NAPCO

OPERATING AND INSTALLATION INSTRUCTIONS

MAGNUM ALERT-800
CCI-8 and CCI-8DD
ALARM CONTROL CENTER
& DIGITAL COMMUNICATOR

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(SEE PAGE 3-28 FOR A SUMMARY OF CHANGES FROM PREVIOUS EDITION)

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1. INTRODUCTION

The MAGNUM ALERT-800, CCI-8 and CCI-8DD are advanced microcomputer-based, 6-zone commercial and residential control centers contained within a wall-mounted metal cabinet. The cabinet has knockouts for wiring and for mounting a Napco keypad, keyswitch station or fire monitoring station in the door. Keypads and keyswitch stations may also be remotely located for easy access, and the control center cabinet concealed from view at a remote site.

All units are supplied with a blank PROM, which must be programmed as the Subscriber PROM for the particular installation. After installation, the Subscriber PROM gives the alarm system its features and (where necessary) communicator information.

The MAGNUM ALERT-800 is a complete control system consisting of a CCI-8DD control center with integral communicator, a digital keypad arming station and a blank PROM. The CCI-8DD may be ordered separately without a keypad, or the CCI-8 may be ordered for installations that do not require the communicator.

BUILT-IN FEATURES (With a Napco RP-1003H Keypad)

- Up to 6 normally-closed or normally-open zones, each capable of individual indication, plus:
  - Two normally-open zones sharing two of the normally-closed indications.
  - 24-Hour Panic Zone that can be activated from the keypad or by normally-open momentary devices.
  - Auxiliary 24-Hour Zone (normally open).
  - Internal low-battery detection circuit.
- Multiple remote momentary keyswitch or digital keypad stations for arming/disarming the system:
  - Digital keypad decoder accepts a 2- to 6-digit security code to arm/disarm the system; alternative single-key arming.
  - Status and Armed/Alarm Memory LEDs indicate trouble or alarm by zone number and system armed/disarmed state.
  - Yellow LED on the keypad or keyswitch station indicates when zones have been manually shunted. Any zone may be selected for this feature by programming.
- Two separate alarm outputs, capable of powering alarm sounders:
  - Output 1: 12Vdc at 2A timed steady; untimed pulsing for sirens, bells, etc. Auto-Reset After Alarm Time-Out may be selected by programming.
  - Output 2: 12Vdc at 2A steady or isolated contacts rated at 3A/24Vdc. This output is capable of powering sirens, bells, fire horns, or a high-voltage relay for outside lights, etc.
- Ac power via 16Vac, 14.4VA, Class-II stepdown transformer.
- Optional 20VA transformer for high Auxiliary Output current.
- 200mA recharging circuit for standby battery.
- 300mA continuous regulated and filtered Auxiliary Output for low-voltage alarm devices; 750mA with optional transformer.
- Maximum protection against lightning and other transients.

BUILT-IN COMMUNICATOR FEATURES (MAGNUM ALERT-800 and CCI-8DD)

- Digital communicator with true dial-tone detection, double-pole line seizure and anti-jam; compatible with most receivers.
- Individual zone number reporting.
- Multiple reporting.

PROGRAMMED FEATURES

- Two Master PROM series:
  - SFP-492 Master PROMs -- Preselected standard set of popular features requiring little or no programming.
  - CCI-7/-8 Master PROMs -- Custom feature selection by programming.

CUSTOM-PROGRAMMED FEATURES (CCI-7/-8 Master PROM)

- Priority, Auto-Shunt, or 24-Hour Zone.
- Manual shunt from keypad or keyswitch station on arming.
- Day Zone supervision.
- Exit/entry delay.
- Zone reponse time.
- Pulsing or timed alarm output and alarm time-out period.
- Mini-Sounder on alarm.
- Voltage output or isolated (dry) contact closure on alarm.
- Maintained key.
- Up to 6 normally-closed zones.

CUSTOM-PROGRAMMED COMMUNICATOR FEATURES (MA-800 and CCI-8DD)

- Alarm/restore reporting by zone.
- Opening/closing reports.
- Abort Delay.
- Rotary or Touchtone Dialing.
- Backup or Split Reporting.
- 4/2 Format or Extended Format reporting.
- Sum-Check Format reporting.

FACTORY-SELECTED STANDARD FEATURE PACKAGE (SFP Master PROM)

- Six zones:
  - Four normally-closed Burglary Zones: three instant; one with preset delay for exit (60 seconds) and entry (30 seconds). Entry time can be set to 60 seconds by programming.
  - 24-Hour normally-open audible Panic Zone.
  - 24-Hour normally-open Auxiliary Zone.
- Auto-Shunt arming on Burglary and Panic Zones.
- One manual-shunt Burglary Zone for interior protection.
- Steady 12Vdc 3A alarm on Burglary and Panic Zones with alarm time-out preset to 10 minutes. Untimed alarm output to Auxiliary Zone optionally programmed for pulsed bell.
- Response times preset to 250mS for Burglary, 50mS for Panic, and 250mS for Auxiliary.
- Auto-Reset After Alarm on Burglary and Panic zones. Auxiliary Zone latches in an alarm condition.

STANDARD FEATURE PACKAGE COMMUNICATOR FEATURES (MA-800 & CCI-8DD)

- Individually-identified reporting for all zones and low-battery condition.
- Restoral reporting available for Burglary Zones, Panic and Auxiliary Zones and low-battery condition.
- Single-digit alarm/restore codes, three-digit subscriber identification number.

ORDERING INFORMATION

CCI-8	Alarm Control Center without Integrated Digital Communicator, 6-zone, 12 volts.
CCI-8DD	Alarm Control Center with Integrated Digital Communicator, 6 zone, 12 volt.
MA-800	Alarm control center package consisting of: one CCI-8DD, one DD-491 (blank) PROM, and one RP-1003H Keypad.
RP-1003L	3-LED Remote Keyswitch Station with Zone Shunting Button and Mini-Sounder (less keyswitch).
RP-1003H	3-LED Remote Digital Keypads with Panic Alarm, Zone
RP-1008WI/	Shunting Button, and Mini-Sounder. RP-1008WI
RP-1008BI	(off white) and RP-1008BI (brown) models illuminated.
RPB-1	Surface Mounting Backplate for RP-1003H, RP-1008WI/BI.
RPB-2	Double-Gang Box for RP-1003H, RP-1008WI/BI, RP-1003L.
RP-1003U	Fire Supervision and Indicator Station.
FT-279	Fire Circuit End-of-Line Relay/Resistor Supervisory Module.
RP-1002	Zone Expansion Indicator Station.
RBAT-1	Rechargeable Gel-Type Battery, 4AH, 12Vdc.
TRF-8	Transformer, 16Vac, 14.4VA.
TRF-9	Transformer, 16Vac, 20VA.
TPS-2	Tamper Switches (set of 2).
GSM-400	Ground-Start Module.
M-278	Line-Reversal Module.
ESM-310	Dual-Channel Siren Driver PC module.
EOLR-8	6-Zone End-of-Line Resistor Supervisory Module.
OI100	User's Operating Instructions.
SR268A/WI286A	Feature Selection Guide/Instructions (CCI-7/-8 PROMs).
PF-144A	Programming Record Sheets, 100/pad (CCI-7/-8 PROMs).
PRO410M	PROM Programmer.
DD-491	Blank PROM.

A specific PROM Master is needed to give the control center its features. Use the list below to select the correct PROM for your central-station receiver. (Any of these PROMs may be used for a CCI-8, as the CCI-8 does not have a communicator).

The DD-491 blank PROM may be formatted from any of the Master PROMs listed below.

SELECTABLE FEATURE PROM	STANDARD FEATURE PROM	RECEIVER FORMAT	RECEIVE/ TRANSMIT (Hz)	DUTY CYCLE ON/OFF (mS)	INTERDIGIT TIME (mS)
	SFP-492	Master PROMs for CCI-8 (without digital dialer)			
CCI-7/-8-1	SFP-492-1	Ademco Format with Pulsing Hold	1400/1900	51/49	600
CCI-7/-8-2	SFP-492-2	Ademco, Adcor, Vertex, and Silent Knight "slow" format	1400/1900	51/49	600
CCI-7/-8-3	SFP-492-3	Sescoa, Vertex, DCI, and Franklin "fast" format	2300/1800	30/20	800
CCI-7/-8-4	SFP-492-4	Radionics "super fast" format	2300/1800	13/12	400
CCI-7/-8-5	SFP-492-5	Silent Knight, "fast" format	1400/1900	40/30	560
CCI-7/-8-6	SFP-492-6	Radionics, DCI, and Franklin "slow" format with Steady Hold	2300/1800	51/49	600

SUBSCRIBER PROM PROGRAMMING

PROGRAMMING MATERIALS

SUBSCRIBER PROM - The blank (DD-491) PROM (integrated circuit) supplied with the control center becomes a Subscriber PROM when programmed with the selected features and communicator information required for the installation. The PROM is programmed on a Napco PRO-410/410M or DD-490 Programmer, then the Subscriber PROM is plugged into the control-center PROM socket.

MASTER PROM SERIES - Master PROMs are factory programmed. Each Master PROM is used as often as required to make copies onto blank PROMs.

There are two series of Master PROMs:

(1) CCI-7/-8 series PROMs contain only the background data for general operation of the control center. After the CCI-7/-8 Master PROM is copied onto a DD-491 Subscriber PROM, features and communicator information selected on the Programming Record Sheet are added to the Subscriber PROM by programming.

(2) The SFP-492 series PROMs include, in addition to background data, a selection of features suitable for the majority of installations. After the SFP-492 is copied, the DD-491 subscriber PROM requires little, if any, additional programming. For a description of the factory-supplied and optional features provided when an SFP-492 series Master PROM is used, refer to the SFP-492 Series Standard Feature Package section of this manual.

Both Master PROM series have six versions. From the Ordering Information, select the version corresponding to the digital receiver to which the system will be reporting. Use either the SFP-492 or any CCI-7/-8 Master PROM (-1 through -6) for a CCI-8 (no communicator).

GLOSSARY - Detailed programming instructions for features and communicator information are provided in the Glossary section of this manual. Entries are arranged in alphanumeric order.

PROGRAMMING RECORD SHEET and FEATURE SELECTION GUIDE - A Programming Record Sheet is completed when planning features and communicator transmission information to be programmed for the installation. After completion, the Programming Record Sheet is used to program the Subscriber PROM, then saved for reference. Since each of the two Master PROM series uses different formats, two different Programming Record Sheets are included in this manual:

1. Use the PF-144A Programming Record Sheet when programming CCI-7/-8 series Master PROMs. The Feature Selection Guide may be used as an aid.

2. For limited programming of Subscriber PROMs prepared from SFP-492 series Master PROMs, use the SFP-492 Series Programming Record Sheet attached to the SFP-492 Series Standard Feature Package information.

PROGRAMMING STEPS

1. (MA-800/CCI-8DD only) Call the central station for receiver format, codes and Subscriber Number(s).

2. Complete the Programming Record Sheet.

3. Select the correct Master PROM format from either series. (See **Ordering Information**.)

   NOTE: If Master-PROM background information must be changed from the factory-supplied version, some programming steps are different. Refer to **CHANGING LOCATION CONTENTS** in the Glossary instead of Steps 4 to 6 below, then proceed to Step 7.

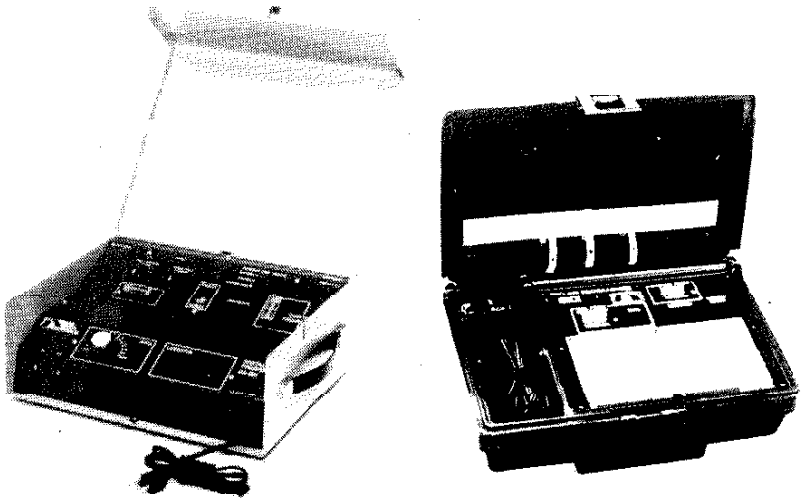
4. Follow the instructions for the Napco Programmer used.

5. Copy the Master PROM chosen.

6. Remove the Master PROM from the programmer. Program any entries in the boxes from your Programming Record Sheet into matching PROM locations.

   NOTE: If the PRO-410/410M Programmer is used, it may be necessary to precede entry numbers by the [PLUS] key.

7. Complete the Programmable Zone Features section of the supplied Installation Record Label (Fig. 3-1). Peel off the paper covering the adhesive on the back of the label, and affix the label at the lower-left corner inside the control-center door. This summary will be used by the installer to match wiring options to programmed features.



(a) (b)

Fig. 1-1 (Above). Napco programmers: (a) DD-490; (b) PRO-410.

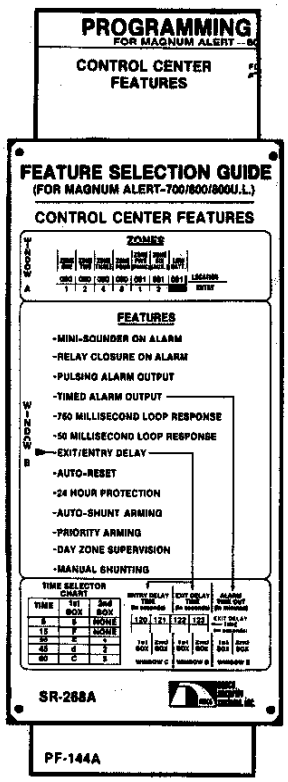


Fig. 1-2 (Right). Feature Selection Guide with Programming Sheet inserted.

