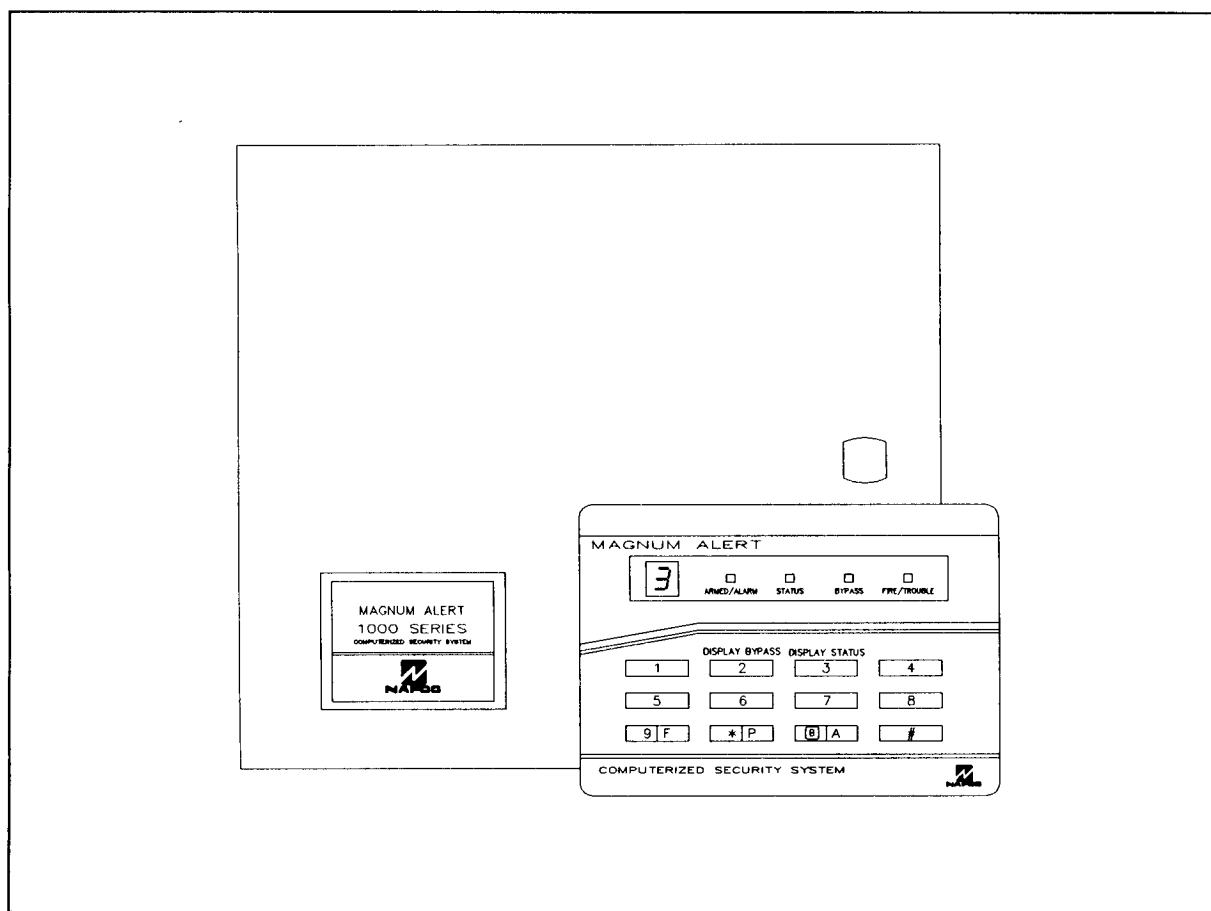




INSTALLATION INSTRUCTIONS

MAGNUM ALERT 1008e/1008eM CONTROL PANEL/COMMUNICATOR



UL Listed

MA1008e: Household Fire & Burglary Warning System Control Unit

MA1008eM: Burglar Alarm System Control Unit

See page 10 for a summary of changes from the previous edition.

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1. INTRODUCTION

GENERAL DESCRIPTION

The MAGNUM ALERT-1008e and MA1008eM are microcomputer-based eight-zone control panels with provisions for Ambush, three Keypad Panics (Fire, Police and Auxiliary), a supervised Fire Zone and a variety of reporting features. An event log, accessible only through Napco PCD2000 Quickloader™ software, monitors up to 82 prior events. The MA1008eM "Mercantile" version is supplied with a heavy-duty enclosure for increased tamper resistance and a tamper switch for tamper protection. (Note: Do not use Fire Zones in a Mercantile installation.)

The system is contained within a wall-mounted enclosure and includes an integral digital communicator and a power transformer. If complemented by Napco wireless transmitters and receiver (optional), the MA1008e will function as a wireless/hardwire system. (Refer to R1000 Receiver Installation Instructions WI604 for transmitter mapping instructions.)

The keypad allows the user to:

- arm and disarm the system,
- check the status of each zone,
- check which zones were violated after an alarm,
- selectively bypass one or more zones,
- display bypassed zones,
- cancel entry delay,
- send a Panic or Ambush alarm,
- enter or change arm/disarm codes,
- test the audible alarm and backup battery,
- test each zone for problems (Fault Find),
- test the telephone line while disarmed,
- reset Ac-Failure indication,
- bypass a Priority Zone with Bypass
- turn the Chime feature on/off, and
- program zone features and communicator information

Four LEDs, a display and a sounder on the keypad provide visual and audible system and individual zone status information. Most keys have secondary functions that are accessed by holding down the key until the sounder beeps, and are therefore termed "hold-down" functions. The following hold-down functions are provided:

Key [1]: Alarm Test

Key [2]: Display Bypassed Zones

Key [3]: Display Status

Key [4]: Instant Alarm (cancels entry delay)

Key [5]: Chime on/off

Key [6]: Communicator Confidence Test or Manual Download (see text)

Key [7]: Fault Find

Key [8]: Program

Key [9]: Reset (System-trouble indication; *Failure-to-Communicate* sounder; Day-Zone indication; Alarm-Memory display; Fire Zone; Fault-Find mode; Bypass Priority-with-Bypass; and Power-Up Delay)

Key [B]: Alarm History (Indicates last alarmed zone(s))

The panels may be programmed in a variety of ways: (a) from the keypad, in its secondary Dealer-Program Mode of

operation; (b) from a PROM (programmable read-only memory), which is itself programmed on an accessory programmer; or (c) from an IBM PC-compatible computer using Napco's PCD2000 Quickloader™ Software.

Designed for use with the PCI2000 Computer Interface Kit, the MA1008e includes a modem to permit remote downloading/uploading over telephone lines or local downloading using a PCL2000 Local Download Cable.

FEATURES

Protection Zones

- Seven end-of-line-resistor supervised zones.
- Two separately-programmable entry delays for Exit/Entry Zones.
- Burglary Zone options include:
 - Priority or Priority with Bypass
 - Selective or Group Bypassing
 - 24-Hour Protection
 - Day Zone Supervision
 - Auto Reset
 - Exit/Entry Delay 1; Exit/Entry Delay 2
 - Preprogrammed Auto Bypass (removable)
 - Optional 50mS or 7mS Loop Response (normally 750mS)
 - Programmable Abort Delay
 - Fire on Burglary Zone
- Separate supervised Fire Zone
- Three keypad panics

Alarm Outputs

- Timed Burglary (sweep siren) and Fire (steady siren) Output: Programmable by zone and time
- Timed Fire Output: Fixed to dedicated and programmed Fire Zones, programmable for time
- Pulsing Steady Siren Output: Fixed to dedicated and programmed Fire Zones, programmable for time
- NTO (No Timed Output) Lug
- Optional voltage on alarm

Keypad Functions

- Keypad permits:
 - Arm/Disarm Code Selection of up to 8 user codes, up to 4 digits each
 - Digital Code Entry to arm and disarm system
 - Selective and Group Bypass Selection
 - Panic Zone Activation
 - Ambush Activation
 - Hold-Down Function Access
 - Resetting of various functions and conditions
 - Programming zone features and communicator options
- LEDs display:
 - Alarm State (armed/disarmed) (ARMED/ALARM)
 - Zone Status (STATUS) - one or more zones in trouble
 - Zones Bypassed - one or more zones removed
 - Fire Zone Status (FIRE/TROUBLE)
 - System troubles

- Display indicates:
 - Zone(s) in alarm and alarm history
 - Zone(s) in trouble
 - Zone(s) bypassed
 - System troubles
 - Programmed data entries (Dealer Program Mode)
- Sounder signals:
 - Entry Delay in Progress
 - Hold-Down Function Accessed
 - Entry Door Opened while Disarmed (Chime)
 - System Armed with a Zone in Trouble
 - Day Zone in Trouble
 - Fire Zone Alarm/Trouble
 - Central-Station Ringback
 - *Failure-to-Communicate* system trouble
 - Exiting Dealer Program Mode

Communicator Features

- Integral digital communicator with true dial-tone detection, double-pole line seizure and anti-jam.
- Programmable abort delay time.
- Rotary or TouchTone® dialing available. Rotary dialing available as backup to unsuccessful TouchTone dialing.
- Two telephone numbers and receiver/data formats can be accessed.
- Two-digit event codes and 4-digit subscriber codes programmable for those receivers accepting these formats.
- Central-Station Ringback on closing or Auxiliary panic.

Reporting Features

- Report on Alarm
- Opening and/or Closing Reporting by Individual User
- Opening Report After Alarm
- Day Zone Trouble; Fire Zone Trouble
- Ambush; Panic; Keypad Auxiliary Panic
- Test Timer; Reset Test Timer on Report
- Ac Failure; Low-Battery Report
- Force-Arm Report; Force-Arm/Status Report
- Control-Panel Restore Report; Zone-Restore Report
- Backup Reporting; Double Reporting; Split Reporting

Other Features

- Supports Napco's *Super Spectrum™* Wireless System
- Audible Bell-Test on Arming
- Power-Up in Last State
- Programmable Chime Duration
- Chime/Display Chime Mode
- No End-of-Line Resistor
- Watch Mode
- Sensor Watch™
- 2- or 4-Wire Smoke Detector Compatibility on dedicated Fire Zone
- Electronic Dealer Lockout prevents unauthorized access.

SPECIFICATIONS

Operating Temperature: 0–49 °C (32–120 °F)
 Input Power: 16Vac, Class 2 step-down transformer TRF12 (19.2VA) or TRF11* (40VA)
 Loop Voltage: 10–13Vdc
 Loop Current: 2.8mA (normal resistance)
 Loop Resistance: 300Ω maximum series resistance
 Alarm Output (Burg/Fire): *Commercial*, 12–12.5Vdc, 1.2A maximum; *Residential*, 10.9–12.5Vdc, 125mA max.
 (Dry) Contact Ratings: 24Vdc, 2A (resistive)
 Auxiliary Output: *Commercial*, 12Vdc regulated; *Residential*, 10.6–12.5Vdc
 Combined Standby Current: (Remote Power + Aux. Output + Relay Output) 450mA maximum with standard TRF12; 500mA maximum with optional TRF11
 Remote Station,
 Current: 35mA typical
 Maximum Number: 5
 Recommended Battery: Rechargeable, sealed lead-acid, RBAT4 (12Vdc, 4AH) or RBAT6* (12Vdc, 6AH)
 Standby Time: 6 hours at 350mA Combined Standby Current
 Fuses,
 Burglary/Fire Output: 3A, 1AG (F2)
 Remote Power: 1A, 1AG (F3)
 Battery: 5A, 1AG (F1) (Non-Replaceable)
 Housing Dimensions: *MA1008e*, 12.6 x 14.1 x 3.6" (32 x 36 x 9.1cm) HxWxD; *MA1008eM*, 13.3 x 13.3 x 3.8" (33.8 x 33.8 x 9.7cm) (HxWxD)
 Shipping Weight: *MA1008e*, Approx. 14 lb (6.4kg); *MA1008eM*, Approx. 11 lb (5.0kg)
 *The TRF11 (40VA) Transformer and RBAT6 (6AH) Battery are required for Mercantile installations.

ORDERING INFORMATION

Equipment Supplied

MA1008e – Residential 8-zone (7 Burglary; 1 Fire; 3 Keypad Panics) 12-volt alarm control panel with integral communicator and siren driver, RP1054e keypad, RBAT4 battery and TRF12 power transformer.
MA1008eM – As above, but for Mercantile installations. Less keypad and battery, but with heavy-duty enclosure, Tamper Switch and TRF11 40VA power transformer.

Optional Peripherals and Accessories

RP1054e Designer-Style 4-Wire Keypad
 RP1000eLCD Designer-Style Keypad with LCD display
 R1000 Wireless Receiver/Interface, with antenna
 T1000WD Wireless Window/Door Transmitter
 T1000PB1 Wireless Hand-Held Panic Button Transmitter
 T1000MC1 Wireless Money Trap Transmitter
 T1000MD1 Wireless Pendant Transmitter, with neckchain
 RBAT4 Rechargeable Battery, 12Vdc, 4AH
 RBAT4GS Rechargeable Battery, 12Vdc, 4AH
 RBAT6 Rechargeable Battery, 12Vdc, 6AH
 RBAT6GS Rechargeable Battery, 12Vdc, 6AH
 RBAT-H1* Dual Battery Harness (not for UL installations)
 TRF8 Transformer, 16Vac, 14.4VA, Class 2 (UL Listed)
 TRF11 Transformer, 16Vac, 40VA, Class 2 (UL Listed)
 TRF12 Transformer, 16Vac, 19.2VA, Class 2 (UL Listed)
 DH-1* Diode Harness
 EOL2.2K End-of-Line Resistor Assembly, 2.2kΩ

FT2200 End-of-Line Relay/Resistor Supervisory Module
 PS3002 Power-Supply Module
 MAV-15 Two-Way Voice/Listen-In Module
 MVA-1000 Talking Siren Driver
 GSM-400 Ground-Start Module
 LOCK-8 Lock & Key Set
 M278* Line-Reversal Module
 PCI2000 Quickloader Interface and Software
 PCL2000 Quickloader Local Download Cable
 TM900* Timer Module
 WL1 Wire with Lug Connector, 20"
 PRO410M PROM Programmer
 DD493BNK Blank PROM

*UL-Listed Accessory

UL CLASSIFICATION

Household Fire and Burglary Warning System Control Unit. Combination Fire and Burglary (see *Compatible UL-Listed Devices*).

COMPATIBLE UL-LISTED DEVICES (See Note below)

For Residential control panels:

Smoke Detectors:

4-Wire:

System Sensor 1812, 2812TH; 1851B, 2851B, 2851BTH, each with B102' Base

ESL 445AT*, 445C, 445CT, 445CR, 445CRT

Gentex 812, 812T, 812P, 812PT, 812PH; 8120, 8120T, 8120P, 8120PT, 8120PH

Hochiki SLG with YBC-RL4-RA Base

2-Wire

System Sensor 1400*, 2400*, 2400TH*, each with B101B Base; 1451*, 2451*, 2451TH*, each with B401B Base

Subtract total smoke-detector alarm current from available standby current.

Horn:

Wheelock 34T-12R* (Rated at 85dB for indoor household applications)

***Note:** Devices not identified with an asterisk (*) require optional power supply PS3002 for UL installations. Compatibility of detectors without "*" has not been evaluated by UL.

For Mercantile control panels:

Bells:

Ademco AD8-12, AD10-12

Amseco MBL-8/12V, -10/12V

Grade-A Bell:

Ademco AB-12, Bell in Box

Speakers:

Ademco 713

Atlas Sound VT-158U

SUMMARY OF UL REQUIREMENTS

Note: The MA1008e may not be used for fire protection where prohibited by local codes. The MA1008eM may not be used for fire protection in *any* installation.

Residential

The following summarizes UL programming and wiring requirements for *Residential Household Fire and Burglary* installations.

- Recognized Limited-Energy Cable for initiating, indicating and supplementary circuits;
- Initiating loops supervised if longer than 3 feet;
- FT2200 End-of-Line Relay for Fire (if using 4-wire smoke detectors);
- Minimum alarm timeout of 4 minutes;
- Maximum exit time: 60 seconds; maximum entry time: 45 seconds;
- Do not program *Don't Wait for Handshake, Telco 1 & 2; Swinger Shutdown; Force Arming; Group Bypass; 7mS or 50mS Loop Response. Abort Delay* may not exceed 45 seconds.
- Program *Disable Callback Download; Disable Function-6 Download;*
- *Key Input on Zone 7* feature may not be enabled;
- Automatic dialer may not dial a police-station number that has not been dedicated for such service;
- Battery Fuse F1 is not field serviceable. If F1 is open, return board to Napco for repair;
- System must be tested at least weekly under ac/battery and battery-only conditions;
- Replace the rechargeable battery at least every 5 years;
- If the battery is heavily discharged, replace it or have it tested by a qualified technician.
- Remote panic switches must be located in the same room as the control unit and keypad. Wiring may not pass through any barrier.
- For silent panic, connect only to UL-listed holdup devices.

