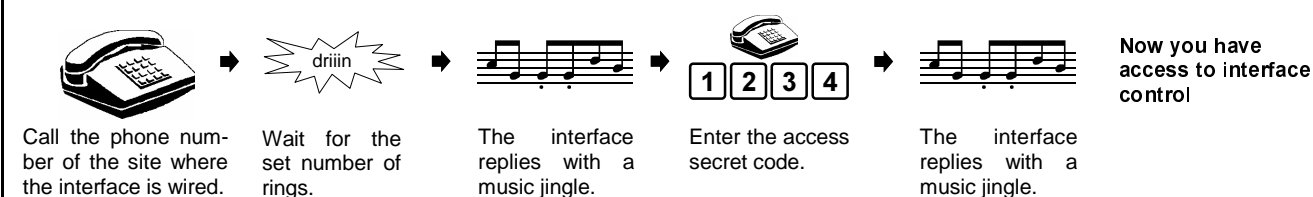**Table 1: Summary of configuration commands.**
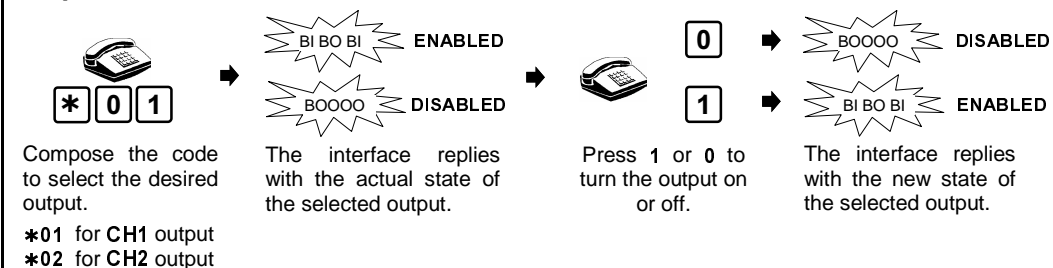
Configuration Command	Function
*01 0 1	Selects CH1 output Turns selected output off Turns selected output on
*02 0 1	Selects CH2 output Turns selected output off Turns selected output on
*11	Requests IN1 input state
*12	Requests IN2 input state
*0#	Terminates communication
*7n#	Sets number of rings before answering
*80# *81#	Disables fax option Enables fax option
*9# n # n #	Modifies the access secret code
*	Cancels input data and waits for a new command

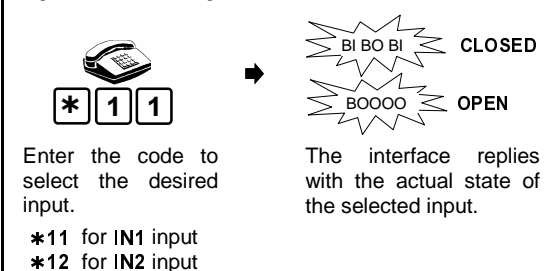**Table 2: Schematic summary of the main commands of the telephone interface.**

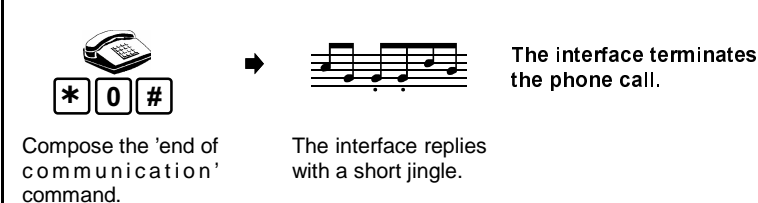**Access to the interface through secret code**

driiin

Now you have access to interface control

Call the phone number of the site where the interface is wired.

Wait for the set number of rings.

The interface replies with a music jingle.

Enter the access secret code.

The interface replies with a music jingle.

Outputs control

*01

BI BO BI — ENABLED
BOOOO — DISABLED

0 — BOOOO — DISABLED
1 — BI BO BI — ENABLED

Compose the code to select the desired output.