2. OPTIONAL SFP-492 STANDARD FEATURE PACKAGE PROM SERIES FOR THE MAGNUM ALERT-800, CCI-8 AND CCI-8DD

INTRODUCTION

apco's optional SFP-492 Series Standard Feature Package Master PROMs are programmed by the factory with features to uit most alarm installations using Napco control center models MAGNUM ALERT-800 or CCI-8DD (with digital communicator) CCI-8 (without digital communicator). This series includes (a) one Master PROM for the CCI-8 (part number SFP-492), uich may be copied to produce Subscriber PROMs that do not require further programming (unless Programmable Options are esired), and (b) six preprogrammed master PROMs for the CCI-8DD (part numbers SFP-492-1 through SFP-492-6), which are ied to make copies that require a small amount of digital-communicator programming. See the Ordering Information to elect the specific SFP-492 version corresponding to the central-station receiver. The SFP Programming Record Sheet uich follows describes Standard Feature Package Programmable Options and Communicator Programming.

ie Master PROM is reused to copy features onto the blank DD-491 (Subscriber) PROM. After any additional programming iat may be required, the Subscriber PROM is installed into a control center requiring that PROM's receiver format.

iere an SFP series PROM does not satisfy installation requirements, features may custom programmed using the alterna- ve Master PROM series. Use Subscriber PROM Programming, Glossary, and Ordering Information sections of the MAGNUM ERT-800, CCI-8 and CCI-8DD instructions in place of these SFP instructions.

PREPROGRAMMED FEATURES

nes 1 through 4 are normally-closed Burglary Zones.

nes 1, 2 and 3 are instant normally-closed Burglary Zones.

ne 4
it/Entry Delay, normally-closed Burglary Zone. Delay time is set at 30 seconds for entry and 60 seconds for exit. The ini-Sounder at the RP-1003H keypad or RP-1003L keyswitch station will sound during the entry delay period as a warning disarm the control center.

nic Zone. 24-hour, audible Panic for momentary action normally-open devices. The Mini-Sounder will give a 4- second lert on arming if the Panic Zone is latched in alarm. (Panic Zone status gives no LED indication.)

xiliary Zone. 24-hour, priority arming auxiliary zone for normally-open devices.

e Auxiliary Zone may be used for fire (subject to fire protection codes) supervisory, or tamper protection. If used r fire protection, it is recommended that an RP-1003U Fire Supervision and Indicator Station be used.

alarm condition on the Auxiliary Zone will not cause a flashing LED indication, and will prevent the control center om arming. An attempt to arm an alarm causes the Mini-Sounder to sound continuously. Alarms on the Auxiliary Zone use an output voltage at Terminals 27 (+) and 30 (-) to power a siren or bell, which will not time out. Devices, such s fire detectors, that latch in alarm must be manually reset using the RP-1003U FIRE RESET switch or a reset switch iat is added during installation. Once the device in alarm has been cleared, the Auxiliary Zone will automatically eset, and again be capable of signalling an alarm.

to-Shunt Arming
f one or more of Zones 1, 2, 3, 4 is in trouble or the Panic Zone is latched in alarm when arming, the control center ill automatically shunt the affected zone(s) and a 4-second warning will sound at the digital keypad station to idicate that the control center is being armed with zone(s) shunted. If the 4-second warning sounds when there has een no flashing LED indication, a problem still exists on the Panic Zone.

nual Shunting
one 3 is a Manual Shunting zone that may be used for interior protection. Zone 3 is shunted when arming by pressing ie [5] button, then entering the arm/disarm code or turning the key within 10 seconds. The yellow indicator glows henever the control unit is armed with Zone 3 shunted.

Burglary Siren/Bell Output
Programmed for steady 12Vdc, 3A output after alarm caused by Zones 1 through 4 or Panic. Siren time-out is 10 minutes.

Auto-Reset
Zones 1 through 4 and Panic will automatically reset after the cause of an alarm condition is removed and the siren/bel times out. The Auxiliary Zone will automatically reset immediately after the cause of an alarm is removed. An alarm o any of the zones will not prevent the remaining zones from functioning.

Loop Response Time
Zones 1, 2, 3 and 4: 250 milliseconds; Panic: 50 milliseconds; Auxiliary: 250 milliseconds.

The following communicator features are available on models MA-800 and CCI-800 only.

Abort Delay Before Dialing
A 15-second delay before dialing is included in the Master PROM for Zones 1 through 4 and Low Battery.

Low-Battery Reporting
The control center reports a low-battery condition (below 10.2 volts) to the central station.

Dial-Tone Detection
The control center communicator will wait 12 seconds before dialing, or sooner if a dial tone is detected.

Anti-Jam Time
If the communicator detects no dial tone within 20 seconds, it will start the anti-jam procedure to free the telephon circuit from incoming calls, pause, and again attempt to detect a dial tone. After a dial tone is detected, or after second unsuccessful attempt, the communicator will proceed to dial.

ORDERING INFORMATION

Select the PROM (SFP-492 for CCI-8; SFP-492-1 through -6 for MA-800 or CCI-800) that fits your installation. Maste Standard Feature Package PROMs are used to copy features onto a blank DD-491 PROM, which (after little or no additiona programming) is used as a Subscriber PROM.

Six different formats are necessary to suit different central-station receivers. The wrong format will not be processe by the central station. Master PROM receiver format numbers are listed in the main MAGNUM ALERT-800, CCI-800, CCI- Ordering Information section. To take advantage of the Standard Feature Package, the Master PROM ordered must have th prefix "SFP".

NOTE: In states such as California where Fire Marshal listing is required, the MA-800 or CCI-8 may not be used if th system includes a fire alarm. In these systems, an MA-800UL or CCI-8UL is required.

SFP-492 PROGRAMMING RECORD SHEET

INSTALLATION NAME: _____

INSTALLATION ADDRESS: _____

DATE PROGRAMMING COMPLETED: ___/___/___

PROGRAMMABLE OPTIONS

To utilize any of the following options, fill in the "entry" box, then follow the instructions for the Napco programmer in use to program that entry into the respective location.

60 Second Entry Time

To change entry time to 60 seconds, program a "2" in location 121. This will add 2 to the existing "1" in this location and display "3".

location-▸	121
entry----▸	

Pulsing Bell Alarm on Auxiliary Zone

For a pulsing bell output at Terminals 29 (+) and 30 (-) produced by an alarm on the Auxiliary Zone, program a "2" in location 109. Do not program this location when a siren is used as the audible warning output. The output on these terminals will be steady if the alarm occurs on any of the Burglary or Panic Zones. Although the bell will time out with an alarm on the Burglary or Panic Zone, no time-out will occur on auxiliary alarms.

location-▸	109
entry----▸	

Communicator Programming (MAGNUM ALERT-800 and CCI-8DD only)

The following programming *must be added* to any SFP-492 series Master PROM used with a MAGNUM ALERT-800 or CCI-8DD, but is not used for a CCI-8 (without communicator).

Fill in the boxes provided on this sheet as instructed and program onto the Subscriber PROM. Retain this sheet as a record of the installation.

Section 1: Alarm Transmission Codes

An alarm transmission code must be programmed for each zone, as represented by the boxes below. Enter the number to be programmed in the box provided below. Do not leave any location blank.

	Zone1	Zone2	Zone3	Zone4	Panic	Aux	Low Batt
location-▸	000	002	004	006	008	010	012
entry----▸							

Section 2: Subscriber Identification Number

The Subscriber Identification Number must consist of 3 digits, even though the first and second may be zeros. (Examples are 001, 057.) Program the first number of the Subscriber Identification Number in location 034.

location-▸	034	035	036
entry----▸			

SFP-492 PROGRAMMING RECORD SHEET

Section 3: Telephone Number

Enter the first digit of the telephone number in location 045 and continue entering the remaining numbers in the locations indicated by the boxes below. There may be unused locations at the end. Unused locations may be used to enter correct digits when mistakes are made, as explained below:

Correcting Telephone Number Errors

If a wrong digit is entered and there are unused locations available, that digit may be eliminated by inserting a number "15" (8+7) in the location holding the error. The number 15 is displayed by the programmer as a letter "F". Any "F" in the telephone number will be ignored by the communicator. Enter the correct digit in the location following the "F".

location-▸	045	046	047	048	049	050	051	052	053	054	055	056	057
entry----▸													

Access Number For Outside Line

For commercial applications where the subscriber must first dial an access number to get an outside line:

1. Enter a "13" (8 + 5) in location 042. This will cause a "d" to be displayed.
2. Program the access number required to get the outside line in location 043.
3. Enter the Telephone Number starting at location 045. (See **Telephone Number**, above.)

location-▸	042	043
entry----▸		

Optional Control Center Restoral Report

This type of restoral report is only transmitted when (a) the cause of the alarm has been removed and (b) the control center has been manually disarmed and the zone reset or Auto-Reset.

All protective zones (1 through 4, Panic and Auxiliary) will reset automatically when the cause of the alarm condition is removed. For these zones, removing the cause after the control center is disarmed will send a report.

The Low-Battery circuit will not reset unless the control center is disarmed *after* the low-battery condition has been corrected. Since the low-battery detection circuit will not Auto-Reset, disarming the control center before removing the cause for Low-Battery Reporting will not send a Control Center Restoral Report, because the control center has not been reset. It will be necessary to rearm and disarm the control center to allow the report to be sent.

To select restoral reporting for Zones 1 through 4, enter a "15" in location 100 by programing "8" plus "7". This will cause an "F" to be displayed. Next, write the appropriate restoral transmission code(s) for Zones 1 through 4 in the boxes below, corresponding to locations 018 to 024. Do not leave any location blank.

		Zone1	Zone2	Zone3	Zone4
location-▸	100	018	020	022	024
entry----▸					

To select restoral reporting for Panic and Auxiliary Zones, and for a low-battery condition, enter a "7" in location 101. Then, program the appropriate restoral code(s) in locations 026 through 030 below. Do not leave any location blank.

		Panic	Aux	Low Batt
location-▸	101	026	028	030
entry----▸				

CCI-7/-8 PROGRAMMING RECORD SHEET

All installations require a Master PROM. The PF-144A Programming Record Sheet provided on the following pages shows PROM locations and selectable features for a CCI-7/-8 series Master PROM. Note the difference between this Programming Record Sheet and the SFP-492 Programming Record Sheet on the preceding pages.

Which Sections to Complete

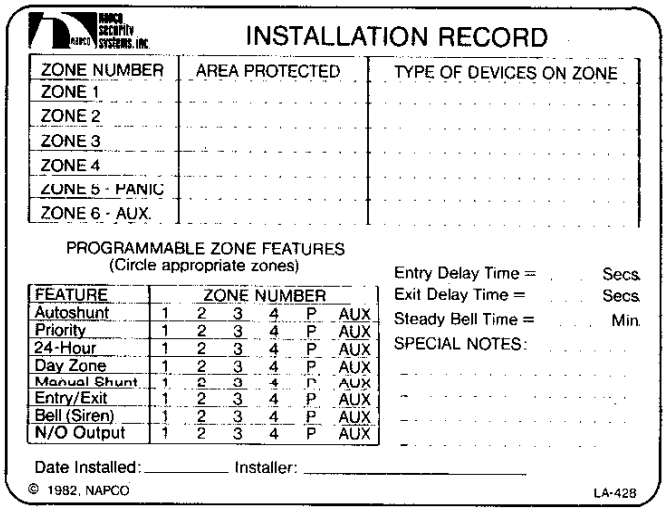
Always complete the CONTROL-CENTER FEATURES section, CUSTOMER, ADDRESS, and DATE on this Programming Record Sheet. However, the COMMUNICATOR FEATURES and the COMMUNICATOR TRANSMISSION INFORMATION (on the reverse) are completed for MA-800 and CCI-8DD only (the CCI-8 has no communicator).

How to Find Instructions and Select Features

Each feature listed on the Programming Record Sheet (next to its PROM location) is described in detail in the Glossary. The Glossary is arranged by feature, not PROM location.

Select any given feature by circling its location box(es), then programming the preprinted entry number in the entry box(es). The Glossary explains what to write in those boxes without preprinted entries. If the entry in a box has a circle around it, that feature has already been selected on the Master PROM for the corresponding zone named at the top of the feature column. A preselected feature can be changed by following the Glossary instructions (see **Changing Location Contents**). If a box is black, the feature cannot be selected for the zone named.

NOTE: Be sure to fill in the PROGRAMMABLE ZONE FEATURES section of the INSTALLATION RECORD label (supplied). Mount this label inside the control-center door.



INSTALLATION RECORD

ZONE NUMBER	AREA PROTECTED	TYPE OF DEVICES ON ZONE
ZONE 1		
ZONE 2		
ZONE 3		
ZONE 4		
ZONE 5 - PANIC		
ZONE 6 - AUX.		