In California: CFM-listed for residential use. (Listing No. 7165-992:111.)

Mercantile

The following summarizes UL programming and wiring requirements for *Mercantile* installations.

- TRF11 (40VA) and RBAT6 (6AH) are required.
- Heavy-duty enclosure with door tamper (MA1008eM) is required.
- Digital communicator must be utilized for Low Battery reporting, but not Low Battery restore.
- Program *Audible Test on Arming; Force-Arm Code;* a maximum exit delay of 10 seconds; *Disable Display Bypass; Auto-Reset.*
- Do not use Fire Zones
- *For Grade-A Local Mercantile:* Ademco AB12 Grade-A Bell & Box is required.

2. INSTALLATION

CONTROL-PANEL MOUNTING

Choose a mounting location accessible to (a) a continuously-powered ac source, (b) a cold-water-pipe ground ideally no further away than 10 feet, and (c) telephone lines (keep telephone wiring away from speaker wires). Remove appropriate knockouts for cables. Place the control panel at a convenient viewing height and mark the mounting holes.

A keypad should be located near the exit/entry door. Up to 5 keypads may be connected if the longest cable run from the panel to the farthest keypad, whether daisy chained or home-run wired, is less than 1000 feet. See *Combined Standby Current* specifications. Each keypad typically draws 35mA, however do not use more than 5 keypads.

The control panel door is secured shut by 3 screws (supplied). A lock and keyset are available as an option (see *ORDERING INFORMATION*).

Grounding

Connect the mounting screw at the lower-left corner of the circuit board (EARTH GROUND) to a metal cold-water pipe. Do not use a gas pipe, plastic pipe or ac ground connections. Use at least 16-gauge wire. Make the run as short and direct as possible. Avoid sharp bends in the wire.

Tamper Switches

Tamper switches may be installed to prevent opening of the enclosure door or removal of the cabinet from the wall. Ideally, tamper switches should be connected to a zone that is active at all times, thus it may be necessary to program that zone for *24-Hour Protection*. When used on a normally-open zone, normally-closed tamper switches (open when set) should be wired in parallel. On a normally-closed zone, install Napco normally-open tamper switches (closed when set) in series. There are two tamper-switch provisions in the cabinet:

1. To prevent cabinet removal from the wall, there are three mounting holes on the left side of the cabinet; another hole on the back that allows the switch button to contact the wall.
2. To prevent opening the cabinet door, there are three mounting holes on the right side of the cabinet. When mounted, the tamper-switch button should contact the inside of the door. Be sure to alert the user that opening the enclosure door will cause a tamper alarm.

KEYPAD MOUNTING (RP1054e)

Opening the keypad. There are two slots along the bottom edge of the keypad about 1 inch from each side. To open, insert a medium screwdriver into either slot and push up with a slight twisting motion to release the retainer tab. Repeat for the other slot. Pull out at the bottom and lift off the two hooks at the top.

This keypad features a handy pull-up reference label. *Before mounting the keypad onto the wall*, push the Sliding Label Plate (with label and felt backing affixed and handle facing forward) down the guides at the rear of the keypad until it snaps into place. Once installed, the Sliding Label Plate cannot be removed without first removing the keypad from the wall.

When installing the rear case, be sure that the words "TOP"

and "UP" (molded into the case) are properly oriented. The rear case is provided with a variety of holes to accommodate virtually any mounting situation. The four *angled* elongated holes are for mounting directly into a wall using appropriate screws; these holes will allow levelling adjustment. If installing into a double-gang box, insert mounting screws through the two *vertical* elongated holes on the left side of the case and into the box. If the box is visible when viewed from the front, adjust the keypad vertically, then tighten the screws. Then, using hardware suitable for the mounting surface, add one or two screws at the right side of the keypad case directly into the wall to ensure a secure installation.

Keypad Wiring (Also see Wiring Diagram)

Connections to the keypad are summarized in the following table. Avoid routing keypad wiring close to zone wiring.

Note: If using a soldering iron, avoid splashing solder onto keypad circuit board or components.

Keypad Wire Color	Control-Panel Terminal
Yellow	9 (Clock)
Green	10 (I/O)
Red	7 (+)
Black	8 (—)
White*	to N/O momentary contact pushbutton switch(es)
White*	

Table 1. Keypad Wiring.

**Wire additional Panic Switches in parallel. Insulate both white wires if not used (a short will cause a panic alarm).*

Remote Panic. To connect a remote (Police) panic button, splice the two white keypad wires to a normally-open momentary-contact pushbutton switch. Similarly, additional panic buttons may be wired in parallel with the first, as needed. If remote panic will not be used, insulate *both* white wires, as a short across them will cause a panic alarm. Note that in UL installations, remote panic buttons must be located in the same room as the keypad, with no intervening barriers.

Backlighting. Keypad backlighting requires no additional wiring. In normal use, the keypad is always dimly backlit. To reduce or disable backlighting, see *Keypad Jumper Options*, which follows.

Keypad Jumper Options

Several white jumpers provide a variety of options. Viewing the keypad from the front, these jumpers are conveniently located at the top edge (Jumper D) and along the right side edge (top to bottom: Jumpers C, B, A and E) for easy access.

Disable Keypad Panic. Cut Jumper A to disable all three keypad panic features. (Cutting Jumper A does *not* disable the two white remote-panic wires.)

Disable Keypad Sounder. Cut Jumper B to completely disable the sounder.

Disable Touchpad Backlight. Cut Jumper C to disable touchpad backlighting.

Reduce Touchpad Backlight. Cut Jumper D to reduce backlight intensity.

Assembling the keypad. To reassemble the keypad after installation, hang the top of the front panel onto the hooks in the rear case and push in firmly at the bottom until the retainer tabs snap into place. (If difficulty is encountered, push the retainer tabs up slightly using a screwdriver, as when removing.)

Refer to Fig. 1. Use any zone for a Tamper Zone and program it for 24-Hour Protection. The Tamper Zone will supervise the cold-water pipe ground, door tamper and bell box. UL installations require a tamper switch on the control-panel door. For this purpose, use the normally-closed (when set) tamper switch supplied with the MA1008eM in series with the Tamper Zone.



Diagram of a two-story house showing the placement of fire alarm devices. The house has a main body and a smaller addition on the right. The main body includes a Living Room, Bedroom, Hall, Recreation Room, Kitchen, and Basement. The addition includes a Bedroom, Hall, and Garage. The roof is labeled 'ATTIC'. A staircase is shown on the left side of the main body. Various symbols are placed throughout the house to indicate the location of fire alarm devices: Control Center (C), Fire Alarm Sounding Device (F), Keypad (K), Smoke Detector (S), and Heat Detector (T).

Legend:

- C** CONTROL CENTER;
- F** FIRE ALARM SOUNDING DEVICE;
- K** KEYPAD;
- S** SMOKE DETECTOR;
- T** HEAT DETECTOR

At least one smoke detector should be installed directly outside each sleeping area. If there is more than one floor, additional smoke detectors should be installed on each level, including the basement. The living-area and basement smoke detectors should be installed near the stairway of the next upper level.

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3. GETTING UP AND RUNNING

POWER-UP SEQUENCE

1. Referring to the Wiring Diagram, (a) connect the keypad to the four KEYPAD Terminals 7 through 10 and (b) install end-of-line resistors (color code red/red/red) across each zone.
2. Connect an earth ground (cold-water pipe) to the *left* screw that secures the circuit board to the cross rail.
3. Connect the power transformer to the AC Terminals 1 and 2 and plug the transformer into ac power.
4. Install the standby battery.
5. Check that the green STATUS LED on the keypad is lit.
6. Install loop wiring to zone terminals and relocate resistors to end of loops. Recheck green STATUS LED.
7. If reporting to a central station, connect a telephone connecting cord to the TELCO terminals: green to 23; red to 24; and PHONE terminals: brown to 25; gray to 26. Then see *CENTRAL-STATION REPORTING*.

DEFAULT PROGRAM

The MA1008e will function as a local alarm control panel *right out of the box!* The following default program is entered at the factory. It is the installer's responsibility to add, change and/or delete features in accordance with these instructions to customize the system to the user's requirements and to conform to local codes.

- Arm/Disarm Code: 1,2,3 (User 1)
- User Program Code: 1,2,3,4,5,6
- Dealer Program Code: 4,5,6,7,8,9
- Exit/Entry (Entry Delay 1): Zone 1
- Entry Delay 1: 30 seconds
- Entry Delay 2: 30 seconds
- Exit Delay: 45 seconds
- Priority: Zones 1–7
- Selective Bypass: Zones 1–7
- 24-Hour Protection: Keypad Panic
- Auto Reset: Zones 1–7; Keypad Panic
- Swinger Shutdown: Zones 1–7; Keypad Panic
- Chime: Zone 1
- Chime Time: 2 seconds
- Burglary Output: Zones 1–7; Keypad Panic
- Burglary Timeout: 15 minutes
- Fire Timeout: 15 minutes
- Download with Answering Machine enabled
- Auto-Reset After Alarm Timeout enabled
- Power-Up In Last State enabled
- Pulsing Fire Output enabled
- Reset Fire enabled
- Keypad Tactile Beep enabled
- Keypad Panic enabled
- Communicator-Confidence Test enabled
- Alarm/Trouble Codes,
 - Zones 1–7: 31–37
 - Panic: 21
 - Fire: 11
 - Ambush: 22

- Fire Trouble: F1
- No Ac: F9
- Low Battery: F8
- Restore Codes,
 - Zones 1–7: E1–E7
 - Fire: E1
 - Fire Trouble: EF
 - No Ac: E9
 - Low Battery: E8
- Closing Codes, Users 1–4: C1–C4
- Opening Codes, Users 1–4: B1–B4
- Force-Arm Code: F

CENTRAL-STATION REPORTING

The following additional programming is required for central-station reporting.

- Report on Alarm
 - Subscriber ID (Account) Numbers, Groups 1 & 2*
 - Receiver Format*
 - Data Format*
 - Telephone Number*
- *Obtained from central station.

Note: Remember, for optimum security, the following code must also be reprogrammed:

- User-1 Code (see *Programming User Codes*, below)

For other programming, see *Dealer Keypad Programming* (Section 4) and the programming aid shown in Fig. 3.

USER KEYPAD PROGRAMMING

Programming User Codes

Note: The User Program Mode is disabled for the first three minutes after power-up to allow you to use the Dealer Program Code. To cancel the delay, hold down Key [9].

Up to eight different Arm/Disarm Codes may be entered into the control panel using the keypad. User Code 5 may be programmed as a Service Code, a special user code intended for temporary or occasional use only (see *Service Code*).

To program a User Code,

1. Hold down Key [8] until the sounder beeps, then enter the User Program Code. (The default User Program Code is 1,2,3,4,5,6, but this code *must* be reprogrammed.) When the User Program Code has been entered, the first three LEDs on the keypad will flash and the sounder will beep rapidly, indicating the User Program Mode.
2. Now enter up to eight codes using any combination of up to four digits (digits 1–9 only).

Examples: press

[B], [1], then any 4 digits = User 1's code*

[B], [5], then any 4 digits = User 5's code**

[B], [8], then any 4 digits = User 8's code

*Default User-1 Code 1,2,3 must be changed.

**May be programmed as *Service Code* or *Arm-Only Code*.

3. To exit User Program Mode, press [B] *twice*.

The numbers selected are the only codes recognized by

the system. Each user should be assigned his own dissimilar code and cautioned against divulging that code to anyone else. Thus, should it become necessary to remove a user from the system, that one code may be voided without affecting other codes, and that user would then be prevented from entry.

Service Code

The Service Code, if programmed, provides reduced access to the control panel for those with limited authority. Operation is similar to that of a regular Arm/Disarm Code, except that the Service Code is disabled at times. When active, it may be used to arm or disarm as many times as necessary. See *User 5 Service Code* in the Glossary.

The Service Code is controlled by User 1. Whenever User 1 arms using his code, the Service Code is deactivated. To activate, merely arm using the Service Code. The Service Code can always be used to arm.

Changing or Voiding a Code

To change any User's Code, refer to *Programming User Codes* and simply change the 4-digit combination. Thus, to change User 3's code, for example:

1. Hold down Key [8] until the function beep sounds.
2. Enter the User Program Code.
3. Press [B], [3], then 4 new digits = User 3's new code.
4. Press [B] twice to exit User Program Mode.

Similarly, User 3's code may be voided by not entering a 4-digit combination. Thus, to void User 3's code:

1. Hold down Key [8] until the function beep sounds.
2. Enter the User Program Code.
3. Press [B], then [3] = User 3's code erased.
4. Press [B] twice to exit User Program Mode.

KEYPAD OPERATION

Arming & Disarming the System

When a User Code is entered into the keypad, the red ARMED/ALARM LED will either come on, indicating that the panel is armed; or go off, indicating that the panel is disarmed. A "P" on the display with a steady sounder indicates an attempt to arm with (a) a system trouble (hold down [9] to reset keypad and arm), or (b) a Priority Zone in trouble (re-enter code, then secure or bypass zone). If a wrong code is entered, the system will fail to respond. Wait at least 2 seconds before attempting to re-enter a code.

Alarm Reset

Disarm the panel to silence a sounding device.

Ambush Zone

The Ambush Zone is tripped by entering the Ambush Code just prior to disarming. Thus, should a user be forced to disarm by an assailant, he can silently signal an emergency while appearing to be merely disarming the system. The Arm/Disarm Code must be entered less than 10 seconds after the Ambush Code for an ambush report to be transmitted.

Keypad Panic

If using an *F/P/A-Panic* keypad, three keypad panics are available: Fire, Police and Auxiliary (cut keypad jumper to enable panics). If enabled, each is tripped by simultaneously pressing the following pairs of panic buttons:

- Fire Panic: press Keys [9/F] and [#]
- Police Panic: press Keys [* /P] and [#]
- Auxiliary Panic: press Keys [B/A] and [#]

Police Panic may be programmed to send a silent alarm to a central station, activate an audible alarm, or both. Note that the key pairs must be pressed at the same time to activate panic. See *Panic Zone* in the Glossary; also see Section 2: *Keypad Jumper Options*.

Bell/Battery Test (Hold-Down Function 1)

The terminal voltage of the battery is constantly monitored by the control panel. Hold-Down Function 1 provides a manual dynamic test by briefly sounding the bell directly from the battery.

A weak or defective battery will be indicated by display of a System Trouble "2". The system trouble display will be cleared and a restore reported when (a) the battery terminal voltage has returned to its specified restored level and (b) the condition has been detected by either the subsequent 24-hour dynamic test, a manual bell/battery test (Hold-Down Function 1) or a manual reset (Hold-Down [9]).

To test the battery with a pre-existing low battery displayed, hold down Key [9] to temporarily reset the keypad, then hold down Key [1] to check bell operation from the battery. If the low-battery display returns the next time the system is disarmed, the battery is still weak and may require replacement. (Allow at least 24 hours for the battery to recharge.) Also see *System Trouble 2: Low Battery*.

Communicator-Confidence Test (Hold-Down Function 6)

This feature checks the telephone line for the presence of a dial tone in those systems that are programmed to communicate with a central station. **Note:** Do not arm and disarm the panel just before making this test.

Hold down Key [6] until the sounder starts to pulse. If the line is okay, the pulsing will stop, otherwise a steady tone will sound (check phone lines). To silence the sounder, hold down Reset Key [9].

Note: Hold-Down Function 6 has a secondary feature (*Manual Download*) that can only be accessed within 5 seconds after arming and disarming the control panel. See *DOWNLOADING FROM A COMPUTER* for use of this feature.

Fault Find (Hold-Down Function 7)

When the Fault-Find mode is accessed, two things occur: (a) the loop response of all zones is preset to 7mS (fastest loop response), and (b) securing a zone in trouble will cause the sounder to beep for about 2 seconds. This set of conditions aids both installer and user. The installer, tapping and poking at suspect points, can easily locate swingers by listening for the beep. Similarly, the user can confirm the repair of a zone in trouble by listening for the beep, and thus eliminate the need of returning to the keypad to visually check after each attempt.

