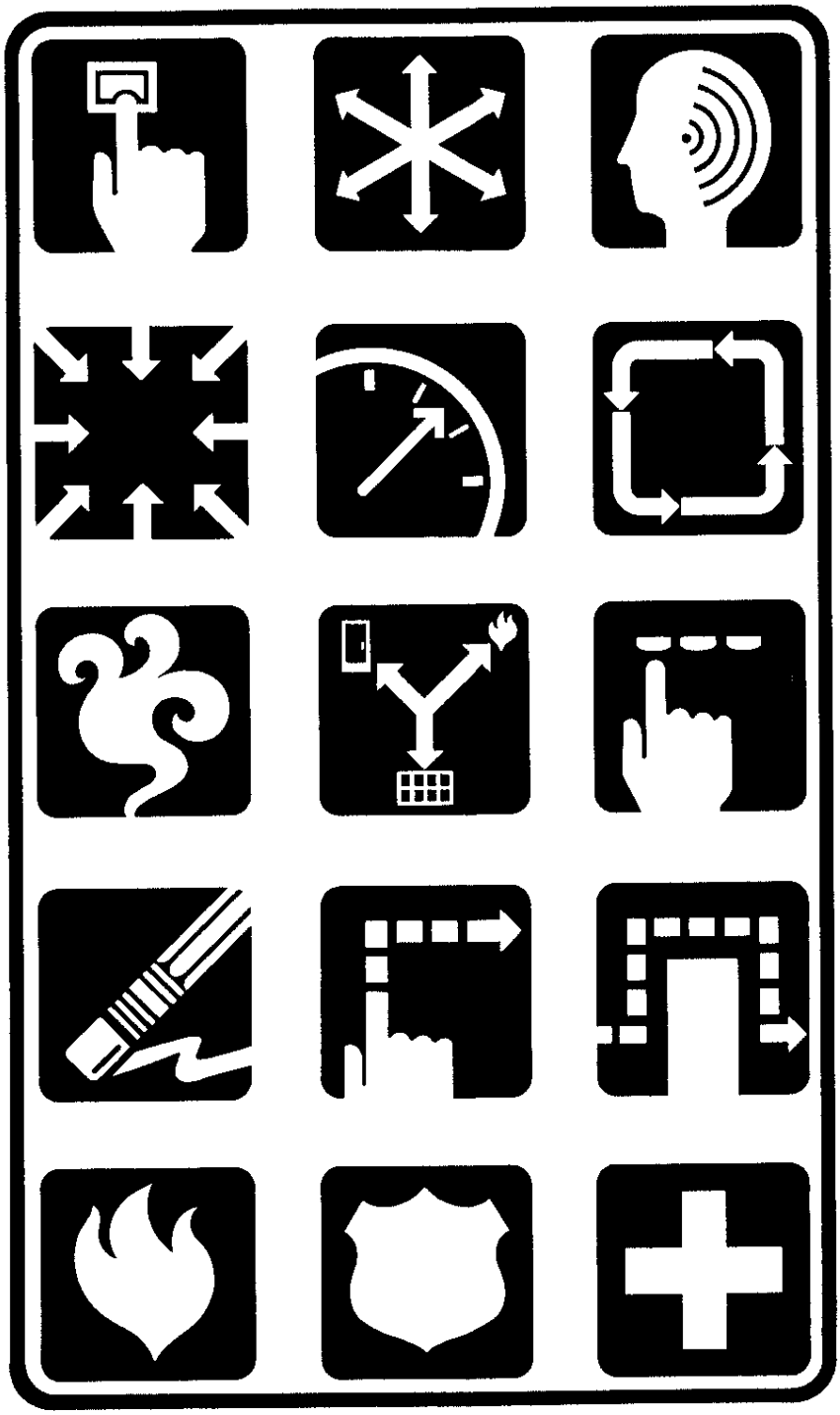
NuTech™

THE SECURITY OF NUTONE



INSTALLER'S PROGRAMMING MANUAL

CONTENTS

INTRODUCTION

The NuTech[11] system's programming options are divided into two distinct categories: User programming options and Installer programming options. User Programming, the basic programming of the system, allows the user to program arm/disarm codes, change the program code, adjust entry times, etc. A "User's Programming Manual" is provided to the security dealer.

The security dealer may–if he chooses–provide the end-user with the "User's Programming Manual." User programming is explained in this manual to introduce the installer to basic programming principles.

The second category – Installer Programming – allows the installer to program the system's many features to suit each particular installation. Like user programming, the installer programs the system from the digital remote controls by entering code sequences on the control's keypads. Many installations will require very little programming to modify the factory pre-set ("default") program–especially if the installation is carefully planned with the factory settings in mind. On the other hand, installer programming gives the security installer the tools to customize the system to a wide variety of individual applications.

The installer should become familar with all aspects of programming. Spending some time reading this manual and practicing the programming will provide the installer with an understanding of the NuTech[11] system's many features. This understanding will pay off on the job, in sales, and in instructing customers how to use their NuTech[11] security systems.

INSTALLER'S OVERVIEW

The NuTech[11] Control/Communicator is a self contained micro-computer based system which can be programmed to perform a variety of tasks. Unlike most conventional microprocessor based systems, the NuTech[11] requires no peripheral devices for programming. All program data are entered (programmed) through a digital remote control, eliminating the need to purchase "programmers" or stock PROM's (programmable read only memory).

The computer's memory is called non-volatile, electrically erasable read only memory (EEROM). Unlike a PROM which can be programmed only once, EEROM can be programmed again and again. Data is just stored in the EEROM; it can be easily changed at any time by just programming new data through the digital remote control. Non-volatile memory requires no power to maintain data stored in it. So, the NuTech[11] System retains its program even if there is a complete power failure, including a defective battery.

The system is shipped from the factory preprogrammed with a factory pre-set program. The system can be used as is (right out of the box) or it can be changed. The factory pre-set program is not affected by installer programming; however, the system can be easily put back into the factory pre-set program by following a simple procedure.

Programming is defined as "user" programming and as "installer" programming. That is, there are certain things the user can change, such as the arm/disarm codes, and there are things that *only* the installer can program, such as zone identification.

A PROGRAMMING SWITCH located in the control panel is used for installer programming. This switch should be left open when installer programming is completed so that the user does not accidentally change any installer programming.

USER PROGRAMMING

Programming options are defined as USER programming options and INSTALLER programming options. When programming, the digital control acknowledges correct entries with a series of beeps. Incorrect entries are acknowledged with a long, steady tone—try again. Each time a USER feature is programmed the system automatically returns to NORMAL mode. To program another option, the program code must be entered again.

To program, one must first get into the "Program mode" by entering the correct program code, which is a 1 to 5 digit authorization code. (The default program code is [9] [8] [7] [6] [5]).

USER programming is defined in the "User's Programming Manual" in terms that a person unfamiliar with programming can understand.

User programming is summarized in this manual to familiarize the reader with basic programming principles. There are two charts to which one must refer for USER programming: the "Program Options" chart and the "Code Form" chart.

Program Options

Program Option	Description
1.	AUTHORIZATION Code #1
2.	AUTHORIZATION Code #2
3.	AUTHORIZATION Code #3
4.	AUTHORIZATION Code #4
5.	Program Code
6.	4th Code usage Count
7.	Dialer Test Time
8.	Entry Time #1
9.	Entry Time #2

Authorization Codes

The first four User Programming options are *authorization* codes—arm/disarm codes, access codes, and duress codes. All of these high-security commands must be followed by an authorization code.