PROGRAMMABLE ZONE FEATURES
(Circle appropriate zones)

FEATURE	ZONE NUMBER					
Autoshunt	1	2	3	4	P	AUX
Priority	1	2	3	4	P	AUX
24-Hour	1	2	3	4	P	AUX
Day Zone	1	2	3	4	P	AUX
Manual Shunt	1	2	3	4	P	AUX
Entry/Exit	1	2	3	4	P	AUX
Bell (Siren)	1	2	3	4	P	AUX
N/O Output	1	2	3	4	P	AUX

Entry Delay Time = Secs.
Exit Delay Time = Secs.
Steady Bell Time = Min.
SPECIAL NOTES:

Date Installed: _____ Installer: _____

 LA-428

Fig. 3-1. Installation Record Label

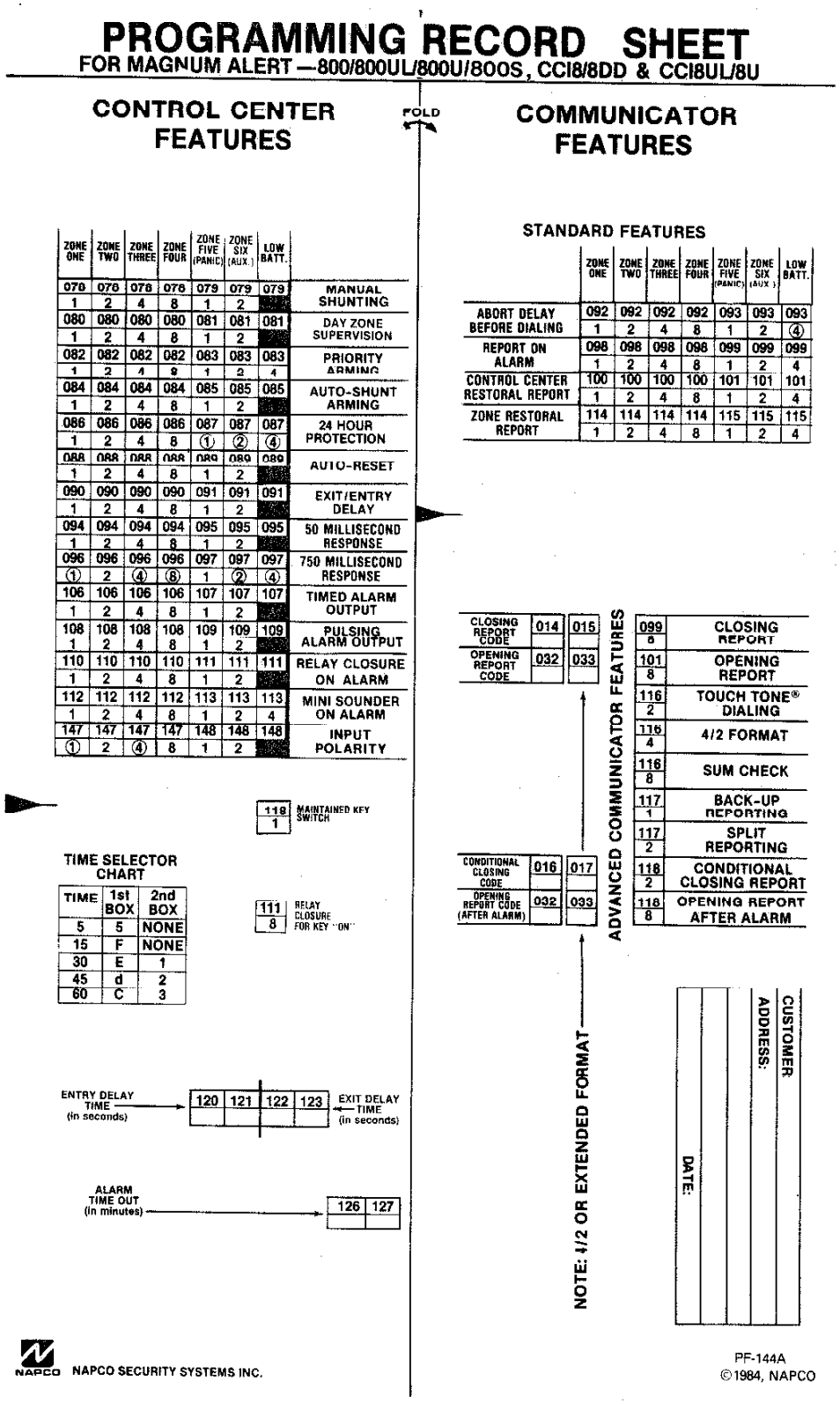
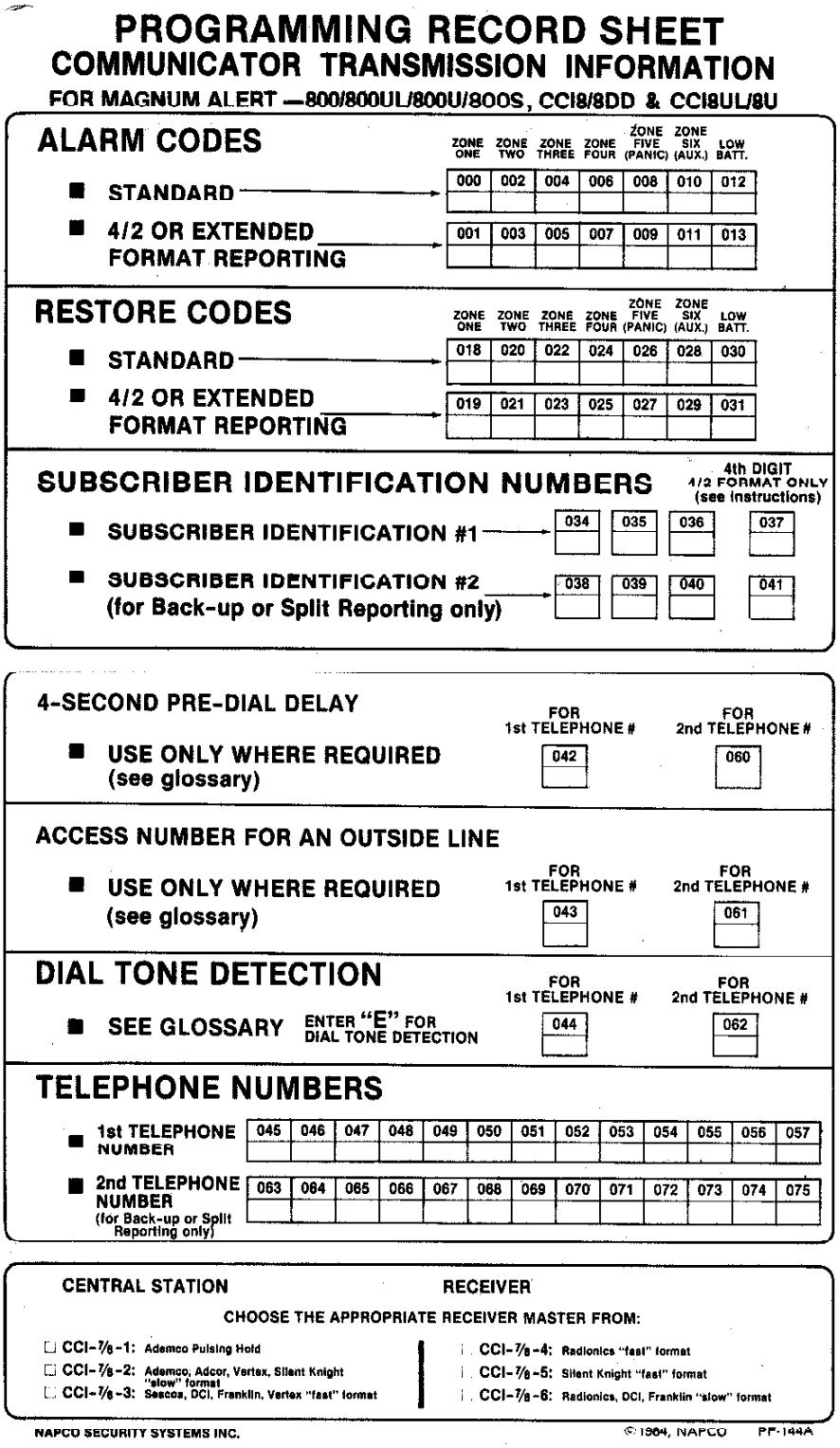


Fig. 3-2. Programming Record Sheet, *Features* side.

NOTE: To select a time not listed in the TIME SELECTOR CHART, refer to **TIME SELECTION** in the Glossary.



PROGRAMMING RECORD SHEET
COMMUNICATOR TRANSMISSION INFORMATION
FOR MAGNUM ALERT —800/800UL/800U/800S, CCI8/8DD & CCI8UL/8U

ALARM CODES

	ZONE ONE	ZONE TWO	ZONE THREE	ZONE FOUR	ZONE FIVE (PANIC)	ZONE SIX (AUX.)	LOW BATT.
■ STANDARD	000	002	004	006	008	010	012
■ 4/2 OR EXTENDED FORMAT REPORTING	001	003	005	007	009	011	013

RESTORE CODES

	ZONE ONE	ZONE TWO	ZONE THREE	ZONE FOUR	ZONE FIVE (PANIC)	ZONE SIX (AUX.)	LOW BATT.
■ STANDARD	018	020	022	024	026	028	030
■ 4/2 OR EXTENDED FORMAT REPORTING	019	021	023	025	027	029	031

SUBSCRIBER IDENTIFICATION NUMBERS

				4th DIGIT 4/2 FORMAT ONLY (see instructions)
■ SUBSCRIBER IDENTIFICATION #1	034	035	036	037
■ SUBSCRIBER IDENTIFICATION #2 (for Back-up or Split Reporting only)	038	039	040	041

4-SECOND PRE-DIAL DELAY

	FOR 1st TELEPHONE #	FOR 2nd TELEPHONE #
■ USE ONLY WHERE REQUIRED (see glossary)	042	060

ACCESS NUMBER FOR AN OUTSIDE LINE

	FOR 1st TELEPHONE #	FOR 2nd TELEPHONE #
■ USE ONLY WHERE REQUIRED (see glossary)	043	061

DIAL TONE DETECTION

	FOR 1st TELEPHONE #	FOR 2nd TELEPHONE #
■ SEE GLOSSARY ENTER "E" FOR DIAL TONE DETECTION	044	062

TELEPHONE NUMBERS

■ 1st TELEPHONE NUMBER	045	046	047	048	049	050	051	052	053	054	055	056	057
■ 2nd TELEPHONE NUMBER (for Back-up or Split Reporting only)	063	064	065	066	067	068	069	070	071	072	073	074	075

CENTRAL STATION RECEIVER

CHOOSE THE APPROPRIATE RECEIVER MASTER FROM:

- ☐ CCI-7/8-1: Ademco Pulsing Hold
- ☐ CCI-7/8-2: Ademco, Adcor, Vertex, Silent Knight "slow" format
- ☐ CCI-7/8-3: Sescoa, DCI, Franklin, Vertex "fast" format
- ☐ CCI-7/8-4: Radionics "fast" format
- ☐ CCI-7/8-5: Silent Knight "fast" format
- ☐ CCI-7/8-6: Radionics, DCI, Franklin "slow" format

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Fig. 3-3. Programming Record Sheet, *Transmission-Information* side.

NOTE: *All* installations require a Master PROM, whether the system reports to a central station or not.

ABORT DELAY BEFORE DIALING (Locations 092-093)
After a zone is violated, there is a 15 second period before the communicator transmits. During this period, the transmission can usually be cancelled by disarming the control center.

Exception: If Abort Delay Before Dialing is selected on a 24-Hour Zone, the device/zone must be reset before the control center can be reset and transmission be cancelled. If the alarm condition is not removed from a 24-Hour Zone before the abort-delay time ends, the communicator will report.

Abort-delay time may be extended by programming (locations 124-125). Refer to **TIME SELECTION** in the Glossary.

ACCESS NUMBER FOR OUTSIDE LINE (Locations 043, 061)
Some telephone subscribers have a telephone system that requires one digit to be dialed to obtain an outside line before the telephone number can be dialed.

If your customer's system uses an Access Number:
1. Enter at least one "d" (8 plus 5) beginning in location 042 for Pre-Dial Delay.
2. Enter the Access Number in the first available location beginning at 043.
3. If Backup or Split Reporting is selected (location 117), again enter the Pre-Dial Delay "d" beginning in location 060, and the Access Number in the first available location beginning at 061.

Also see **Pre-Dial Delay**.

ALARM CODES (Locations 000-013)
See **Report On Alarm, Extended Format Reporting, 4/2 Format.**

ALARM OUTPUTS (Locations 106-111, 126-127; Terminals 27-30)

Description

Each control center has two different alarm outputs. The two outputs may signal different alarm conditions, or possibly the same one.

Alarm Outputs 1 and 2 may be used to deliver two different ouputs, or Alarm Output 2 may be converted into a pair of (dry) relay contacts having the same programmed features as Alarm Output 2.

Alarm Output 1 (Terminals 29 & 30) may be programmed to have a timed steady (locations 106-107) or untimed pulsing (locations 108-109) output voltage. Do not select Timed Alarm Output and Pulsing Alarm Output together on a zone. Alarm Time-Out period (locations 126-127) must be programmed when Timed Alarm Output is used.

Alarm Output 2 (Terminals 27 & 30) is an untimed output voltage. Isolated (Dry) Relay Contacts (Terminals 27 & 28) are used for a device having its own power supply. (The jumper to the left of Terminals 27 & 28 must cut to convert Alarm Output 2 to these isolated contacts.) Program Relay Closure On Alarm (locations 110-111) to use either Alarm Output 2 or the Isolated Relay Contacts.

Programming for Typical Installations

Wiring for the following application examples is described in the Installation Instructions for Terminals 27-30. When programming and installation wiring are done by different personnel, advise the installer which alarm outputs have been programmed for each zone.

Two-Channel Siren for Burglary (Warble) and Fire (Steady):

1. Select Timed Alarm Output (Alarm Output 1) for Burglary Zones (location 106).

2. Program the Time-Out period (locations 126-127).

3. The fire siren may be untimed or timed.

   Untimed fire siren: Select Alarm Output 2 on Auxiliary Zone (Relay Closure On Alarm, location 111). The steady siren will not time out automatically and must be silenced by manually disarming the control center.

   Timed fire siren: Select Timed Alarm Output (Alarm Output 1) for Auxiliary zone (location 107). (Extra wiring is required.)

12-Volt Outputs, Examples of use:
Alarm Output 1 (Terminals 29 & 30) might be used for a timed bell or electric siren burglary alarm.

Alarm Output 2 (Terminals 27 & 30) might be used for an untimed fire alarm "Klaxon" horn, or to activate a heavy-duty relay for switching on house lights.

To program two 12-volt outputs to operate as described above,

1. Select Timed Alarm Output (location 106) on the zones for which a voltage is desired during alarm on Terminals 29 & 30.

2. Enter the Time-Out period (locations 126-127).

3. Select Alarm Output 2 (Relay Closure On Alarm, locations 110-111) on any zone for which a voltage output is desired during alarm on Terminals 27 & 30. This untimed output voltage is shut off by manually disarming the control center.

Single Bell and Extra Relay Contacts

A single bell may be made to sound continuously for burglary, and to pulse on and off for fire.

Isolated contacts at Terminals 27 & 28 might be used for switching on low-voltage accessories from an external power supply when an alarm occurs. (The jumper isolating these contacts must be cut; Ratings: 2A at 24Vdc maximum.)

To accomplish this,

1. Steady Bell - Select Timed Alarm Output (location 106) on any zone for which a steady bell is desired.

2. Program the Time-Out period (locations 126-127).

3. Pulsing Bell - Select Pulsing Alarm Output on Auxiliary and any

other zone for which a pulsing bell is desired (locations 108-109). The Pulsing Alarm Output will not time out automatically and can only be silenced by manually resetting the control center.

4. Relay contacts - Select Relay Closure On Alarm (locations 110-111) on any zone for which low-voltage accessories will be switched on in an alarm. Relay Closure On Alarm may be selected on the same zone(s) as Timed Alarm Output or Pulsing Alarm Output. If isolating these contacts, the jumper to the left of Terminals 27 & 28 must be cut.

   See **Installation Instructions**, Terminals 27-30. Also see **Time Selection** (for Alarm Time Out); **Relay Closure With Key On**.

