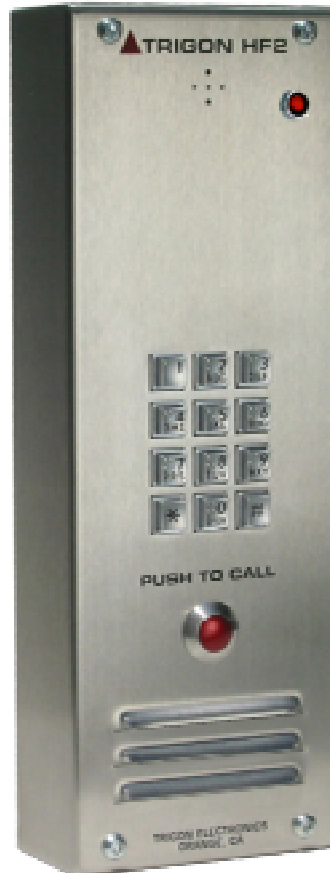


Miniguard HF-2 with Keypad Entry

Handsfree Telephone Entry Autodialer



HF2C-1K

INSTALLATION

and

OPERATIONAL INSTRUCTIONS



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February 2, 2006

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INTRODUCTION

This manual contains all the information required to install and program the TRIGON MINIGUARD HF-2 with keypad entry. If you are using this manual to install this unit, it is very important to read all the sections in order.

You should read these instructions before you begin installation. This will insure that everything is done efficiently.

If you are using this manual as a programming guide after the initial installation, you may find the TABLE OF CONTENTS useful in locating the particular programming procedure you need.

PRODUCT OVERVIEW

The TRIGON HF-2 with keypad entry is a multi-number auto dialer with the additional feature of an entry keypad integrated in the front of the HF-2 which activates the entry relay when a valid code is entered. If a valid code is not known, entry is granted or denied by the remote called party. Upon pressing the button, the HF-2 dials a programmed telephone number. If the number dialed is busy or does not answer, the HF-2 will hang up and dial the next programmed number, up to a maximum of 10. If the last programmed number is busy or does not answer, the HF-2 will rollover and start the dialing process again with the first phone number.

The HF-2 comes standard with 2 output relays. These relays can be programmed to operate in several different ways. Relays can be set to pulse momentarily for camera call-up, they can be set to stay latched on for the duration of the call, or they can be set to operate for a timed duration (for door strike operation, etc).

A Site I.D. code feature provides for unit identification. The Site I.D. code is a programmable four digit code that is transmitted by the HF-2 when it receives a command from the called party. This code, when interpreted by a Trigon DTMF Decoder, will identify the calling unit.