To program an authorization code, enter the program mode ([9]-[9] [8] [7] [6] [5]) and then provide three steps of information:

1. Program Option number.
   (See "Program Options" chart.)
2. Code Form number.
3. The Authorization code itself.
   (See "Code Forms" chart.)

Code Forms

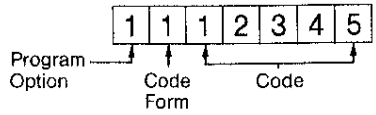
The authorization codes may be used in several different ways. The "Code Form" chart explains each *code form* that is available.

Code Forms

Code Form Number	What It Means
1	Standard **ARM/DISARM** code.
2	Used as an **ACCESS** code.
3	Combination of **ARM/DISARM** and **ACCESS** codes. System reads arm/disarm when command key [1] is pressed first. System reads access if command key [0] is pressed first.
5	**ARM/DISARM** and **ACCESS** are activated at the same time when user presses command key [1] and enters code.
7	**ARM/DISARM** and **ACCESS** are activated at the same time when user presses command key [1] and enters code. **ACCESS** is activated alone by pressing command key [0] and enters code.
9	Used as a **DURESS** code or for new **PROGRAM** code.

Authorization Code Programming Format

The following illustration shows the sequence of the three segments of information you must enter to program an arm/disarm code.



Programming Musts

1. Authorization codes must be entered in to 5 digits.
2. If 5 digits are not used, enter trailing zeros (0) to fill in the spaces.
3. The ✱ and # may NOT be used in codes.
4. Digits may be repeated.

Summary

For this section, all the examples will use the factory pre-set codes. If these codes have been changed, substitute the new codes when programming.

1. As a rule, always press the ✱ key before beginning any programming operation.
2. To perform any user programming, first enter the **program command** and **program code:** 9–9 8 7 6 5.
3. Enter the **program option** number.
4. Enter the **code form** number.
5. Enter the **code number** itself.
6. The keypad acknowledges a **correct entry** with a series of beeps.
7. The keypad acknowledges an **incorrect** entry with a long steady tone. When you hear this tone, press the ✱ key and start again.

EXAMPLE

The following example illustrates how to change the factory pre-set arm/disarm code (2–4–5) to a new code 4–5–6.

1. Enter the program comand and program code: 9–9 8 7 6 5.
2. Remote control beeps 4 times to indicate correct entry.
3. Enter program option #1 by pressing key 1. (You are telling the system that you want to change authorization code #1.)
4. Remote control beeps 3 times to acknowledge entry.
5. Enter code form #1 by pressing key 1. (You are telling the system that you want the code to be an arm/disarm code only.)
6. Enter new code number and fill space with trailing zeros: 4 5 6 0 0.
7. Remote control beeps 3 times to acknowledge entry.
8. Programming is complete. The system automatically returns to "normal" mode.

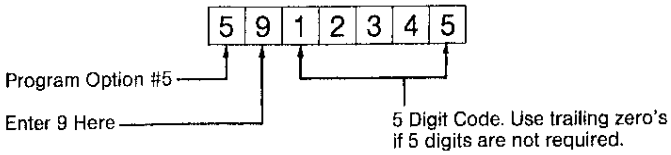
   Now, check to see if the new arm/disarm code works correctly.

   1. To arm, enter 1–4 5 6.
   2. **ARM** LED will light.
   3. To disarm, enter 1–4 5 6.
   4. **ARM** LED will go out.

Changing Program Code

The program code can be one (1) to five (5) digits long. Digits can be repeated. Factory-set code is 9 8 7 6 5.

The program code is programmed the same as other codes except that the "Code Form Number" is a 9.



EXAMPLE

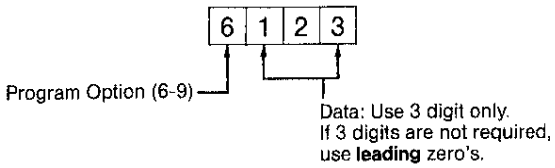
Change the program code from 9 8 7 6 5 to 8 7.

1. Enter the program mode by entering 9 9 8 7 6 5.
2. Key pad beeps 4 times to indicate correct entry.
3. Enter 5 for program option #5.
4. Key pad beeps 3 times to acknowledge the entry.
5. Enter 9 for code configuration.
6. Enter 8 7 0 0 0.
7. Key pad beeps 3 times to acknowledge the entry.
8. Done. The system automatically returns to normal mode.

Programming Other User Options

Programming Options 6 thru 9 (refer to Options Chart) are programmed using 3 digits of data. Where 3 digits are not required, use **leading** zero's to fill the space.

FORMAT:



EXAMPLE

Program Option #6 (4th Code Usage Count) to operate 2 times.

1. Enter the program mode by entering 9 9 8 7 6 5.
2. Key pad beeps 4 times to indicate correct entry.
3. Enter 6 for program option #6.
4. Key pad beeps 3 times to acknowledge the entry.
5. Enter 0 0 2.
7. Key pad beeps 3 times to acknowledge the entry.
8. Done. The system automatically returns to normal mode.

Program Option 7— Dialer Test Time

The Dialer test time sets the time for the automatic test and when the unit will call the central station. Usually, the central station prefers to receive test codes during non-peak operating times—between midnight and 6:00 o'clock in the morning.

To program this option, you tell the system to test itself some number of hours from the time you program the option. For example, if it is 7:00 PM and you want the system to test itself at mid-night (5 hours from now) you would program 005 into this option. You can enter 000 to 024. The first digit will always be zero.

EXAMPLE

Program the automatic test time for 005.

1. Enter the program mode by entering [9] [9] [8] [7] [6] [5].
2. Key pad beeps 4 times to indicate a correct entry.
3. Enter [7] for program option #7.
4. Key pad beeps 3 times to acknowledge the entry.
5. Enter [0] [0] [5].
7. Key pad beeps 3 times to acknowledge the entry.
8. Done. The system automatically returns to normal mode.

Entry Delay Times— Options 8 and 9

Program Option #8 (Entry Delay Time #1) and Program Option #9 (Entry Delay Time #2) are programmed similar to #7 except that the corresponding User Option Numbers 8 and 9 are used for these options. Entry Delay Times can be programmed from 1 to 255 seconds in duration.

INSTALLER PROGRAMMING

Installer programming covers a variety of options which allow the NuTech[11] to be programmed to "customize" the system to one's particular needs. To activate installer programming, a "programming switch" in the control panel must be closed. This switch is located next to connector J-16 (on the right side of the control panel).

The programming switch should normally be left in the OPEN position to prevent the User from inadvertently getting into address programming. **Always make sure that this switch is *open* before leaving an installation.**

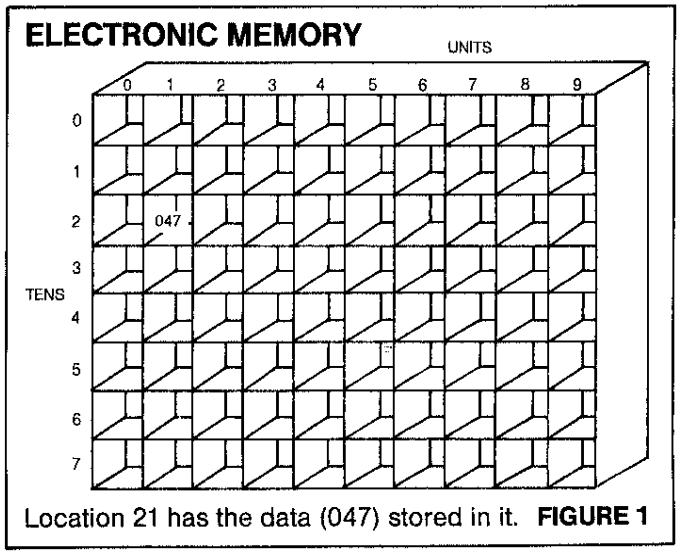
NOTE: If the program switch is closed and the system loses power, upon "power up" the system will automatically be in the program mode—just as if the program code had been entered.

