TRASMETTITORI

FREQUENZA PORTANTE:	30.875 o 40.685 Mhz controllata al quarzo
STABILITA':	30 ppm (da - 40°C a + 85°C)
POTENZA IRRADIATA:	100 µW
CODIFICA:	digitale 30 o 38 bit (1.048.512 o 268.419.072 combinazioni totali)
CANALI:	1,2 o 4 contemporanei
ALIMENTAZIONE:	12 Vdc +20% - 50% con batteria tipo 23A
ASSORBIMENTO MEDIO:	25mA
TEMPER. FUNZIONAMENTO:	-40°C +85°C
DIMENSIONI:	72 x 40 h 18
PESO:	40 g

SCHEDA DI MEMORIA

N° CODICI:	60 BM60, 250 BM250
TIPO MEMORIA:	EEPROM ad accesso seriale
DURATA MEMORIA:	40 anni o 1 milione cambiamenti
TEMPO CARICAM. CODICE:	1 mS per codice
DIMENSIONI:	13 x 11 h 9
PESO:	1 g

English

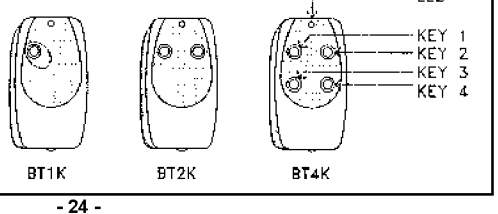
"BIO" SERIES QUARTZ RADIO CONTROL INDIVIDUAL SELF-LEARNING CODE

DESCRIPTION

The "BIO" individual code system is made up of:
- 1, 2 or 4 channel transmitters (BT1K, BT2K, BT4K)
- Receivers with 1 or 2 channel terminal connections (BX1K, BX2K, BXB2K) and special 2 channel version (BB2BK)
- Receivers with 1 or 2 channel coupling connections (BXIK, BXI2K).
- Memory card for 60 or 250 codes (BM60 or BM250)
- Charged antenna (ABK - ABKIT)

The special version receivers are equipped with a working program (softuare) with additional functions. (See the instructions).

Fig. 1



INSTALLATION

TRANSMITTERS :

The transmitters do not require any setup. They are immediately operational, each with its own individual factory pre-set code.

To check proper operation, just press any key and make sure the red transmission LED indicator is flashing.

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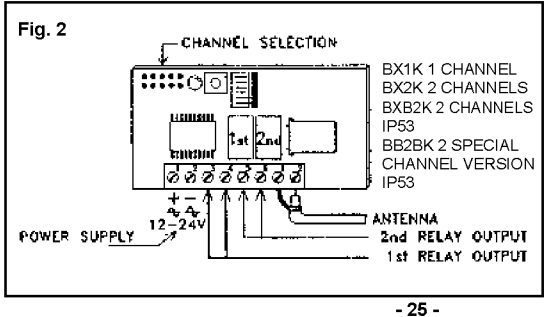
RECEIVERS WITH TERMINALS :

The receivers with terminals can be used universally. The container can be attached with screws or with a bottom sticker and provides the circuit with essential and effective protection.
Connect it as per the following diagram:

Fig. 2



1-2: POWER SUPPLY
12 to 24 V DC or AC with automatic internal regulation

3-4: 1st RELAY OUTPUT
Clean contact of normally open relay

5-6: 2nd RELAY OUTPUT
Clean contact of normally open relay (only for twin channel receivers)

1-2: ANTENNA
Antenna signal input

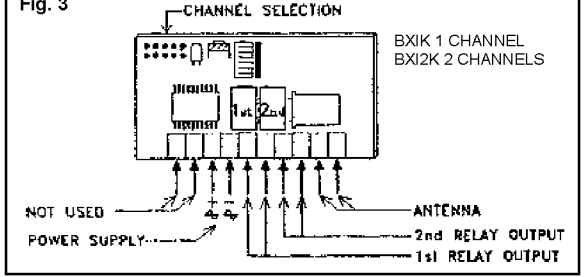
COUPLING RECEIVERS:
Coupling receivers are provided to be directly coupled to NICE "A" series units. Once coupled, they are ready for operation, since all electric signals (power supply, antenna and outputs) go to their respective points in the unit.

POWER SUPPLY:
12 to 24 V DC or AC with usually supplied by the unit.

1st RELAY OUTPUT:
Clean contact of normally open relay, used for unit control.

2nd RELAY OUTPUT:
Clean contact of normally open relay, available on special unit terminals (only for twin channel receivers).

Fig. 3



ANTENNA: Antenna signal input, fitted on special unit terminals.