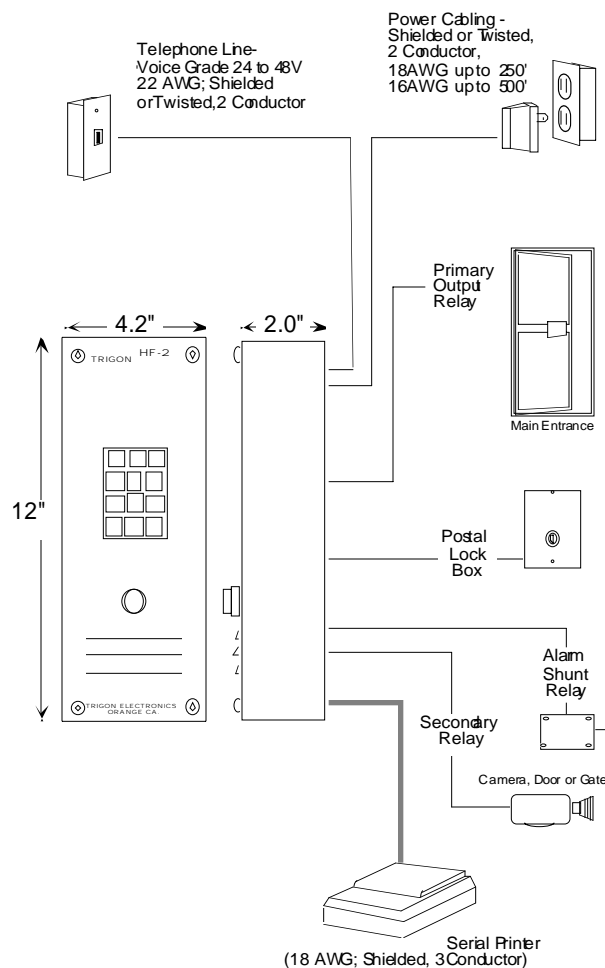


Figure 1

MOUNTING

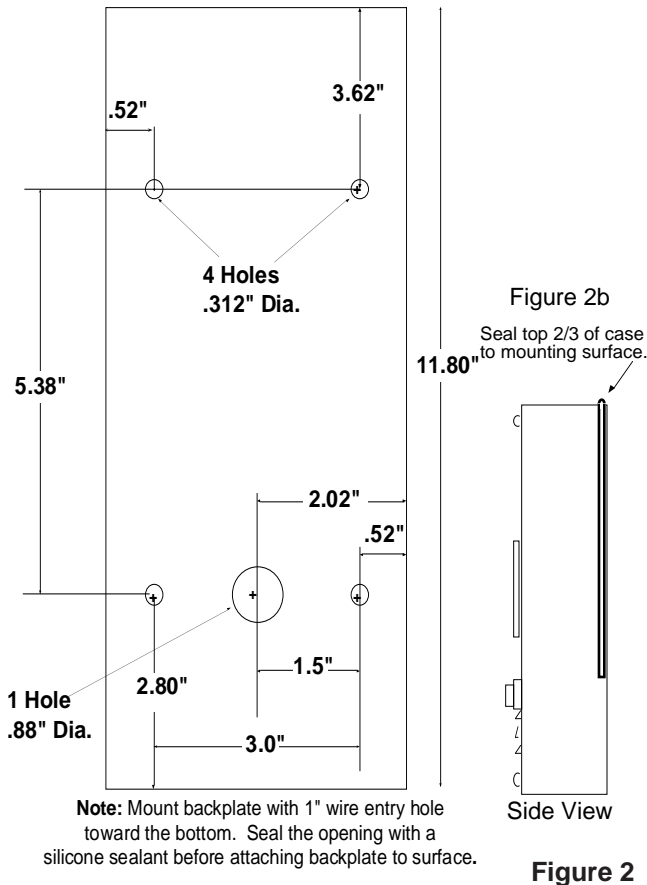


Figure 2

Arrangements must be made with the local telephone company for installation of a standard voice-grade telephone line (touch-tone or rotary) as close to the unit mounting location as possible. The telephone company may require the following information.

FCC Registration No.....1Z8898-62546-DI-T
 Ringer Equivalence.....0.8B
 Connector.....Terminal Block

The unit is designed to be as weather resistant as possible*. We do however recommend some shelter from direct rain and sunlight. An overhang is usually sufficient. Bolt the back plate (**Fig. 2**) to the mounting surface using the four .312" holes in the chassis. Feed the wiring through the access hole in the rear of the back plate. At this point, the wiring should NOT be live (energized).

Note: If used in extreme weather, a bead of silicon sealant should be run around the outside top two thirds of the unit, after the front case is secured.

(Fig. 2b).

* We offer an optional Lighted Hood for further protection.