Once in the program mode the digit [0] is always entered (the program option) to specify address programming. Where the user enters 1 thru 9 for program options, the installer enters a zero [0] for Installer Programming.

CAUTION: Do not open or close the program switch unless the master power switch is OFF.

Memory Locations

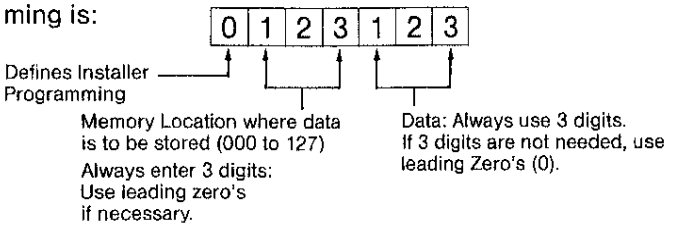
The electronic memory (EEROM) in the control panel can be thought of much like slots in a post office. Each memory location where data is to be stored (each slot) has an address. When data is to be stored, in a particular slot (memory location) the computer must first be told at which slot (location) the data is to be stored. Then the data is entered. Figure 1 shows the concept.



Location 21 has the data (047) stored in it. **FIGURE 1**

INSTALLER PROGRAMMING

The format for programming data in installer programming is:



EXAMPLE

Program the exit delay time (memory location 030) for 60 seconds:

1. Make sure Program Switch is closed.
2. Enter the program mode by entering command [9] followed by program code: [9] [9] [8] [7] [6] [5].
3. Digital Control beeps three times, acknowledging a correct entry.
4. Enter [0] for installer program.
5. Digital Control beeps 3 times.
6. Enter Memory Location: [0] [3] [0].
7. Digital Control beeps 3 times.
8. Enter data: [0] [6] [0] (for 60 seconds).
9. Digital Control beeps 5 times.
10. To exit program mode, press CLEAR; Control acknowledges with a short beep and a long steady beep.
11. Done.

After entering the data you are still at the memory location you entered; the system is just sitting there—waiting. If you entered the wrong data, simply enter the correct data. You can change the data any number of times.

If you are entering data in sequence, starting at one location and going up location by location, you can simply press the [#] key. This key increments the memory location by one. If you are at location 030 and press [#], you go to location 031, etc.

NOTE: The digital control will automatically return to normal mode after 3 minutes from the last entry, or you can press CLEAR [*] to exit the programming mode immediately.

Memory Verification

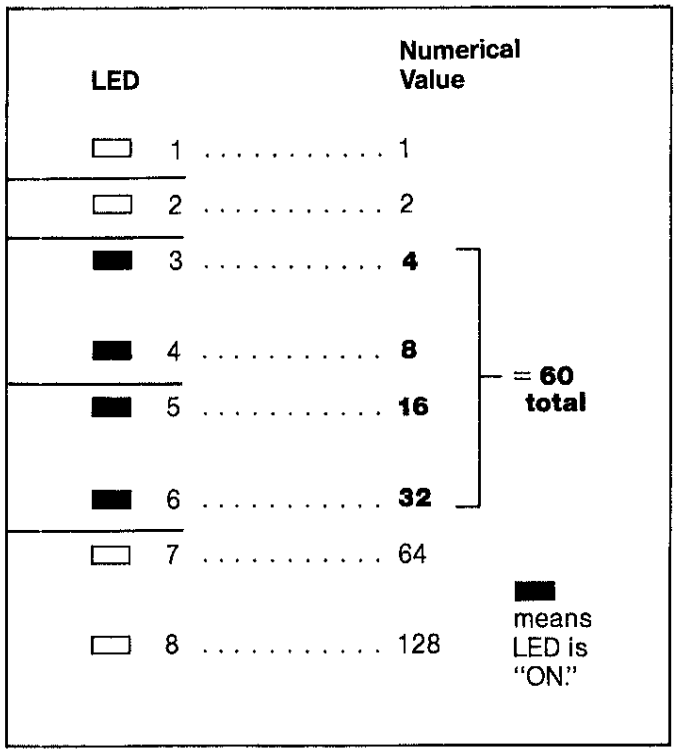
You probably noticed that as you programmed the exit time the LED's were doing some strange things—switching on and off. Unlike many conventional panels, the NuTech[11] System provides a means for verifying what data has been programmed into a given memory location. The LEDs, when in installer programming, represent in BINARY FORMAT the data stored at the location you entered.

The 8 LEDs represent the following numbers:

LED #:	1	2	3	4	5	6	7	8
Numerical Value:	1	2	4	8	16	32	64	128

EXAMPLE

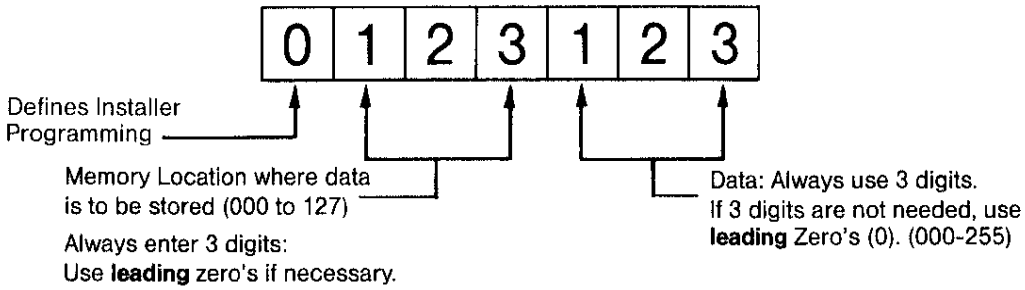
In the previous example, 60 seconds was entered at location 030. If entered correctly, the LEDs would look like:



Just add up the values of the "lighted" LEDs. The total is the number stored at that location, in this case—60.

Using this feature, you can enter the program mode and, using the [#] key, sequence through the locations to verify the data at each location. See page 17 for a list of the data for the factory pre-set program.

SYSTEM FUNCTIONS

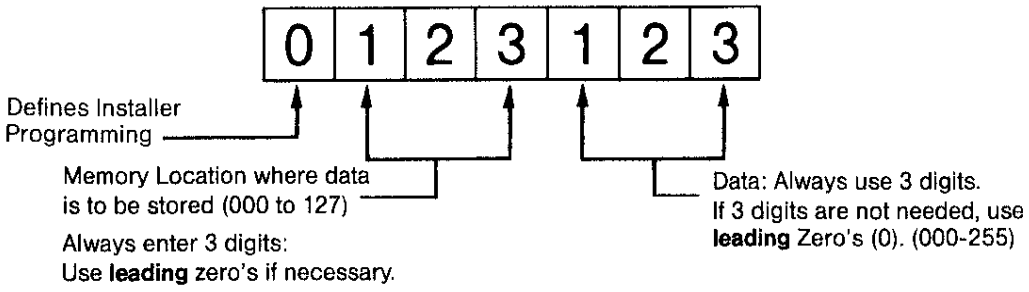


The following is a list of the memory locations and how to program each. Program these as you programmed the exit time in the example.