MEMORY CARD

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Receivers are supplied with a BM60 memory card that can contain up to 60 codes (max. limit of 60 remote controlled codes). A memory card with 250 codes (BM250) can be optionally supplied and must be fitted to replace the BM60 card supplied. The receiver automatically recognizes the type of card inserted.
When maximum safety is required, the code learning function must be disabled (also considering the fact that it may be remote-controlled). After entering the codes from the remote controls concerned, just cut the arrow indicated by an arrow (Fig. 4).
If you wish to enter other codes at a later date, join the two contacts with a drop of tin (Fig. 5).

NB: The memory card is enabled and disabled with receiver off.

Fig. 4

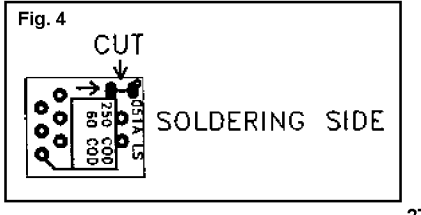
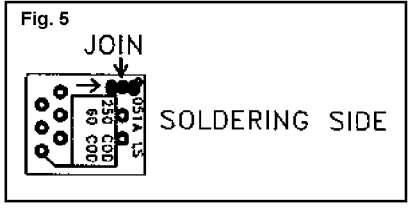


Fig. 5



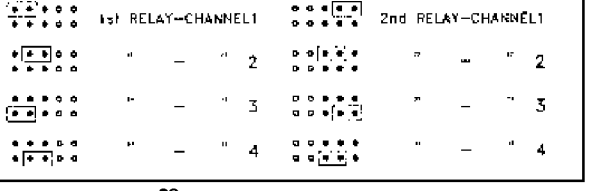
This is a very simple hardware lock to perform but therefore easy for other people to disable.
A second software type of lock has been fitted that is harder to operate but extremely safe since a remote control authorized (see - enable - disable 2nd lock) or via BUPC must be used as an unlocking key.

REGULATIONS AND SETTINGS

RELAY SELECTION ON THE CHANNELS

Each receiver is able to recognize all four transmitter channels even simultaneously. The output relay (two in the twin channel versions) is allocated to the required channel via a jumper to be inserted in the plugs provided.

Fig. 6



OUTPUT CONTACT

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The outputs are controlled by a normally open clean contact (i.e. free of other connections). If a normally closed contact is required, this can be made by:
- Cutting the “N.A.” jumper (Fig. 7)
- Soldering the “N.C.” contacts with a drop of tin (Fig. 8)

Fig. 7

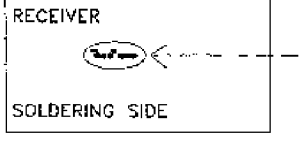


Fig. 7

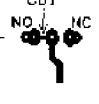


Fig. 8

SPECIAL OUTPUT FUNCTIONS (AVAILABLE ONLY ON BB2BK)

In normal operation the output relay has temporary function, i.e. it is energized on a few instants after pressing the control key (delay caused by code recognition), it is de-energized 300 mS after a key has been released.

Some special functions are available for output relay conduct.

STEP-BY-STEP FUNCTION

The relay is activated by pressing the remote control key and remains activated until the key is pressed again.

TIMER FUNCTION:

The relay is activated by pressing the remote control key and remains activated until the preset time has elapsed. The period is timed restarts every time the key is pressed and can be disabled early by pressing the key for at least 3 sec.

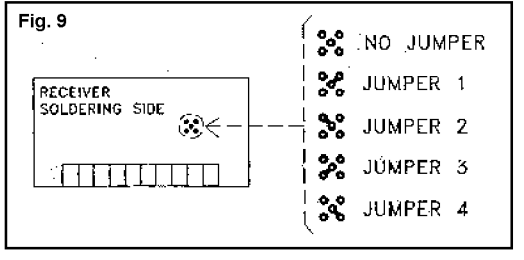
BURGLAR ALARM FUNCTION

This function is combined with outputs 1 and 2. When key 1 is pressed, the step-by-step function will be enabled on channel 1 (used to enable / disable burglar alarm function). Besides having the normal

operation linked to key 2, channel 2 is briefly enabled once when channel 1 changes from OFF to ON and twice when channel 1 changes from ON to OFF.
An visual warning or alarm can thus be connected to channel 2 to warn that the burglar alarm has been triggered off or disabled.

The special functions can be activated by soldering a small drop of tin (Fig. 9) as per the following table.