ALARM TIME OUT (Locations 126-127)
If you select Timed Alarm Output, you must also enter Alarm Time-Out, the number of minutes the timed alarm will signal before shutting off.

Reminder: Alarm Time-Out is in minutes.

To select and program the Alarm Time-Out, refer to **TIME SELECTION**.

ANTI-JAM TIME (Location 141)
Normally, if the communicator does not detect a dial tone within 4 seconds, it will institute the anti-jam procedure to free the telephone circuit from incoming calls, pause, and again attempt to detect a dial tone. After a dial tone is detected, or after a second unsuccessful attempt, the communicator will proceed to dial.

Consult the central station to determine the time needed for anti-jam to work in your area. Enter a "1" in location 141 to increase anti-jam time from 4 seconds to 20 seconds.

AUTO-RESET (Locations 088-089, 106-107, 126-127; Terminals 29-30)
When a zone is selected for Auto-Reset, reset will occur at the time shown in Table 3-1 and explained in the text that follows.

ALARM	DATA IN LOCATION 119	ZONE RESETS
Timed, Steady	3	After Alarm Time Out.
Timed, Steady	2	As soon as alarm condition is removed.
Untimed, Pulsing Alarm Output 1 or Relay Closure (Alarm Output 2 or Isolated Contacts)	2 or 3	As soon as alarm condition is removed.
Panic or Fire	2 or 3	After control center is manually reset. (Latched fire detector must also be reset.)

Table 3-1. Auto-Reset Timing

Normally, when a zone is selected for both Auto-Reset and Timed Alarm Output, it will automatically rearm itself after the siren or steady bell times out and the cause of the alarm is removed.

For Auto-Reset to occur as soon as the alarm condition is removed

(without waiting for the alarm to time out), change the "3" in location 119 to a "2" (see **Changing Location Contents**). Instant Auto-Reset will not affect Alarm Time Out, but will allow Restoral Report to occur instantly, if selected.

Zones that are programmed for Auto-Reset and have untimed alarms (Pulsing Alarm Output 1 or Relay Closure on Alarm Output 2) always reset the instant an alarm condition is removed.

Zones that are not programmed for Auto-Reset will latch when in alarm and will not be capable of signalling another alarm until (a) the cause of the alarm has been removed, (b) the alarm is manually reset by disarming the control center, and (c) (if the alarm is not on a 24-Hour Zone) the control center is manually rearmed.

Auto-Reset is recommended for the Panic Zone, and for the Auxiliary Zone when it is used for fire protection. However, it will still be necessary to manually reset the control center. Any latched fire devices must be reset from the RP-1003U Fire Supervision and Indicator Station or a reset switch wired to Auxiliary Output Terminal 31.

For Auto-Reset to follow Alarm Time Out on a zone, (1) Select both Auto-Reset and Timed Alarm Output (locations 106-107) for that zone; (2) Program Alarm Time Out (locations 126-127). (3) Leave the 3 in location 119. (4) Advise installer to wire alarm siren/bell to Alarm Output 1 (Terminals 29 & 30).

See **Alarm Outputs; Time Selection** (for Alarm Time-Out).

AUTO-SHUNT ARMING (Locations 084-085)

If trouble exists only on auto-shuntable zones, the control center can still be armed. Zones programmed for Auto-Shunt Arming will be bypassed (shunted) when in trouble. A 4-second warning will sound at the keypad station to indicate that the control center has been armed without the protection of the shunted trouble zones.

It is generally not recommended to select a 24-Hour Zone (locations 086-087) for Auto-Shunt Arming, except to prevent mechanical failures or other "swingers" from causing alarms. Shunting is not generally recommended for the Auxiliary Zone when used for fire protection.

NOTE: If Auto-Shunt Arming and Priority Arming (locations 082 083) are selected together on a zone, Priority Arming will override Auto-Shunt Arming. If *neither* Auto-Shunt *nor* Priority is selected for a zone that has trouble, the trouble zone will cause an alarm on arming.

BACKUP REPORTING (Location 117)

If this method of reporting has been selected and the communicator is unsuccessful in reaching the 1st Telephone Number, it will make seven attempts to reach the 2nd Telephone Number.

If Backup Reporting is selected, Subscriber Identification #2 (locations 038-040 or 041) and all information needed for the 2nd Telephone Number (locations 060-075) must be entered. Subscriber Identification #2 may be the same as Subscriber Identification #1.

Do not select Backup Reporting and Split-Reporting together.

b-F/10-15, HOW TO PROGRAM

Napco programmers display entries 0 though 9 as they are programmed, but represent 10 to 15 by the number 0 (zero), and letters b, C, d, E and F, respectively.

DD-490 Programmer

When a feature is selected for more than one zone, the zone entries are accumulated and display a digit that can be interpreted from the DD-490 Programmer manual to verify which zones were selected.

To program the letters b through F using a DD-490 Programmer, first program the number 8, then program the second number in the same location shown in Table 3-2, below:

DISPLAY	ENTRY TOTAL	FIRST ENTRY	SECOND ENTRY
0	10	0	-
b	11	8	3
C	12	8	4
d	13	8	5
E	14	8	6
F	15	8	7

Table 3-2. Programming entries larger than "9".

PRO-410/410M Programmer

When using the PRO-410 or PRO-410M Programmer, use the [0] and [B-F] keys for the numbers 10 to 15. Or, to program "b" through "F" (11 through 15), use Table 3-2 as follows.

Enter the number "8", press the [PLUS] key, then enter the second number in the same location. Refer to the instructions furnished with the PRO-410/410M programmer.

CHANGING LOCATION CONTENTS

If instructions in this Glossary indicate that a location entry must be changed, the entry in that location is already preprogrammed on the Master PROM with a larger number than the desired entry. To change the entry for the subscriber PROM, follow the instructions below. Also refer to the instruction manual for the programmer in use.

If programming is done on a DD-490 Programmer: (1) *Before* copying the Master PROM, program any changes to preprogrammed entries in their locations on the blank DD-491 Subscriber PROM. (2) Copy the Master PROM onto the DD-491 Subscriber PROM. (3) Program the remaining entries from the Programming Record Sheet into matching locations on the DD-491 subscriber PROM.

If programming is done a PRO-410 or PRO-410M Programmer: (1) *First* copy the Master PROM into programmer memory. (2) Replace any factory-supplied entries displayed for their locations in programmer memory by pressing the number keys for the new entry. (Do not use the [PLUS] key before the first entry in each location.) (3) Add the contents of each box on the Programming Record Sheet to its programmer-memory location: press the [PLUS] key before every entry number key. (4) Verify each location in programmer memory. (5) Program the contents of the programmer memory onto the blank DD-491 PROM.

CLOSING REPORT (Locations 099, 014-015)

See Opening and Closing Report; Conditional Closing Report

CONDITIONAL CLOSING REPORT (Locations 118, 016-017)
If either Closing Report or Conditional Closing Report is selected, the communicator will transmit a closing code to the central station at the time the control center is armed.

Select Conditional Closing Report for the communicator to send a different code from the Closing Report Code if one or more of the following conditions exists when arming:
(a) one or more zones have been automatically shunted,
(b) a 24-Hour Zone is latched in alarm. (*Example:* Smoke detectors are latched in alarm),
(c) a low-battery condition exists,
(d) Panic circuit is latched in alarm.

The Mini-Sounder will automatically sound a 4-second *ringback* when the central station kissoff (verification) is received.

If Conditional Closing Report is selected, the Conditional-Closing Code must be entered in location 016 (and 017 with 4/2 or Extended Formats).

See **Extended Format; 4/2 Format**. Also see **Opening and Closing Report.**

CONTROL CENTER RESTORAL REPORT (Locations 100-101, 018-031)
See **Restoral Report.**

DAY-ZONE SUPERVISION (Locations 080-081)
A zone programmed for Day-Zone Supervision will cause the Mini-Sounder in the keypad or keyswitch station to sound immediately upon trouble. This feature may be used to warn of trouble during the day when the control center is not armed. Possible applications include window foil and secured exit doors.

The Mini-Sounder is reset by arming and disarming the control center.

No communicator report occurs as a result of Day-Zone Supervision.

Do not select Day-Zone Supervision and 24-Hour Protection on the same zone.

DIAL-TONE DETECTION (Locations 044 and 062)
Dial-Tone Detection must be programmed to ensure that a dial tone is present before the communicator (MA-800 or CCI-8DD only) dials. Enter an "E" (8 + 6) in location 044 for Dial-Tone Detection before the 1st Telephone Number. If Backup Reporting or Split Reporting is selected, also put an "E" in location 062 (for the 2nd Telephone Number).

Exceptions:

(1) Generally, if more than one 4-second Pre-Dial Delay "d" is needed, the Dial-Tone Detection "E" is entered in the first available location before each telephone number used.

(2) The communicator is set to detect the standard dial-tone frequency of 440Hz. With certain nonstandard exchanges, the dial tone may not be recognizable by the communicator and a Pre-Dial Delay "d" must be programmed without a Dial-Tone Detection "E".

Also see **Access Number for Outside Line** and **Pre-Dial Delay**

EASY-ARM

A 1-amp, 100-volt diode is included with the FT279 Terminating Module. Connecting the FT279 and diode directly to the control center allows the system to be armed by merely pressing Key 8 on the keypad. Disarming still requires entry of the full code. To install the Easy-Arm feature, wire the FT279 module and diode as shown in Fig. 3-4 at right and mount the module inside the enclosure. Also refer to the instructions furnished with the FT279 (WI304).

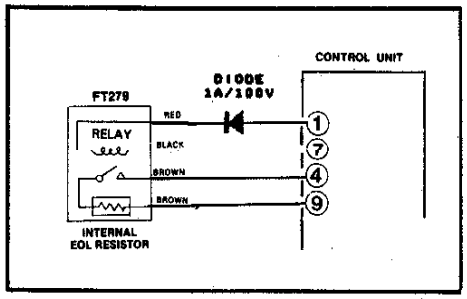


Fig. 3-4. Easy-Arm.

EOLR-8 END-OF-LINE-RESISTOR SUPERVISORY MODULE

For higher-security installations, the EOLR-8 End-of-Line-Resistor Supervisor Module may be added.

The control center can be configured using the EOLR-8 for either of the following protection schemes:

(a) With appropriate programming, the EOLR-8 converts the system to up to six non-24-Hour End-of-Line Resistor Zones, each of which may contain a combination of normally-open and normally-closed contacts, and each of which is fully supervised by a resistor at the end of the loop.

(b) The EOLR-8 may be used without programming changes to provide supervision for Zones 1-4, which will have status indication, plus 24-Hour Panic and Auxiliary Zones. Any zone connected to the EOLR-8 may contain a combination of normally-open and normally-closed contacts, but 24-Hour Panic and Auxiliary alarm/trouble conditions will not flash on status indicators.

The Auxiliary Zone may be connected to the EOLR-8 only when converted to a Burglary Zone.

Advise the installer to wire the control center as described in the Installation Instructions for the EOLR-8 (Terminals 12, 14, 16, 18, 20, 22, 31-32). Fire-Trouble Reporting affects EOLR-8 wiring (see **FIRE-TROUBLE REPORTING**).

If leaving Panic and Auxiliary Zones as 24-Hour Zones with no blinking status indication, no additional programming is required. To convert both Panic and Auxiliary to non-24-Hour Zones 5 and 6, change location 087 to a "4". To make Panic (but not Auxiliary) non-24-Hour Zone 5, change location 087 to a "6". To make Auxiliary (but not Panic) non-24-Hour Zone 6, change location 087 to a "5". See **Changing Location Contents**.

EXIT/ENTRY DELAY (Locations 090-091, 120-123; Terminals 11 & 32)

Exit delay allows the user time to exit the premises without causing an alarm after the control center has been armed.

Entry delay allows the user time to enter the premises and disarm the control center without causing an alarm. Upon entering, the Mini-Sounder at the keypad station reminds the user to disarm the control center.

If Exit/Entry Delay is selected, Entry Delay and Exit Delay times must also be entered. Refer to **TIME SELECTION** for instructions.

An optional Instant/Delay switch may be installed to inhibit entry and exit delay (between Terminals 11 and 32, see **WIRING DIAGRAM**).

EXTENDED-FORMAT REPORTING (Locations 000-033)
Selecting Extended-Format Reporting allows the communicator to transmit an extra digit to the central station. The extra digit is generally used to report the zone on which the alarm occurred, and the Alarm Code identifies the type of alarm. For example, if a holdup occurs on Zone 3 of an installation programmed this way:

Subscriber Identification Number is "678",
Report on Alarm selected for Burglary Zone 3,
Extended Format Alarm Code is "13" (holdup alarm Type 1, Zone 3).

If the receiver is capable of receiving Extended-Format Reporting, it will print out:

6781 (indicating Subscriber 678 reported a holdup alarm)
6781 (repeat of above)
1113 (indicating the holdup alarm reported was on Zone 3)
1113 (repeat of above)

Extended Format may be used with most central-station receivers. Any receiver capable of recognizing multiple reporting will also recognize Extended Format. The central station will advise if this feature should be used.

Extended Format cannot be used when 4/2 Format (location 116) is selected.

To use Extended-Format Reporting:
1. Note which zones have been selected to Report on Alarm (locations 098-099), then turn to the Communicator Transmission Information side of the Programming Record Sheet.
   For each zone selected to Report on Alarm:
   (a) Enter the first digit of the Alarm Code in the row marked *STANDARD*. (You may use this digit to indicate alarm type.)
   (b) Enter the second digit of the Alarm Code in the row marked *4/2 OR EXTENDED FORMAT REPORTING*. (You may use this digit to indicate zone.)

2. Repeat Step 1 to enter Restore Codes (locations 018-031) for each zone selected for Control-Center Restoral Report (locations 100-101) or Zone-Restoral Report (locations 114-115).

3. Return to the Communicator Features side of the Programming Record Sheet. For each zone selected to report an opening or closing, enter both report-code digits, as follows:
   (a) For a Closing Report (location 099), enter a Closing Report Code (locations 014-015). If Conditional Closing Report is not also selected, repeat the same Closing Report Code in locations 016-017.
   (b) For a Conditional Closing Report (location 118), enter a Conditional Closing Code (locations 016-017).
   (c) For an Opening Report (location 101) or Opening Report After Alarm (location 118), enter an Opening Report Code (locations 032-033).

FEATURE SELECTION GUIDE
A specially-designed slide card that makes programming quick and easy. See **Ordering Information**.