System Functions

Memory Location	Description
000	FAST LOOP RESPONSE TIME: Valid range=001 to 255. Each number=40 milliseconds; so 002=80 milliseconds. 80 milliseconds is the recommended minimum loop response time.
001	SLOW LOOP RESPONSE TIME: Same as above.
002 to 004	Used to store authorization Code #1 in User Programming. DO NOT PROGRAM IN INSTALLER PROGRAMMING!
005	TWO DIGIT ARM CODE: "000"=Two digit arming; anything other than "000", you must use full code. Enter COMMAND and first digit of code to arm system. You must use full code to disarm. **NOTE: If the first digit of any arm/disarm code is zero (0) only the Command digit needs to be pressed to activate the command. This does not apply to an access code.**
006 to 008	Used to store authorization code #2 in user programming. DO NOT PROGRAM IN INSTALLER PROGRAMMING!
009	FACTORY PROGRAM RESTORAL: To restore the system to the factory pre-set program, program this location for a value greater than 1. Then remove all power and power back up. The system will reprogram itself to the factory pre-set program. This procedure does not erase telephone numbers: Any value stored in any location from 067 to 127 will not be affected. If you make an error in programming telephone numbers, just reprogram them.
010 to 012	Used to store authorization code #3 in user programming. DO NOT PROGRAM IN INSTALLER PROGRAMMING!
013	4th CODE USAGE COUNT: Program through user programming.
014 to 016	Used to store authorization code #4 in user programming. DO NOT PROGRAM IN INSTALLER PROGRAMMING!
017	ACCESS CONTROL OUTPUT TIME—IN SECONDS: Valid entry=001 to 254. 255=Untimed output is permanent. Do not program 255 into this location.
018 to 020	Used to store program code in user programming. DO NOT PROGRAM IN INSTALLER PROGRAMMING!
021	Used by system to store the "Zone Status Upon Power Up." NOT TO BE PROGRAMMED!

SYSTEM FUNCTIONS



Memory Location	Zone Definition Table

The following defines the various options for which zones can be programmed. Simply add up the numbers under each zone "type." Program this number into the corresponding address:

022-029

BURGLAR DELAY ZONE.*. 0

ENTRY DELAY #1 0

ENTRY DELAY #2 . . . . . 8 8

INTERIOR ZONE 16 16

ALARM LOCKOUT . . . . . 32 total . . . 24*

SLOW ZONE RESPONSE 64

DAY ZONE 128

BURGLAR STANDARD ZONE 1
INTERIOR 16
ALARM LOCKOUT 32
SLOW LOOP RESPONSE 64
DAY ZONE 128

FIRE ZONE 2
SHUNTABLE 8
SLOW ZONE RESPONSE 64

POLICE ZONE** 3
SILENT ALARM 8
SLOW ZONE RESPONSE 64

MEDICAL ZONE** 4
SLOW LOOP RESPONSE 64

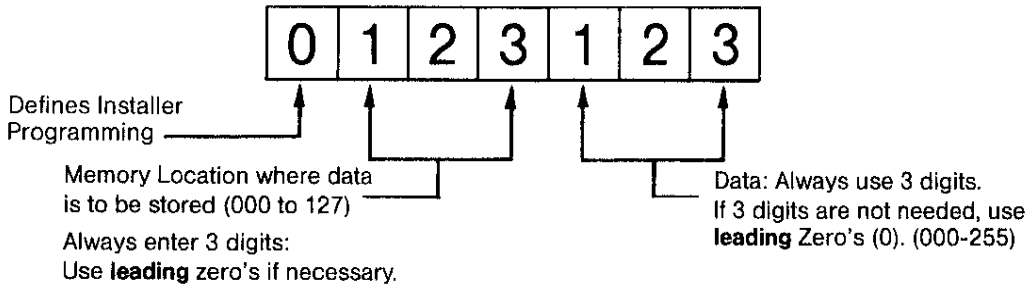
MECHANICAL KEYSWITCH ZONE 5

EXAMPLE: A burglar zone, delay #2, that is to be an interior zone would be a number 24. Program 024 into zone(s) address.

*** The above zone is a fast response by default unless programmed for slow response.**

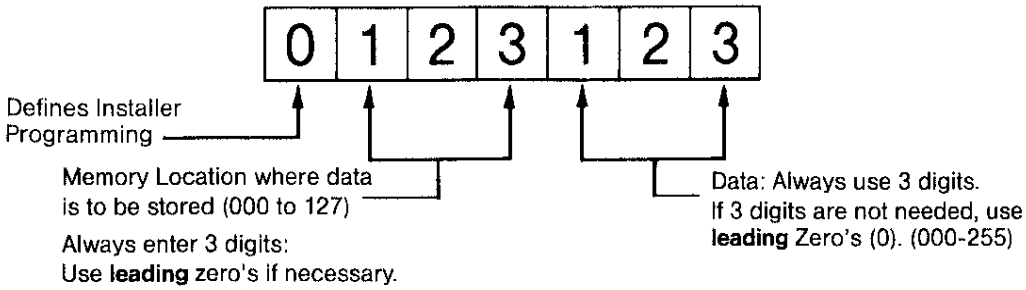
NOTE: Any values not mentioned in the above tables will be ignored.

****These zones automatically lock out and do not restore. They cannot be programmed for restoral.**



Memory Location	Zone Definitions (Locations 022 Thru 029)
022	ZONE #1: as defined in tables
023	ZONE #2: as defined in tables
024	ZONE #3: as defined in tables
025	ZONE #4: as defined in tables
026	ZONE #5: as defined in tables
027	ZONE #6: as defined in tables
028	ZONE #7: as defined in tables
029	ZONE #8: as defined in tables

Memory Location	System Timers
030	EXIT DELAY TIME IN SECONDS: Valid entry=001 to 255. The exit time is the amount of time you have to leave the premises after arming the system. All burglar zones are automatically by-passed during exit delay.
031	ENTRY-DELAY TIME #1: Valid range=001-255. The entry delay time allows time to disarm the system after entering the premises through a delay zone. All standard burglar zones are by-passed when a delay zone is activated (known as "follower" zones).
032	ENTRY DELAY TIME #2: Valid range=001-255. If both delay zone #1 and delay zone #2 are activated, the zone with the shortest time overrides the other zone.
033	DIALER DELAY TIME BEFORE REPORTING: Valid range=001 to 255 (seconds). *If 000 is entered in this address the Dialer is DISABLED.* **NOTE: Entering an arm/disarm code aborts the dialer, (except for a "Duress" code).**
034	BURGLAR ALARM CUT-OFF TIME: Valid range=000 to 255 (minutes). If 000 is entered, in address 034 the alarm will not cut off until system is disarmed.
035	FIRE ALARM CUT-OFF TIME: Valid Range=000 to 255 (minutes). If 000 is entered, the alarm will not cut off.
036	POLICE/AUX 1 ALARM CUT-OFF TIME: Valid range=000 to 255 (minutes). If 000 is entered, the alarm will not cut off.
037	MEDICAL/AUX 2 ALARM CUT-OFF TIME: Valid range=000 to 255 (minutes). If 000 is entered, the alarm will not cut off.



Memory Location	System Configuration (Memory locaton 038)
	There are several features which can be programmed into this location. Like the zones, add up the values of the features and enter the number in location 038.