*01 for **CH1** output
*02 for **CH2** output

The interface replies with the actual state of the selected output.

Press **1** or **0** to turn the output on or off.

The interface replies with the new state of the selected output.

Inputs state request

*11

BI BO BI — CLOSED
BOOOO — OPEN

Enter the code to select the desired input.

*11 for **IN1** input
*12 for **IN2** input

The interface replies with the actual state of the selected input.

End of communication

*0#

The interface terminates the phone call.

Compose the 'end of communication' command.

The interface replies with a short jingle.

ITP F22 1 CE

TELEPHONE INTERFACE FOR FIXED LINE

- 12V= power supply through mains plug adaptor.
- Remote driving of two different electrical appliances through fixed telephone network (PSTN).
- Remote reading of the state of two inputs.
- Visual indication of the state of the outputs and manual toggling with two pushbuttons.
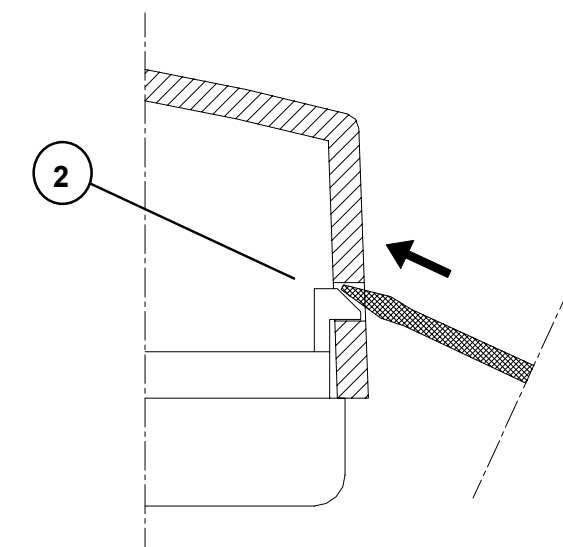
seitron

Fig. 1: External appearance.

Fig. 2: Cover removal.