NOTE: Do *not* use the Feature Selection Guide for the SFP Standard Feature Package Series, which requires special instructions.

FIRE-TROUBLE REPORTING (Location 086, Terminal 18)
The RP-1003U must be used to monitor Fire Trouble.

Zone 4 is used for Fire-Trouble Reporting, when required. Select Zone 4 for 24-Hour Protection (location 086) and advise Installer to wire the RP-1003U Fire Supervision and Indicator Station and the EOLR-8 End-of-Line Resistor Module (if used) as shown in the Installation Instructions for Terminals 18, 22, 27 or 29, 31-33 (RP-1003U).

INPUT POLARITY (Locations 147-148)
Standard MA-800, CCI-8 and CCI-8DD systems have 4 normally-closed Burglary Zones; 2 normally-open Burglary Zones sharing normally-closed indications; and 1 Panic Zone and 1 Auxiliary Zone, both 24-Hour normally-open. These zone characteristics may be custom tailored to suit the following representative installations:

4 Normally-Open Burglary Zones
To convert the 4 normally-closed Burglary Zones to normally open, change the "5" in location 147 to a "0". See **Changing Location Contents**. Advise the installer to use normally-open detection devices.

5 or 6 Normally-Closed Zones (Location 148; Terminals 20-22)
To convert the normally-open Panic Zone to a normally-closed zone, add a "1" in location 148. To convert the Auxiliary Zone to normally closed, add a "2" to location 148. Advise the installer to use normally-closed detection devices on the zone(s) converted to normally closed.

6 Supervised Zones (Locations 087, 148; Terminals 20-22)
For higher-security installations, the EOLR-8 End-of-Line-Resistor Supervisory Module may be added. This provides up to 6 end-of-line resistor zones, each of which may contain a combination of normally-open and normally-closed contacts, and each of which is fully supervised by a resistor at the end of the loop.

Advise the installer to wire the control center as described in the installation instructions or in the instructions supplied with the EOLR-8. If leaving Panic and Auxiliary as 24-Hour normally open zones with no blinking status indication, no additional programming is required.

NOTE: 24-Hour Zones do not indicate loop status by flashing the indicator LEDs. With additional programming, the Panic Zone or Auxiliary Zone can also be converted to a non-24-Hour Zone, capable of indicating Zone 5 or Zone 6 loop status, respectively. To change the Panic Zone (but not the Auxiliary Zone) to a non-24-Hour Zone, change location 087 to a "6". To change the Auxiliary Zone (but not the Panic Zone) to a non-24-Hour Burglary Zone, change location 087 to a "5". To change both Panic and Auxiliary Zones to non-24-Hour Zones, change location 087 to a "4". See **Changing Location Contents**.

See **EOLR-8 End-of-Line-Resistor Module; 24-Hour Protection.**

LOOP RESPONSE (Locations 094-097)
Loop Response is the length of time that a normally-closed circuit must remain open or a normally-open circuit must remain closed in

order to trigger an alarm. The slower the response time, the safer the installation is from false alarms resulting from intermittent activation of the loops. In order to minimize false alarms use the longest loop response time that your system allows.

Programmable loop response times, in milliseconds (mS), are:
(a) 7 milliseconds (.007 second) is an extremely fast loop response time, used primarily for window bugs and to eliminate the need for a pulse extender.
(b) 50 milliseconds (.05 second) is used for momentary panic buttons and area protection devices such as photoelectric eyes, passive infrareds, floor mats, etc.
(c) 750 milliseconds (0.75 second) is the slowest loop response time, and is recommended for use with magnetic contacts, window foil, etc.

The Master PROM is factory-programmed to provide 750mS response on Zones 1. 3. 4 and Auxiliary: and 7mS on Zones 2 and Panic.

Any zone may be changed to 50mS loop response by programming in locations 094-095. 50mS Loop Response will override 750mS response, so that if these two response times are selected for the same zone, the zone will respond in 50 milliseconds.

If they are not selected for 50mS response, 750mS Loop Response may be selected for Zones 2 (location 096) and Panic (location 097).

NOTE: A Panic Zone loop response of 750mS is not recommended.

Zones may be programmed to respond in 7mS. (The low-battery circuit must have a response time of 750mS.) Follow the instructions for the programmer in use.

PRO-410/410M Programmer: To program all zones to respond in 7mS and the low-battery circuit in 750mS, use a new blank PROM. Change locations 094 and 096 to *blank*, and location 097 to a "4" (Low Battery). (See **Changing Location Contents**.) Leave an "8" in location 095.

DD-490 Programmer: To make most zones respond in 7mS, and the low-battery circuit in 750mS, before copying the master PROM, select at least one zone for 750mS response in location 096, and select Low Battery with a "4" in location 097. For example, first program a "1" in 096 and a "4" in 097 (750mS response on Zone 1 and the low-battery circuit, 7mS response on Zones 2, 3, 4, Panic and Auxiliary), then copy the master PROM.

LOW BATTERY
The MA-800 and CCI-8DD report low-battery conditions below 10.2 volts to the central station. With either a Napco keypad or keyswitch station, a local Mini-Sounder alert may also be selected for Low Battery (location 113) for MA-800, CCI-8DD and CCI-8 systems.

For installations using an RP-1003U Fire Supervision and Indicator Station to monitor an Auxiliary Zone fire-detection circuit, it is recommended that the battery be tested monthly with the BELL/BATTERY TEST switch.

MAINTAINED KEYSWITCH (Location 118; Terminals 5 & 9)
A mechanical, maintained keyswitch may be used to arm and disarm the control center. If a maintained keyswitch (with or without an RP-1003L

Keyswitch Station) is to be installed, enter "1" in location 118.

Do not use a maintained keyswitch with keypads or any other keyswitches (either momentary or maintained).

SFP Standard Feature Package installations require at least one digital keypad, and therefore, cannot use a maintained keyswitch.

MANUAL SHUNTING (Locations 078-079)
Manual Shunting is the action of making one or more zones inactive while the remainder of the system is armed. To shunt zones selected for Manual Shunting, first press the keypad or keyswitch station [S] button, then *within 10 seconds* arm with keypad code or key. The yellow LED will go on to indicate that all zones selected for Manual Shunting have been made inactive. The red LED will go on to indicate that the system is armed.

Manual Shunting is often used for interior protection zones. For example, area protection devices such as passive infrared detectors may be shunted out so that a user may move around his premises with perimeter protection still on.

It is recommended that any zone selected for Manual Shunting also be selected for Auto-Shunt Arming (locations 084-085).

It is not recommended that Manual Shunting and Priority Arming (locations 082-083) be selected for the same zone, although it is possible. It is generally not recommended to select Manual Shunting on a 24-Hour Zone (locations 086-087). It is not recommended to select the Auxiliary Zone for Manual Shunting if it is used as for fire protection.

MINI-SOUNDER ON ALARM (Locations 112-113; Terminals 1-10, 12-19)
The Mini-Sounder on a Napco keypad or keyswitch arming station will provide local warning of an alarm on any zone for which this feature is selected, or of a low-battery condition (location 113). The Mini-Sounder is silenced by arming and disarming the control center.

MOMENTARY KEYSWITCH (Terminals 5 & 9)
Momentary keyswitch operation may be obtained by wiring a momentary keyswitch (with or without an RP-1003L Keyswitch Station) across the appropriate terminals. No selection by programming is necessary.

When a momentary keyswitch is used, do not select Maintained Keyswitch (location 118).

OPENING AND CLOSING REPORT (Locations 099, 014-015; 101, 032-033)
Opening and Closing reporting are typically used in commercial installations.

Closing Report. If Closing Report is selected (location 099), the communicator transmits the Closing Report Code to the central station at the time the control center is armed. The Mini-Sounder will automatically sound a 4-second *ringback* when the central-station kissoff (verification signal) is received.

If Closing Reporting is selected, also enter the Closing Report Code in location 014 (and 015 with 4/2 or Extended-Format Reporting). If Closing Report is selected, but not Conditional Closing Report (location 118), repeat the Closing Code in location(s) 016 (and 017 for Extended Format).

Opening Report. If Opening Report is selected (location 101), the Opening Report Code will be transmitted to the central station when the control center is disarmed.

If Opening Report is selected, also enter the Opening Report Code in location 032 (and 033 with 4/2 or Extended-Format Reporting).

Do not select Opening Report together with Opening Report after Alarm (location 118).

See **Extended-Format Reporting; 4/2 Format.** Also see **Conditional Closing Report.**

OPENING REPORT AFTER ALARM (Locations 118, 032-033)
If this feature is selected, the communicator will transmit an opening code when the control center is disarmed after an alarm has occurred. This feature may be used by the central station to verify that the subscriber has responded to the alarm and has disarmed his system.

If Opening Report After Alarm is selected, enter the Opening Code (locations 032-033). Use the second digit for 4/2 Format (location 116) or Extended Format only. Do not select Opening Report After Alarm together with Opening Report (location 101).

See **Extended Format Reporting; 4/2 Format.**

PRE-DIAL DELAY (Locations 042, 060)
Pre-Dial Delay may be used whenever a delay is needed before dialing.

Usually, the communicator is also programmed to wait to detect a dial tone before dialing. However, certain telephone exchanges send a nonstandard dial tone, and the communicator may not be able to detect the dial-tone frequency. With these nonstandard exchanges, Pre-Dial Delay is programmed, and Dial-Tone Detection is not.

Select Pre-Dial Delay by programming a "d" in location 042 for the 1st Telephone Number. If Backup or Split Reporting is selected (location 117), program a "d" in location 060. Programming the "d" results in a 4-second delay. Additional "d"s may be used in consecutive locations to extend the Pre-Dial Delay time, however entering more than one "d" will result in higher-number locations for entry of Access Number for Outside Line, Dial-Tone Detection (if used) and Telephone Number.

See **b-F/10-15, How to Program; Dial-Tone Detection.**

PRIORITY ARMING (Locations 082-083)
When a zone selected for Priority Arming is in trouble, the control center will not arm and the Mini-Sounder will sound continuously. Enter the arm/disarm code or turn the key a second time to silence the sounder.

It is not recommended to select Manual Shunting (locations 078-079) on Priority Arming zones. If Priority Arming is selected with Auto-Shunt Arming (locations 084-085), Priority Arming will override the shunt.

If *neither* Priority Arming *nor* Auto-Shunt Arming has been selected for a zone in trouble, that trouble zone will cause an alarm on arming.

PROGRAMMING RECORD SHEET
The entries to be programmed on a Subscriber PROM are first written on a Programming Record Sheet. The completed sheet aids in programming and can later be filed as a permanent record of the installation.

Each PROM series has its own Programming Record Sheet. The Programming Record Sheet that allows custom-installation programming with the CCI-7/-8 PROM appears at the beginning of this Glossary. The Programming Record Sheet for the SFP (Standard Feature Package) PROM series is included with the instructions for that series and is reproduced in Section 2. (See **Ordering Information.**)

PULSING ALARM OUTPUT (Locations 108-109; Terminals 29 & 30)
A Pulsing Alarm Output will not automatically time out and can only be silenced by manually resetting the control center.

If Pulsing Alarm Output and Timed Alarm Output (locations 106-107) are selected together on a zone, Pulsing Alarm Output will override steady Timed Alarm Output. See **Alarm Outputs.**

RECEIVER FORMAT MASTER PROM
Different makes and models of receivers recognize only certain transmission characteristics. Use only the proper receiver format PROM for the particular central-station receiver. (See **Ordering Information.**)

RELAY CLOSURE ON ALARM (Locations 110-111; Terminals 27 & 28 or 30)
Relay Closure On Alarm is selected to provide *either* of the following alarm outputs:

Voltage Output. Relay closure normally provides a voltage output of 12Vdc at 2A to Alarm Output 2 (Terminals 27 & 30) of the control center. This voltage output may be used for a siren driver or bell; *or,*
Isolated (Dry) Contacts. If the jumper to the left of Terminals 27 & 28 of the control center is cut, a pair of isolated (dry) contacts rated at a maximum of 24Vdc/2A is obtained at these terminals. Isolated contacts may be used to switch an external device having its own power supply.

Relay Closure On Alarm does not automatically time out and must be manually reset by disarming the control center.

Also see **Alarm Outputs.**

RELAY CLOSURE WITH KEY ON (Location 111; Terminals 1-10, 20, 27, 28, 30)
If Relay Closure With Key On is selected (with an "8" in location 111), arming with either keypad or key outputs 13Vdc across Terminals 27 and 30 or (if the jumper to the left of Terminals 27 and 28 is cut) causes a closure of the isolated contacts across Terminals 27 and 28.

REPORT ON ALARM (Locations 098-099, 000-013)
Violation of a zone selected to Report On Alarm results in the transmission of the code selected for that zone to the central station. Zones not selected to Report On Alarm are limited to activating the Alarm Output Terminals 27-30.

Enter an Alarm Code (locations 000-013) for each Report On Alarm zone, even if identical codes are used for different zones. A second digit for each Alarm Code (second row of boxes) is entered for 4/2 Format (location 116) or Extended Format only.

See **Extended-Format Reporting; 4/2 Format**. Also see **Split Reporting**.

RESTORE CODES (Locations 018-031)
See **Restoral Report; Extended-Format Reporting; 4/2 Format**.

RESTORAL REPORT (Locations 100-101, 114-115, 018-031)
A digital telephone report will be transmitted to the central station when a particular event follows an alarm on a zone programmed to report. To enable a report to occur under one of the conditions in the boxes below (Table 3-3), program zone feature selection in the locations shown in the table, and a restore code for each reporting zone.

	TIME REPORT SENT		
	CONTROL CENTER RESTORAL REPORT (Locations 100-101)	ZONE RESTORAL REPORT (Locations 114-115 and 100-101)	
AUTO-RESET AFTER ALARM TIMEOUT (Locations 088-089; "3" in 119)	As soon as one of the following occurs: ● Zone resets (alarm times out and zone is repaired). ● Control center is disarmed.	When zone resets (alarm times out and zone is repaired), regardless of whether control center is armed or disarmed.	
INSTANT* AUTO-RESET (locations 088-089; "2" in 119 or Untimed alarm)	As soon as one of the following occurs: ● Zone is repaired. ● Control Center is disarmed.	As soon as zone is repaired, regardless of whether control center is armed or disarmed.	
		ZONE REPAIRED WITH CONTROL CENTER ARMED	DISARMED
NO AUTO-RESET	When control center is disarmed (regardless of zone condition).	When control center is disarmed.	When control center is armed and disarmed again.