EXTENDED DIALER REPORTING	1;	Standard Reporting	=0
SINGLE ROUND DIALER REPORTING	2;	Report all alarm	=0
PULSING BURGLAR ALARM OUTPUT	4;	Constant Output	=0
1 SECOND SIREN TEST UPON ARMING	8;	No siren test	=0
SILENT BURGLAR ALARM	16;	Audible Violation	=0
TELEPHONE #1 TOUCH TONE DIALING	32;	Pulse Dial (rotary)	=0
TELEPHONE #2 TOUCH TONE DIALING	64;	Pulse Dial (rotary)	=0
NO INTERIOR/DELAY LED CHANGE WITH KEYSWITCH USE	128;	Keyswitch changes LED's	=0

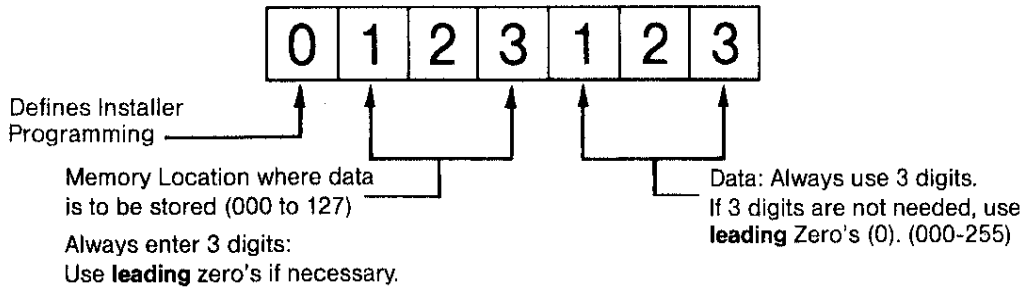
038	Add above numbers for feature(s) wanted and enter this number in location 038.
039	LAST ARM/DISARM AND INTERIOR/DELAY LED STATUS. Used by system to store information. DO NOT PROGRAM!
040	INTERIOR/DELAY DISARM MODE: Valid range=000 to 003. The system can be programmed to have the interior ON or OFF upon disarming and the DELAY zones either DELAY or INSTANT upon disarming. Enter the value in address 040 that corresponds to the selection in the chart.

VALUE	INTERIOR	DELAY
0	ON	DELAY
1	OFF	DELAY
2	ON	INSTANT
3	OFF	INSTANT

EXAMPLE: To have the system disarm with the interior READY (ON) and the delay zones in DELAY, program 000 into location 040. (This is the factory default mode.)

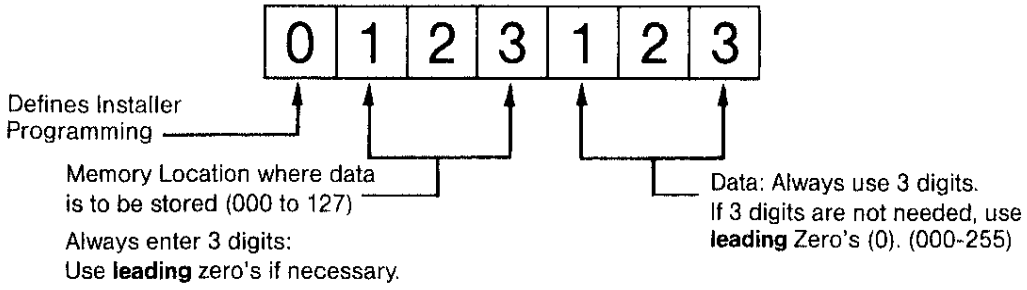
041 DIGITAL COMMUNICATOR DIAL-OUT ATTEMPTS;
Valid range–001 to 255. Location 041 sets the number of dial-out attempts the digital communicator will make before it shuts down. Upon shutdown, all active alarms will be aborted. Subsequent alarms will start the dial sequence over again with the full number of dial-out attempts.

Dial attempts applies to both telephone numbers. If the first number (Telephone #1) is not reached on the first attempt, the second number (Telephone #2) is dialed. If the second number is not reached, the system re-dials the first number. This process continues up to the programmed number of dial-out attempts: If the Communicator does not reach the receiver after the programmed number of dial-out attempts (default=8), the system will not dial again. If a second number (Telephone #2) is not programmed, the number of dial-out attempts is halved; eight attempts become four attempts.

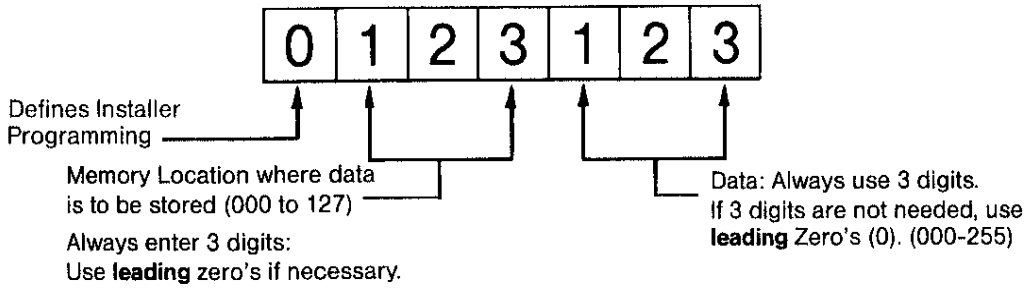


Memory Location	Digital Communicator Transmission Format (Memory locations 042 and 043)
	The digital communicator can be programmed for one of several formats. Each of two telephone numbers can be programmed for a different format. Choose the format desired from the chart and enter the number(s) in location 042 and 043. 001: ADEMCO, ADCOR, VERTEX, and SILENT KNIGHT SLOW FORMAT. —1400 Hz Kiss Off; 1900 Hz Data —51/49 millisecond duty cycle. —600 millisecond inter-digit delay. 002: SESCOA, VERTEX, DCI and FRANKLIN FAST FORMAT —2300 Hz Kiss Off; 1800 Hz Data —30/20 millisecond duty cycle. —800 millisecond inter-digit delay. 003: RADIONICS SUPER FAST FORMAT —2300 Hz Kiss Off; 1800 Hz Data —13/12 millisecond duty cycle. —400 millisecond inter-digit delay. 004: SILENT KNIGHT FAST FORMAT —1400 Hz Kiss Off; 1900 Hz Data —40/30 millisecond duty cycle. —560 millisecond inter-digit delay. **Kiss Off:** The frequency the Central Station sends to the digital communicator. **Data:** The frequency at which the digital communicator transmits to the Central Station.
042	TELEPHONE NUMBER 1 DIGITAL COMMUNICATOR TRANSMISSION FORMAT: Valid entry=001-004. Choose format from chart above.
043	TELEPHONE NUMBER 2 DIGITAL COMMUNICATOR TRANSMISSION FORMAT: Valid entry=001-004. Choose format from chart above.