Hold down Reset Key [9] to restore normal operation. Arming the system successfully will automatically cancel the Fault-Find mode.

System Trouble Indications

The following system troubles will display at the keypad, whether armed or disarmed, accompanied by flashing ARMED, STATUS and BYPASS LEDs. The indication may be

temporarily reset by holding down Reset Key [9] in order to check zone status and/or arm the system.

1: Ac Failure. Indicates loss of ac power. The Ac-Failure indication will clear when ac power is restored.

2: Low Battery. Displays when battery terminal voltage drops below 11.5 volts, nominally. The system trouble display will be cleared and a restore reported when (a) the battery terminal voltage has returned to its specified restored level and (b) the keypad is reset using Hold-Down Function 9. Also see *Bell/Battery Test*.

3: Failure to Communicate. Indicates an unsuccessful transmission to the central station. If the panel is armed, disarm. Hold down Key [9] to reset the keypad, then hold down Key [6] to test the phone lines. If the test is successful, the display will clear; otherwise it will return, indicating a need for service. A successful communication followed by a Hold-Down [9] Reset will also clear the display.

Note: If the system is armed and in alarm, the sounder will come on but the violated zones will display, along with a flashing red ARMED/ALARM LED. Subsequent disarming will initiate the system trouble indication.

4: Transmitter Supervisory. (*For wireless systems only*) indicates that a wireless transmitter has not sent a report in

more than 4 hours. Refer to R1000 Receiver Installation Instructions WI604: *SYSTEM TROUBLES* for details.

5: Transmitter Battery. (*For wireless systems only*) indicates a transmitter low-battery condition. Refer to R1000 Receiver Installation Instructions WI604: *SYSTEM TROUBLES* for details.

6. System Trouble 6. (*For wireless systems only*) indicates a receiver trouble (data failure between receiver and panel). Check wiring between receiver and panel. Also check for a short on Zone 5.

7: Auto-Download Failure. Indicates failure of a Function-6 Auto-Download. Reset the display by holding down Key [9], then try again to auto-download the program.

TESTING THE SYSTEM

After installation is completed, test the system as follows. Call the central station to inform them of the test. Initiate an alarm, preferably on a zone that activates a steady output. Verify proper signaling, then call the central station to confirm their receipt of a good transmission.

Important: Be sure to test the operation of all enabled keypad-panic features.

CHANGES FROM PREVIOUS EDITION

This edition accommodates a revised printed-circuit board with modified terminal assignments. The following changes have been made:

Page 2	Telephone Numbers: Technical Service direct line added.
Page 5	ORDERING INFORMATION: MAV-15 and MVA-1000 added. COMPATIBLE UL-LISTED DEVICES: Smoke Detectors updated. SUMMARY OF UL REQUIREMENTS: Residential required programming updated.
Page 6	Grounding: Earth-ground terminal revised.
Page 8	POWER-UP SEQUENCE: Terminal assignments revised.
Page 9	Ambush Zone revised. Bell/Battery Test revised.
Page 11	Example 1: Step 3 corrected (Key [B]).
Page 17	Alarm Outputs & Table 4: Terminal assignments, text and notes revised. Ambush Code revised.
Page 18	Battery Lug added; Burg Lug: + AUX PWR terminal revised.
Page 21	Fire Lug: + AUX PWR terminal revised.
Page 22	Key Input on Zone 7 revised. Listen-In Lug added.
Page 24	Remote Status LED on NTO Lug: + AUX PWR terminal revised. Remove Auto-Bypass revised. Reset Shock Sensors on Arming corrected (power terminals).
Page 25	Smoke Detectors (Note): + AUX PWR terminal revised.
Page 27	Trouble: + AUX PWR terminal revised. Untimed Output: + AUX PWR terminal revised. Audio Verification on NTO Lug revised.
Pages 28–30	INDEX revised.
Page 31	WIRING DIAGRAM revised

4. PROGRAMMING

KEYPAD PROGRAMMING

Keypad Programming may be divided into two sub-groups: User Program Mode and Dealer Program Mode. **USER KEYPAD PROGRAMMING** is limited to user codes. In the Dealer Program Mode, the keypad provides full programming capabilities.

Dealer Keypad Programming.

Set the keypad to the Dealer Program Mode: Hold down Key [8] until a beep sounds, then enter the Dealer Program Code. (The default Dealer Program Code is 4,5,6,7,8,9, but this code *must* be reprogrammed to preserve system security. See Glossary and the programming example, which follows.) The center segment of the numeric display will light to indicate the Dealer Program Mode.

The Dealer Program Mode cannot be accessed while the panel is armed or communicating *except* during the first three minutes after power-up. (See *Power-Up Delay* in Glossary.) To shut the 3-minute "window" early, that is, before it times out, hold down Key [9]. **Note:** If the Dealer Program Mode has been accessed during this interval, complete required programming, exit the Dealer Program Mode (see following), then power down and power up the system once again.

Set the location to be programmed by pressing Key [B] (the three horizontal segments of the display and the green LED will light), followed by the location number. Each location must be entered as a three-digit number, that is, 001, 020, 157, etc. Notice that as each of the three digits is entered, the three display segments extinguish in succession from bottom to top. When the last digit is entered, the yellow LED will light and the display will show the data (if any) programmed in that location.

At this point, several numeric keys take on new function assignments, as shown in Fig. 3.

Keys [1] or [6] (Prior Location) and [2] or [3] (Next Location) - Change the location. Use Key [1] or [6] to move down to the next lower location, or Key [2] or [3] to move

up to the next higher location. Whenever a new location is entered, a beep will sound.

Keys [4] (Data Up) and [7] (Data Down) - select the data for the chosen location: numbers 1–9, 0, and letters B, C, D, E, and F, as will be indicated in the display. Key [4] sequences data values in ascending order; Key [7], in descending order.

Key [5] (Clear) - clears data from the selected location (display will go blank).

Key [8] (Exit) - exits the Dealer Program Mode. Hold down until the beep sounds, then enter the Dealer Program Code within 10 seconds to exit.

Key [B] (Set) - sets the location to be programmed. After pressing Key [B], enter a three-digit location number.

To exit the Dealer Program Mode, hold down Key [8] until the beep sounds; all four LEDs will light. Within 10 seconds, enter the Dealer Program Code; the LEDs will go out. (If the LEDs go out before your code is entered, repeat this procedure.)

Caution: Before exiting the Dealer Program Mode, be sure that Location **083** contains the data shown in Table 2. If the control panel comes up armed on power-up, you have three minutes to access the Dealer Program Mode. Hold down Key [8] for two seconds, then enter your Dealer Program Code. By checking Location **083**, you can prevent accidental erasures of required data from going undetected. (If invalid data reside in Location **083**, a non-existent fire trouble and/or loss of keypad functions may result. If you encounter this problem and need assistance, call Napco's Technical Service Department (toll free) at (800) 645-9445.

Disarmed	Armed
5	7, D or F

Table 2. Valid data for Location 083.

Example 1. Reprogram the existing (default) Dealer Program Code to 8,1,5,4,8,7.

1. Hold down Key [8] until the beep sounds.
2. Enter the existing (default) Dealer Program Code, 4,5,6,7,8,9. The center segment of the display will light.
3. Set Location **244**, the first location of the Dealer Program Code block, as follows: (a) Press Key [B] (the three horizontal display segments and green LED will light); (b) press [2],[4],[4] (the yellow LED will come on and the display will indicate the first digit of the existing code, "4").
4. Program the first digit of the *new* Dealer Program Code as follows: Press Key [4] (Data Up) repeatedly until an "8" is displayed.
5. Press Key [2] (Next Location) once to advance to Location **245**, the second digit of the code. A "5" (the second digit of the default code) will be displayed. To program the second digit of the *new* code press Key [5] (Clear), then press Key [4] (Data Up) once – a "1" will be displayed.
6. Press Key [2] (Next Location) once again to advance to the third location (**246**) of the code. Using Key [7] (Data Down), replace the "6" with a "5".
7. Repeat this procedure, using Key [2] to advance locations and Keys [4] and [7] to select data, until the entire code has been reprogrammed. To check the code, press Key [1] (Prior Location) five times to return to Location **244**, then press Key [2] to step through each location, noting the data displayed.
8. To exit the Dealer Program Mode, hold down Key [8] until the beep sounds, then enter the *new* Dealer Program Code within 10 seconds. This will confirm operation of the new code.

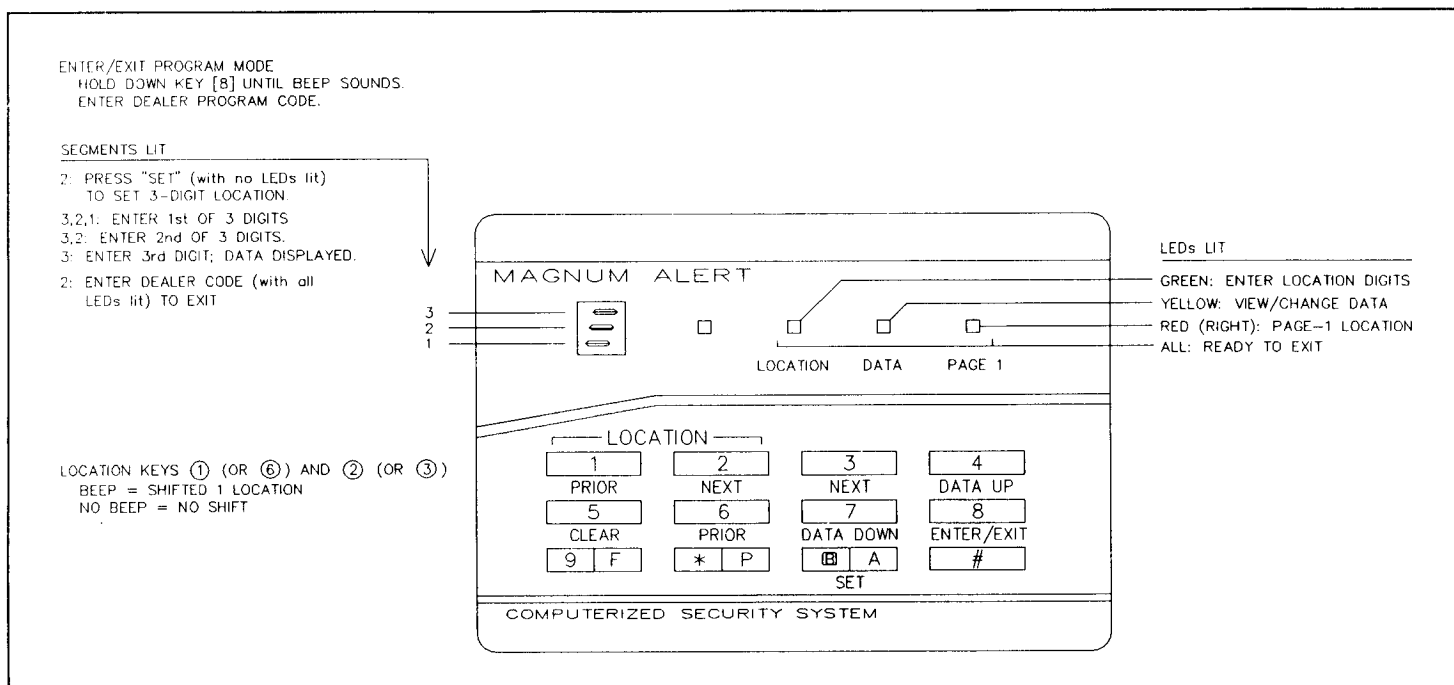


Fig. 3. Keypad functions in Dealer Program Mode (RP1054e Keypad shown).

PROGRAMMING SHEETS.

Programming Sheets similar to those which follow are completed when planning system features and communicator information for the particular installation. These sheets should be retained for future reference. The Glossary contains information and instructions for programming each feature.

General Programming Steps

1. Contact the central station to confirm receiver format, data format, event codes, subscriber numbers and telephone number(s). Two receiver descriptions and telephone numbers, and up to 4 Subscriber Identification Numbers may be required.
2. Fill out the Programming Record Sheets by circling the numbers representing the zone features or system features to be programmed. Referring to the programming sheets and the accompanying table, note that each program location is assigned data values (1,2,4,8) such that adding any combination will produce a unique total (entry). Also note that because the entry can be only one character, the two-digit totals greater than 9 are replaced by zero and letters B through F, as shown. Check the Glossary for guidance in selecting "data" entries.

3. To program the subscriber PROM, follow the instructions furnished with the programmer. While programming, remember to keep the address page number in mind, and be sure that the position of the PAGE switch (PRO410/410M) is set accordingly. **Note:** If using the Napco PRO410/410M programmer, before attempting to program either page, be sure that all data in programmer memory are erased (press [ERASE], then [EXECUTE]).

4. Program the entries (data totals from Programming Record Sheets in Step 2) into the respective locations. The display will show the entry numerically, but will display "0" for the number 10, and letters "B", "C", "D", "E", and "F" for the numbers 11 through 15, respectively. To program a 10, enter [0]. To program 11 through 15, enter [B] through [F] respectively. If using the Napco PRO410/410M programmer to program a PROM, use the [PLUS] key to enter any two or more digits that add up to the desired entry. To program 13, for example, enter either [d] or [8] [PLUS] [5], or [8] [PLUS] [4] [PLUS] [1], etc. Similarly, to add to an existing PROM location, first press the [PLUS] key, then the complementary digit, otherwise the digit entered will *replace* the digit in memory. Refer to the PRO410/410M instructions for further programming information.

Example 2. Program Zones 1-7 to report on alarm. Referring to the Communicator Information section of the Programming Sheet, *Report on Alarm* is contained in Locations 166 and 167. Circle data values for Zones 1-7.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8/Panic	
Report on Alarm	166	166	166	166	167	167	167	167	location
	①	②	④	⑧	①	②	④	8	data

Add the data values for Location 166: $1 + 2 + 4 + 8 = 15$. From Table 3, 15 is programmed as an "F". Now add the data values for Location 167: $1 + 2 + 4 = 7$. From Table 3, enter a "7" in Location 167.

LOCATION XXX				ENTRY
				blank
(1)				1
	(2)			2
(1)	(2)			3
		(4)		4
(1)		(4)		5
	(2)	(4)		6
(1)	(2)	(4)		7
			(8)	8
(1)			(8)	9
	(2)		(8)	0 (10)
(1)	(2)		(8)	B (11)
		(4)	(8)	C (12)
(1)		(4)	(8)	D (13)
	(2)	(4)	(8)	E (14)
(1)	(2)	(4)	(8)	F (15)

Table 3. Determining data entry for a location. Numbers in parentheses indicate selected zones or features. (See Programming Sheet.)

DOWNLOADING FROM A COMPUTER USING NAPCO SOFTWARE AND INTERFACE.

Local Downloading

Data may be locally downloaded with the use of a PCL2000 Local Download Cable, which is supplied with the PCI2000 interface. The panel need not be wired nor the keypad connected. Also refer to the instructions included with the PCI2000.

1. Referring to the PCI2000 Wiring Diagram, connect the PCL2000 Local Download Cable between the modem LINE connector and the control panel TELCO terminals. (Remove the plug shown coming from the PCI2000-J5.)
2. With the control panel unpowered, set up the computer for a *Function-6 Method* download.
3. When a high-pitched tone is heard at the modem, power up the panel (connect the battery or transformer). A connection will automatically be established, ignoring the status of the zones.
4. Make all required selections and download the program.
5. After the computer indicates a successful download, terminate the connection, then remove power to the panel.

Remote Downloading

Data may be remotely downloaded to the panel via telephone lines using an IBM PC-compatible computer with Napco PCD2000 software and PCI2000 interface. On-screen prompting and the extensive use of help menus simplify programming, and an error-checking mode locates omissions and incompatible data to reduce the possibility of mistakes. Remote downloading requires (a) a modem compatible with the PCI2000 and (b) PCD2000 software Version 2.E or higher. **Note:** Remote downloading may be disabled through programming and *must* be disabled in UL installations.

A program may be downloaded remotely using either of the following procedures.

Callback Method. This method is used to download to an unattended panel. The MA1008e will accommodate an answering machine at the site if line seizure is used on the house phones. Program a "1" in Location **082** (*Enable Download with Answering Machine*). Refer to the instructions furnished with the PCD2000 for details. **Note:** The number of rings programmed into the panel must exceed that of the answering machine.

Function-6 Method. Call the central station from the site to request a *Manual Download*. During this procedure, voice contact will be lost, therefore both the installer and the computer operator should be familiar with the operation. When a high-pitched tone is heard at the site phone, arm the panel, disarm, then access Hold-Down Function 6 (*Manual Download*) within 5 seconds; the site phone will go dead. Hang up the phone and wait for a call from the central station confirming a successful download.