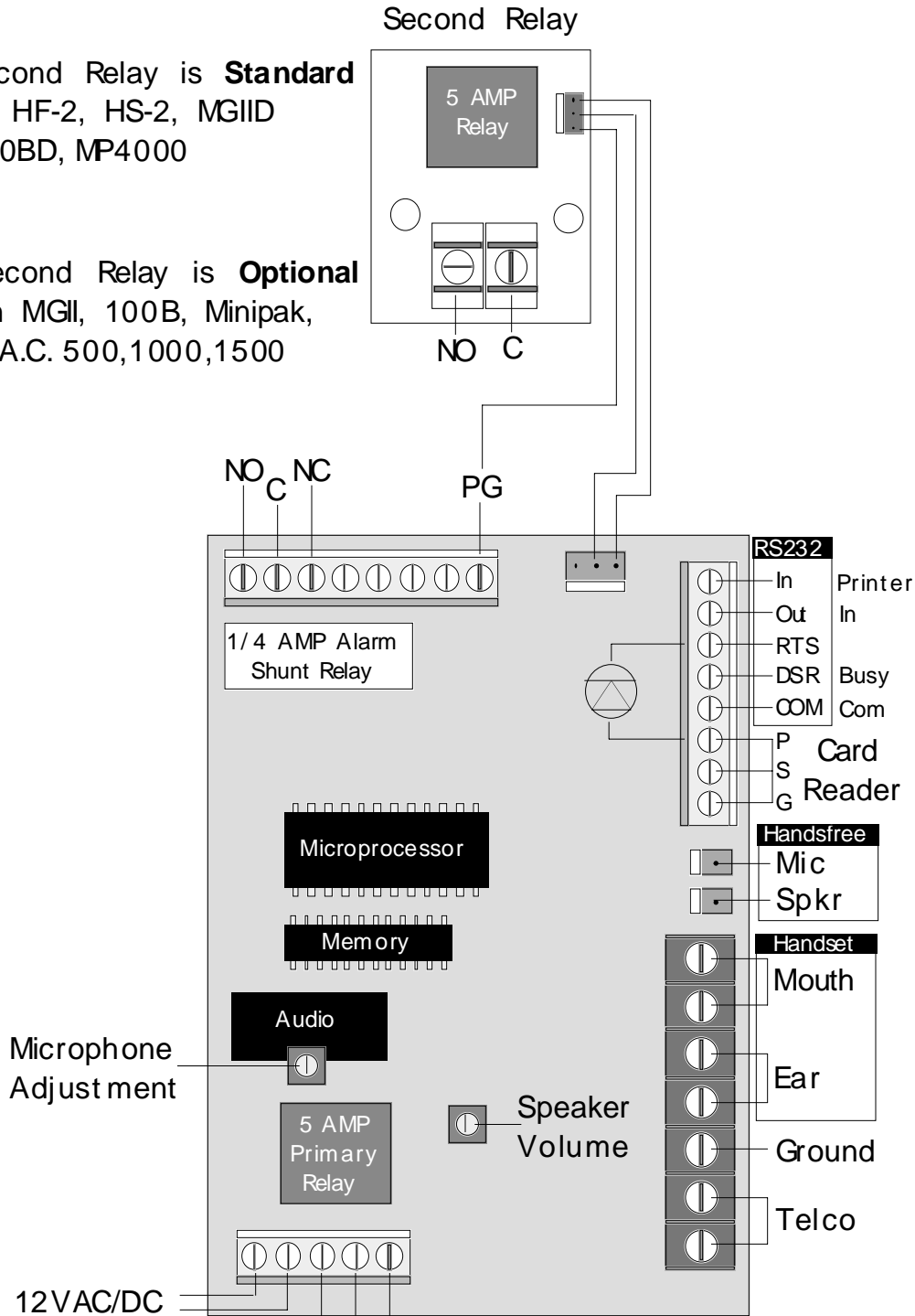
WIRING

1. Use the wiring diagram (Fig. 3) for wire connection information.
2. Do not power any other device from the Trigon's 12 VAC transformer. If a substitute transformer is used, be sure it is rated 12 VAC, 40VA, UL Class 2 listed. The 12 VAC input power wires should be 18AWG, 600V, insulated wire. This should be sufficient for distances up to 250 feet.
3. Do not energize wires until installation is completed.
4. Ground the unit by attaching a separate 12 AWG ground wire to the ground location on the terminal block. This ground wire should go to a grounding rod or grounded metal conduit.
5. Trigon recommends that an EMI filter (Cornell-Dubilier Model APF 1021 or equivalent) be mounted between the 12 VAC transformer output and the unit. EMI/RFI filters are available from Trigon. Mount the filter as close to the unit as possible. Ground the filter to the same point as unit ground.
6. Shielded cable is recommended. Ground the shielding to the same point as the unit and filter. To avoid ground loops, do not ground the shield at both ends. Use 600V insulated wire for this installation.
7. Isolate the Telco phoneline from 12 VAC power wires. This will prevent 60 Hz hum from occurring on the phoneline. Use 22 AWG wire on Telco line run distances of up to 2400 feet. Consult the factory for distances greater than 2400 feet.
8. Power Relays 1 and 2 are dry contact, Form C type, rated for 5 AMPS @ 30 VDC/ 250VAC.
9. The Shunt relay is a low-power (4 watt) reed relay. It can be used for temporary alarm switch bypass, video camera activation, etc. The Shunt relay activates with the #1 or #2 power relay, and deactivates thirty seconds after relay release.
10. Connect printer wiring to the RS-232 port (Printer IN to RS-232 OUT, Printer BUSY to RS-232 DSR, Printer COM to RS-232 COM).
11. If all wiring and grounding is completed, mount the faceplate onto the backbox.

WIRING DIAGRAM

Second Relay is **Standard**
on HF-2, HS-2, MGIID
100BD, MP4000

Second Relay is **Optional**
on MGII, 100B, Minipak,
T.A.C. 500,1000,1500



Input Cable Size	
0-250'	18AWG; Shielded
250 to 500'	16AWG; Shielded
500+'	14AWG; Shielded

Door Strike Connections	
NO	NC

Figure 3

Telephone Cable	
Voice Grade 24 to 48V	
22AWG; Shielded or Twisted	
up to 2400'	

