliary relay has been configured as monostable in the "auxiliary relay type" configuration field.

☞ The relay contact can be configured with the following field values:

➲ "0" Normally open. The contact will close during the activation time.
➲ "1" Normally closed. The contact will open during the activation time.

☞ The relay contact will open when there is no power, regardless of the software configurations in the corresponding configuration fields.

Ring type:

☞ Serves to differentiate between calls from the telephone line and the door entry system by identifying the type of ring we receive through the line of the interface's local subscriber loop.

☞ Three types of different cadence rings have been preprogrammed from the factory. They can be selected via the following field values:

➲ "1" cadence type 1
➲ "2" cadence type 2
➲ "3" cadence type 3

☞ If the telephone is of the type that generates preprogrammed melodies, a change of ring type will not cause its melody to change.

Reset local telephone volume:

☞ The interface changes the user programmed volume back to the initial factory default.

Reset volume of diverted telephone:

☞ The interface changes the user programmed volume back to the initial factory default.
☞ This option acts on the volume of the divert telephone which is programmed in the interface. The divert telephone is selected from one of the following field values:

➲ "1" Telephone configured in the "Divert telephone 1" field.
➲ "2" Telephone configured in the "Divert telephone 2" field.
➲ "3" Telephone configured in the "Divert telephone 3" field.

Audio door entry system sensitivity:

☞ Depending on the noise level of the area where the audio door entry system has been installed, the *installer* can choose from the following options for best operation:

➲ "1" High sensitivity, for relatively quiet environments.
➲ "2" Medium sensitivity, for moderately noisy environments "factory default".
➲ "3" Low sensitivity, for very noisy environments.

System compatibilities:

☞ The telephone interface can be installed in 4+N audio door entry systems and Plus systems, however in the case of the latter it must be installed together with the CD-PLUS/4+N digital converter.

☞ To define the system in which the interface is installed, it must be configured by the *installer* using the following field values:

➲ "0" For systems: 4+N ó 4+N CO.
➲ "1" For systems: PLUS.

☞ In installations with Plus systems and telephone interfaces, see the TCD-PLUS4N leaflet which is supplied with the converter. It explains its installation, programming, and start-up.

Divert type:

☞ In installations where the interface is installed with PABXs that are not fully transparent, that is, they don't transmit the pick up or hang up signals, the *installer* has the following configuration options:

➲ "0" Normal operation, the PABX is transparent.
➲ "1" Operation with PABX, the PABX is not fully transparent.
   With this option, to end the call received on the diverted telephone press the "*" key and replace the handset.
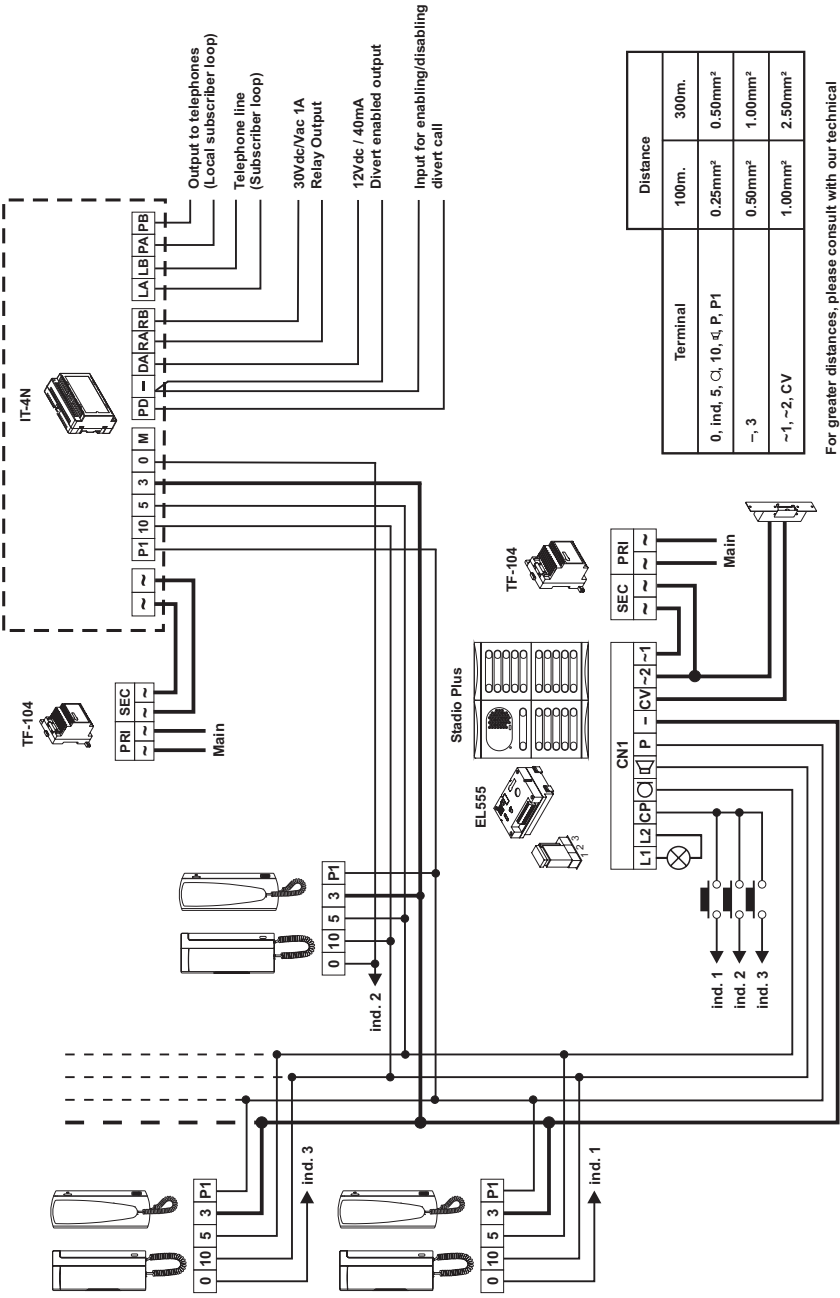
Pick up detection:

☞ In installations where the interface is installed with PABXs that are not fully transparent, on pick the handset up a delay of a few seconds can occur before initiating communication. To deal with this delay the *installer* has the following configuration options:

➲ "0" With a delay of a few seconds on initiating communication.
➲ "1" No delay. With this option, when a call is received on the diverted telephone pick the handset up, then press the "*" key to initiate communication.

☞ Note: The "pick up detection" programming field is enabled only if the "divert type" programming field is set to "1".

Direct access codes:

☞ They allow the user to change a programming field in the interface without having to access the programming mode.
☞ They give user access to auxiliary functions of the interface.
☞ To use these direct access functions, pick the handset up of the apartment's telephone and enter the sequence "## <direct access code number>" using the telephone's keypad.
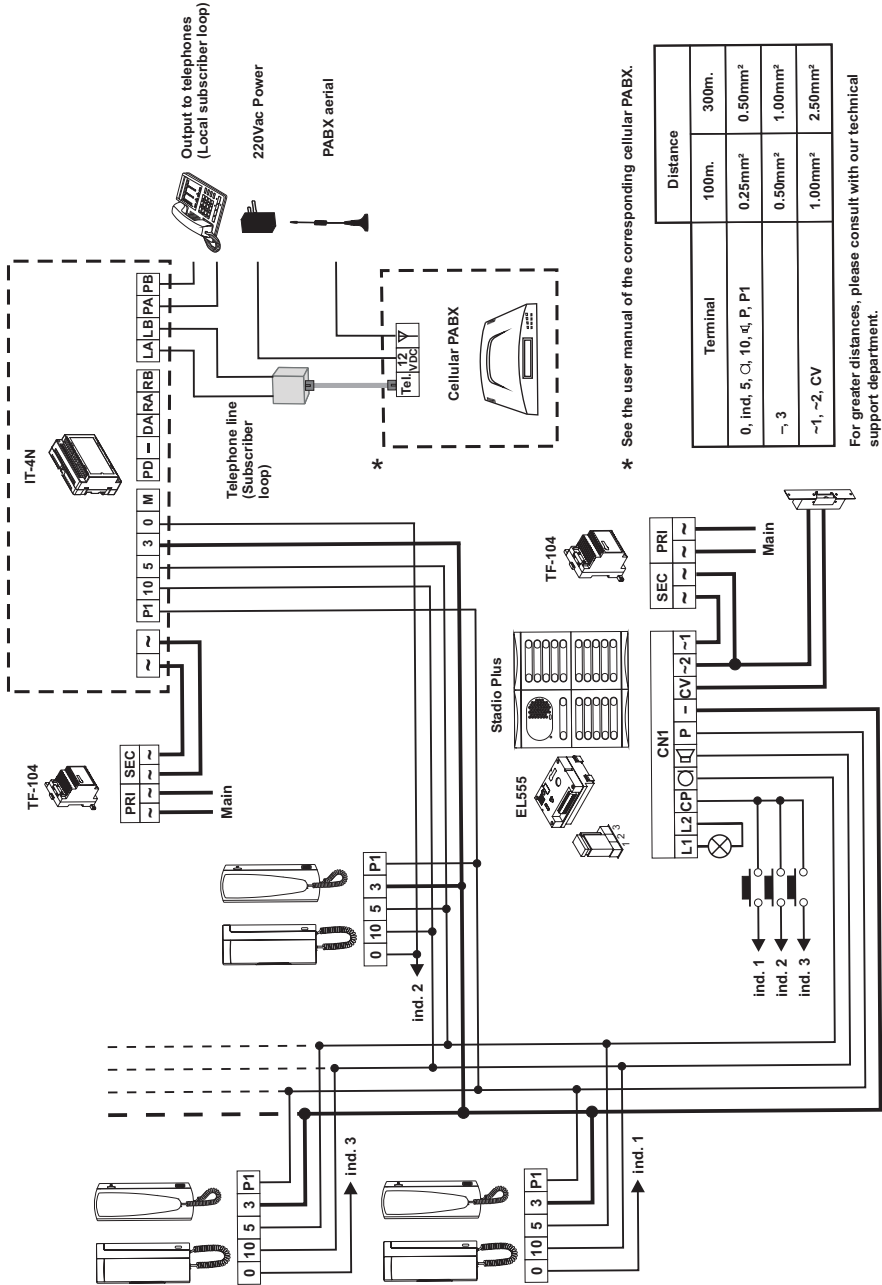
Function	Code
Enable call divert	"##1"
Disable call divert	"##2"
Activate auxiliary relay	"##3"
Deactivate auxiliary realy	"##4"
Lock release	"##5" Only 4+N systems. (4+N CO and PLUS without function)
Autoswitch-on	"##6" Only 4+N systems. (4+N CO and PLUS without function)
Call the Master Porter's Exchange	"##7" Plus system with CD-PLUS/4N converter.
CD-PLUS/4N Converter programming	"##9" To program the CD-PLUS/4N converter.
IT-4N Telephone interface programming	"##0" To program the IT-4N telephone interface.