Fig. 9



None : All temporary channels
Jumper 1 :1 step/step ...2, 3, 4 temporary
Jumper 2 :1,2 step/step ...3, 4 temporary
Jumper 3 : 1 timer ...2, 3, 4 temporary
Jumper 4 : 1 burglar alarm ...3, 4 temporary

ANTENNA INSTALLATION

To obtain efficient operation the receiver requires a tuned antenna (NICE ABK - ABKIT type). Without an antenna, the range is reduced by a few metres. The antenna must be installed as high as possible. If metal frames or reinforced concrete is nearby, install the antenna above them. If the cable supplied with the antenna is too short, use a coaxial cable with a 52 Ohm impedance (e.g. RG58 with low loss <20 dB for 100m. at 400 MHz). The cable must not exceed 10m. in length. Connect the core to terminal 2 and the sock to terminal 1 (in the dual position unit). If the antenna is installed where there is no sturdy floor (building work) the sock terminal can be earthed (grounded) so as to obtain a larger range. Obviously the earth (ground) plate must be in the immediate vicinity and of high quality. If the ABK - ABKIT tuned antenna cannot be installed, satisfactory results can be achieved if a section of wire is stretched 2.45 m. length and connected to terminal 2 to act as an antenna.

LEARNING

Each transmitter has its own code (selected from over 1 million codes) that identifies it from any other remote control. The receiver is designed to receive all codes, but will only be activated if its own individual code is stored in the list of 'authorized' codes. A code is entered into the list via a procedure called 'learning' in which the receiver directly recognizes the code. This procedure (or other similar ones) must

be enabled by the operator by pressing a button located on the receiver card.
The various stages of the procedure are displayed by small LED indicator.
This LED will provide different indications depending on the meaning.

LED off: Normal operation
LED on: Time valid for learning procedure (approx. 5 sec.)

1 flash :	Received code is not authorized
2 flashes*:	Timeout out on learning without result
3 flashes:	Learning completed with positive result
4 flashes:	Code already in authorized code list
5 flashes:	Code list is empty
6 flashes:	Code list is full up (no room left for new codes)
7 flashes:	Cancellation requested for code not in list
8 flashes:	Different codes were received in learning stage
9 flashes:	Password entered.

*If the second type of lock is enabled, the 2nd flash will be longer the first.
If the second type of lock is disabled, both flashes will be equally long.

Fig. 10

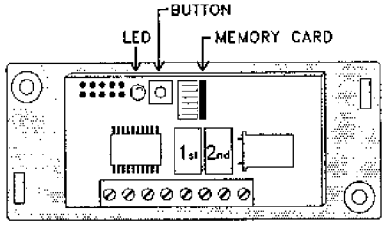
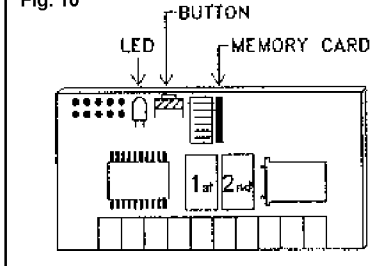


Fig. 10



ENTERING A CODE

This operation lets you add the code of a new transmitter into the receiver's memory.
The operations are timed and you thus need to read all the instructions to perform the operation in sequence without stopping.

- **Press the key on the receiver for a moment** to switch on the LED for 5 sec. In this time you have to:
- **Send a code until the LED is switched off** by pressing any button on the transmitter.
- Release the transmitter key and wait 1 sec.
- Press any button on the transmitter **to send the code for confirmation**.

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The LED will flash three times to indicate that the operation has been successfully completed. If this does not occur, repeat the entire operation from scratch. To enter a new code, repeat the whole operation.

REMOTE CODE INPUT

To insert the code of a new remote control without pressing the receiver key, you need to have the previously authorized remote control (consequently the first remote control code is always entered by pressing the receiver key). All the instructions should be read to perform the operations in sequence without stopping. Now with the remote control whose code is to be entered called NEW and the previously authorized one called OLD, stand within the radio control's operating range and then:

- Press any button on the NEW transmitter **to send the NEW code for at least 5 sec.**
Now slowly but positively;
- Press any button on the OLD transmitter **three times to send the OLD code three times;**
- Press any button on the NEW transmitter **to send the NEW code once for confirmation.**

The operation has now been completed and can be repeated immediately with a new remote control.

NB: This operation enters the new code in all receivers locating within the operating range that recognize the old code (and which are not disabled). Therefore, if there are several receivers nearby with the old code previously entered, switch off those not involved in the operation.

DELETING A CODE

This operation lets you remove a code from the receiver's memory.
The operations are timed and you thus need to read all the instructions to perform the operation in sequence without stopping.