PROGRAMMING INFORMATION

General Programming Information

The "Initial Setup" for the HF-2 with keypad entry has been programmed at the factory. The programming of the unit basically includes programming of the telephone numbers to be autodialed when the call button is pushed, and the access entry codes.

Record below up to ten (10) autodialed numbers to be programmed into the HF-2.

Autodialed Numbers

Primary Auto dial Number (16 digit max)

Second Auto dial Number (16 digit max)

Third Auto dial Number (16 digit max)

Fourth Auto dial Number (16 digit max)

Fifth Auto dial Number (16 digit max)

Sixth Auto dial Number (16 digit max)

Seventh Auto dial Number (16 digit max)

Eighth Auto dial Number (16 digit max)

Ninth Auto dial Number (16 digit max)

Tenth Auto dial Number (16 digit max)

Site ID Number-if required Number (4 digits)

Entry Access Number (4 digits)

SYSTEM SETUP

General Programming Information:

The "Initial Setup" for the Miniguard HF-2 with keypad entry has been programmed at the factory. These factory default settings may be changed to better suit your particular application. If you decide to alter these settings, follow the instructions below. It is important that each programming step be taken in order. When reprogramming a specific feature, you must always enter the programming mode first. You may then go to the appropriate procedural steps for the changes desired.

Note: It is recommended that you read thru all of the following sections first, before any change is attempted. This will familiarize you with the procedure required. Record any programmed information you wish to change in the spaces () provided. Factory default is displayed in brackets [].

(A) To Enter Program Mode Locally:

1. Enter " * " then enter the unit's Program Code.

If the unit is new, use the preset factory code. **(Factory code is 5269).** You will hear two beeps

-OR-

(B) To Enter Program Mode Remotely:

1. Call the telephone number of the unit.
2. Listen for a single tone.
3. Enter " * " then the unit's Program Code.

If the unit is new, use the preset factory code. **(Factory code is 5269).** You will hear two beeps

(C) To Run Initial Setup:

1. Unit must be in programming mode (see above).
2. Enter "#, 0". This tells the unit that you want to run SETUP. No beeps will be heard.