Auto-Download Method. Napco PCD2000 Software Version 2.E and later includes *PC-Preset*, a utility wherein blocks of up to 99 programs each may be preset for remote uploading or downloading from the installation site while the computer is unattended. The *Auto-Download ID Number* identifies the program in the computer that will be selected. (Note that the Dealer Program Code in the PCD2000 must agree with that of the control panel for the remote connection to be established.)

At the installation site, the *Auto-Download ID Number* corresponding to that in the computer is programmed into the panel, along with the *Callback Telephone Number* of the computer. To execute an Auto-Download, arm the panel, disarm, then access Function 6 within 5 seconds.

PROM PROGRAMMING

A blank DD493BNK PROM may be programmed using a PRO410 or PRO410M Programmer. See *General Programming Steps* and the manual furnished with the programmer for operating instructions, and also the Programming Record Sheets that follow. PROM programming may be used to program all features except the Dealer Program Code (Locations **244-249**) and User Arm/Disarm Codes.

The following programming is *required*.

- Page-0, Location **083**: "5"
- Page-1, Location **251**: "C"
- Page-1, Location **252**: "4"

Transferring Memory from a PROM.

Data programmed in the PROM are saved in memory as follows.

1. At the panel, with ac and battery power *off*, insert the programmed PROM into the MEMORY CHIP socket. Align the dot on the PROM with the dot on the circuit board.
2. Apply ac power. Enter the Dealer Program Mode: Hold down Key [8] until the function beep sounds, then enter the Dealer Program Code.
3. Exit the Dealer Program Mode: Hold down Key [8] until the beep sounds, then enter the Dealer Program Code.
4. An "L" or "LOADING PROM" will display at the keypad. When loading is complete, remove both ac and battery power, remove the PROM from the socket, then power up normally.

PROGRAMMING RECORD SHEET FOR THE MA1008e

Communicator Features – Default programming shown in parentheses.

	GROUP 1								GROUP 2							
	ZONE							K/P	FIR	AMB	TBL	DAY	TST	NO	LOW	AUX
REPORT ON ALARM	1	2	3	4	5	6	7	8								
	166								167					168		169
CONTROL-PANEL RESTORE (SEE NOTE 1)	1	2	4	8	1	2	4	8	1	2	4	8	1	2	4	
	170								171					172		173
ZONE RESTORE (SEE NOTE 1)	1	2	4	8	1	2	4	8	1		4			2	4	
	184								185							
	1	2	4	8	1	2	4	8								

ALARM/TROUBLE CODES	Single Digit	000	002	004	006	008	010	012	014	016	018	020	022	024	026	028	062
		(3)	(3)	(3)	(3)	(3)	(3)	(3)	(2)	(1)	(2)	(F)		(F)	(F)		

Extended or Two Digit	001	003	005	007	009	011	013	015	017	019	021	023	025	027	029	063
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)	(1)	(2)	(1)			(9)	(8)	

RESTORE CODES	Single Digit	040	042	044	046	048	050	052	054	056	058	060	062	064	066	068
		(E)	(E)	(E)	(E)	(E)	(E)	(E)				(E)			(E)	(E)

Extended or Two Digit	041	043	045	047	049	051	053	055	057	059	061	063	065	067	069
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		(1)		(F)			(9)	(8)

OPENING/CLOSING CODES

	CLOSING USER				FORCE ARM	OPENING USER			
	1	2	3	4		1	2	3	4
Single Digit	030	032	034	036	038	070	072	074	076
	(C)	(C)	(C)	(C)	(F)	(B)	(B)	(B)	(B)
Extended or Two Digit	031	033	035	037	039	071	073	075	077
	(1)	(2)	(3)	(4)	(SEE NOTE 2)	(1)	(2)	(3)	(4)
Select User(s) Closing	174				Select User(s) Opening	176			
	1	2	4	8		1	2	4	8

SUBSCRIBER I.D. NUMBERS

	ALARM/RESTORE ID (SEE NOTE 3)				OPENING/CLOSING ID (SEE NOTE 4)			
	GROUP 1		GROUP 2					
Telephone 1	100	101	102	103	104	105	106	107
Telephone 2	132	133	134	135	136	137	138	139

	FORMAT RCVR DATA		TELEPHONE NUMBER 1													
	PRE	ACC	D/T	DLY	NO.	DET										
Telephone 1	112	113					114	115	116	117	118	119	120	121	122	123
Telephone 2	144	145					146	147	148	149	150	151	152	153	154	155

# OF RINGS	CALLBACK TELEPHONE NUMBER 1															
	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	285
# OF RINGS	CALLBACK TELEPHONE NUMBER 2															
	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301

NOTE: PROM LOCATIONS ARE 013 THROUGH 029, PAGE 1

NOTE: PROM LOCATIONS ARE 030 THROUGH 045, PAGE 1

ENTRY	RECEIVER FORMAT
Blank	ADEMCO, SILENT KNIGHT SLOW
1	SESCOA, VERTEX, DCI, FRANKLIN (SEE NOTE 5)
2	RADIONICS FAST (SEE NOTE 5)
3	SILENT KNIGHT FAST
4	RADIONICS, DCI, FRANKLIN SLOW (SEE NOTE 5)
5	UNIVERSAL HI-SPEED
8	FOR 2300HZ HANDSHAKE, ADD AN "8" TO THIS LOCATION

ENTRY	DATA FORMAT
Blank	EXTENDED OR SINGLE DIGIT
1	SINGLE DIGIT
2	TWO DIGIT (OR 4/2)
4	SUM CHECK

NOTES: (1) IF PROGRAMMING ZONE RESTORE, ALSO PROGRAM CONTROL-PANEL RESTORE. (2) TWO-DIGIT FORMAT ONLY. (3) GROUP-2 CODES MUST BE ENTERED, EVEN IF THEY ARE THE SAME AS GROUP-1 CODES. (4) MUST BE PROGRAMMED IF OPENING/CLOSING CODES ARE PROGRAMMED. (5) THESE FORMATS TYPICALLY USE A 2300HZ HANDSHAKE; ADD AN "8" TO THIS ENTRY.

CUSTOMER:	DATE:
ADDRESS:	
ACCOUNT NO.	TEL.

PROGRAMMING RECORD SHEET FOR THE MA1008e

Zone Features & Keypad Codes – Default programming shown in parentheses.

ZONE FEATURES	GROUP 1								GROUP 2								
	ZONE							K/P	FIR	AMB	TBL	DAY	TST	NO	LOW	ARM	
SWINGER SHUTDOWN	1	2	3	4	5	6	7	8									
	084							085									
	(1)	(2)	(4)	(8)	(1)	(2)	(4)	(8)									
NO END-OF-LINE RESISTOR	086							087									
	1	2	4	8	1	2	4	8									
CHIME ZONE	088							089									
	(1)	2	4	8	1	2	4	8									
NEVER ARM	090							091									
	1	2	4	8	1	2	4	8									
PIR ZONE	092							093									
	1	2	4	8	1	2	4	8									
UNTIMED OUTPUT (NTO LUG E15)	096							097									
	(1)	(2)	(4)	(8)	(1)	(2)	(4)	(8)	1	2	4	8	1	2	4	8	
ENABLE KEYPAD SOUNDER ON ALARM	164							165									
	1	2	4	8	1	2	4	8									
DAY ZONE	186							187									
	1	2	4	8	1	2	4	8									
PRIORITY ZONE WITH BYPASS (SEE NOTE 1)	188							189									
	1	2	4	8	1	2	4	8									
PRIORITY ZONE	190							191									
	(1)	(2)	(4)	(8)	(1)	(2)	(4)	8									
REMOVE AUTO-BYPASS (SEE NOTE 1)	192							193									
	1	2	4	8	1	2	4	8									
SELECTIVE BYPASS	194							195									
	(1)	(2)	(4)	(8)	(1)	(2)	(4)	8									
GROUP BYPASS	196							197									
	1	2	4	8	1	2	4	8									
24-HOUR PROTECTION	198							199									
	1	2	4	8	1	2	4	(8)									
AUTO-RESET	200							201									
	(1)	(2)	(4)	(8)	(1)	(2)	(4)	(8)									
EXIT/ENTRY ZONE (ENTRY DELAY 1)	202							203									
	(1)	2	4	8	1	2	4	8									
EXIT/ENTRY ZONE (ENTRY DELAY 2)	204							205									
	1	2	4	8	1	2	4	8									
EXIT/ENTRY FOLLOWER	206							207									
	1	2	4	8	1	2	4	8									
ABORT DELAY	208							209									
	1	2	4	8	1	2	4	8									
BURGLARY OUTPUT	210							211									
	(1)	(2)	(4)	(8)	(1)	(2)	(4)	(8)									
7ms LOOP RESPONSE (SEE NOTE 2)	214							215									
	1	2	4	8	1	2	4	8									
50ms LOOP RESPONSE (SEE NOTE 2)	216							217									
	1	2	4	8	1	2	4	8									
FIRE ON BURGLARY ZONE (SEE NOTE 3)	306							307									
	1	2	4	8	1	2	4	8									

←--(Also see TIMES & TIMEOUTS, Loc. 230-231)

←--(See Note 7)

←--(Also see TIMES & TIMEOUTS, Loc. 094-095)

←--(See Note 7)

TRANSMITTER ZONE MAP
(FOR WIRELESS SYSTEMS ONLY)

TX#	LOC	ZONE
1	308	
2	309	
3	310	
4	311	

TX#	LOC	ZONE
5	312	
6	313	
7	314	
8	315	

REFER TO R1000 RECEIVER INSTRUCTIONS
WI604 FOR TRANSMITTER MAPPING AND
LEARNING INSTRUCTIONS AND OTHER WIRE-
LESS INSTALLATION INFORMATION.

NOTE: For wireless systems, refer to R1000 Receiver
Installation Instructions (WI604) for Transmitter
Mapping Locations 308-315.

←--(See Note 7)

KEYPAD CODES (DO NOT ENTER ZEROS)

SEE NOTE 4

AMBUSH	USER PROGRAM CODE	DEALER PROGRAM CODE
236 237	238 239 240 241 242 243	244 245 246 247 248 249
	(1) (2) (3) (4) (5) (6)	(4) (5) (6) (7) (8) (9)

USER 1	USER 2	USER 3	USER 4
316 317 318 319	320 321 322 323	324 325 326 327	328 329 330 331
(1) (2) (3)			

USER 5	USER 6	USER 7	USER 8
332 333 334 335	336 337 338 339	340 341 342 343	344 345 346 347

ENTRY TOTAL:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
PROGRAMMER DISPLAYS:	•	1	2	3	4	5	6	7	8	9	0	B	C	D	E	F

See Note 5

See Note 6

NOTES: (1) If programming PRIORITY ZONE WITH BYPASS, do not program REMOVE AUTO BYPASS. (2) If neither 7ms nor 50ms LOOP RESPONSE is programmed, loop response will be 750ms. (3) FIRE ON BURGLARY ZONES must also be programmed for 24-HOUR PROTECTION, but for no other zone features except UNTIMED OUTPUT. (4) The Dealer Program Code must not start with the same numbers as the User Program Code. (5) • (dot) or blank for no entry. (6) To conform with Telephone Company convention, program zeros in Telephone Numbers, Alarm Codes and Subscriber ID Numbers as an entry total of 10. (Press DATA UP button until "0" is displayed; in PRO410, press Key [0].) (7) Zone "8" for wireless operation only. To use as other than Keypad Panic, also program DIRECT KEYPAD PANIC TO AMBUSH (see GLOSSARY).

PROGRAMMING RECORD SHEET FOR THE MA1008e

System Features & Timeouts – Default programming shown in parentheses.

SYSTEM FEATURES

INSTRUCTIONS: FOR EACH LOCATION: (1) CIRCLE NUMBERS FOR FEATURES DESIRED. (2) PLACE SUM OF CIRCLED NUMBERS IN "ENTRY" BOX.
WARNING: DO NOT ATTEMPT TO PROGRAM "RESERVED" LOCATIONS AS IMPROPER OPERATION MAY RESULT.

LOCATION 078	ENTRY--->	
DISPLAY DAY ZONES AFTER RESET	1	
FAILURE TO COMMUNICATE ON NTO LUG	2	
USER 5 ARM ONLY	4	
USER 5 REPORT AS USER 1	8	

LOCATION 178	ENTRY--->	
TOUCHTONE DIALING	1	
TOUCHTONE WITH ROTARY BACKUP	2	
BACKUP REPORTING	4	
DOUBLE REPORTING	8	

LOCATION 183	ENTRY--->	
DISPLAY ANY BYPASS	1	
NO OPNG REPT AFTER ALRM ON ZONE 6	2	
INCL MANL BYP IN FORCE-ARM/STATUS	4	
KEY INPUT ON ZONE 7	8	

LOCATION 079	ENTRY--->	
USER 5 SERVICE CODE	1	
DISABLE DAY-ZONE REPORT	2	
USERS 6,7,8 REPORT AS USERS 2,3,4	4	
KEYPAD AUXILIARY ALARM ON NTO LUG	8	

LOCATION 179	ENTRY--->	
OPENING REPORT AFTER ALARM	1	
FORCE ARM	2	
STATUS REPORT	4	
SPLIT REPORTING	8	

LOCATION 304	ENTRY--->	
DON'T WAIT FOR HANDSHAKE, TELCO 1	1	
DON'T WAIT FOR HANDSHAKE, TELCO 2	2	
(RESERVED)		
(RESERVED)		

LOCATION 080	ENTRY--->	
DIRECT KEYPAD PANIC TO AMBUSH	1	
DIRECT ZONE 8 TO AMBUSH	2	
DISABLE CALLBACK DOWNLOAD	4	
DISABLE FUNCTION-6 DOWNLOAD	8	

LOCATION 180	ENTRY--->	
AUDIBLE TEST ON ARMING	1	
AUTO-RESET AFTER ALARM TIMEOUT	(2)	
POWER UP IN LAST STATE	(4)	
SOUNDER OUTPUT ON LUG E4	8	

LOCATION 305	ENTRY--->	
AUDIO VERIFICATION ON NTO LUG	1	
BURGLARY OUTPUT ON AMBUSH	2	
RESET SHOCK SENSORS ON ARMING	4	
DISABLE LOW-BATTERY DISPLAY	8	

LOCATION 081	ENTRY--->	
WATCH ON WITH GROUP BYPASS	1	
CHIME ON WITH GROUP BYPASS	2	
DISPLAY OPEN ZONES	4	
DISABLE DISPLAY BYPASS	8	

LOCATION 181	ENTRY--->	
PULSING FIRE OUTPUT	(1)	
RESET FIRE ZONE	(2)	
ENABLE KEYPAD TACTILE BEEP	(4)	
RESET TEST TIMER ON REPORT	8	

LOCATION 082	ENTRY--->	
ENABLE DOWNLOAD W/ANSWERING MACH.	(1)	
REMOTE STATUS LED ON NTO LUG	2	
ENABLE KEYPAD FIRE (SEE NOTE 1)	4	
ENABLE KEYPAD AUX. (SEE NOTE 1)	8	

LOCATION 182	ENTRY--->	
DISABLE FAULT FIND	1	
ENABLE KEYPAD PANIC	(2)	
ENABLE COMMUNICATOR CONF. TEST	(4)	
DISABLE BELL TEST	8	

TIMES & TIMEOUTS

TIME EXAMPLES		
TIME	1st BOX	2nd BOX
5	5	NONE
10	0	NONE
15	F	NONE
30	E	1
45	D	2
60	C	3

x1	x16	
094	095	SENSOR WATCH (hours)
250	251	TEST-TIMER OFFSET (hours)

x1	x16	
218	219	EXIT DELAY (D,2) (seconds)
220	221	ENTRY DELAY 1 (E,1) (seconds)
222	223	ENTRY DELAY 2 (E,1) (seconds)
232	233	ABORT DELAY (seconds)

x1	x16	TIMEOUT
224	225	BURG OUT TIMEOUT (F,) (minutes)
228	229	FIRE TIMEOUT (F,) (minutes)
230	231	CHIME TIME (8,) (1/4 seconds)

Example: For 2 seconds, enter 8 in 230.

x1	x10	
252	253	AUTO D/L ID NO. (SEE NOTE 2)
254	255	CALLBACK SELECT (ENTER 1 OR 2)

DD493BNK PROM Required Programming: Page 0, Location 083 = "5"; Page 1, Location 251 = "C"; Page 1, Location 252 = "4"

ENTRY TOTAL:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PROGRAMMER DISPLAYS:	•	1	2	3	4	5	6	7	8	9	0	B	C	D	E	F

See Note 3

See Note 4

NOTES: (1) This feature requires that all system keypads have F/P/A keypad panics. (2) Program in decimal numbers; do not use leading zeros. (3) • (dot) or blank for no entry. (4) To conform with Telephone Company convention, program zeros in Telephone Numbers, Alarm Codes and Subscriber ID Numbers as an entry total of 10. (Press DATA UP button until "0" is displayed; in PRO410, press Key [0].)