- **Keep the button on the receiver pressed** (approx. 3 sec.) and then the LED will switch off, then release the key.
- Press any button on the transmitter **to transmit the code until the LED goes off again.**

Release the transmitter key and wait 1 sec.
- Press any key on the transmitter **to send the code for confirmation.**

The LED will flash once to indicate that the code has been deleted. If this does not occur, repeat the entire operation from scratch.

DELETING ALL CODES
This operation lets you remove all codes stored in memory (which is reset empty). The 2nd learning lock is also removed and the TIMER is reset to default time of 3 sec. (only for special version).
The operations are timed and you thus need to read all the instructions to perform the operation in sequence without stopping.

- **Keep the button on the receiver pressed** and after 3 sec. the LED will switch off;
- **Release the key during the 3rd following flash.**
- Wait about 3 sec.
- **Press the key as soon as the LED lights up again and release it as soon as it switches off.**

After a few seconds 5 flashes will follow to indicate that the memory has been reset and is empty. If this does not occur, repeat the entire operation from scratch.

CHECKING THE NUMBER OF CODES STORED (only for special BB2BK versions)

- **Press the receiver key twice;**
- **Count the number following flashes.** Each flash equals a code.

If there are a large number of codes and you wish to end early, press the key for a sec.

CHECKING THE 2nd LEARNING LOCK

- **Press the key on the receiver a while** and wait for 2 flashes to indicate elapsed time (approx. 5 sec.);
- If the second flash lasts longer than the first, the lock is enabled;
- If both flashes are equally long, the lock is disabled.

CHECKING THE 2nd LEARNING LOCK
(only for special BB2BK versions or with BUPC)

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- **Press the key on the receiver a while** and wait for 2 flashes to indicate elapsed time (approx. 5 sec.);
- **Press the key during the 2nd flash and release it as soon as the LED switches off.**

Two flashes will follow and the 2nd should last longer than the first to indicate that the lock is enabled.
If this does not occur, repeat the entire operation from scratch.

DISABLING THE 2nd LEARNING LOCK (only for special BB2BK or with BUPC)
In order to disable the learning lock, a previously authorized remote control is required.
The operation are timed and you thus need to read all instruction before carring out the operation in sequence:

- **Press the receiver key a while**, the LED lights up for 5 sec., before this time elapses you need to:
- **Send the code until the LED switches off**, by pressing any key on the transmitter. Release the transmitter key and wait 1 sec.
- **Send the code to confirm** by pressing any key on the transmitter.

The LED will now flashes 4 times to indicate that the code is already inclued in the list.

- Press the key during the 4ht lamp and release it as soon as the LED switches off.
It will then flash twice more to indicate that the lock status has been disabled, if this does not occur, repeat the operation from scratch.

SETTING THE TIMER (only for special version)

In order to set the timer, the timer function must be enabled (jumper on 3, see Fig. 9).
If you do not wish to enable the relay, temporarily remove the channel selection jumper.

- **Press and keep key 1 on the transmitter pressed** (if previously authorized), then within 3 sec. you have to:
- **Press and keep the key on the receiver pressed**
- **Release the transmitter key;**
- **Release the receiver key** after a period equal to the time you wish to set (max. 2h 30 min.).

The time is now stored and will remain valid until it is reset.

NB: While setting the time on the timer, normal operation of the receiver is disabled (channels disabled).

TECHNICAL SPECIFICATIONS

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RECEIVERS;

RECEPTION FREQUENCY	30.875 - 40.685 MHz quartz controlled
INTERMEDIATE FREQUENCY	455 kHz single conversion
INPUT IMPEDANCE	52 Ohms
SENSITIVITY	over 0.3 µV for successful signal (average range 300 m. with ABK - ABKIT antenna)
POWER SUPPLY	10 V to 28 V DC or AC
STANDBY ABSORPTION	15 mA
ABSORPTION OF 1st ENABLED CHANNEL	35 mA
DECODING	30 bit digital (1.048.512 combinations)
N° OF CHANNELS	1 or 2 depending on version
RELAY CONTACT	Normally open, max. 0.5A 125 Vac
ENABLING TIME	Reception of 3 full codes (250 mS)
DISABLING TIME	300 mS after last valid code
OPERATING TEMP.	-10°C to + 55°C
DIMENSIONS	67 x 34 17 h mm. BXIK - BXIK2 98 x 41 25 h mm. BX1K - BX2K 105 x 68 32 h mm. BXB2K - BB2BK
WEIGHT	27 g. BXIK - BXI2K 62 g. BX1K - BX2K- 85 g. BXB2K - BB2BK