Enter Telephone Code Length:

Note: Telephone code length for the HF-2 must be two digits in length.

3. Enter the telephone code length. 2 for two digits. () [2]

Enter Ring Count:

"Ring Count" refers to the number of incoming rings the Miniguard HF-2 will wait before it auto-answers. This count is adjustable from 1 to 9.

4. Enter the number that indicates the number of rings desired. () [1]

Enter Gate Interval:

"Gate Interval" refers to the length of time the output relay (parking gate, front entry, etc.) will stay engaged after the command has been issued.

For example: Enter "1" for *one 5-second interval*. Enter "2" for *two 5-second intervals (10 seconds)*. Enter "6" for *six 5-second intervals (30 seconds) etc.*

Note: Nine is the maximum..

5. Enter the number of 5-second intervals desired. () [2]

Note: A "0" here will allow the output relay to engage for a one second pulse

Enter Call Length:

“Call Length” refers to the maximum time (in minutes) that the unit will allow a conversation to last.

6. Enter the number (1 thru 4) that corresponds to the call length time (in minutes) that is desired. () [1]

Note: A “0” here allows indefinite call length, however the unit will auto disconnect after 30 seconds of voice silence.

Enter Dial Mode:

“Dial Mode” refers to the type of signal the unit uses to dial a telephone number. The Miniguard HF-2 is capable of dialing rotary/pulse or touch-tone.

Enter “2” for Touch-tone dialout and active DTMF keypad after dialout.

7. Enter dial mode desired () [2].

Enter Latch Enable/Disable:

“Latch Enable/Disable” refers to the ability of the Miniguard HF-2 to latch (hold closed) the #1 relay, from a remote location.

Enter “1” to enable the latch feature for relay #1.
Enter “0” to disable this feature.

8. Enter latch mode desired () [0].

You will hear two beeps. . . .setup complete.

9. Enter “##” to exit Program Mode, otherwise, continue programming by entering the desired function code.

PROGRAMMING

General Programming Information:

The “Initial Setup” for the Miniguard HF-2 with keypad entry has been programmed at the factory. The programming of the unit focuses on the program mode, the telephone numbers to be autodialed, the site ID number, and the desired entry codes. It is important that each programming step be taken in order. When reprogramming a specific feature, you must always enter the programming mode first. You may then go to the appropriate procedural steps for the changes desired.

Note: It is recommended that you read thru all of the following sections first, before any change is attempted. This will familiarize you with the procedure required. Record any programmed information you wish to change in the spaces () provided. Factory default is displayed in brackets [].

(A) To Enter Program Mode:**(1) To Enter Program Mode Locally:**

a. Enter “* ” then enter the unit’s Program Code.

If the unit is new, use the preset factory code. **(Factory code is 5269).** You will hear two beeps

-OR-

(2) To Enter Program Mode Remotely:

a. Call the telephone number of the unit.

b. Listen for a single tone.

c. Enter “* ” then the unit’s Program Code.

If the unit is new, use the preset factory code. **(Factory code is 5269).** You will hear two beeps

(B) Setting the Primary and Backup Telephone Numbers:

a. Unit must be in Program Mode.

b. Press ‘0’ then ‘0’ (wait for tone) and enter the first phone number. Press ‘#’ when complete. Press ‘0’ then ‘1’ (wait for tone) and enter the second phone number. Press ‘#’ when complete. If more numbers are needed press ‘0’ then ‘2’ (wait for tone) and so on for up to 10 phone numbers. Press ‘#’ when complete.

c. If desired, exit Program Mode by pressing ‘#’

d. If remotely programming press ‘7’. to terminate call.