INSTALLATION DIAGRAMS

Connecting an audio door entry system to an IT-4N telephone interface.

Distance		
	100m.	300m.
Terminal		
0, ind, 5, C\, 10, ꙴ, P, P1	0.25mm²	0.50mm²
~, 3	0.50mm²	1.00mm²
~1, ~2, CV	1.00mm²	2.50mm²

For greater distances, please consult with our technical support department.

Connecting an audio door entry system to an IT-4N telephone interface with a cellular PABX.

Output to telephones
(Local subscriber loop)

220Vac Power

PABX aerial

Cellular PABX

Telephone line
(Subscriber loop)

IT-4N

* See the user manual of the corresponding cellular PABX.

Distance		
	100m.	300m.
Terminal		
0, ind, 5, ◁, 10, ◁, P, P1	0.25mm²	0.50mm²
~, 3	0.50mm²	1.00mm²
~1, ~2, CV	1.00mm²	2.50mm²
For greater distances, please consult with our technical support department.		

TF-104

PRI SEC

Main

TF-104

SEC PRI

Main

Stadio Plus

EL555

CN1

L1 L2 CP ◁ P — CV ~2 ~1

ind. 1
ind. 2
ind. 3

P1
3
5 10 0

ind. 2

P1
3
5 10 0

ind. 3

P1
3
5 10 0

ind. 1

Nothing operates:

▻ Check that the voltage between the "~ , ~" terminals of the telephone interface is between 12 and 17 Vac., if not, check the power supply and its connections.
▻Without connecting the telephone interface, check that the door entry system works correctly.
▻ Check that the connections between the audio door entry system and the interface are correct.
▻ Check that the programming has been done correctly. Reprogram it if necessary.

Not receiving calls:

▻ Check the apartment's telephone line connections to the interface's "LA and LB" terminals.
▻ Check the apartment's telephone connections to the interface's "PA and PB" terminals.
▻ Check that the apartment's telephone is of the tone dial type and that it works on PSTN.
▻ If the installation's telephone line has ADSL, then verify that the interface is connected via the splitter supplied by the ISP.
▻ If the interface is connected between the telephone line and the PABX's input, then make sure that this is an analogue line.
▻If the interface is connected to a PABX extension, then make sure that this is analogue.
▻Check that the programming has been done correctly. Reprogram it if necessary.

Cannot establish communication in call divert mode :

▻ If the door entry system makes a call via a PABX to a divert telephone which receives the call but communication is not able to be established, then verify that the PABX is fully transparent. If it is not, then access the programming mode, go to step "71" and set the field value to "1".

Delay in establishing communication in call divert mode:

▻ If the door entry system makes a call via a PABX to a diverted telephone which receives the call but with a delayed establishment of communication, then verify that the PABX is fully transparent. If it is not, then access the programming mode, go to steps "71" and " 72" and set both of these field values to "1".

Inappropriate audio level:

▻ Adjust the volume to the desired level as shown on pages 43 and 44, according to the type of communication being used in that moment.
In case of feedback, reduce the volume until it disappears.