Memory Location	Digital Communicator Account Code
	A three (3) digit account code can be programmed into the Communicator. The account code can be from 000 to FFF in Hexidecimal format. This allows for a total of 3375 account codes. When using the EXTENDED format certain codes should not be used. They are 000, 111, 222, 333, 444, 555, 666, 777, 888 and 999. The number may be confusing to the central station since the same numbers may be received as other codes. To program HEXIDECIMAL numbers: Digits 1 thru 9 are entered as 010 thru 009 Digit A and 0 are entered as 000 or 010 Digit B is entered as 011 Digit C is entered as 012 Digit D is entered as 013 Digit E is entered as 014 Digit F is entered as 015 ACCOUNT CODE . . . . . 1 2 3 Most Significant Digit Middle Digit Least Significant Digit NOTE: A zero (0) and an "A" communicate (send) 10 pulses to the Central Station. They (0 or A) are not differentiated by the digital communicator. **For proper programming of the communicator, consult the Central Station to which the communicator is transmitting.**

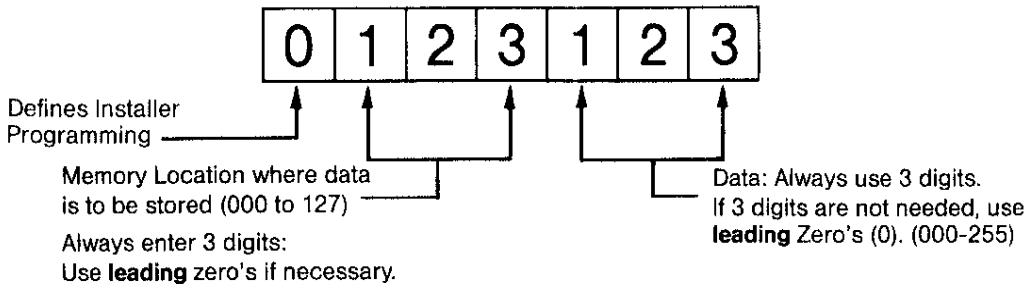


Memory Location	Digital Communicator Account Code
044	ACCOUNT CODE MOST SIGNIFICANT DIGIT (MSD): Valid Range=000 to 015.
045	ACCOUNT CODE MIDDLE DIGIT: Valid range=000 to 015.
046	ACCOUNT CODE LEAST SIGNIFICANT DIGIT (LSD): Valid range=000 to 015
047	SILENT KEYPAD POLICE OPTION: Enter 000 in location 047 for keypad police to be totally silent, including the VIOLATION OUTPUT on connector J-16. The police relay and digital communicator will activate if programmed to do so.
Memory Location	**Digital Communicator Transmission Code**
	NOTE: For the digital communicator to be active, location 033 must be programmed for other than 000. The digital communicator channels are programmed for a value between 001 and 015. Any channel can be disabled by entering a value between 016 and 255 into the appropriate address. In EXTENDED format, the second line of data on the central station receiver will show the zone (1 thru 8) that caused the alarm. The four arm/disarm codes will report the corresponding code (1, 2, 3 or 4) used with opening/closing enabled. A code 5 will be reported if a mechanical key is used to arm/disarm the system. Keypad triggered FIRE, POLICE and MEDICAL will report a zone code of 9 (keypad is identified as Zone 9 so central station knows that alarm was caused by someone pressing keypad button) if the corresponding-keypad code is enabled (programmed). A low battery condition will report a zone code of 9 if the low battery code is enabled.
048	HARDWIRE ZONE #1 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
049	HARDWIRE ZONE #2 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
050	HARDWIRE ZONE #3 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
051	HARDWIRE ZONE #4 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
052	HARDWIRE ZONE #5 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
053	HARDWIRE ZONE #6 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
054	HARDWIRE ZONE #7 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
055	HARDWIRE ZONE #8 DIGITAL COMMUNICATOR ZONE CODE: Valid range=000 to 015.
056	KEYPAD FIRE ZONE CODE: Valid range=000 to 015.



Memory Location	Digital Communicator Account Code
057	KEYPAD POLICE ZONE CODE: Valid range=000 to 015.
058	KEYPAD MEDICAL ZONE CODE: Valid range=000 to 015.
059	OPENING REPORT ZONE CODE: Valid range=000 to 015. **NOTE: The system can be programmed to report an opening only if an alarm had occurred by adding 16 to the value that would be entered in location 059.**
060	CLOSING REPORT ZONE CODE: Valid range=000 to 015. **NOTE: Above code is reported if no zones are shunted prior to arming (See 061).**
061	CLOSING REPORT WITH SHUNTED ZONE(S): Valid range=000 to 015. The system can report to the central station that a closing report is being sent but that one or more zones have been shunted! **NOTE: If EXTENDED format is used, opening and closing reports will show the user code (1, 2, 3, 4 or 5) in the second line zone position. Code 5 is a mechanical key switch.**
062	CANCEL ZONE CODE: Valid range=000 to 015. If any alarms are aborted before they are reported to the central station, a cancel code will be transmitted to the central station. In EXTENDED format, the zone cancelled will be in the second line zone position.
063	RESTORE ZONE CODE: Valid range=000 to 015. If any zones are restored after causing an alarm, a RESTORE code will be transmitted. In extended format, the zone number will be in the second line zone code position.
064	FIRE TROUBLE ZONE CODE: Valid range=000 to 015. If a Fire Zone has a trouble condition, a fire trouble code will be transmitted. In extended format, the zone number will be in the second line zone code position.
065	LOW BATTERY ZONE CODE: Valid range=000 to 015. If, at the 24 hour automatic battery test or during a manual test, the battery is found to be weak, a low battery zone code will be transmitted. In extended format a "9" will be transmitted in the second line zone position. (Keypad emergency buttons and low battery are "Zone 9").
066	DIGITAL COMMUNICATOR TEST CODE: Valid range=000 to 015. The digital comunicator will send a test code once every 24 hours. User program option #7 sets the test time. A number higher than 015 disables the automatic test.
067	Not used.

SYSTEM FUNCTIONS



Memory Location		Telephone Numbers
		The digital communicator uses two telephone numbers. Each number can be up to 30 digits long, including timed spaces between digits. The telephone numbers automatically switch between each other if a dial attempt fails. Dialable digits are 0 thru 9. If a value of 011 is entered, a touch tone [*] is dialed. A value of 012 dials a touch tone [#]. A value of 013 produces a 3-second wait. A value of 014 or higher is considered a non-dialable digit. If the first digit of the telephone number is non-dialable, the digital communicator will hang up and switch to the other number. After dialing has started, the first encounter of non-dialable digit or the end of the 30 number storage will end the dialing sequence. Use 013 (3-second wait) for pauses between numbers where needed--such as dialing "9" and waiting, etc.
068-097	068	First Digit of Telepone #1 (30 digits)
098-127	097	Last Digit of Phone #1
	098	First Digit of Telephone #2 (30 digits)
	127	Last Digit of Phone #2

GLOSSARY

PROGRAM: A set of instructions which describe the actions for a computer to perform in order to accomplish a given task.

DATA: Information, especially information used or operated on by a program.

COMPUTER: An electronic device for performing predefined (programmed) computations at high speed and with great accuracy. A machine used to store, transfer and transform information (data).

FACTORY PROGRAM: A factory pre-set ("default") program which can be used without need for programming. The "default" program is not affected by any installer or user programming.

AUTHORIZATION CODE: One of several codes that, when entered properly, tells the computer to implement the "Command" designated prior to entering the code.

FACTORY PRE-SET PROGRAM

The NuTech[11] system is pre-programmed at the factory with the following program settings.
NOTE: these zones are not programmed for alarm lockout.

1. ZONE 1	BURGLAR Delay zone (Delay 1)	Slow loop-response
2. ZONE 2	BURGLAR Delay zone (Delay 2)	Slow loop-response
3. ZONE 3	BURGLAR Instant zone (Interior)	Slow loop-response
4. ZONE 4	BURGLAR Instant zone (Perimeter)	Slow loop-response
5. ZONE 5	BURGLAR Instant zone (Perimeter)	Slow loop-response
6. ZONE 6	BURGLAR Instant zone (Perimeter)	Slow loop-response
7. ZONE 7	BURGLAR Instant zone (Perimeter)	Slow loop-response
8. ZONE 8	FIRE zone	Slow loop-response

EXIT time: 60 seconds
Delay 1 ENTRANCE time: 30 seconds
Delay 2 ENTRANCE time: 45 seconds

Slow loop-response: 320 milliseconds
Fast loop-response: 80 milliseconds

FIRE-alarm Cutoff time: No Cutoff
BURGLAR-alarm Cutoff time: 15 minutes
POLICE-alarm Cutoff time: 15 minutes
MEDICAL-alarm Cutoff time: 15 minutes

ACCESS on-time: 20 seconds
AUTHORIZATION code #1: [2] [4] [5]
PROGRAM code: [9] [8] [7] [6] [5]
DIGITAL COMMUNICATOR: Disabled
(Memory location 133 contains 000.)