(C) Setting the Site ID Number:

This number identifies the unit upon request from a central office.

a. Unit must be in Program Mode.

b. Press ‘#8’.

c. Enter a four digit number.

You will hear two ‘beeps’ indicating command accepted.

d. If desired, exit Program Mode by pressing ‘#’ (wait for two second tone).

e. If remotely programming press ‘7’. to terminate call.

PROGRAMMING

(D) Deleting Telephone Numbers:

1. Unit must be in Program Mode (see section A).
2. Enter the two-digit code for the number you wish to delete. (0,0 for primary, (0,1) for secondary, etc.

You will hear one beep.

3. Enter "#".

Two beeps indicate Erasure complete.

Repeat steps 2 and 3 until you are finished.

4. Enter "##" to exit Program Mode, otherwise, continue programming by entering the desired function code.

Note: If you wish to change an existing telephone number, use the instructions for Adding Telephone Numbers and enter the new number in place of the old one. The old number will be overwritten.

Note: Use caution when performing these steps..

(E) Programming Entry Codes:

Entry Codes make it possible for the resident to enter a Code (P.I.N. number) at the unit and gain access without placing a call.

1. Unit must be in Program Mode (see section A).
2. Enter "# 1".
3. Enter any 4-digit number between 0000 and 8999.
4. Enter any 4-digit number between 9000 and 9999 to operate the second relay.

You will hear two beeps, indicating the number has been recorded in the Miniguard II's memory.

Repeat steps 2 and 3 until you are finished.

Note: Three beeps indicate the code already existed.

4. Enter "##" to exit Program Mode, otherwise, continue programming by entering the desired function code.

(F) Deleting Entry Codes:

1. Unit must be in Program Mode (see section A).
2. Enter "# 2"
3. Enter the Entry Code that you want to delete.

You will hear two beeps. Erasure complete.

Three beeps indicate no Code match found.

4. Enter "##" to exit Program Mode, otherwise, continue programming by entering the desired function code.

(G) Changing the Program Code:

This feature allows you to change the Program Code to something other than the factory preset of **5269**.

1. Unit must be in Program Mode (see section A).
2. Enter "# 7"
3. Enter 4 digits for new Program Code.
You will hear two beeps.
4. Enter "##" to exit Program Mode, otherwise, continue programming by entering the desired function code.

Note: The 5269 Code (or any other previous code) is now invalid, so keep a good, safe record of your new Program Code for future use.

Note: If you lose the ability to access the Program Mode after performing this step, call TRIGON service. We have the ability to remotely reset the Program Code back to default.

(H) Master Erase Procedure:

This procedure allows selective or complete deletion of all data in the Miniguard IID's memory. Also, it is possible to reset the Miniguard IID back to its factory defaults (presets).

Note: Use caution when performing these steps.

1. Unit must be in Program Mode (see section A),
2. Enter "# *".
3. Enter "0" if you wish to erase all data and reset unit back to factory defaults.
4. Enter "1" if you wish to erase all Entry Codes.
5. Enter "2" if you wish to erase all Resident Code/ telephone numbers.
6. Enter "3" if you wish to reset the unit back to factory defaults, leaving all other memory intact.

Upon completion of the full master erase sequence, you will hear a long series of beeps.

Note: Master Erase time will vary greatly depending on memory type, usage and capacity.

OPERATION

STANDARD MODE

When a CALL button is pressed, the HF-2 dials a pre-programmed phone number and monitors the line for the following signals:

Busy Signal: The HF-2 will hang up and redial the number after approximately three busy tones.

Ring Signal: The HF-2 will hang up and redial the number after approximately six unanswered rings (36 seconds).

Voice or Touch-tones: This indicates an answer. The unit then enters the Talk Mode.

Calling a Tenant:

1. Press call button.

You will hear tenant answer.

Granting Visitor Entry:

Answer telephone and identify visitor. You may choose from the following options: (fig.4)

1. Enter "0" to activate Primary Relay and disconnect.

Note: On rotary telephones "5" or higher can be used to activate the Primary Relay.