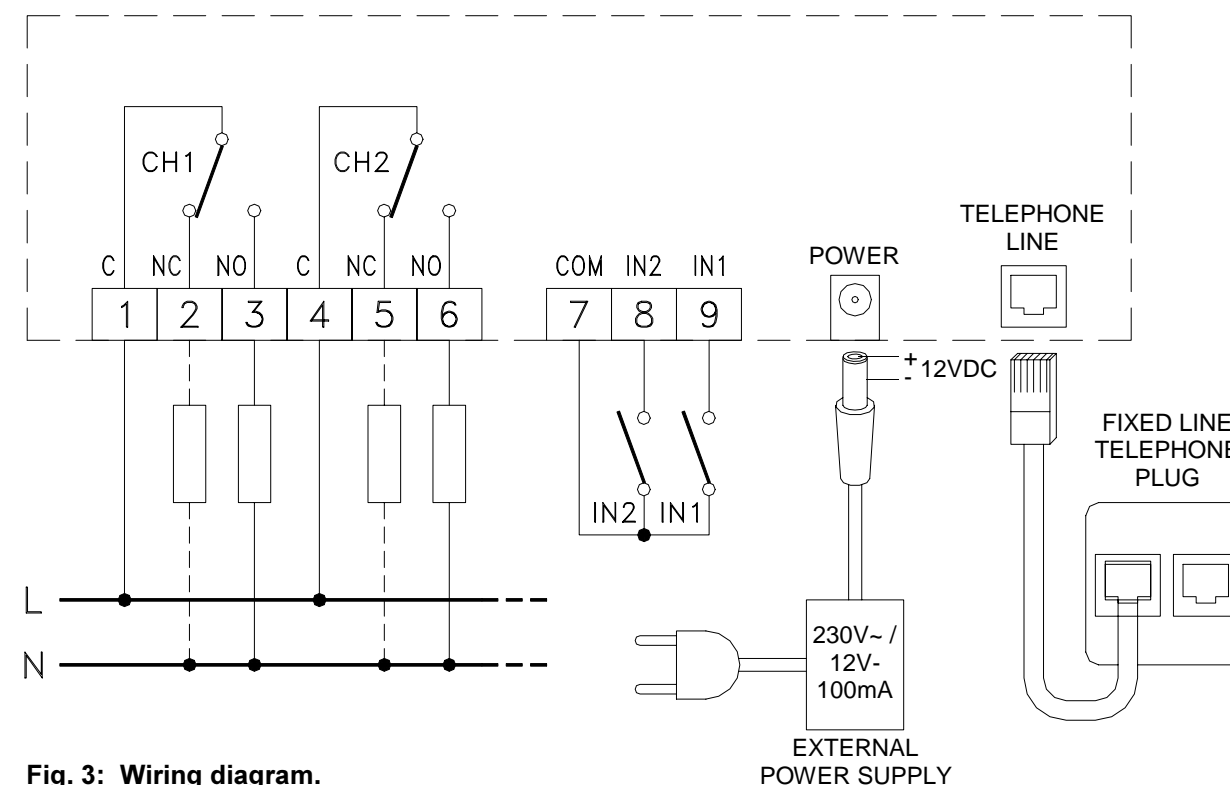**Fig. 3: Wiring diagram.**

OVERVIEW

The ITP F22 1 is a device capable of turning on and off at any distance one or two electric appliances thus allowing to control systems like burners, air-conditioners, small irrigation plants through the use of the telephone public line PSTN (Public Switched Telephone Network).

The interface answers the incoming call after a number of rings set by the user and is only activated when the internal four digits secret code exactly matches the one composed by the user on the telephone keyboard.

The interface also features two input channels, thus allowing a remote feedback of the state of a certain appliance (i.e. if it is on or off) or the state of a voltage free contact of a sensor (like a door or gate sensor, to know if they are open or closed). The device features an internal digital non-volatile memory so that it can 'remember' its state even in case of a power failure and restore the correct operating state as soon as the power returns.

Two pushbuttons located on the interface front panel can be used to change the outputs state as well as to show the input state. In case the interface is wired on the same line as that of a fax machine, a special option can be activated: when this is activated the interface is instructed to answer after it receives two calls with one ring each.

With this 'trick' the interface can answer the call <u>before</u> the fax machine does. On the front panel are also located two red indicators, used to show the inputs or the outputs actual state (see further) and one green indicator, whose purpose is to show the presence of power, an incoming call or the state of the communication established.

The device can be easily mounted on a wall with the screws and plastic shells supplied in the package.

OPERATION

The telephone interface ITP F22 1 answers a phone call after 2 rings (factory setting) or after a number of rings set by the user. The interface gives for this an acoustic feedback with a short music jingle. When the four digits secret code is composed by the user on the telephone keyboard, the interface plays a little longer music jingle thus giving access to all the available configuration and control commands.

All commands are described in the following parameters; in case of an error in inputing a command sequence, the operation can be aborted by pressing ✳ so that the sequence can be composed again.

In case for 5 consequent times the secret code is composed in a wrong way, the interface automatically terminates the phone call. The same happens in case for at least 30 seconds no command is issued by the user. Anyway it is always possible to make a new call.

This telephone interface can be driven also by a mobile phone or by another device (computer or alarm system), provided it can issue the correct multi-frequency tones (DTMF).

CH1 and CH2 OUTPUTS CONTROL

When the sequence ✳01 is composed on the keyboard, the CH1 output relay control mode is initiated.

The interface replies with a deep single note sound in case the relay is inactive or with a high double note sound in case it is active. If the key 0 is pressed the relay turns off meanwhile it is turned on when a 1 is pressed.

Each time the interface receives a command it also replies with the new state of the relay.