TRANSMISSION FORMAT =002: SESCOA, VERTEX, FRANKLIN FAST FORMAT, 2300 HZ KISSOFF, 1800 HZ DATA

DATA FORMAT: Standard reporting (non-extended)

DIAL METHOD: PULSE (ROTARY)

DIAL ATTEMPTS: 8

ACCOUNT code NUMBER: 888

ZONE 1 COMMUNICATOR code: 3
ZONE 2 COMMUNICATOR code: 3
ZONE 3 COMMUNICATOR code: 3
ZONE 4 COMMUNICATOR code: 3
ZONE 5 COMMUNICATOR code: 3
ZONE 6 COMMUNICATOR code: 3
ZONE 7 COMMUNICATOR code: 3
ZONE 8 COMMUNICATOR code: 1

Keypad FIRE code: 1
Keypad POLICE code: 2
Keypad MEDICAL code: Not programmed

MEMORY LOCATION MAP–QUICK REFERENCE

LOCATION	DESCRIPTION	RANGE	DEFAULT VALUE
000	FAST loop-response timer; 40 msec steps	001-255	002
001	SLOW loop-response timer; 40 msec steps	001-255	008
002	AUTHORIZATION code one, digits 1 & 2	N/A	*
003	AUTHORIZATION code one, digits 3 & 4	N/A	*
004	AUTHORIZATION code one, digit 5	N/A	*
005	Two-digit ARM all codes; 000=Enable	N/A	255
006	AUTHORIZATION code two, digits 1 & 2	N/A	*
007	AUTHORIZATION code two, digits 3 & 4	N/A	*
008	AUTHORIZATION code two, digit 5	N/A	*
009	EEPROM flap; 255=NEW	N/A	000
010	AUTHORIZATION code three, digits 1 & 2	N/A	*
011	AUTHORIZATION code three, digits 3 & 4	N/A	*
012	AUTHORIZATION code three, digit 5	N/A	*
013	Usage count: AUTHORIZATION code four	001-255	255
014	AUTHORIZATION code four, digits 1 & 2	N/A	*
015	AUTHORIZATION code four, digits 3 & 4	N/A	*
016	AUTHORIZATION code four, digit 5	N/A	*
017	ACCESS output ON time; seconds	001-254	020
018	PROGRAM code, digits 1 & 2	N/A	*
019	PROGRAM code, digits 3 & 4	N/A	*
020	PROGRAM code, digits 5 & 6	N/A	*
021	SYSTEM USE ONLY–DO NOT PROGRAM!	N/A	000
022	ZONE 1 Definition: BURGLAR; Delay (Delay 1), Slow loop-response.	000-248	064
023	ZONE 2 Definition: BURGLAR; Delay (Delay 2), Slow loop-response.	000-248	072
024	ZONE 3 Definition: BURGLAR; Instant (Interior), Slow loop-response	000-248	081
025	ZONE 4 Definition: BURGLAR; Instant (Perimeter), Slow loop-response	000-248	065
026	ZONE 5 Definition: BURGLAR; Instant (Perimeter), Slow loop-response	000-248	065
027	ZONE 6 Definition: BURGLAR; Instant (Perimeter), Slow loop-response	000-248	065
028	ZONE 7 Definition: BURGLAR; Instant (Perimeter), Slow loop-response	000-248	065
029	ZONE 8 Definition: FIRE; Slow loop-response	000-248	066
030	EXIT timer (all Burglar zones); seconds	001-255	060
031	ENTRANCE Delay #1 timer; seconds	001-255	030
032	ENTRANCE Delay #2 timer; seconds	001-255	045
033	COMMUNICATOR delay before dialing; in seconds. 000=COMMUNICATOR disabled.	000-255	000

*Program using "USER" Programming Method. Do not use "Installer" Programming.

LOCATION	DESCRIPTION	RANGE	DEFAULT VALUE
034	BURGLAR–Output Cutoff timer; minutes 000=No Cutoff	000-255	015
035	FIRE–Output Cutoff timer; minutes 000=No Cutoff–must be manually reset	000-255	000
036	POLICE–Output Cutoff timer; minutes 000=No Cutoff	000-255	015
037	MEDICAL–Output Cutoff timer; minutes 000=No Cutoff	000-255	015
038	SYSTEM CONFIGURATION (See page 9.)	––	000
039	SYSTEM USE ONLY–DO NOT PROGRAM	N/A	000
040	Interior/Delay default.	000-003	000
041	COMMUNICATOR dial attempts.	001-255	008
042	COMMUNICATOR; Telephone #1 data format.	001-004	002
043	COMMUNICATOR; Telephone #2 data format.	001-004	002
044	COMMUNICATOR; Account code (MSD)	000-015	008
045	COMMUNICATOR; Account code (Middle digit)	000-015	008
046	COMMUNICATOR; Account code (LSD)	000-015	008
047	Keypad POLICE audible/silent Piezo 000=Silent Piezo (pre-alarm)	N/A	255
048	COMMUNICATOR; ZONE 1 code	000-015	003
049	COMMUNICATOR; ZONE 2 code	000-015	003
050	COMMUNICATOR; ZONE 3 code	000-015	003
051	COMMUNICATOR; ZONE 4 code	000-015	003
052	COMMUNICATOR; ZONE 5 code	000-015	003
053	COMMUNICATOR; ZONE 6 code	000-015	003
054	COMMUNICATOR; ZONE 7 code	000-015	003
055	COMMUNICATOR; ZONE 8 code	000-015	001
056	COMMUNICATOR; Keypad FIRE code	000-015	001
057	COMMUNICATOR; Keypad POLICE code	000-015	002
058	COMMUNICATOR; Keypad MEDICAL code	000-015	255
059	COMMUNICATOR; Opening (Disarm) code. Exception Opening=normal code + 16.	000-031	255
060	COMMUNICATOR; Closing (NO shunts) code	000-015	255
061	COMMUNICATOR; Closing (Shunts) code	000-015	255
062	COMMUNICATOR; Cancel code	000-015	255
063	COMMUNICATOR; Restore code	000-015	255
064	COMMUNICATOR; Fire-Trouble code	000-015	255
065	COMMUNICATOR; Low-battery code	000-015	255
066	COMMUNICATOR; 24-hour test code	000-015	255
067	SYSTEM USE ONLY–DO NOT PROGRAM!	––	000
068-097	COMMUNICATOR; Telephone #1 (30 digits).	000-013	255
098-127	COMMUNICATOR; Telephone #2 (30 digits).	000-013	255

INSTALLER'S PROGRAMMING WORKSHEETS

Zone Identification

ZONE	ZONE TYPE/AREA/DEVICES	N/C	N/O-N/C E-O-L
1	_____	☐	☐
2	_____	☐	☐
3	_____	☐	☐
4	_____	☐	☐
5	_____	☐	☐
6	_____	☐	☐
7	_____	☐	☐
8	_____	☐	☐