2. (Option) Enter "8" to activate Secondary Relay and disconnect.

Denying Visitor Entry (disconnect):

To deny entry

1. Enter "7" to force disconnect. Hang up telephone.

Note: It is important that the tenants recognize the responsibility to hang up the Trigon unit by pressing the appropriate key on their telephone's keypad. Otherwise, the visitor may walk away leaving the unit active. Shortly, the loud off-hook indicator tone from the telephone company will be heard for the remaining duration of the call length.

Latching/Unlatching Relays:

This feature must be enabled in the initial SETUP of the unit's programming. Refer to the SETUP section in this manual. To latch (hold closed) a relay, place a telephone call to the Miniguard HF-2. The Miniguard HF-2 will auto-answer and you will hear a brief tone in the speaker. Refer to Fig. 5 for options:

1. Enter "3" to latch primary relay.
2. Enter "4" to unlatch primary relay.
(OPTIONAL)
3. Enter "5" to latch secondary relay.
4. Enter "6" to unlatch secondary relay.
5. Press "7" to hang unit up.

Site Identification:

The Site I.D. number must be programmed into the unit before the feature can be used. See "Programming Site Identification Number"

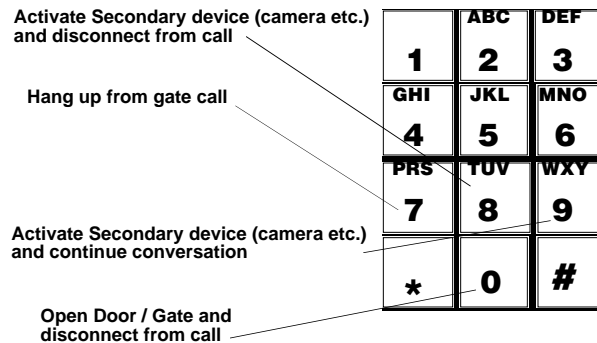
1. Answer or place call to unit.
2. Enter #.

This instructs the unit to transmit the four digits (tones) of its site I.D. code. The tones may be decoded by using a TRIGON DECODER.

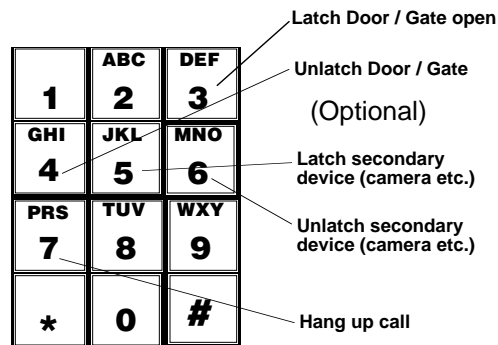
Direct Entry Codes:

1. Press button for dialtone.
2. Enter " # " and your four digit Entry Code (PIN Number).

Calls from the gate



Latching Keys



Remote Operation Time-out:

If you call the unit to operate it remotely, you have 30 seconds until auto-termination. Any tone instruction will restart this 30 second timer. If you find that you need more than 30 seconds:

1. Enter "8" on your telephone's keypad to extend your call time to three minutes.

Remote Function Tests:

The TRIGON Miniguard HF-2 has the ability to run a series of self-tests to verify its functionality.

Call the unit. When it answers choose from the following.

OPERATION (con't)

1. Enter "0" for touch tone echo test.
Unit will "echo" any touch tone you send with your phone.
2. Press "# " to escape from this test.
3. Enter "1" for memory test. (One tone = good; two tones = bad).
4. Enter "2" for touch tone sequence. (Unit answers by transmitting touch tones 1 through 9, *, and #).

Printer Operation: (Optional)

The Miniguard HF-2 can support an audit log output to a remote serial printer up to 300 feet away.