Entering the command ✳02 from the telephone keyboard the CH2 output relay control mode is initiated, which is then carried out as for channel CH1.

IN1 and IN2 INPUTS CONTROL

When the sequence ✳11 is entered from the telephone keyboard an interrogation on the IN1 input state is made.

The interface then replies either with a deep single note sound when the input contact is open or with a high double-note sound when it is closed.

When the sequence ✳12 is entered the IN2 input state is checked with exactly the same way of operation.

SETTING THE NUMBER OF RINGS AT THE ANSWER

The command ✳7 **"number of rings"** # sets the numer of rings the interface waits before answering the incoming phone call. This number can be set from 1 to 10 by simply pressing the relevant digit on the phone keyboard, except for 10 which is set by pressing the digit 0.

Examples:

If ✳74# is composed the interface answers after 4 rings.

If ✳70# is composed the interface answers after 10 rings.

If the command sequence was correct the interface gives a successful feedback with a dual-tone sound; in case of failure instead it gives a single-tone sound. In case of success the setting of number of rings is stored in memory and maintained even in case of absence of power.

Note: The factory setting for this parameter is 2 rings.

FAX OPTION

The fax option allows to wire the telephone interface on the same telephone line on which is plugged a fax device or any other device capable of an autoatic answer to the incoming calls. The fax option, when enabled, operates in a way that the telephone interface answers the phone call before the fax attempts to do the same thing. The interface will then be able to answer the incoming call in two different ways: either after the set number of rings or after two consequent calls each only one ring long.

Let's suppose that the fax machine is answering after 3 rings: the interface will then be configured for answering after a greater number of rings and the fax option will be enabled. In this way all normal incoming calls will be correctly received by the fax machine.

On the other hand in case the user wants to communicate with the telephone interface without interference with the fax machine, he will make a phone call and then, after only one ring, hang up the line. After about 10 seconds (but within 30 seconds) he will make a new call: this time the interface will answer the incoming call after the first ring, thus anticipating the fax machine. With the sequence ✳80# the fax option is disabled, meanwhile with the sequence ✳81# the option is enabled. If the command has been correctly composed the interface replies with a dual-tone as a positive feedback. Factory setting for this option is for the fax option disabled.

SETTING THE SECRET CODE

The secret code needed to access the interface can be modified by the user in any moment and is stored and held in the device even in case of absence of power.

A new secret code (4 numeric digits) can be set by composing on the keyboard the sequence ✳9# "new code" # "new code" # .

The code must therefore composed twice in order to avoid errors in the sequence input procedure.

As an example, if the user wants to set as new code the number 5678, the sequence to be composed is: ✳9# 5678 # 5678 #.

If the command sequence was correct the interface gives a successful feedback with a dual-tone sound and stores in its memory the new code; in case of failure instead it gives a single-tone sound and the old code remains not modified.

END OF CALL COMMAND

When the sequence ✳0# is composed the communication is terminated. Anyway the interface provides an automatic end-of-call in case no command is composed in 30 seconds: in this situation a short sound warns the user when 10 seconds and 5 seconds are left.

In no case the overall duration of the phone call can be longer than 3 minutes: after this time the call is automatically terminated. Before the call is terminated a short music jingle is played. During the communication with the interface, a short sound (beep) is issued every time is manually requested a state change in the inputs or in the outputs.

RESET BUTTON

Inside the interface is located a reset button: when this is depressed for a few seconds all parameters are reset to the factory values. The reset is useful in case the user forgets the secret code.

The reset button can be pressed even without opening the plastic front cover, by using the tip of a proper screwdriver from the external. In case a reset is performed the interface blinks all the front indicators three times.

Factory settings are as follows:

- Number of rings at answer: **2**
- Fax option: **OFF**
- Secret code: **1234**

LED INDICATORS

On the front panel are located two red LEDs and one green whose purpose is the following:

- Green LED on: the interface is properly powered and is waiting for a phone call on the telephone line.
- Green LED quickly blinking: the interface is processing a phone call ring on the telephone line.
- Green LED slowly blinking: the interface has answered the phone call and the communication is going on.
- The red LEDs show the state of the CH1 and CH2 outputs . An LED turned on means that the relevant output is active meanwhile if the LED is off then the relevant output is inactive.