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5. GLOSSARY & PROGRAMMING DATA

Abort Delay (Locations 208, 209; 232, 233)

A delay period that allows cancellation of the central-station report. This is done by disarming the panel within the delay period. Program Locations 208-209 for zone selection; Locations 232, 233 for delay time (see *Time Selection*). The NTO Lug E15 will be subject to the abort delay if *Untimed Output* and *Abort Delay* are programmed for the same zone. **Note:** If *Abort Delay* is selected for a 24-Hour Zone or a Zone-Restore Zone, the cause of the alarm must be corrected before disarming the panel.

Ac-Failure Reporting (Locations 169; 173)

If ac is removed from the panel, the first three LEDs will flash slowly and a "1" will be displayed (while armed or disarmed). If disarmed, holding down Key [9] will reset the indication for about three minutes to permit arming. However, the failure indication will return within a few minutes, whether armed or disarmed, unless ac power is restored. If programmed for *Report on Alarm*, the report will be delayed for 1 hour. Restores report immediately.

Access Number for Outside Line (Locations 115, 147)

Some subscribers will have a telephone system that requires one digit to access an outside line before the telephone number can be dialed. Also, the first dial tone encountered (prior to the access number) may have a frequency that is different from that of the accessed dial tone (440Hz). One or more 4-second *Pre-Dial Delay* "D"s may be entered before the access number instead of a dial tone with frequency "E". See *Pre-Dial Delay*.

If your subscriber's system uses an access number:

1. Contact the telephone-equipment supplier to find out if a dial tone other than 440Hz is received prior to dialing the access number. If the communicator must delay before dialing the access number instead of attempting to recognize the dial tone, find out how many 4-second delays must be programmed.
2. For Telephone 1, (a) enter the *Dial-Tone Detection* "E" or *Pre-Dial Delay* "D" in Location 114. Enter any extra "D"s that may be required starting in Location 115; (b) enter the access number digit in Location 115, or the first available location thereafter; (c) starting in the first available location after the access number, enter any *Pre-Dial Delay* "D"s needed before the second dial tone; the *Dial-Tone Detection* "E" for the second dial-tone frequency; then the telephone number.

quency; then the telephone number.

3. If Telephone 2 is used, repeat Step 2 starting in Location 146. (See *Backup Reporting*; *Double Reporting*; and *Split Reporting*.) Also see *Dial-Tone Detection*; *Pre-Dial Delay*.

Alarm Codes See Report on Alarm

Alarm History

Hold-Down Key [B] will display (on the digital readout) all alarm conditions that have occurred. While holding down Key [B], note the number(s) displayed indicating the zone(s) violated. When the system is rearmed, the previous alarm history will stay memorized until automatically erased by a new alarm condition. Note that *Alarm History* will not display Fire, Fire Trouble, Ambush, or zones directed to Ambush, but it will display *Fire on Burg Zone* alarms.

Alarm Outputs (Locations 181, 210-211; 224-225; 228-229; Terminals 3, 4; NTO Lug E15)

The MA1008e has a common Burglary/Fire siren output at Terminals 3 and 4. Steady bell and pulsing bell outputs for Burglary and Fire, respectively, are selectable options. Table 4 summarizes wiring and programming for signalling an alarm in typical installations. Refer to *Time Selection* for timeout durations.

Ambush Code (Locations 236, 237)

Burglary Output on Ambush (Location 305)

A 1- or 2-digit code that is entered by the user prior to disarming to access the Ambush Zone, causing a silent report to be sent to a central station. Thus, should a user be forced to disarm by an assailant, he can silently signal an emergency while appearing to be merely disarming the system. The Arm/Disarm Code must be entered less than 10 seconds after the Ambush Code for an ambush report to be transmitted. The Ambush Zone will automatically report when programmed to report on alarm.

To program the ambush feature, (a) program Ambush to *Report on Alarm* (enter a "2" in Location 168); (b) enter 1 or 2 digits as the Ambush Code in Locations 236-237; (c) enter an Ambush alarm report code in Locations 018-019.

Inform the user what the Ambush Code is, and that his arm/disarm code must be entered less than 10 seconds after the Ambush Code for an ambush report to be sent.

Burglary Output on Ambush may be programmed in

Output	Wiring	Output Locations	Timeout Locations	Remarks
Sweep Siren	Speaker on 3 (+) & 4 (-)	210, 211	224, 225	—
Fire (Steady) Siren	Speaker on 3 (+) & 4 (-)	—	228, 229	Fire Zones only
Fire (Pulsing) Siren	Speaker on 3 (+) & 4 (-)	"1" in Location 181	228, 229	Fire Zones only
Steady Bell	Bell on 3 (+) & 4 (-)	210, 211	224, 225	Cut Jumper E
Pulsing Bell	Bell on 3 (+) & 4 (-)	"1" in Location 181	228, 229	Fire Zones only; cut Jumper E
Untimed Output (NTO)	E15 (-) & 5 (+)	096-099	—	< 300mA for strobes, etc. See NTO.

Note: (1) For UL Residential Fire installations, use a bell on Terminals 3 (+) and 4 (-); cut Jumpers E and PS and install Jumper J2 (see *Wiring Diagram*). See *Time Selection* for timeouts. (2) Cut Jumper C to prevent the fire signal from sounding a steady siren (or bell, if Jumper E is cut). (3) Cut Jumper D to produce an alternating two-tone siren sound.

Table 4. Alarm Outputs

conjunction with either *Direct Zone 8 to Ambush* or *Direct Keypad Panic to Ambush* to sound an audible alarm when ambush is tripped. Also see *Direct Keypad Panic to Ambush*; *Direct Zone 8 to Ambush*.

Anti-Jam Time

If the communicator does not detect a dial tone within 12 seconds, the *Anti-Jam* feature will be activated. That is, the communicator will go off-line for a 16-second anti-jam interval in order to free the telephone circuit from incoming calls, then make another 12-second attempt at dial-tone detection. If still unsuccessful, the communicator will again go off-line for 16 seconds, then proceed to dial anyway.

To test the *Anti-Jam* feature, call the alarm phone line from a different phone line, then activate an alarm. The incoming call should be disconnected by the control panel.

Arm Lug (Lug E4)

Lug E4 (ARM) will go to approximately 1Vdc when the system is armed. This lug may be used for auxiliary equipment. For use, refer to the instructions furnished with the peripheral device. Also see *Sounder Output On Lug E4*.

Audible Test on Arming (Location 180)

(Required for UL Mercantile installations.) To test the alarm circuit each time the system is armed, add a "1" to Location 180. The alarm is then activated briefly about 8 seconds after the panel is armed. If the alarm does not sound, the device may be defective.

Audio Verification on NTO Lug See *Untimed Output*

Auto-Bypass Zone See *Remove Auto-Bypass*

Auto-Download ID Number (Locations 252, 253)

Callback Select (Location 254)

Napco PCD2000 Software Version 2.E and later includes a *PC-Preset* utility wherein numerous programs may be preset for automatic remote uploading or downloading from the installation site while the computer is unattended (in standby mode). The *Auto-Download ID Number* identifies the program in the computer that will be selected. (Note that the Dealer Program Code in the PCD2000 must agree with that of the control panel for the remote connection to be established.)

At the installation site, program the *Auto-Download ID Number* in Locations 252 and 253, in decimal numbers, corresponding to that in the computer. Also program the *Callback Telephone Number* of the computer. If two phone numbers are programmed, select the phone to be called in Location 254. Then, arm the panel, disarm and, within five seconds, access Function 6 to execute an Auto-Download.

Auto-Reset (Location 200–201)

Auto-Reset After Alarm Timeout (Location 180)

If a zone signals an alarm and is selected for *Auto-Reset*, it will automatically rearm itself soon after the alarm condition is removed. *Auto-Reset* may be delayed to occur after the timeout period by programming a "2" in Location 180.

Zones 1–8/Panic that are not programmed for *Auto-Reset* will not be capable of signalling another alarm until (a) the cause of the alarm has been removed and (b) the panel is disarmed.

Also see *Swinger Shutdown*.

Backup Reporting (Location 178)

When *Backup Reporting* is selected and the com-

municator does not reach the first telephone number after two attempts, seven attempts will be made to reach the second telephone number. Enter Subscriber Identification Numbers for Telephone 2 (Locations 132–143) and other information required for Telephone 2 (Locations 144–163). If *Double Reporting* is selected with *Backup Reporting*, all reports sent to the first telephone number will also be transmitted to the second telephone number. However, if the first transmission fails, two reports will be sent to Telephone 2 (*Double Reporting*). **Note:** Subscriber Identification Numbers for both Telephones 1 and 2 must be entered, even if they are the same.

Battery

12Vdc standby power source in the control panel to provide backup protection in the event of a power loss. The RBAT4 (4AH) is supplied; the RBAT6 (6AH) is available as an option. Note that the battery is an integral part of the system. It must be installed, even if ac power is present.

Battery Lug (Lug E14)

This is a fused battery output (3A) designed primarily for use with the MVA-1000 Talking Siren Driver.

Burg Lug (Lug E10)

Lug E10 (BURG) will go to about 1Vdc when a burglary alarm is tripped. E10 may be used to trip an LW-900 Long-Range Wireless Interface. Or, a relay (400Ω minimum) may be connected between E10 and Terminal 5 (+ AUX. POWER) if a diode is wired in series (cathode to E10; anode to relay coil).

Burglary Output See *Alarm Outputs*

Burglary Output on Ambush See *Ambush Code*

Callback Telephone Number 1 (Locations 270–285; PROM Page-1 Locations 014–029)

Callback Telephone Number 2 (Locations 286–301, PROM Page-1 Locations 030–045)

Number of Rings (Location 269; PROM Page-1 Location 013)

The control panel will call back the PCI2000 as a security check prior to downloading when using the Callback Method. Provisions for two callback telephone numbers are made for the Auto-Download Mode. Program at least one callback number starting in Location 270. (Remember that a "D" or an "E" must be programmed before the telephone number — see *Telephone Numbers*.) The panel will initiate the callback after waiting 15 rings, unless programmed otherwise. To change the number of rings before callback, enter the desired number of rings (3 minimum, 15 maximum) in Location 269. Also see *Auto-Download ID Number*.

Chime Zone (Location 088–089)

Chime On with Group Bypass See *Group Bypass*

This annunciator feature may be programmed for any zone to sound at the keypad while disarmed when the zone goes into trouble. Hold down Key [5] until the function beep sounds to enable or disable the Chime. Chime duration is programmable (Locations 230, 231) in units of 1/4 seconds. See *Time Selection*. The Chime-Zone number will be displayed for the duration of the programmed chime time, or for as long as the zone is open (or shorted), whichever is greater. Also see *Never-Arm Zone*. **Note:** A "1" in Location 230 will prevent the sounder from coming on.

Closing Report (Select User(s) Closing) (Location 174)
Force Arm Report (Locations 179; 038-039)
Status Report (Locations 179; 000-029; 038-039)
Include Manual Bypass in Force-Arm/Status Report
(Location 183)

On arming, the communicator can transmit a closing code for each user, a Force-Arm Code, and a Status Report that identifies the problem zone to the central station. Note that Subscriber Identification Numbers (Locations 108-111; 140-143) and Closing Codes (Locations 030-037) must be entered for any closing report. Program closing report (*Select User(s) Closing*, Location 174) to report each time the panel is armed. Each of up to four users may have his own Closing Code (Locations 030-037).

Select Force Arm Report ("2" in Location 179) to report only when arming with an auto-bypassed zone. This transmission will consist of a Closing Code followed by a Force-Arm Code. Select both closing report and Force Arm to always send a closing report, and a Force Arm report only if one or more zones were auto-bypassed. Also see *Priority Zone with Bypass*.

Select Status Report ("4" in Location 179) to send a Force Arm report followed by a Status Report that identifies the auto-bypassed zone(s). The second Alarm-Code location is usually used for this purpose. If this location is vacant, the first location will be used.

To include manual bypasses in a Force Arm/Status Report, program a "4" in Location 183. (Either Force Arm or Status Report must also be programmed.)

Following is an example of a typical Force-Arm/Status Report.

Example. A burglar breaks into a commercial establishment during the night, breaking the window foil. The Alarm Subscriber Identification Number is "123"; the Alarm Code is "1" (Burglary Zone 1); the Opening/Closing Subscriber Identification Number is "456"; the Force-Arm Code is "F"; the Closing Code for User 1 is "C". The communicator will send the following report to the central station (single-digit data format):

1231 - Sent when alarm occurs.

456B - Opening; User returned and inspected damage.

456C - Closing.

CCC1 - User 1 rearmed

456F - Force Arm.

FFF1 - Zone status at time of closing: Window foil still broken. Zone 1 auto-bypasses; repair required.

Control-Panel Restore See *Restore Report*

Data Format (Locations 113, 145)

Consult the central station to find out which of the following formats to use.

Extended Format. Extended-format reporting allows the communicator to transmit an extra digit to the central station. This extra digit is generally used to report the user or the zone on which the event occurred.

Example. An installation uses the following programmed transmission information: Subscriber Identification Number is "678"; a Closing Report is selected for User 3; Extended Format Closing Code is "C3" (Closing, User 3). If User 3 closes, the communicator will transmit:

678C - Subscriber "678" has closed.

CCC3 - Closing, User 3.

Extended Format may be used with most central-station receivers. Most receivers capable of recognizing multiple reporting will also recognize Extended Format. The central station will indicate the event codes to be programmed. Extended Format does not require any programming in Locations 113 and 145. To use Extended Format, follow Steps 2 through 5 of *Two-Digit Event-Code Format* later in this section.

Single-Digit Event Code Format. If the receiver cannot accept extended reporting,

1. Program a "1" in Location 113 (and 145 for a second telephone number, if used). See *Double Reporting* and *Backup Reporting*.
2. Enter the first digit for any Alarm/Trouble Code, Restore Code and Opening/Closing Codes.

Note: If it is desired to have a Single-Digit Event Code for one telephone number and Extended Format for the other, program both digits for all event codes. Use the first digit to indicate the alarm type and the second digit to indicate the zone. The telephone number with a "1" in Location 113 (or 145) will transmit only the first digit. The other telephone number will use both digits. (Single-Digit Format will ignore the second digit of the event code.)

Two-Digit Event Code Format. Some central-station receivers require that a two-digit code be sent in each report.

Example. In a certain installation, the Alarm Subscriber Number is "123"; a burglary alarm occurs on Zone 1 (Alarm Code "31"). The communicator will send "12331".

To use Two-Digit Event Code Format,

1. Program a "2" in Location 113 (145 for a second telephone number, if used). See *Double Reporting* and *Backup Reporting*.
2. Enter an Alarm Code (Locations 000-029) for each zone or condition to report on alarm (see *Report on Alarm*) or for a Force-Arm/Status Report as follows:
 - a. Enter the first digit of the Alarm Code. (This digit may be used to indicate alarm type.)
 - b. Enter the second digit of the Alarm Code. (This digit may be used to indicate the zone.)
3. Repeat Step 2 to enter Restore Codes (Locations 040-069) for each zone selected for *Control-Panel Restore* or *Zone Restore* (see *Restore Report*).
4. If Opening Report or Opening Report After Alarm is selected, enter a two-digit Opening Code for each user (Locations 070-077). See *Opening Report*; *Opening Report After Alarm*.
5. If Closing Report is selected, enter a two-digit Closing Code (Locations 030-037) for each user. If a Force Arm or Force-Arm/Status Report is selected, also enter a two-digit Force-Arm Code (Locations 038, 039).

Note: *Single-Digit Format* will override *Two-Digit Format* in Locations 113 and 145 if both are programmed.

Sum-Check Format. Sum Check is a sophisticated data format used to enhance the speed and check the accuracy of the received transmission. This format should be preferred if the central station is capable of receiving it.

After transmitting the Subscriber Identification Number and the event code, the communicator sends a verifying digit that is the sum of both. The receiver compares the

verifying digit with the sum of the other two numbers to check transmission accuracy. To select *Sum Check*, program a "4" in Location 113 (or 145 for a second telephone number, if used).