The printer must be a SERIAL type with a standard RS232 interface connector. The settings of the printer are:

300 Baud, 8 bits, No parity, 1 stop bit.

Serial linkage requires a minimum of three wires that carry "DATA, COMMON, and BUSY".

TROUBLE SHOOTING GUIDE

NO DIAL TONE

1. Check input power at unit. Should be 12 VAC.
2. Check that unit is properly grounded to a good Earth ground.
3. Current starved. Increase AC input wire size.
4. Remove power, wait 5 seconds, restore power. Check for dial tone.
5. Check for phone line. Should be 48-52 VDC across phone line terminals (on hook).
6. Check VOLUME adjustment on PC board.
7. Check "SPKR" plug on PC board. Make sure speaker is properly plugged in (Handsfree units).
8. Verify that contacts and wires are clean and tight.

CANNOT PROGRAM

1. Incorrect/lost program code.
2. Not entering '* ' before program code.
3. Try 'NO DIAL TONE' troubleshooting procedures.
4. Keypad damaged. Check for vandalism.
5. Check that Program Prom/Microprocessor is fully seated.
6. Unit is in the wrong Operational Mode

LOSES MEMORY

1. Electrical noise on power line. Install EMI/RFI filter.
2. Excessive electrical noise from strike. Use low current strike.
3. Unit transformer shared with another device (i.e. door strike).

RESIDENT CANNOT ACTIVATE STRIKE/GATE

1. Tenant not pressing correct number on phone.
2. Strike/gate operator not wired correctly.
3. Missing or incorrect power to strike or gate operator.
4. Current starved. Increase wire size.
5. Tone may be too brief in duration (cordless phones, etc.).

AC HUM IN SPEAKER

1. Phone wires running in same conduit as AC power.
2. Unit not properly grounded.
3. Defective microphone.

RESIDENT CANNOT HEAR VISITOR

1. Defective handset/microphone.
2. Person receiving the call answers in too short a duration to activate the HF-2 (person must speak a minimum of 2 seconds to be detected).

CONDENSED GUIDE TO USE and PROGRAMMING

General

Data between "[]" is a mandatory program key stroke sequence. Data between "{ }" is to be supplied by the programmer. Unit responses are shown between "()".

Legend:

d	Day of the week (1, 2,...7; Monday= 1)
DD	Date (01, 02,...31)
eeee	Entry Code (always use four digits)
hh	Hour (01, 02,...23)
iiii	Site ID Code (always use four digits)
mm	Minute (01, 02,...59)
MM	Month (01, 02,...12)
nnn nnnn	Resident Phone Number (up to 12 digits)
pppp	Program 4 digit Access Code
rrrr	Resident Code (may be 1, 2, 3, or 4 digits)
YY	Year (01, 02,...99)
*	The "star" key of the telephone
#	The "pound sign" key of the telephone
☎	Tones returned by the unit

Set Unit Parameters:

Press "#, 0", then:
{3} Set Resident Code Length (1 - 4 digits)
{3} Set Ring Count (1 - 9, 0= unlimited)
{3} Set Gate Interval (1 - 9 five second intervals, 0=1 second pulse)
{3} Set Call Length (1 - 4 minutes, 0= no time-out)
{0} Set Dial Mode (1= Rotary, 0= Tone) (+{2}= active DTMF keypad after dial out)
{0} Set Latch Enable Mode (0= disable, 1= enable) 1) (☎☎)

Programming at the Unit:

Enter the Program Mode: Acquire dial tone.

Press " *, Program Code".

You will hear two beeps.

Legend:

d	Dial mode (0= Touch, 1= Rotary)‡
f	Five second relay duration time (1, 2,...9)
iiii	Site ID number (always use four digits)
lll	Call Length Time in seconds (001, ...999)
nnn nnnn	Phone Number (up to 12 digits)
pppp	Program Code
r	Ring Count (1, 2, ...9)
*	The "star" key of the telephone
#	The "pound sign" key of the telephone
☎	Tones returned by the unit