*Auto-Reset is always instant with untimed alarms. Auto-Reset is also instant with timed alarms if location 119 is a "2".

Table 3-3. Types of Restoral Reporting

Enter the Restore Code for each Restoral Reporting zone in locations

018-031 (Communicator Transmission Information side of the Programming Record Sheet). A second digit for each Restore Code is entered (second row of boxes) with 4/2 Format (location 116) or Extended Format only.

See **Alarm Time Out**. Also see **Auto-Reset; Extended-Format Reporting; 4/2 Format**.

SPLIT REPORTING (Location 117)
If Split Reporting is selected, alarms on Zones 1 through 5 (Panic) will be transmitted to the 1st Telephone Number, and alarms on the Auxiliary Zone, Low Battery, and openings and closings will be transmitted to the 2nd Telephone Number.

Furthermore, when Split Reporting is selected, if telephone number 1 is inoperative, the communicator will automatically operate in the Backup Reporting mode. All information will be transmitted through the functioning telephone number.

If this feature is selected, fill in Subscriber Identification Number 2 (locations 038-040 or 041) and all the information needed for the 2nd Telephone Number (locations 060-075) on the Communicator Transmission Information side of the Programming Record Sheet. Subscriber Identification Number 2 may be the same as Subscriber Identification Number 1.

When selecting Split Reporting, do not also select Backup Reporting.

See **Backup Reporting; Subscriber Identification Number; Telephone Number; 4/2 Format**.

SUBSCRIBER IDENTIFICATION NUMBER (Locations 034-041)
Subscriber Identification Number 1 is transmitted when the communicator dials the 1st Telephone Number. Subscriber Identification Number 2 is used only when Backup Reporting or Split Reporting (location 117) is selected. The central station may assign identical numbers for Subscriber Identification Numbers 1 and 2.

A Subscriber Identification Number must have at least 3 digits, even if the first and second are zeros (*examples:* 001, 057).

The fourth digit (locations 037 and 041) for each Subscriber Identification Number is needed for 4/2 Format (location 116).

Also see **Backup Reporting; Split Reporting 4/2 Format**.

SUM CHECK (Location 116)
Sum Check is a sophisticated data transmission format used to increase both the speed and accuracy of a transmission. Select this feature whenever the central-station receiver is capable of accepting this format.

Sum Check works as follows: After transmitting both the Subscriber Identification Number and the Alarm Code, the communicator sends a verifying digit. The verifying digit is derived from the sum of the digits in the Subscriber Identification Number and the Alarm Code. The receiver compares this digit to the sum of the digits it receives for the Subscriber Identification Number and Alarm Code to verify the accuracy of the transmission.

TAMPER SWITCH
Tamper switches may be installed to guard against removal of the control center cabinet from the wall and/or opening of the control center door. If used, tamper switches should, ideally, be connected to a 24-Hour Zone. Therefore, it may be necessary to program the zone with tamper protection for 24-Hour Protection (locations 086-087).

Tamper switch type and wiring method depend on the zone used. See Section 4 - **INSTALLATION INSTRUCTIONS, Tamper Switches.**

Also see 24-Hour Protection.

TELEPHONE NUMBERS (Locations 045-057; 063-075)
Telephone Numbers are entered on the Communicator Transmission Information side of the Programming Record Sheet. For standard exchanges, enter the Dial-Tone Detection (generally location 044) before the 1st Telephone Number. (Non-standard exchanges use Pre-Dial Delay instead of Dial-Tone Detection.) Unless several Pre-Dial Delays are needed, the first digit of the 1st Telephone Number is entered in location 045.

If Backup Reporting or Split Reporting features are selected (location 117), enter the 2nd Telephone Number (usually beginning in location 063).

Correcting Telephone-Number Errors. If a wrong digit has been burned into the PROM, and there are unused locations available, the digit may be eliminated by inserting the number "15" (8 plus 7) in that location in place of the error. The number "15" is displayed by the programmer as a letter "F". The "F" will be ignored by the communicator when dialing. Enter the correct digit in the location following the "F".

See Access Number For Outside Line; Dial-Tone Detection; Pre-Dial Delay; Backup Reporting; Split Reporting; and **b-F/10-15, How to Program.**

TIMED ALARM OUTPUT (Locations 106-107, 126-127; Terminals 29 & 30)
When a zone programmed for Timed Alarm Output is tripped, a voltage will be supplied at the siren/bell Terminals 29 & 30. Timed Alarm Output is usually selected for Burglary Zones and audible Panic.

If Timed Alarm Output is selected, also enter the Alarm Time-Out period (locations 126-127).

If Timed Alarm Output and Pulsing Alarm Output (locations 108-109) are selected together on a zone, Pulsing Alarm Output will override Timed Alarm Output.

Auxiliary alarm or fire alarm protection is usually selected for Relay Closure On Alarm (location 111). However, the following procedure will make a fire siren output timed:

1. Extra wiring is required. (See **INSTALLATION INSTRUCTIONS, Terminals 27-30.**
2. Programming: Select Timed Alarm Output for Auxiliary Zone (location 107) and enter the Alarm Time-Out period (locations 126-127).

Also see Alarm Time Out; Alarm Outputs; Relay Closure On Alarm.

TIME SELECTION (Locations 120-127)
Program times as follows:

1. Alarm Time Out is in minutes. All other times are in seconds.

2. **Entry Delay** (locations 120-121), **Exit Delay** (location 122-123) and **Alarm Time-Out** (locations 126-127). Use the instructions below to fill in the 1st Box (first location) and 2nd Box (second location) on the Programming Record Sheet.

   Abort Delay Before Dialing. Add location 124 (1st Box) and location 125 (2nd Box) to the Programming Record Sheet. Use the intructions below to fill in the entry for each.

3. Locate the Time Selector Chart on the Programming Record Sheet or Feature Selection Guide. The Time column gives several choices for the number of seconds or minutes in the time period.

   (a) To program a time period from the TIME column, follow Step 4, below.
   (b) To program a time that is not listed in the TIME column, follow Step 5, below.

4. Using the Time Selector Chart:

   (a) Choose a time from the TIME column.

   (b) The second column ("1st BOX") represents single seconds or minutes (up to 15). The values 12 through 15 are entered as C, d, E, and F, respectively. The 1st BOX column tells you what to enter in the the first location for each time period.

   (c) The third column ("2nd BOX") represents units of 16 seconds or minutes (up to 3 x 16 = 48). The 2nd BOX column tells you what to enter in the second location. Note that the 2nd BOX is not programmed (left blank) for short time periods.

5. To calculate a time that is not on the Time Selector Chart, fill in the 1st BOX and 2nd BOX locations as follows:

   (a) The 1st BOX represents single seconds or minutes (up to 15) and the 2nd BOX represents units of 16 seconds or minutes (up to 15 x 16 = 240). The total time period possible is 15 + 240 = 255 seconds or minutes.

   The value 10 is entered as 0 (zero); the values 11 through 15 are entered as b, C, d, E, and F, respectively.

   (b) Calculate the 1st BOX number and enter it into the first location for the time period. Calculate the number for the 2nd BOX and enter it into the second location.

   Example 1. If you want an Entry Delay of 75 seconds, divide 75 by 16: 75/16 = 4, and 11 left over. The letter "b" (which represents the number 11) goes in the 1st BOX (location 120) and the number "4" goes in the 2nd BOX (location 121). The boxes for this example are filled in on the following page.

Example 2. If you want an Alarm Time-Out of 40 minutes, divide 40 by 16: 40/16 = 2, and 8 left over. Therefore, enter an "8" in location 126 (1st BOX), and a "2" in location 127 (2nd BOX). The boxes for this example are filled in below.

(c) Check your calculation before programming as follows: Add the number in the 1st BOX to 16 times the number in the 2nd BOX.

Using Example 1: Multiply 16 x 4 (from 2nd BOX) = 64. Add 11 (from 1st BOX) + 64 = 75 seconds.

Using Example 2: Multiply 16 x 2 (from 2nd BOX) = 32. Add 8 (from 1st BOX) + 32 = 40 minutes.

120	121
1st BOX	2nd BOX
b	4

Example 1.
Entry Delay Time = 75 seconds

126	127
1st BOX	2nd BOX
8	2

Example 2.
Alarm Time-Out = 40 minutes

TOUCH-TONE DIALING (Location 116)
Select Touch-Tone Dialing only if the subscriber has touch-tone service. Touch-Tone Dialing is faster than rotary dialing, but not always as reliable.

TRANSMISSION CODES (Locations 014-017, 032-033)
See **Opening and Closing Report; Conditional Closing Report; Opening Report After Alarm.**

ZONE-RESTORAL REPORT (Locations 100-101, 114-115, 018-031)
See **Restoral Report.**

4/2 FORMAT (Locations 116, 001-033, 037 and 041)
Select the 4/2 Format only if the central-station receiver will accept a 4-digit Subscriber Identification Number and 2-digit Alarm, Restore, opening, and closing codes.

To select 4/2 Format:
1. Select 4/2 Format (location 116).

2. Note which zones are selected to Report On Alarm (locations 098-099), then turn to the Communicator Transmission Information side of the Programming Record Sheet. For each zone selected to report:
   (a) Enter the first digit of the Alarm Code in the row designated **STANDARD** (even locations 000-012).
   (b) Enter each second digit for each Alarm Code needed in the row designated **4/2 OR EXTENDED FORMAT REPORTING** (odd locations 001-013).

3. Repeat Step 2 to enter Restore Codes (locations 018-031) for each zone selected for Control Center Restoral Report (locations 100-101) or Zone Restoral Report (locations 114-115).

4. Enter the fourth digit of the Subscriber Identification Number in location 037 (and 041, if Subscriber Identification Number 2 is used).

5. Return to the Communicator Features side of the Programming Record Sheet. Enter a two-digit Transmission Code for any of the following Reports, if selected:
   (a) For Closing Report (locations 099), enter Closing Report a Code (Locations 014-015). If Conditional Closing Report is not also selected, repeat the Closing Report Code in locations 016-017.
   (b) For Conditional Closing Report (location 118), enter the Conditional Closing Code (locations 016-017).
   (c) For Opening Report or Opening Report After Alarm, enter the code in locations 032-033.

Do not use 4/2 Format and Extended Format in the same installation.

4 NORMALLY-OPEN BURGLARY ZONES
See **Input Polarity.**

4-SECOND PRE-DIAL DELAY
See **Pre-Dial Delay.**

5 NORMALLY-CLOSED ZONES
See **Input Polarity.**

6 NORMALLY-CLOSED ZONES
6 SUPERVISED ZONES
See **Input Polarity.**

24-HOUR PROTECTION (Locations 086-087)
Generally, (a) 24-Hour Protection Zones remain armed even though the control center may be disarmed. (b) Neither the green STATUS nor red ARMED LED will indicate the condition of a zone programmed for 24-Hour Protection. (c) If the control center is armed with a 24-Hour Zone in alarm, the Mini-Sounder will give a 4-second alert. (d) The cause of alarm must be removed and the control center reset to cancel the alarm condition on a 24-Hour Zone.

Auto-Shunt Arming (locations 084-085) and Manual Shunting (locations 078-079) are not recommended for 24-Hour Zones. It is not recommended to select shunting for the Auxiliary Zone if that zone is used for fire protection.

50-MILLISECOND LOOP RESPONSE (Locations 094-095)
See **Loop Response.**

750-MILLISECOND LOOP RESPONSE (Locations 096-097)
See **Loop Response.**

PROGRAMMING TROUBLESHOOTING GUIDE

Wiring problems are covered in the troubleshooting guide in Section 4 (INSTALLATION INSTRUCTIONS). This section describes only programming problems.

GENERAL SYMPTOMS

Specific symptoms occur at an installation. Many of them have the same causes. Instructions for these are grouped as follows: General Symptom I results when a Master PROM is incorrectly copied, General Symptom II results from custom installation programming problems.

GENERAL SYMPTOM I: CONTROL CENTER AND COMMUNICATOR CANNOT FUNCTION (GENERALLY DUE TO MISSING OR INCORRECT BACKGROUND INFORMATION).

POSSIBLE CAUSE	REMEDY
No Master PROM copied.	Check Subscriber PROM locations: 251 to 252. If blank, add background information, as follows: Use CCI-7/-8 or SFP-492 Master PROM. See **Ordering Information** for correct receiver format (MAGNUM ALERT-800 or CCI-8DD). When using PRO-410/410M Programmer: Verify completed locations on Subscriber PROM. If correct, copy Master onto existing Subscriber PROM. If missing or incorrect, copy Master PROM onto new blank PROM then complete custom installation programming on this new Subscriber PROM. When using DD-490 Programmer: Copy Master PROM onto new blank PROM then complete custom installation programming on this new Subscriber PROM.
Wrong Master PROM for control center.	Check the following Subscriber PROM locations: 251 should be "C"; 252 should be "F" (CCI-7/8) or "8" (SFP-492). If wrong: copy correct Master onto new blank PROM, and complete custom installation programming on this new Subscriber PROM.
Wrong receiver format Master PROM used.	Call central station for receiver type. Check chart in **Ordering Information** for Master PROM format number matching this receiver type. Check PROM location 253. May be blank (no receiver) for CCI-8; or 1, 2, 3, 4, 5, or 6 (receiver format) for MAGNUM ALERT-800/CCI-8DD. If receiver format wrong, obtain correct Master PROM and copy onto new blank Subscriber PROM. Complete installation programming on this new Subscriber PROM.
Bad PROM.	If the (PRO-410 Programmer) LOCATION display has missing segments, or (with DD-490 Programmer) locations 251 to 253 show correct information, either Master or Subscriber PROM may have been bad. Copy new Master PROM onto new blank to make Subscriber PROM. Complete custom installation programming on new Subscriber PROM.

GENERAL SYMPTOM II: CUSTOM PROGRAMMED FEATURES NOT OPERATING PROPERLY OR COMMUNICATOR INFORMATION NOT TRANSMITTING PROPERLY

POSSIBLE CAUSE	REMEDY
Feature or communicator information not programmed or programmed incorrectly.	Check Programming Record Sheet against instructions in Glossary and correctly mark location. Compare PROM location(s) with correctly completed Programming Record Sheet. If Subscriber PROM blank in needed location(s) but correctly filled in other locations, program missing entries on existing Subscriber PROM. If PROM entry less than correct value in needed location(s), but correct in other locations, follow Programmer instructions for Changing PROM Contents. If PROM entry larger than needed value, copy correct Master onto a new blank PROM. Complete custom installation programming on this new Subscriber PROM.