ZONES—FACTORY PROGRAM

ZONE 1: BURGLAR DELAY (1)
ZONE 2: BURGLAR DELAY (2)
ZONE 3: BURGLAR INTERIOR
ZONE 4: BURGLAR PERIMETER
ZONE 5: BURGLAR PERIMETER
ZONE 6: BURGLAR PERIMETER
ZONE 7: BURGLAR PERIMETER
ZONE 8: FIRE

ALL ZONES FACTORY-SET FOR SLOW-LOOP RESPONSE

Programming Information

MEMORY LOCATION	DESCRIPTION	FACTORY PROGRAM	DATA TO PROGRAM
000	FAST LOOP RESPONSE TIME	002	_____ (MILLISECONDS)
001	SLOW LOOP RESPONSE TIME	008	_____ (MILLISECONDS)
005	TWO-DIGIT ARM (000=ENABLE)	255	_____
017	ACCESS OUTPUT TIME	020	_____ (SECONDS)
022	ZONE 1 DEFINITION	064	_____
023	ZONE 2 DEFINITION	072	_____
024	ZONE 3 DEFINITION	081	_____
025	ZONE 4 DEFINITION	065	_____
026	ZONE 5 DEFINITION	065	_____
027	ZONE 6 DEFINITION	065	_____
028	ZONE 7 DEFINITION	065	_____
029	ZONE 8 DEFINITION	066	_____
030	EXIT TIME	060	_____ (SECONDS)
031	ENTRANCE TIME #1	030	_____ (SECONDS)
032	ENTRANCE TIME #2	045	_____ (SECONDS)
033	DIALER DELAY TIME (000=DISABLE)	000	_____ (SECONDS)
034	BURGLAR CUTOFF TIME	015	_____ (MINUTES)
035	FIRE CUTOFF TIME	000	_____ (MINUTES)
036	POLICE CUTOFF TIME	015	_____ (MINUTES)
037	MEDICAL CUTOFF TIME	015	_____ (MINUTES)
038	CONTROL CONFIGURATION	000	_____
040	INTERIOR/DELAY MODE	000	_____
041	DIALOUT ATTEMPTS	008	_____
042	TEL. NO. #1 FORMAT	002	_____
043	TEL. NO. #2 FORMAT	002	_____
044	ACCOUNT CODE (MSD)	008	_____
045	ACCOUNT CODE (MIDDLE)	008	_____
046	ACCOUNT CODE (LSD)	008	_____
047	SILENT KEYPAD POLICE (000=ENABLE)	255	_____
048	ZONE 1 ALARM CODE	003	_____
049	ZONE 2 ALARM CODE	003	_____
050	ZONE 3 ALARM CODE	003	_____
051	ZONE 4 ALARM CODE	003	_____
052	ZONE 5 ALARM CODE	003	_____
053	ZONE 6 ALARM CODE	003	_____
054	ZONE 7 ALARM CODE	003	_____
055	ZONE 8 ALARM CODE	001	_____
056	KEYPAD FIRE CODE	001	_____
057	KEYPAD POLICE CODE	002	_____
058	KEYPAD MEDICAL CODE	255	_____
059	OPENING REPORT ON ALARM CODE	255	_____
060	CLOSING WITH NO SHUNTS CODE	255	_____
061	CLOSING WITH SHUNTS CODE	255	_____
062	CANCEL CODE	255	_____
063	ZONE RESTORAL CODE	255	_____
064	FIRE TROUBLE CODE	255	_____
065	LOW BATTERY CODE	255	_____
066	COMMUNICATOR TEST CODE (255=DISABLE)	255	_____
068-097	TEL. NO. #1	255	_____
098-127	TEL. NO. #2	255	_____

Zone Identification

ZONE	ZONE TYPE/AREA/DEVICES	N/C	N/O-N/C E-O-L
1		☐	☐
2		☐	☐
3		☐	☐
4		☐	☐
5		☐	☐
6		☐	☐
7		☐	☐
8		☐	☐

ZONES—FACTORY PROGRAM

ZONE 1: BURGLAR DELAY (1)
ZONE 2: BURGLAR DELAY (2)
ZONE 3: BURGLAR INTERIOR
ZONE 4: BURGLAR PERIMETER
ZONE 5: BURGLAR PERIMETER
ZONE 6: BURGLAR PERIMETER
ZONE 7: BURGLAR PERIMETER
ZONE 8: FIRE

ALL ZONES FACTORY-SET FOR SLOW-LOOP RESPONSE

Programming Information

MEMORY LOCATION	DESCRIPTION	FACTORY PROGRAM	DATA TO PROGRAM
000	FAST LOOP RESPONSE TIME	002	_____ (MILLISECONDS)
001	SLOW LOOP RESPONSE TIME	008	_____ (MILLISECONDS)
005	TWO-DIGIT ARM (000=ENABLE)	255	_____
017	ACCESS OUTPUT TIME	020	_____ (SECONDS)
022	ZONE 1 DEFINITION	064	_____
023	ZONE 2 DEFINITION	072	_____
024	ZONE 3 DEFINITION	081	_____
025	ZONE 4 DEFINITION	065	_____
026	ZONE 5 DEFINITION	065	_____
027	ZONE 6 DEFINITION	065	_____
028	ZONE 7 DEFINITION	065	_____
029	ZONE 8 DEFINITION	066	_____
030	EXIT TIME	060	_____ (SECONDS)
031	ENTRANCE TIME #1	030	_____ (SECONDS)
032	ENTRANCE TIME #2	045	_____ (SECONDS)
033	DIALER DELAY TIME (000=DISABLE)	000	_____ (SECONDS)
034	BURGLAR CUTOFF TIME	015	_____ (MINUTES)
035	FIRE CUTOFF TIME	000	_____ (MINUTES)
036	POLICE CUTOFF TIME	015	_____ (MINUTES)
037	MEDICAL CUTOFF TIME	015	_____ (MINUTES)
038	CONTROL CONFIGURATION	000	_____
040	INTERIOR/DELAY MODE	000	_____
041	DIALOUT ATTEMPTS	008	_____
042	TEL. NO. #1 FORMAT	002	_____
043	TEL. NO. #2 FORMAT	002	_____
044	ACCOUNT CODE (MSD)	008	_____
045	ACCOUNT CODE (MIDDLE)	008	_____
046	ACCOUNT CODE (LSD)	008	_____
047	SILENT KEYPAD POLICE (000=ENABLE)	255	_____
048	ZONE 1 ALARM CODE	003	_____
049	ZONE 2 ALARM CODE	003	_____
050	ZONE 3 ALARM CODE	003	_____
051	ZONE 4 ALARM CODE	003	_____
052	ZONE 5 ALARM CODE	003	_____
053	ZONE 6 ALARM CODE	003	_____
054	ZONE 7 ALARM CODE	003	_____
055	ZONE 8 ALARM CODE	001	_____
056	KEYPAD FIRE CODE	001	_____
057	KEYPAD POLICE CODE	002	_____
058	KEYPAD MEDICAL CODE	255	_____
059	OPENING REPORT ON ALARM CODE	255	_____
060	CLOSING WITH NO SHUNTS CODE	255	_____
061	CLOSING WITH SHUNTS CODE	255	_____
062	CANCEL CODE	255	_____
063	ZONE RESTORAL CODE	255	_____
064	FIRE TROUBLE CODE	255	_____
065	LOW BATTERY CODE	255	_____
066	COMMUNICATOR TEST CODE (255=DISABLE)	255	_____
068-097	TEL. NO. #1	255	_____
098-127	TEL. NO. #2	255	_____

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