When both pushbuttons located on the front panel are pressed simultaneously the LEDs show the state of the inputs instead. An LED turned on means that the relevant input contact is closed meanwhile a LED turned off means that the relevant input contact is open.

BUTTONS OPERATION

On the front panel of the interface are located two pushbuttons: CH1 and CH2.

When one of these buttons is pressed the relevant relay output inverts its state changing from on to off or vice versa, thus turning on or off the appliance driven by that relay without the need of a phone call.

In case these buttons are pressed together no change of the output state will take place; instead this will result in showing the state of the IN1 and IN2 inputs state through the front panel indicators.

ELECTRICAL WIRINGS

For a correct electrical installation of this telephone interface, folow the wiring diagram sketched in Fig. 3.

At terminals 1 .. 6 the changeover (SPDT) contacts of the output relays are available.

These contacts are voltage free and can be used to drive electrical appliances when wired as described in the diagram. Terminals 7, 8 e 9 are used by the interface as inputs to acquire a state of an external contact. Terminal 7 is the common and is internally wired to the power supply ground. At these terminals can be wired any electrical contact asshown in the diagram.

By the way it is very important to stress that this contact must be voltage free; in other words it must be only wired to the telephone interface and not to any other electrical appliance. The wiring to the telephone line is made with the cable supplied with the device.

This cable is provided with standard telephone plugs at each end. One of the ends must be plugged in the female connector located on the board inside the interface, meanwhile the other must be plugged in the telephone socket located in the installation site.

In case the available telephone socket in not compatible with the supplied cable a proper adaptor must be used: these adaptors are usually distributed in electrical shops.

In case the telephone interface requires a different wiring to the telephone line, it is important to keep in mind that the device must be wired in parallel to the existing line, therefore in parallel with other phone line machines.

It is not mandatory to respect the polarity of the wires to be connected to the telephone line.

The device is powered with 12Vdc: this is made with the supplied external 230V~/12V power supply whose connector must be plugged in the connector located on the interface board as shown in Fig. 3.

MECHANICAL INSTALLATION

The mechanical installation is carried out by fixing the device on a wall with two screws, taking advantage of the two holes with 60 mm. of distance between them.

When tools are used close to the screws holes, particular attention must be used in order not to damage the electronics around.

Once the electrical installation has been completed apply again the front plastic cover to close the case.

Place the plastic front cover on the plastic base paying attention in that the holes for the indicators located on the front cover will fit in the relevant LEDs on the board, then press slightly until the four plastic side teeth snap (2) Fig. 2.

TECHNICAL FEATURES

Power supply:	12V= through mains adaptor
Current absorption:	100 mA
Contacts rating:	2 x 3A @ 250V~ SPDT
Inputs:	2 (voltage free)
Indicators: Green:	On - Communication
Red 1 on:	Output 1 active
Red 2 on:	Output 2 active
Buttons:	Manual activation for each channel (on the cover) Device reset (internal)
Installation:	Wall mount
Protection grade:	IP 30
Operating temperature:	0°C .. 40°C
Storage temperature:	-10°C .. +50°C
Humidity limits:	20% .. 80% rH (non condensing)
Case: Material:	ABS V0 self-extinguishing
Color:	Signal White (RAL 9003)
Dimensions:	85 x 85 x 31 (W x H x D)

⚠ WARNING

- **The appliance must be wired to the electric mains through a switch capable of disconnecting all poles compliant to the current safety standards and with a contact separation of at least 3 mm. in all poles.**
- **Installation and electrical winrigs of the appliance must be made by qualified technicians and in compliance with the current standards.**
- **Before wiring the appliance be sure to turn the mains power off.**