SPECIFIC SYMPTOMS

SYMPTOM: GREEN STATUS LED SHOWS ZONES 1 AND 3 OPEN WHILE LOOPS ARE JUMPERED OUT

POSSIBLE CAUSE	REMEDY
No Master PROM copied.	Follow instructions for General Symptom I.

SYMPTOM: NO OUTPUT ON SOUNDER

POSSIBLE CAUSE	REMEDY
Zone not selected for Exit/Entry Delay or Entry Delay Time not programmed.	Check locations 090-091 for feature selection and locations 120-121 for Entry Delay Time. To enter, follow instructions for General Symptom II.
Mini-Sounder On Alarm feature not selected for zone in alarm.	Check locations 112 and 113. If incorrect, follow instructions for General Symptom II.
Bad PROM.	Use a new Master and a blank PROM to make a new Subscriber PROM.

SYMPTOM: SOUNDER GOES ON WHEN CONTROL CENTER ARMED

POSSIBLE CAUSE	REMEDY
Programming Error.	Check location 113 on Subscriber PROM. If more than "7", follow instructions for General Symptom II.

SYMPTOM: SOUNDER ON, CANNOT BE RESET; RED AND GREEN LEDS OFF

POSSIBLE CAUSE	REMEDY
Master PROM copying error, or bad PROM.	Follow instructions for General Symptom I.

SYMPTOM: ALARM OUTPUT DEVICE DOES NOT SIGNAL ON ALARM

POSSIBLE CAUSE	REMEDY
Alarm Outputs not selected for zone.	Check Alarm Output locations: Device on Terminals 29 and 30: Timed Alarm Output selected in locations 106-107, Alarm Time-Out period programmed in locations 126-127. Pulsing Alarm Output, locations 108-109. Device on Terminals 27 and 30 (or 27 and 28): Relay Closure On Alarm, locations 110-111. If programmed incorrectly, follow instructions for General Symptom II.
Alarm Time Out not programmed for Timed Alarm Output.	If device is on Terminals 29 and 30, use Time Selector Chart to determine entry that should be in locations 126-127. If necessary, follow instructions for General Symptom II.

SYMPTOM: ZONES 1, 3, ALWAYS IN TROUBLE; PANIC ALWAYS IN ALARM

POSSIBLE CAUSE	REMEDY
Wrong Master PROM copied.	Follow instructions for General Symptom I.

SYMPTOM: COMMUNICATOR LED* DOES NOT GO ON (RELAY DOES NOT ENGAGE) WHEN CONTROL UNIT IS ARMED AND A ZONE IS TRIPPED

POSSIBLE CAUSE	REMEDY
Zone not programmed to report.	If zone not selected for Report On Alarm (locations 098-099), follow instructions for General Symptom II.
Zone restores to normal faster than programmed Loop Response.	Zones 1, 3, 4 and Auxiliary are preselected for 750 Millisecond Response.

*Located near the middle of the control-center circuit board.

If zone contacts restore in less than 750 milliseconds, program for faster loop response.

Select 50mS in locations 094-095.

All zones can be programmed to respond in 7 milliseconds if using a PRO-410 Programmer. (See next paragraph if using a DD-490 Programmer.) Use a new blank PROM. Change locations 094 and 096 to blank, change location 097 to a "4". leave an "8" in location 095.

Most zones can be programmed to respond in 7 milliseconds if using a DD-490 Programmer. Before copying Master PROM, select at least one zone in location 096, and select low battery with a "4" in location 097. For example: first program a "1" in 096 and "4" in 097 (750 millisecond response on Zone 1 and the Low Battery circuit, 7 millisecond response on Zones 2, 3, 4, Panic and Auxiliary), then copy the Master PROM.

SYMPTOM: COMMUNICATOR LED* LIGHTS STEADILY FOR 12 SECONDS, THEN GOES OUT, (REPEATED 3 TIMES) BEFORE BLINKING (ROTARY DIAL) OR LIGHTING STEADILY MORE THAN 12 SECONDS (TOUCH-TONE DIAL)

POSSIBLE CAUSE	REMEDY
Dial-tone frequency not recognized by communicator.	Program a "d" in location 042 (and 060 if a 2nd Telephone Number used). If more than one 4-second delay period needed before dialing, program additional "d"s following the first. For telephone exchanges that use a non-standard dial-tone frequency (other than 440Hz), do not program the Dial-Tone Detection "E" following the last Pre-Dial Delay "d". Follow instructions for General Symptom II.

SYMPTOM: COMMUNICATOR LED* BLINKS (ROTARY DIAL) OR LIGHTS STEADILY (TOUCH-TONE DIAL) 8 TIMES BUT COMMUNICATOR DOES NOT REPORT

POSSIBLE CAUSE	REMEDY
Wrong receiver format Master PROM copied. (Receiver gave answering tone.)	Follow instructions for General Symptom I.

*Located near the middle of the control-center circuit board.

Telephone number not programmed correctly. (Receiver did not answer.)	Check locations 045-57 for correct Telephone No. 1 (and 063-075 for correct Telephone No. 2, if used). Follow instructions for General Symptom II.

SYMPTOM: RECEIVER OR COMMUNICATOR NOT RECOGNIZING SIGNALS

POSSIBLE CAUSE	REMEDY
Wrong receiver format Master PROM copied.	Each receiver requires a specific Master format PROM. Follow instructions for General Symptom I.

SYMPTOM: INCORRECT SUBSCRIBER IDENTIFICATION NUMBER AND ALARM CODE TRANSMISSION

POSSIBLE CAUSE	REMEDY
Wrong receiver format Master PROM copied.	Follow instructions for General Symptom I.
Error in programming Communicator Transmission Information.	Call central station to verify correct Subscriber Identification Number (locations 034-041) and Transmission Codes (Alarm Codes, locations 000-013; Restore Codes, locations 018-031; Closing Report Codes, locations 014-017; Opening Report Codes, locations 032-033). If 4/2 Format is selected (location 116), Subscriber Identification is 4 digits and all Transmission Codes must have 2 digits each. Follow instructions for General Symptom II.

SYMPTOM: COMMUNICATOR SENDS 4 ROUNDS 8 TIMES

POSSIBLE CAUSE	REMEDY
Wrong receiver format Master copied.	Follow instructions for General Symptom I.
Sum-Check report format needed, but not programmed.	Call Central Station. If Sum Check required, follow instructions for General Symptom II to program location 116 for Sum Check.

SYMPTOM: ZONE DOES NOT REPORT A RESTORAL AFTER PROBLEM REMOVED AND CONTROL CENTER IS DISARMED

POSSIBLE CAUSE	REMEDY
Zone not programmed for Zone Restoral Report.	If Zone Restoral Report wanted, zone must be selected in locations 114-115 *and* locations 100-101. Restore codes must be entered in locations 018-030. If zone selected for Control Center

	Restoral Report (locations 100-101), but not for Zone Restoral Report (locations 114-115) and Auto-Reset (locations 088-089), control center must be manually reset to send report.

SYMPTOM: ABORT DELAY BEFORE DIALING FAILS

POSSIBLE CAUSE	REMEDY
Abort Delay selected on 24-Hour Zone.	If an alarm remains on a 24-Hour Zone for the duration of the abort-delay period (15 seconds unless extended by programming), the communicator will report. The device/zone must be reset before the control center is reset (disarmed, or armed and disarmed) to abort the report. Check Subscriber PROM locations 086-087 (24-Hour Protection) and 092-093 (Abort Delay Before Dialing) for zones selected. Use Time Selector Chart to extend Abort-Delay period (locations 124-125).

SUMMARY OF CHANGES FROM THE PREVIOUS EDITION

Summarized below are changes made to this manual since the previous edition.

Cover:	* Table of Contents revised.
	* Addresses and Telephone Numbers revised.
Page 3-10:	* Easy-Arm text and wiring added.
Page 4-1:	* CONTROL-CENTER MOUNTING, minor text revisions.
Page 4-3:	* Arming Options, reference to Easy-Arm added.
Page 4-15:	* SPECIFICATIONS, Operating Temperature spec added.
Page 4-16:	* ARM, Step 2 (a) revised.
Page 5-1:	* KEYPAD WIRING and OPERATION instructions added.
Page 5-2:	* KEYPAD MOUNTING instructions added.
Page 5-3:	* KEYPAD MOUNTING TEMPLATE added.
Page 5-4:	* WIRING LEGEND added.
Pages 6-1 to 6-3:	* INDEX (formerly Section 5) corrected and revised.

4. CONTROL-CENTER INSTALLATION

MOUNTING

Choose a mounting place 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 (MA-800, CCI 8DD only). (Keep telephone lines away from speaker wires.)

Remove appropriate wiring knockouts. Place the control center at a height convenient for viewing and mark the mounting holes.

If a keypad, keyswitch station or RP-1003U Fire Supervision and Indicator Station is to be mounted at the control center, remove the rectangular knockout on the control-center door. Backplate mounting is available for remote RP-1003H Keypads; junction-box mounting is available for remote RP-1003H Keypads and RP-1003L Keyswitch Stations. See **Keypad Mounting** (Section 5) and **Ordering Information** (Section 1).

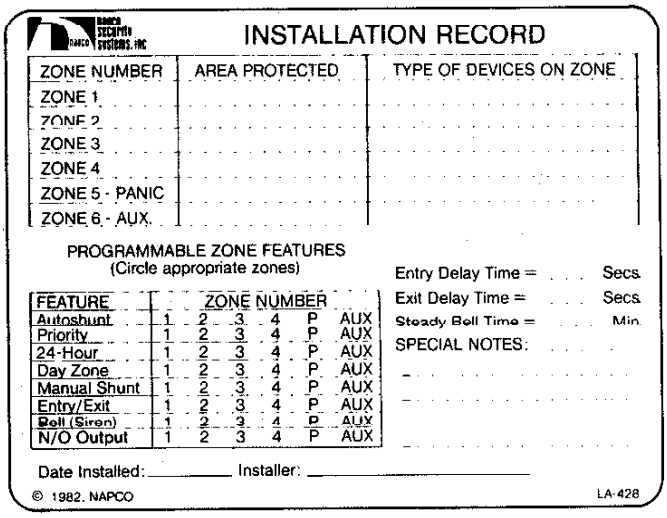
GROUNDING

Connect the control-center ground screw to a metal cold-water pipe. Do *not* use gas pipe, plastic pipe, or ac ground connections. Use at least 16 gauge wire. Make as short and direct a run as possible, without any sharp bends in the wire.

SELECTING FEATURES AND WIRING OPTIONS

PROM features should be listed, when programmed, on the Installation Record label (Fig. 4-1), and that label pasted inside the cabinet door for reference when wiring.

After wiring and testing have been completed, fill in the top portion of the Installation Record as a reminder of wiring options used, and date and sign at the bottom.



INSTALLATION RECORD

ZONE NUMBER	AREA PROTECTED	TYPE OF DEVICES ON ZONE
ZONE 1		
ZONE 2		
ZONE 3		
ZONE 4		
ZONE 5 - PANIC		
ZONE 6 - AUX.		

PROGRAMMABLE ZONE FEATURES
(Circle appropriate zones)

FEATURE	ZONE NUMBER					
Autoshunt	1	2	3	4	P	AUX
Priority	1	2	3	4	P	AUX
24-Hour	1	2	3	4	P	AUX
Day Zone	1	2	3	4	P	AUX
Manual Shunt	1	2	3	4	P	AUX
Entry/Exit	1	2	3	4	P	AUX
Bell (Siren)	1	2	3	4	P	AUX
N/O Output	1	2	3	4	P	AUX

Entry Delay Time = . . . Secs.
Exit Delay Time = . . . Secs.
Steady Bell Time = . . . Min.
SPECIAL NOTES:

Date Installed: _____ Installer: _____

 LA-428

Fig. 4-1. Installation Record Label.

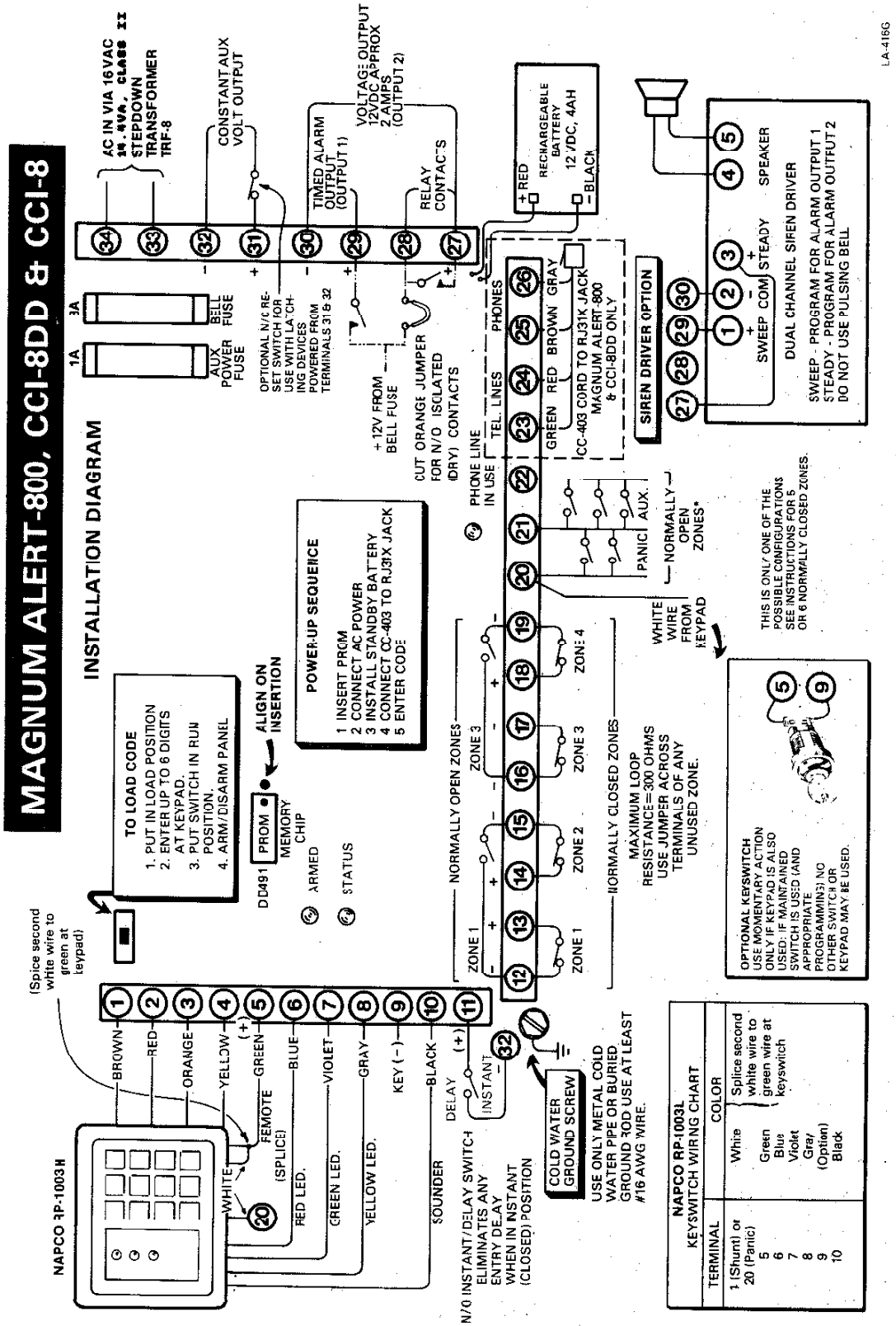


Fig. 4-2. Wiring Diagram.