Day Zone (Locations 186, 187)

Disable Day-Zone Report See PIR Zone

Display Day Zones After Reset (Location 078)

A Day Zone is a Burglary Zone that will cause visual and audible indication at the keypad if the loop has an open condition only when disarmed. This feature may be used to warn of trouble during the day, when the control panel is not armed. If the Day Zone experiences a problem (a break in a window foil, for example), the green STATUS LED on the keypad will flash, the sounder will beep repeatedly, and the display will indicate the problem zone(s). Hold down Key [9] to silence the sounder and clear the display. Arm and disarm the panel to reset the Day Zone.

If a "1" is programmed in Location 078 (*Display Day Zones After Reset*), the Day-Zone number(s) will continue to display after the sounder is silenced until the condition is corrected, and the Day Zone will auto-reset without the need to arm/disarm.

Note: For high security Day-Zone supervision, also program *Disable Fault Find* (enabling Fault Find will disable Day-Zone supervision).

Also see *Watch On with Group Bypass*.

Dealer Program Code (Locations 244-249)

This code is required to enter the Dealer Program Mode. The default Dealer Program Code is 4,5,6,7,8,9, however this code must be changed to preserve system security. Reprogram the 3- to 6-digit Dealer Program Code starting in Location 244. **Note:** (1) The Dealer Program Code must not start with the same numbers as the User Program Code. (2) The Dealer Program Code also serves as your *Download Security Code*.

Dial-Tone Detection (Locations 116, 148)

At least one *Dial-Tone Detection* entry is usually required for each telephone number used to ensure that a dial tone is present before the communicator dials.

When an "E" is programmed before the first digit of an outside telephone number, the communicator dial-tone detection circuit is set to detect the standard 440Hz dial tone. The "E" is generally entered in Location 116 for Telephone 1 and Location 148 for Telephone 2, if used.

It may be necessary to program at least one 4-second *Pre-Dial Delay* before a *Dial-Tone Detection* "E". With certain nonstandard exchanges, *Pre-Dial-Delay* "D"s may be used without a *Dial-Detection* "E". (See *Access Number for Outside Line; Pre-Dial Delay*.)

Direct Keypad Panic to Ambush (Location 080)

Direct Zone 8 to Ambush (Location 080)

Program *Direct Keypad Panic to Ambush* ("1" in Location 080) to free Zone 8 for wireless use while providing silent panic. Or, select *Direct Zone 8 to Ambush* ("2" in Location 080) to have wireless transmitters that are mapped to Zone 8 send a silent report. (These will report using the Ambush Code.)

Disable Bell Test (Location 182)

Program an "8" in Location 182 to prevent unauthorized persons from sounding the bell.

Disable Callback-Method Download (Location 080)

Data may be remotely downloaded to an MA1008e using Napco Quickloader™ software and interface if the correct download security code is known. Program this feature to prevent downloading to an unattended panel.

Disable Day-Zone Report See PIR Zone

Disable Display Bypass (Location 081)

For added security, this feature disables Hold-Down Function 2 and the BYPASS LED after exit delay expires.

Disable Fault Find (Location 182)

When the Fault-Find mode is accessed (Hold-Down Key [7]), two things occur: (a) the loop response of all zones is preset to 7mS (fastest loop response), and (b) securing a zone in trouble will cause the sounder to beep for about 2 seconds. This set of conditions aids both installer and user. The installer, tapping and poking at suspect points, can easily locate swingers by listening for the beep. Similarly, the user can confirm the repair of a zone in trouble by listening for the beep and thus eliminate the need of returning to the keypad to visually check after each attempt.

Hold down Reset Key [9] to restore normal operation. Arming the system successfully will automatically cancel the Fault-Find mode. Program a "1" in Location 182 to prevent unauthorized use of the Fault-Find mode.

Disable Function-6 Download (Location 080)

An "8" in Location 080 will prevent manual remote downloading at the panel. See *Manual Download*.

Disable Low-Battery Display See Low Battery

Display Any Bypass (Location 183)

Hold-Down Function 2 (*Display Bypass*) normally displays manually-bypassed zones only. When *Display Any Bypass* is selected and a zone is auto-bypassed, the yellow BYPASS LED will light, and Hold-Down Function 2 will display Auto-Bypassed and Priority Bypassed Zones as well.

Display Day Zones After Reset See Day Zone

Display Open Zones (Location 081)

A "4" in Location 081 will cause any non-24-Hour zone that is open (or shorted) while disarmed to automatically display at the keypad in addition to the flashing green LED.

Don't Wait for Handshake, Telco 1 (Location 304)

Don't Wait for Handshake, Telco 2 (Location 304)

Select this feature for telephones *not* reporting to a central station. (This feature may be useful for demo purposes.)

Double Reporting (Location 178)

When *Double Reporting* is selected, only information that is successfully sent to Telephone 1 will be sent to Telephone 2 as well. To program, enter an "8" in Location 178. Enter Subscriber Identification Numbers for Telephone 2 (Locations 132-143) and related information required for Telephone 2 (Locations 144-163).

If *Backup Reporting* is selected with *Double Reporting*, reports sent to the first telephone number will also be sent to the second. However, if the first transmission fails, two reports will be sent to Telephone 2. *Split Reporting* will override *Double Reporting* if both are programmed.

Note: Subscriber Identification Numbers for Telephones 1 and 2 must be entered, even if they are the same.

"E" Lugs see *INDEX*

Enable Communicator-Confidence Test (Location 182)

Program a "4" in Location 182 to enable the Communicator-Confidence Test. This feature checks the telephone line for the presence of a dial tone only in those systems that are programmed to communicate with a central station. **Note:** Do not arm and disarm the panel just before making this test.

Hold down Key [6] until the sounder starts to pulse. If the line is okay, the pulsing will stop; if not, a steady tone will sound (check phone lines). To silence, hold down Key [9].

Enable Download with Answering Machine (Location 082)

Permits downloading to a telephone with an answering machine (factory programmed). After one ring, the panel will listen for the modem tone produced by the PCI2000. If recognized, the panel will go into line seizure and, if security codes match, establish connection with the PCI2000.

Enable Keypad Auxiliary Panic (Location 082)

This feature may be enabled only if all system keypads are *F/P/A-panic* compatible. (Cut panic-enabling jumpers in *all* keypads.) Pressing the [B/A] and [#] keys simultaneously will activate Keypad Auxiliary Panic. This is a "report-only" feature. Program an Alarm Code in Locations 062-063 and a Group-2 Subscriber ID Number. A successful report will be indicated by a ringback at the keypad. In order to prevent multiple alarms from being transmitted, subsequent *Auxiliary-Panic* alarms cannot be tripped for five minutes. Also see *Keypad Aux. Alarm on NTO Lug*.

Enable Keypad Fire Panic (Location 082)

This feature may be enabled only if all keypads in the system have the *F/P/A-panic* capability. (Cut panic-enabling jumpers in *all* keypads.) Pressing the [9/F] and [#] keys simultaneously will activate Keypad Fire Panic.

Enable Keypad (Police) Panic See *Panic Zone*

Enable Keypad Sounder on Alarm (Locations 164-165)

Programmable for Zones 1-7 and Keypad Panic. When tripped, a steady tone will sound at the keypad until the panel is disarmed.

Enable Keypad Tactile Beep (Location 181)

Causes the sounder to beep briefly with each press of a button. For *RP1000LCD* and *RP1000eLCD* keypads: cut the keypad tactile-beep jumper to prevent a double beep from sounding.

Exit/Entry Delay (Locations 218-223)

Permits exit and entry through the Exit/Entry Zone(s) (see Locations 202-205) after the system is armed without setting off an immediate alarm. Exit delay allows the user to leave the premises after the panel has been armed. Entry delay allows the user time to enter and disarm the panel. Upon entering, the keypad sounder will emit a steady tone to remind the user to disarm.

Two separately-programmable entry delays are provided to accommodate different entry zones (only one exit delay is provided). If two or more Exit/Entry Zones are entered in succession, the delay programmed for the last Exit/Entry Zone entered will take precedence over all others.

Exit time (Locations 218-219) and entry time (Locations 220-223) may each be programmed for up to 255 seconds (4¼ minutes). See *Time Selection*. If times are not programmed, exit time will be 60 seconds; entry delay will be

30 seconds. (In UL installations, exit time may not exceed 60 seconds; entry time may not exceed 45 seconds.)

Entry delay may be cancelled by holding down Key [4] (*Instant Protection*) prior to or after arming, however it will be automatically reinstated upon disarming.

Exit/Entry Follower (Locations 206, 207)

A zone programmed as an *Exit/Entry Follower* will ignore detection during the exit delay, and only during entry delay if the Exit/Entry Zone is entered first. Thus, detection devices (passive infrared detectors, for example) along the path between the keypad and the exit/entry door will not signal an alarm during exit/entry delay under normal conditions. However, if a device in the Exit/Entry Follower Zone detects a violation when the exit/entry door has not first been entered, there will be no entry delay and the Exit/Entry Follower Zone will go into an instant alarm.

If the panel is armed with the entry delays cancelled (*Instant Protection*), any violation on the Exit/Entry Zone or the Exit/Entry Follower Zone will cause an immediate alarm.

Extended Format See *Data Format*

Failure to Communicate on NTO Lug See *Untimed Output*

Fault Find See *Disable Fault Find*

Fire Lug (Lug E9)

Lug E9 (FIRE) will go to about 1Vdc when a fire alarm is tripped. E9 may be used to trip an LW-900 Long-Range Wireless Interface. Or, a relay (400Ω minimum) may be connected between E9 and Terminal 5 (+ AUX. POWER) if a diode is wired in series (cathode to E9; anode to relay coil).

Fire Zone (Terminals 11 & 12)

Fire on Burg Zone (Locations 306-307)

(**Note:** Do not use Fire Zones in Mercantile installations.) The Fire Zone is indicated by the red FIRE/TROUBLE keypad LED. Normally-open devices are connected across Terminals 11 and 12, in parallel with the 2200Ω end-of-line resistor (see *Wiring Diagram*). A short across the Fire Zone will cause a fire alarm: the red LED will light and the the sounder will pulse; an open circuit (trouble) will cause a blinking red LED and a pulsing sounder after a 10-second delay. The sounder may be silenced using Reset Key [9]. The LED will go off within 30 seconds after reset if the alarm or trouble is cleared. **Note:** Even if the Fire Zone is not used, the end-of-line resistor must be installed.

For the Fire Zone to report on alarm (Location 168) or to restore (Location 172), program Alarm Codes in Locations 016-017 and Restore Codes in Locations 056-057. *Trouble* and *Restore Trouble* on *all* Fire Zones (including *Fire on Burg Zones*, see below) are reported in Locations 020-021 and 060-061, respectively. To reset Fire, program a "2" in Location 181 (see *Reset Fire Zone*).

Any Zone 1-7 may be converted to a Fire Zone by programming it for *Fire on Burg Zone*, however that zone must be programmed for *24-Hour Protection* as well. No other zone feature except *Untimed Output* may be selected for that zone, however program *reporting* features as required. Fire alarms will activate a steady siren unless *Pulsing Fire Output* is programmed. **Note:** Only 4-wire smokes may be used on zones programmed as *Fire on Burg Zone*.

When an alarm condition is detected on any Fire Zone, a *Fire Alarm Verification* feature will cause all zones to power down for 10 seconds. Power is restored and a 4-second

power-up time is started. Thereafter, the zone will be active again. This represents a total processing time of 14 seconds from the time the alarm is first detected. If an alarm condition still exists or reoccurs within 2 minutes, an alarm will be initiated, otherwise the zone will return to its original state. **Note:** Alarm restores are sent individually; trouble restores are not sent until *all* fire troubles are restored.

Force-Arm Report See *Closing Report*

Ground-Start Module, GSM-400 (Lug E3)

If the dial tone is not continuously active, Ground-Start Module Model GSM-400 will be required at Lug E3 to establish the dial tone. For installation, refer to the instructions furnished with the GSM-400.

Group Bypass (Location 196, 197)

Chime On with Group Bypass (Location 081)

Group Bypass removes a programmed group of zones from the system. It is often used to deactivate some or all interior zones simultaneously so that the user may move freely throughout the premises but still be protected from intrusion through armed perimeter zones.

Group Bypass is executed by pressing Key [B] *twice*; the yellow BYPASS LED on the keypad will light. When the panel is subsequently disarmed, all bypassed zones automatically revert to non-bypassed zones. The zones bypassed may be checked by holding down Key [2] (*Display Bypass*) until the beep sounds and all zones have been displayed.

When a "1" is entered in Location 081 (*Watch On with Group Bypass*), all Day Zones will be activated simultaneously (*Watch Mode*) when *Group Bypass* is activated. See *Watch On with Group Bypass*.

When a "2" is entered in Location 081 (*Chime On with Group Bypass*), the Chime Mode will be enabled for all programmed zones when *Group Bypass* is activated. Note that (a) *Group Bypass* need not be programmed for any zone to use this feature; (b) if a zone is programmed as a Chime Zone, it may not be programmed for *Group Bypass*; and (c) if this feature is programmed, Hold-Down Function 5 (*Chime On/Off*) is disabled. Also see *Chime Zone*.

Include Manual Bypass in Force-Arm/Status See *Closing Report*

Key Input on Zone 7 (Location 183)

For a remote arm/disarm keyswitch station, program an "8" in Location 183 and wire a normally-open momentary keyswitch to Zone 7. Supervise the keyswitch with an end-of-line resistor in parallel and program Zone 7 for *24-Hour Protection*. This feature reports as *User 1*.

Note: A wireless transmitter mapped to Zone 7 may be used for remote arming.

Keypad Aux. Alarm on NTO Lug See *Untimed Output*

Keypad Panic See *Panic Zone*

Line-Reversal Module, M278

The Line-Reversal Module allows the control panel to be monitored by a central station through leased lines. On alarm, the module reverses normal line-voltage polarity. For details, see instructions furnished with the module.

Listen-In Lug (Lug E5)

If the installation requires one, connect a Listen-In module to Lug E5. The 12V at Lug E5 will drop to zero when the

communicator goes off-hook. The voltage will return when the transmission is completed and the module can occupy the phone line. **Note:** A Listen-In Module may not be used in UL installations.

Also see *Untimed Output: Audio Verification on NTO*.

Loop Response (Locations 214-217)

Loop response is the amount of time that a normally-closed circuit must remain open, or a normally-open circuit must remain closed, to trip an alarm. The slower the loop response, the more immune the system will be to intermittents ("swingers"). Selectable loop-response times are:

750mS (.75 sec.): The slowest loop-response time, recommended for use with magnetic contacts, window foil, etc. Unless programmed otherwise, loop-response time will be 750mS (milliseconds) for all zones.

50mS (.05 sec.): Used for momentary panic buttons and area-protection devices, such as photoelectric eyes, passive infrared sensors, floor mats, etc.

7mS (.007 sec.): An extremely fast loop response used primarily for window bugs.

Low Battery (Location 169, 173)

Disable Low-Battery Display (Location 305)

A low-battery alarm will signal a system trouble ("2" flashing with LEDs) when the battery terminal voltage drops below 11.5V (nominal). A low-battery condition may report to a central station by programming a "4" in Location 169. Low-Battery restores report upon detection of a specified terminal voltage during a dynamic battery test. See *Bell/Battery Test* (Hold-Down Function 1).

If *Disable Low-Battery Display* is programmed, there will be no indication of a low-battery system trouble at the keypad unless accompanied by another system trouble.

Never Arm (Locations 090-091)

A zone programmed as *Never-Arm* cannot go into alarm. When tripped, it will display at the keypad when Hold-Down Function 3 (*Display Status*) is selected. A chime will sound at the keypad while armed or disarmed if Chime is programmed for that zone and enabled. (The display will also indicate the zone if *Display Chime* is programmed.) This feature is suggested for use as a garage-door or driveway monitor or similar application.

No Ac See *Ac-Failure Reporting*

No End-of-Line Resistor (Locations 086-087)

Program for any normally-closed zone that is not wired with an end-of-line resistor.

No Opening Report After Alarm on Zone 6 (Location 183)

If *Opening Report After Alarm* is selected and a TM900 Test Timer is installed, wire the TM900 to Zone 6. Program a "2" in Location 183. Also see *Opening Report After Alarm*.

NTO Lug see *Untimed Output*

Number of Rings See *Callback Telephone Number 1, 2*

Opening (Closing) Codes See *Opening (Closing) Report*

Opening Report (*Select User(s) Opening*) (Location 176)

Opening Report After Alarm (Location 179)

Opening and closing reports are generally used in commercial installations. On disarming, the communicator can send an opening code for each user (*Select User(s) Opening*), or it may transmit only when the panel is disarmed

after an alarm has occurred (*Opening Report After Alarm*). Note that Subscriber Identification Numbers (Locations 108-111; 140-143) and Opening Codes (Locations 070-077) must be entered for either opening report.

Program *Select User(s) Opening* (Location 176) to report each time the panel is disarmed. Each of up to four users may have his own Opening Code (Locations 070-077). If selecting Opening Report, do not select *Opening Report After Alarm*.

Program *Opening Report After Alarm* ("1" in Location 179) to report only when disarming after an alarm. This feature may be used by the central station to verify that the subscriber has responded to the alarm and disarmed the panel. If *Opening Report After Alarm* is selected, do not select Opening Report.

Panic Zone

Enable Keypad Panic (Location 182)

To enable Panic from the keypad (K/P on Programming Sheet), program a "2" in Location 182. The Panic Zone is tripped by simultaneously pressing Keys [*] and [#] and may be programmed to send a silent alarm to a central station, activate an audible alarm, or both. (For silent panic, see *Direct Keypad Panic to Ambush*.) Keypad Panic may be disabled at individual keypads by cutting a jumper on the keypad circuit board. Also see *Enable Keypad Auxiliary Panic*; *Enable Keypad Fire Panic*.

Remote momentary pushbutton panic switches (normally open) are connected across the two white wires on the keypad (only on those keypads that support remote-panic switches). In UL systems, remote panic buttons must be located in the same room as the keypad.

PIR Zone (Locations 092, 093)

Sensor Watch® (Locations 094-095)

Disable Day-Zone Report (Location 079)

Power-Up Delay

Program for any zone containing a PIR or dual-technology sensor, floor mats, door contacts, etc. Upon powering up the control panel, a 3-4 minute delay on these zones allows sensors to stabilize. For power-up delay only, do not program *Sensor-Watch Time* (Locations 094-095, see *Time Selection*). Power-up delay may be cancelled by holding down Reset Key [9] until the function beep sounds.

If no trip is detected within the programmed Sensor-Watch time, a Day-Zone trouble will be transmitted to the central station, if programmed to report ("8" in Location 168). There is no audible indication at the keypad.

Program *Sensor Watch* in Locations 094-095. Select a value according to the expected activity within the coverage area while *disarmed*. In calculating the Sensor Watch time, note that only the disarmed hours (the time between armed periods) are added. In moderate traffic areas, a Sensor Watch time of perhaps 15 hours may be appropriate, whereas in remote areas, a time of 60 hours or more may be in order. Sensor Watch time should be calculated for the PIR Zone with the *least* amount of traffic. However, if no activity is expected on a zone (in an attic, for example) that zone should not be programmed as a PIR Zone. (If Locations 094-095 are left blank, PIR Zones will still be delayed on power-up, but they will not be monitored for activity.)

If this feature is selected and any other zones are programmed as Day Zones, a "2" may be programmed in

Location 079 (*Disable Day-Zone Report*) to inhibit Day-Zone trouble reports. A Day-Zone condition will still display at the keypad, but a trouble report at the central station will now indicate a PIR-Zone trouble.

Power Up in Last State (Location 180)

If programmed, the panel will return in its last state (armed or disarmed) when ac is restored after a lengthy power failure (and the backup battery is depleted). If the panel returns armed and closings are programmed to report for User 1, it will report as USER 1.

Pre-Dial Delay (Locations 114, 146)

A *Pre-Dial Delay* may be used whenever a delay is required before dialing. It is usually required to program *Dial-Tone Detection*, which causes the communicator to wait for a dial tone before dialing (see *Dial-Tone Detection*). Certain telephone exchanges send a nonstandard dial tone that the communicator may not be able to detect. With these nonstandard exchanges, it is possible to program *Pre-Dial Delay* rather than *Dial-Tone Detection*. This will cause the communicator to wait for a predetermined time before dialing rather than look for a nonstandard dial tone.

Contact the telephone-equipment supplier to find out how long a delay is required before dialing. Select *Pre-Dial Delay* by programming one "D" for each 4-second delay required. Enter *Pre-Dial Delay* "D"s starting in Location 114 for Telephone 1, and starting in Location 146 if Telephone 2 is used. See *Backup Reporting*; *Double Reporting*; *Split Reporting*. Also see *Access Number for Outside Line*.

Priority Zone (Locations 190, 191)

A zone that will prevent arming if in trouble. If an attempt is made to arm, the sounder will emit a steady tone and a "P" will be displayed. The priority condition may be silenced by disarming. Any zone may be selected as a *Priority Zone*. A zone in trouble that is neither a Priority Zone nor an Auto-Bypass Zone will cause an alarm on arming.

Priority Zone with Bypass (Locations 188, 189)

A Priority Zone that will permit arming if the priority condition is bypassed by pressing Reset Key [9], then entering a User Code. The zone will auto-bypass and, if status is reported, the condition can be communicated to a central station.

Any zone not selected as a *Priority Zone* may be programmed as a *Priority Zone with Bypass*. When programming a zone as *Priority with Bypass*, do not program *Remove Auto-Bypass*. Also see *Display Any Bypass*.

Pulsing Fire Output See Alarm Outputs

Receiver Format (Locations 112, 144)

The communicator can transmit to any standard central-station receiver. A receiver format must be programmed for each telephone number used, but a different format may be assigned to each.

Refer to *Double Reporting* and *Backup Reporting* to determine if Telephone 2 will be programmed. Call the central station for each telephone number to check the type of receiver in use. From Table 5, enter the receiver format for each phone number.

Entry	Receiver Format	Data Freq. (Hz)	Duty Cycle (On/Off)	Inter-digit Time
blank	Ademco, Silent Knight <i>Slow</i>	1900	60/40mS	600mS
1	Sescoa, Vertex, DCI, Franklin	1800	30/20	800
2	Radionics <i>Fast</i>	1800	13/12	400
3	Silent Knight <i>Fast</i>	1900	40/30	560
4	Radionics, DCI, Franklin <i>Slow</i>	1800	60/40	600
5	Universal Hi-Speed			
6	Reserved			
8	Add "8" for 2300Hz Handshake; do not add if 1400Hz Handshake.			

Table 5. Receiver Formats.

Program the receiver-format entry in Location 112 for Telephone 1 and Location 144 for Telephone 2, if used.

Receiver see R1000 Installation Instructions WI604

Remote Status LED on NTO Lug (Location 082)

When a "2" is programmed in Location 082, a remote Status LED connected to the NTO Lug will go on when the lug is low, giving the same indication as the keypad STATUS LED. In this application, do not use the NTO Lug as an output. Connect the LED cathode to the lug through a 560Ω resistor, and the anode to +12V AUX. POWER (Terminal 5).

Remove Auto-Bypass (Locations 192, 193)

All zones are normally Auto-Bypass Zones and will be bypassed if in trouble when arming. (Note that the exit/entry door must be closed before arming, otherwise the Exit/Entry Zone will be auto-bypassed.) A momentary beep will sound at the keypad to warn that the system has been armed with a zone in trouble. *Hint:* Remove Auto-Bypass from Follower Zones containing a keypad and PIR to permit arming while motion is sensed. The zone will be secure by the time exit delay has expired.

Note: If auto-bypass is removed from a zone in trouble that is not programmed for Priority arming (Locations 190, 191), that zone will cause an alarm on arming. If selecting *Priority Zone with Bypass*, do not select *Remove Auto-Bypass*.

For UL installations, non-24-Hour Zones with auto-bypass (*Remove Auto-Bypass* not programmed) must be programmed for *Priority Zone with Bypass*. If an attempt is made to arm with these zones in trouble, the sounder will come on, a "P" will be displayed, and the panel will not arm (enter a valid arm/disarm code to silence the sounder and clear the display). To arm, hold down Reset Key [9] for about 2 seconds, then enter the arm/disarm code.

Report on Alarm (Locations 166-169)

Violation of a zone selected to report on alarm will cause the communicator to transmit the code selected for that zone to the central station. Enter Alarm Codes (Locations 000-029) for each zone to report on alarm, even if identical codes are used for different zones.

Reset Fire (Location 181)

If detection devices in use require removal of dc voltage to reset, program a "2" in Location 181 and wire the device power leads to Terminals 11 (+) and 12 (-) for two-wire devices, or Terminals 11 (+) and 13 (-) for four-wire devices (see *Wiring Diagram*). Holding down Reset Key [9] until the sounder beeps will momentarily remove power from Terminal 11.

Reset Shock Sensors on Arming (Location 305)

Select for detection devices that require a brief power interruption to reset; wire the device power leads to Terminals 11 and 6. Arming the system will momentarily remove power from the Fire Power terminal to reset the device.

Reset Test Timer on Report See *Test Timer*

Restore Report

Restore, Control-Panel (Locations 170-173)

Restore, Zone (Locations 184, 185)

If programming *Zone Restore, Control-Panel Restore* must be programmed as well. When selecting a Restore Report, (a) Subscriber Alarm/Restore Identification Numbers must be programmed for Telephone 1 (Locations 100-107) and Telephone 2 (Locations 132-139), if used; and (b) Restore Codes (Locations 040-069) must be entered for each zone selected to report a restore.

The communicator can transmit a report to the central station when a zone or the control panel is restored. To select the time of reporting, refer to Table 6.

Select User(s) Closing See *Closing Report*

Program:	for Control-Panel Restore to be sent:	and for Zone Restore to be sent:	
Instant <i>Auto-Reset</i> (Locations 200, 201)	When (a) zone is repaired; or (b) control panel is disarmed	When zone is repaired, whether panel is armed or disarmed	
<i>Auto-Reset After Alarm Timeout</i> (Locations 200, 201; "2" in Location 180)	When (a) resets (alarm times out & zone repaired); or (b) when panel is disarmed.	When zone resets (alarm times out & zone is repaired) whether panel is armed or disarmed.	
		(See Note 2) Zone Repaired with Panel	
		Armed	Disarmed
No <i>Auto-Reset</i>	When panel is disarmed (regardless of zone condition)	When panel is disarmed	When panel is armed & disarmed again

Table 6. Restore Reports

Note: (1) 24-Hour Zone restores are sent as shown under Zone Restore. (2) It is recommended that Zone-Restore Zones or 24-Hour Zones be programmed with Auto Reset or Priority Zone to prevent accidental auto-bypassing of a latched zone.

Select User(s) Opening See *Opening Report*

Selective Bypass (Locations 194, 195)

Removal of one particular zone from the system. Any or all Zones 1–7 programmed for *Selective Bypass* may be removed from the system, but each must be removed separately.

Selectively bypass a zone by pressing Bypass Key [B] followed by the zone number. The next time the panel is disarmed, all bypassed zones will automatically revert to non-bypassed zones.

When one or more zones is bypassed, the yellow BYPASS LED on the keypad will light. The zones bypassed may be confirmed by holding down Key [2] (*Display Bypass*) until the function beep sounds; with the key depressed, the bypassed zones will be displayed.

Sensor Watch™ See *PIR Zone; Time Selection*

Service Code See *User 5 Service Code*

Single-Digit Format See *Data Format*

Smoke Detectors (Terminals 11 & 12)

Connect smoke detectors as shown on the *Wiring Diagram*. Note that Terminals 11 and 12 may be used for the Fire Zone only. Up to 10 compatible two-wire smoke detectors may be “daisy-chained” together. Subtract smoke-detector alarm current from auxiliary standby current. See *COMPATIBLE UL-LISTED DEVICES*.

Note: If they are of the self-resetting type, power 4-wire smokes from the Constant Auxiliary Voltage Output at Terminal 5 instead of Terminal 11.

Sounder Output on Lug E4 (Location 180)

When an “8” is programmed in Location 180, Lug E4 will go low whenever the keypad sounder is activated. This feature disables Lug E4 for use as an Arm Lug (see *Arm Lug*).

Split Reporting (Location 179)

Split Reporting causes all reports except Openings, Closings, and Test Timer to be sent to Telephone No. 1, while Openings, Closings, and Test Timer report to Telephone No. 2. (*Split Reporting* overrides *Backup Reporting* or *Double Reporting* if either combination is programmed.) Enter Subscriber IDs (Locations 132–143) and other information (Locations 144–163) required for Telephone 2. Note that Subscriber ID Numbers for Telephones 1 and 2 must be entered, even if they are the same.

Status Report See *Closing Report*

Subscriber Identification Numbers (Locations 100–111; 132–143)

Different *Subscriber Identification Numbers* (account numbers) may be used by the central station to distinguish Alarm and Restore Reports (Locations 100–107) from Opening and Closing Reports (Locations 108–111). Similarly, different numbers may be used to distinguish Alarm/Restore Reports for Group-1 Zones (Zones 1–7) from Group-2 Zones (Fire to Low Battery). Both groups must be programmed, even if both use the same number. See *Report on Alarm; Restore Report; Opening Report; Closing Report*.

Furthermore, if a second telephone is used, different Subscriber Identification Numbers may be required for

Alarm/Restore Reports (Locations 132–139) and Opening/Closing Reports (Locations 140–143). As above, both groups must be programmed, even if both use the same number. See *Double Reporting; Backup Reporting*.

Note:

1. If the central station cannot accept two-digit or extended event codes, the Alarm and Restore Codes may be the same as the Opening and Closing Codes; or, the Alarm/Restore Codes may be the same for Groups 1 and 2 if the respective Subscriber Identification Numbers are different.
2. Starting at the left-most location, enter at least 3 digits for each Subscriber Identification Number, even if the first two are zeros. A fourth digit is available for those receivers capable of recognizing 4-digit subscriber codes.

Sum Check See *Data Format*

Swinger Shutdown (Locations 084–085)

When programmed, Zones 1 through 7 with *Auto-Reset* will only reset twice (3 alarms) until rearmed in order to prevent “swingers” (intermittents) from causing repeated false alarms. (Do not program for UL installations.) See *Auto-Reset*.

Telephone Numbers (Locations 117–131; 149–163)

To report to a central station, Telephone Number 1 (Locations 117–131) must be programmed. Telephone Number 2 (Locations 149–163) is programmed if *Backup Reporting*, *Split Reporting* or *Double Reporting* is selected.

Telephone Number 1 will be preceded by at least one *Dial-Tone Detection* entry (“E” in Location 116) or *Pre-Dial Delay* entry (“D” in Location 114) to ensure that the communicator detects a dial tone or waits a reasonable time to access a telephone line before dialing. (See *Dial-Tone Detection; Pre-Dial Delay*.) Furthermore, private telephone systems may require a separate *Dial-Tone Detection* or *Pre-Dial Delay* digit, followed by an *Access Number* (Location 115) to obtain an outside line. (See *Access Number for Outside Line*.)

It should be noted here that Telephone Number 1 need not actually start in Location 117 nor end in Location 131, as extra locations have been provided to allow for additional prefix digits, if required. What is important is that Telephone Number 1, with its associated *Pre-Dial Delay*, *Access Number*, and *Dial-Tone Detection*, be wholly contained within Locations 114–131, and that they be in their proper sequence. It may, in fact, be advantageous to leave one or two blank locations before entering the telephone number to allow for the unexpected (an additional *Pre-Dial Delay*, for example). The above applies to *Telephone Number 2* (Locations 149–163) and the *Callback Telephone Number* (Locations 270–285; PROM Page-1 Locations 014–029) as well.

Note: An “F” in any location will be ignored by the communicator when dialing.

Test Timer (Locations 024, 025; 169)

Reset Test Timer on Report (Location 181)

When a “1” is programmed into Location 169, a daily test report will be transmitted to the central station from the time the panel is powered up. The respective Alarm Code is programmed into Locations 024, 025.

By entering an "8" in Location **181**, the timer will be programmed to send a daily test only if there has been no other report. (Note that this, or the above, is required in UL installations.) Thus, if one normally reports an opening every weekday morning, for example, this feature may be utilized to maintain reporting continuity on weekends.

Test-Timer Offset (Locations 250, 251)

If Test Timer is programmed, the test timer will report immediately upon power-up, and every 24 hours thereafter. To delay the timer reporting time up to 24 hours from power-up time, program Locations **250** and **251** in hours (see *Time Selection*). (If these locations are left blank, the test timer will report immediately upon power-up.)

Timeout (Locations 224-231)

Specifies the length of time that an alarm, alert, or delay will remain active. Abort-Delay time and Burglary timeout must be programmed, or the feature will not activate. See *Time Selection*.

Note: In installations governed by California Fire Marshal regulations, do not program a timeout for fire alarms.

Time Selection Also see *Programming Sheet*

The times shown in Table 8 are programmable. The Time Selector Chart on the Programming Sheet shows example times only, in seconds or minutes. In reality, any time up to those shown in Table 8 may be programmed. Note that each time is programmed in two locations. The first location has a time factor of 1, the second a time factor of 16.

1st box	2nd box
tx1	tx16

Time (t)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Entry	*	1	2	3	4	5	6	7	8	9	0	B	C	D	E	F
*Blank. Note: If both programming locations are left blank, refer to Table 8 <i>Notes</i> for feature timeout.																

Table 7. Program entries for unit times.

To select a time up to 15 seconds, 15 minutes, or 15 quarter-seconds (3.75 seconds), program the respective entry into the first box only; do not program the second box. To select a time greater than 15 seconds, 15 minutes, or 15 quarter-seconds, program both boxes as follows:

- 1. For the feature selected, choose an appropriate time in units shown (all seconds, minutes, or quarter-seconds -- not minutes and seconds, etc.).
- 2. Divide the time chosen by 16. Enter the quotient in the 2nd Box and the remainder in the 1st Box.
- 3. Check entries by adding the contents of the 1st Box to 16 times the contents of the 2nd Box. (Remember that a "zero" entry represents "10".)

Example 1. Program *Entry Delay 1* for 1½ minutes.

- 1. *Entry Delay 1* (Locations **220, 221**) is in units of seconds, thus delay time is 90 seconds.
- 2. Divide by 16: $90/16 = 5$ (quotient) + 10 (remainder). Enter the *quotient* in the 2nd Box and the *remainder* in the 1st Box:

220	221
0	5

/ \
remainder quotient
(0 for "10")

3. Check entries (remember, a "0" entry = "10"): $10 + 16(5) = 90$.

Example 2. Program the sounder to sound a "Chime" for 4 seconds.

- 1. Chime time duration (Locations **230, 231**) is in units of quarter-seconds, thus chime duration is 16 quarter-seconds.
- 2. Divide by 16: $16/16 = 1$ (quotient) + 0 (remainder). Enter the *quotient* in the 2nd Box and the *remainder* (blank entry for "0") in the 1st Box:

230	231
	1

/ \
remainder quotient
(blank for "0")

3. Check entries (blank entry = "0"): $0 + 16(1) = 16$.

Time	Locations	Units	Max. Time
Sensor-Watch Time (See Note 1)	094, 095	hr	255 hr
Abort Delay (See Note 1)	232, 233	sec	4 min, 15 sec (255 sec)
Exit Delay (See Note 2)	218, 219	sec	4 min, 15 sec (255 sec)
Entry Delay 1 (See Note 2)	220, 221	sec	4 min, 15 sec (255 sec)
Entry Delay 2 (See Note 2)	222, 223	sec	4 min, 15 sec (255 sec)
Burglary Timeout (See Notes 1 & 3)	224, 225	min	4 hr, 15 min (255 min)
Fire-Zone Timeout	228, 229	min	Untimed (See Note 4)
Chime Duration	230, 231	¼-sec	Untimed (See Note 4)
Timer Offset	250, 251	hr	23 hr (See Note 5)

Table 8. Programmable times and timeouts.

Notes:

- 1. If both locations are left blank, this feature will not activate (timeout = 0).
- 2. If both locations are left blank, Exit Delay = 60 sec.; Entry Delay = 30 sec.
- 3. In UL installations, timeout must be at least 4 minutes for Residential; at least 15 minutes for Mercantile.
- 4. If both locations are left blank, this feature will remain active until system is disarmed. (Chime may be reset using Key [9]; however if a time is programmed, Chime cannot be reset and must time out.) If both locations are programmed "F", maximum time = 4 hours, 15 minutes (255 minutes); or 63.75 seconds (255 quarter-seconds) for Chime Duration.

5. If left blank and Test Timer is selected, will report immediately on power-up.
6. In installations governed by California Fire Marshal regulations, do not program a timeout for fire alarms.

TouchTone® Dialing (Location 178)

TouchTone® with Rotary Backup (Location 178)

Select *TouchTone Dialing* only when the subscriber has TouchTone service. TouchTone dialing is faster than rotary dialing, but not always as reliable.

For the communicator to use TouchTone on all dial attempts, add a "1" to Location 178. To use TouchTone on the first attempt with subsequent rotary dial attempts, add a "2" to Location 178. *TouchTone Dialing* will override *TouchTone with Rotary Backup* if both are selected. Note that if *Backup Reporting* is also selected, the communicator will use rotary dial to reach Telephone 2.

Transmitters see R1000 Receiver Instructions W1604

Trouble

An abnormal zone condition (a break in a normally-closed loop; a short on a normally-open loop; or either on an end-of-line-resistor supervised loop) while disarmed.

Trouble on a Burglary Zone will be indicated by a sounder beep upon arming (does not apply to selective- or group-bypassed zones). If auto-bypass has been removed from a Burglary Zone, that zone will go into alarm on arming. Note that if the zone is Exit/Entry, it will go into alarm after exit-delay and entry-delay times have elapsed.

Trouble (open circuit) on a Day Zone (normally closed) will be indicated by a flashing green STATUS LED and a beeping sounder; the digital readout will display the troubled zone(s). Keypad indications are reset by Key [9].

A Fire-Zone trouble is indicated by the red FIRE/TROUBLE LED and by the sounder. An open circuit or short to ground on Fire Power (Terminal 11) or Aux. Power (Terminal 5) will cause a flashing LED and a pulsing sounder after a 10-second delay. (A short across the EOL resistor will cause an alarm condition: steady LED and pulsing sounder.) Reset Key [9] will silence the sounder; the LED will go out within 30 seconds if the cause of the trouble has been removed. **Note:** Fire trouble restores are sent only after all zones are restored.

Two-Digit Format See Data Format

Untimed Output (NTO Lug E15; Locations 096-099)

Audio Verification on NTO Lug (Location 305)

Failure to Communicate on NTO Lug (Location 078)

Keypad Aux. Alarm on NTO Lug (Location 079)

Lug E15 is an untimed output, programmable for any zone (Group 1 or Group 2). When tripped, the NTO Lug will go low. This output may be used for strobes (do not exceed 300mA), or to trip an LW-900 Long-Range Wireless Interface. A relay (400Ω minimum) may be connected between E15 and Terminal 5 (+ AUX. POWER) if a diode is inserted in series (cathode to E15; anode to relay coil).

Select *Audio Verification on NTO Lug* for the MAV-15 Two-Way Voice or other listen-in device. The NTO lug will go low when a programmed zone is tripped but will return high when the central-station communication is complete.

If *Failure to Communicate on NTO Lug* is programmed ("2" in Location 078), Lug E15 will go low after 9 unsuccessful transmissions, and remain low until either a trans-

mission or a Telco Test is successful.

If *Keypad Aux. Alarm on NTO Lug* is programmed, Lug E15 will go low when the keypad Auxiliary Panic is tripped, and will remain low until the panel is disarmed.

Also see *Abort Delay; Remote Status LED on NTO Lug*.

User Program Code (Locations 238-243)

Allows an authority to access the User Program Mode to program any User Code (see *GETTING UP AND RUNNING – Programming User Codes*). The default User Program Code is 1,2,3,4,5,6, however this code must be changed to preserve system security. Enter the 3- to 6-digit User Program Code starting in Location 238.

Note: The Dealer Program Code must not start with the same numbers as the User Program Code.

User 5 Arm Only (Location 078)

User 5 Report as User 1 (Location 078)

Users 6, 7 & 8 Report as Users 2, 3 & 4 (Location 079)

User 5 Service Code (Location 079)

To restrict User Code 5 as an "arm-only" code (for single-digit easy arming), program a "4" in Location 078. (Do not program *User 5 Service Code*.) Note that if a single-digit arm-only code is programmed, the hold-down function for that digit is disabled.

The Service Code, if programmed, provides reduced access to the control panel for those with limited authority. Operation is similar to that of a regular Arm/Disarm Code, except that the Service Code is disabled at times. When active, it may be used to arm or disarm as needed.

The Service Code is controlled by User 1. Whenever User 1's code is entered, the Service Code is *deactivated*. To activate, merely arm using the Service Code. (The Service Code can always be used to arm.) To enable User Code 5 as a Service Code, program a "1" in Location 079. For the Service Code to report, it must report as User 1 ("8" in Location 078). For Users 6, 7 and 8 to report, they must report as Users 2, 3 and 4 ("4" in Location 079).

Watch On with Group Bypass (Location 081)

The Watch Mode activates all Day Zones simultaneously. When a "1" is entered in Location 081, the Watch Mode will be enabled when *Group Bypass* is selected (by pressing Key [B] twice). Note that (a) *Group Bypass* need not be programmed for any zone for this feature to operate; (b) if a zone is programmed as a *Day Zone*, it may not be programmed for *Group Bypass*; and (c) *Chime On with Group Bypass* should not be programmed.

Zone Restore See Restore Report

Normally, Control-Panel Restore is programmed for a zone to send a restore report to the central station when either the zone is repaired or the panel is disarmed. If the restore report is to be sent only when the zone is repaired, *Zone Restore* should be selected (also program *Control-Panel Restore*). It is recommended that *Auto Reset* and *Priority Zone* or *Priority Zone with Bypass* also be selected for proper operation. See *Restore Report*.

24-Hour Protection (Locations 198, 199)

A zone that provides protection at all times, whether or not the system is armed. Neither the green STATUS nor the red ARMED/ALARM LED will indicate the condition of a zone programmed for *24-Hour Protection*, however an alarm will be logged into Alarm History (see *Alarm History*).

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REFER TO INSTALLATION INSTRUCTIONS W1587

BATTERY STANDBY:
4 HOURS AT 500mA
COMBINED STANDBY CURRENT
6 HOURS AT 350 mA.

AC IN, 15V/60Hz VIA
NAPCO TRF12 CLASS II
TRANSFORMER
DO NOT CONNECT TO
SWITCHED OUTLET

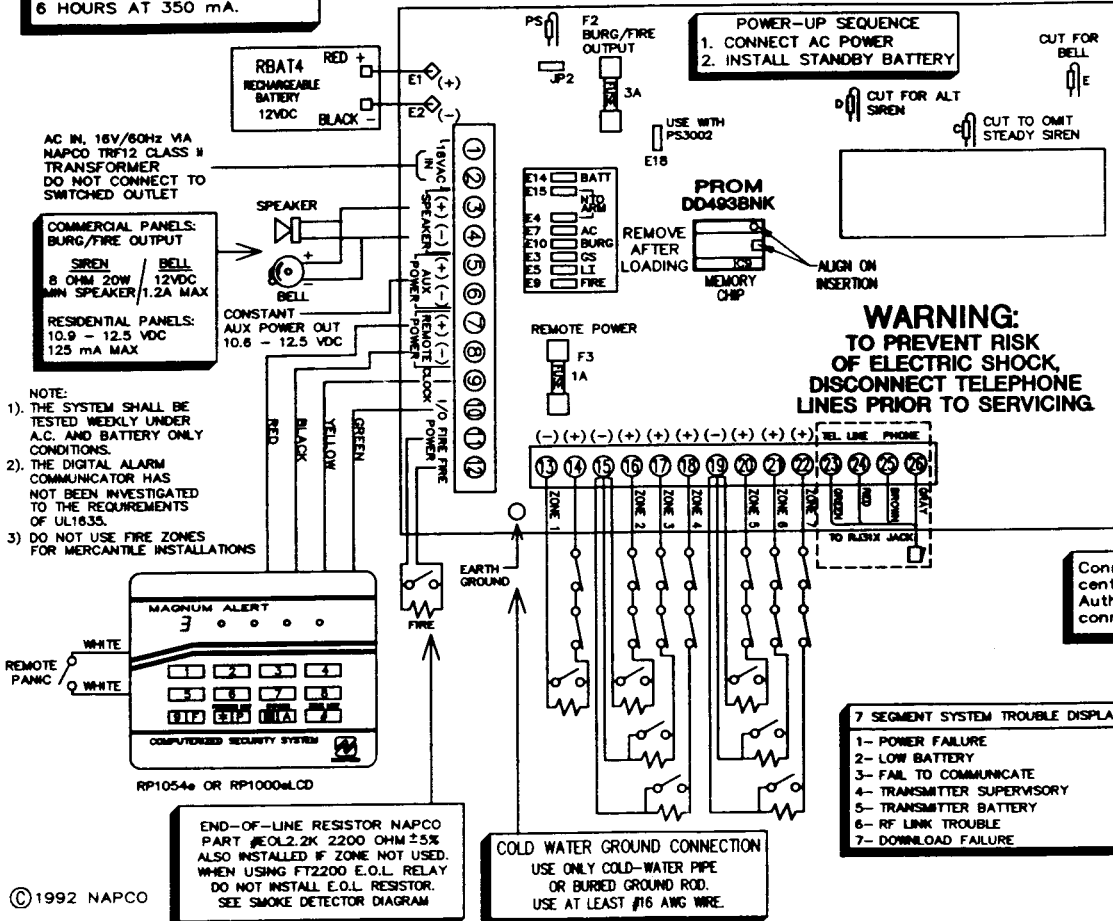
COMMERCIAL PANELS:
BURG/FIRE OUTPUT

<u>SIREN</u>	<u>BELL</u>
8 OHM 20W	12VDC
MIN SPEAKER	1.2A MAX

RESIDENTIAL PANELS:
10.9 - 12.5 VDC
125 mA MAX

NOTE:

- 1). THE SYSTEM SHALL BE TESTED WEEKLY UNDER A.C. AND BATTERY ONLY CONDITIONS.
- 2). THE DIGITAL ALARM COMMUNICATOR HAS NOT BEEN INVESTIGATED TO THE REQUIREMENTS OF UL1835.
- 3). DO NOT USE FIRE ZONES FOR MERCANTILE INSTALLATIONS



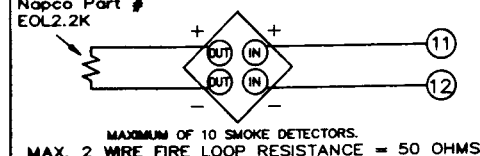
PROM LOADING SEQUENCE

1. REMOVE ALL POWER
2. INSERT PROGRAMMED PROM
3. CONNECT AC POWER
4. ENTER DEALER PROGRAM MODE
5. EXIT DEALER PROGRAM MODE
6. WAIT 10 SECONDS
7. REMOVE AC
8. REMOVE PROM

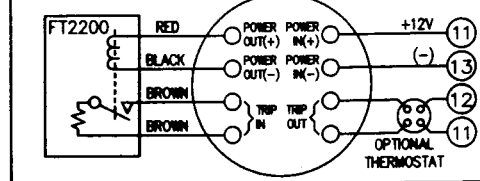
IMPORTANT

Shorting fuses to either the case or to each other may cause damage to the circuit board. Always use fuse pullers. For continued protection against fire, replace only with fuse of same type and rating.

WORKING BETWEEN 2-WIRE SMOKE DETECTOR AND CONTROL-CENTER TERMINALS



WIRING BETWEEN 4-WIRE SMOKE DETECTOR AND CONTROL-CENTER TERMINALS



Connection of a fire alarm signal to a fire alarm headquarters or a central station shall be permitted only with approval of the local Authority Having Jurisdiction. The burglar alarm signal shall not be connected to a police emergency number.

END-OF-LINE RESISTORS, 2200 OHMS \pm 5%

ALSO INSTALLED IF ZONE IS NOT USED

COMBINED STANDBY OUTPUTS:

(AUX. POWER, REMOTE POWER, FIRE POWER):

500 mA maximum with OPTIONAL TRF-11 TRANSFORMER
450 mA maximum with OPTIONAL TRF-12 TRANSFORMER

This equipment should be installed in accordance with the National Fire Protection Association's Standard 74 (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269) and local codes. Printed information describing proper installation, operation, testing, maintenance, evacuation planning, and repair service is to be provided with this equipment. Refer to Operation and Installation Manual W587
UL Listed Limited Energy Cable is required.

7 SEGMENT SYSTEM TROUBLE DISPLAY

- 1- POWER FAILURE
- 2- LOW BATTERY
- 3- FAIL TO COMMUNICATE
- 4- TRANSMITTER SUPERVISORY
- 5- TRANSMITTER BATTERY
- 6- RF LINK TROUBLE
- 7- DOWN-LOAD FAILURE

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