TERMINALS	WIRING INFORMATION (Refer to Fig. 4-2)
1 to 5 (+), 6 to 10 (-); 20 (+)	**Arming Options** (Also see **EASY ARM** in GLOSSARY.) Choose only *one* of arming methods A or B described in the sections immediately following.

A. COMBINED KEYPADS AND MOMENTARY KEYSWITCHES (WITH OR WITHOUT KEYSWITCH STATIONS).

Do not use more than five combined stations. Total current drain for all stations in the system must not exceed 200mA.

1. RP-1003H Digital Keypads

Provide remote arming, manual shunting and panic buttons, LED and Mini-Sounder status indicators.

See Fig. 4-2 for the most common keypad connections and read the instructions in the rest of this keypad section carefully.

CAUTION: Avoid splashing solder on the keypad circuit board. Solder splashes are the most common cause of keypad malfunction.

Generally, one white wire goes to control center Terminal 20 (Panic Zone) and the other white wire is spliced to the keypad green wire connected to control center Terminal 5.

Exceptions:

(a) To supervise the wiring to the Panic buttons when the Panic Zone is wired to an EOLR-8: Connect one keypad white wire to EOLR-8 Terminal E7. Connect the other white wire from the keypad to EOLR-8 Terminal E8. Connect the end-of-line resistor between the white wires at the keypad. Do not connect the green and white wires of the keypad together.

(b) If Panic is not used, do not connect the white wires.

Terminal 9 is not used.

Do not use a maintained keyswitch when a keypad is installed.

Installations using an SFP (Standard Feature Package) series PROM must have at least one keypad.

2. RP-1003L Keyswitch Stations

Provide remote arming, shunt button, LED and Mini-Sounder status indicators.

Keyswitches must be ordered separately.

5 (+) and 9 (-)

Momentary Keyswitches (optional)
Wire optional momentary keyswitches across these terminals.

B. ONE MAINTAINED KEYSWITCH (WITH OR WITHOUT KEY SWITCH STATION)

Wire only *one* keyswitch (optionally with one keyswitch station) across these terminals if the keyswitch has a maintained action. Do *not* use keypads.

If a maintained keyswitch is used, Maintained Keyswitch must be programmed (location 118).

Installations using SFP (Standard Feature Package) series PROMs cannot use a maintained keyswitch.

11 (+) and 32 (-)

Instant/Delay Switch (optional)
For use with the Entry/Exit Delay feature (locations 090-091, 120-123).

Use a maintained normally-open on/off switch.

When switched to the closed position, the entry and exit delays are eliminated and the zone will respond immediately to an alarm. When this switch is open, or no switch is used, the Entry/Exit Delay operates as follows:
(a) Arming: When the red ARMED/MEMORY LED goes on, the exit period has commenced. If Mini-Sounder sounds, exit delay has expired and entry period has started.
(b) Disarming: Mini-Sounder is audible as long as entry delay is active. The alarm will trip at the end of the entry period if the control center is still armed.

Tamper Switches

Optional. Guard against removal of the control-center cabinet from the wall and/or opening of the control-center door.

If used, tamper switches should, ideally, be connected to a 24-Hour Zone. It may be necessary to program the zone with tamper protection for 24-Hour Protection (PROM locations 086-087). See Terminals 12 to 22 for zone descriptions.

Tamper switch type and wiring method depend on the zone used:
(a) For use with the Panic circuit or another normally-open circuit, wire *normally-closed* switches in *parallel*.
(b) Use Napco TPS-2 *(normally-open)* switches in

series with a normally-closed circuit.

There are two locations in the cabinet for mounting tamper switches:

(a) For protection against removal of the cabinet from the wall: On the left side of the cabinet, there are three mounting holes and an adjacent hole on the back that allows the tamper switch button to contact the wall.
(b) For protection against opening of the cabinet door. On the right side of the cabinet there are three more mounting holes. A tamper switch mounted on the right would have its button positioned so that it made contact with the closed door. Alert the user that opening the control center door (for example, to access the RUN/LOAD switch when changing his arm/disarm code), will cause a tamper alarm.

12 to 22 **Protection Zones**

Loop Response. This is the length of time that a normally-closed loop (circuit) must remain open or a normally-open loop must be closed in order to trigger an alarm. The slower the response time, the more immune the installation will be from false alarms due to intermittents ("swingers").

Response times are preselected, but, if necessary, may be changed (by programming) to any of those described below.

7mS (.007 second) response time is used primarily for window bugs, and to eliminate the need for a pulse extender. Zones 2 and Panic are preselected for 7 millisecond loop response.

50mS (.05 second) is used for momentary panic buttons and area protection devices such as photoelectric eyes, passive infrareds, floor mats, etc.

750mS (0.75 second) is the slowest loop-response time, and is recommended for use with magnetic contacts, window foil, etc. Zones 1, 3, 4 and Auxiliary are preselected for 750mS loop response.

Protection-Zone Options: Choose one of the possible protective zone configurations A, B, or C described in the sections immediately following.

NOTE: Options B and C must be programmed.

A. 4 NORMALLY-CLOSED (AND 2 OPTIONAL NORMALLY-OPEN) BURGLARY ZONES, PLUS NORMALLY-OPEN 24-HOUR PANIC AND AUXILIARY ZONES

TERMINALS	WIRING INFORMATION (Refer to Fig. 4-2)

Normally-Closed Burglary Zones

12 (-) and 13 (+)	Zone 1
14 (+) and 15 (-)	Zone 2
16 (-) and 17 (+)	Zone 3
18 (+) and 19 (-)	Zone 4

Maximum loop resistance is 300 ohms.

If a zone is not used, wire a jumper across the unused zone terminals.

Local audible warning can be provided by connecting any of the four Burglary Zones to a Mini-Sounder wired in parallel to a normally-closed device such as a door contact. If the normally-closed contact opens, current flows through the Mini-Sounder. When the contact closes, current bypasses the Mini-Sounder.

Normally-Open Burglary Zones

12 (-) and 15 (-)	Zone 1
16 (-) and 19 (-)	Zone 3

Connect devices such as floor mats to these normally-open burglary loops (see Fig. 4-2).

The first normally-open circuit will have all the characteristics programmed for Zone 1 and the second normally-open circuit will operate the same as Zone 3.

18 (+), 22 (-),
27 (+) or 29(+),
31 (+), 32 (-), 33

RP-1003U Fire Supervision and Indicator Station

An Auxiliary-Zone fire circuit may be monitored by an RP-1003U Fire Supervision and Indicator Station. The RP-1003U gives LED and Mini-Sounder indication of ac power loss and fire circuit trouble. It also provides a switch for testing the fire bell and auxiliary battery, and for resetting a latched fire alarm.

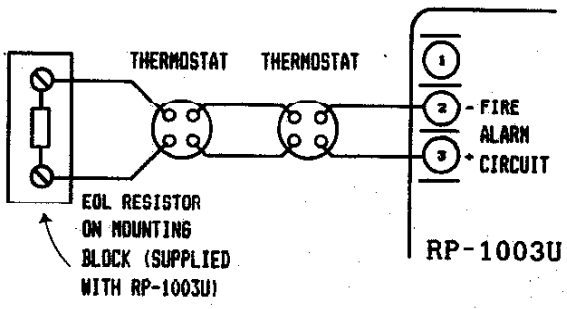


Fig. 4-3a. Thermostat fire circuit supervised by an end-of-line resistor.

If using a fire circuit with thermostats only, connect the 787-ohm end-of-line resistor (supplied with the RP-1003U) between the two terminal screws of the resistor mounting block. See Fig. 4-3a.

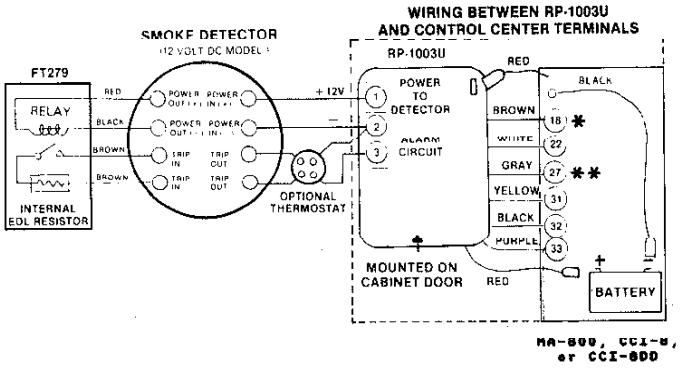


Fig. 4-3b. Powered smoke detector supervised by an FT-279.

RP-1003U FIRE SUPERVISION and INDICATOR STATION		MAGNUM ALERT-800, CCI-8DD OR CCI-8 CONTROL CENTER	
FUNCTION	WIRE COLOR	TERMINAL	LABEL
Fire Circuit Trouble	Brown	18*	Zone 4
Fire Alarm	White	22	N/O Aux Input
Bell/Battery Test	Gray	27 or 29**	Alarm Output 2 (+)
12-Volt Power for Fire Detection Devices and Status Station	Yellow	31	Aux Out (+)
	Black	32	Aux Out (Ground)
Ac Sensing	Purple	33	16Vac

* For optional communicator Fire-Trouble reporting,
(a) Connect brown wire to control center Terminal 18.
(b) Use Zone 4 for reporting only. Program as 24 Hour Zone.
(c) If using EOLR-8, do not connect gray EOLR-8 wire to control-center Terminal 18.
If Fire-Trouble transmission is not used (as in CCI-8), do not connect RP1003U brown wire to control center.

** If using 1 bell for Burglary/Fire (Steady/Pulsing), connect gray RP-1003U wire to Terminal 29 of the control center.

Table 4-1. Wiring between RP-1003U and control center.

If fire detectors require power from the control-center Auxiliary Output Terminals 31 (+) & 32 (-), use an FT-279 End-of-Line Module with the RP-1003U. A relay in the FT-279 will remain ener-

gized while there is auxiliary power for the detectors. The contacts of the relay will open if there is a power loss, and the Mini-Sounder will sound. Do not use the separate 787-ohm resistor and mounting block when connecting an FT-279 module. See Fig. 4-3b.

20 (-) and 21 (+)
21 (+) and 22 (-)

Zone Five (usually Panic)
Zone Six (usually Auxiliary)
These are usually normally-open 24-Hour Zones.

When used as a Panic circuit, Zone Five accepts input through Terminal 20 from a digital keypad station or any added normally-open momentary device.

Where permitted by local fire codes, Zone 6 may be used for fire detection. The Fire circuit may be monitored by an RP-1003U Fire Supervision and Indicator Station. (See Terminals 18, 22, 27 or 29, 31, 32, 33.)

Connect all fire detectors in parallel with no branch systems.

Connect circuits containing *thermostats only* (not powered fire detectors) between Terminals 21 (+) and 22 (-).

To connect circuits containing *powered fire detectors* (such as smoke detectors):
1. Attach the positive lead of the first detector to Terminal 21 (+) and the negative lead to Terminal 22 (-).
2. If fire detectors are powered by the Auxiliary Output of the control center, connect the voltage supply (+) of the first detector to Terminal 31 (+), and (-) to Terminal 32. See Fig. 4-3. Also refer to Fig. 4-2.

NOTE: Powered fire detectors that are not self-resetting require a switch to reset a latched fire alarm. If a fire circuit contains powered detectors that are not either self-resetting or monitored by the RP-1003U, connect a momentary normally-closed switch between the positive voltage supply of the fire detector (which may be an external source or Auxiliary Output Terminal 31) and the fire detector. (Figure 4-4 shows a reset switch on a fire detector circuit that is powered by the control center.) Place the switch where it is easily accessible to the user and point out its location and function.

Thermostats and powered detectors may be used on the same circuit.

TERMINALS WIRING INFORMATION (Refer to Fig. 4-2)

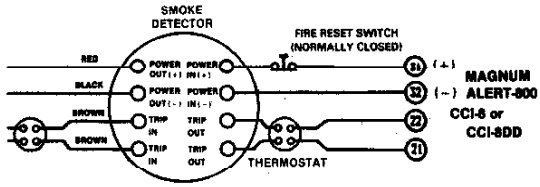


Fig. 4-4. Unsupervised fire circuit with reset switch.

B. CONVERTING ZONES 5 AND/OR 6

24-Hour Zones do not give flashing status indications. Panic and Auxiliary Zones may be converted by programming (PROM location 087) to zones that are not 24-Hour, and are then capable of flashing indication.

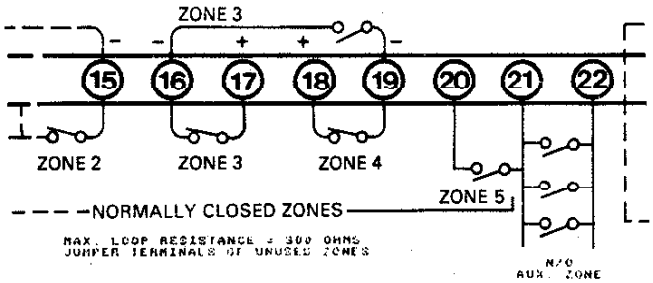


Fig. 4-5a.
5 normally-closed zones and Auxiliary.

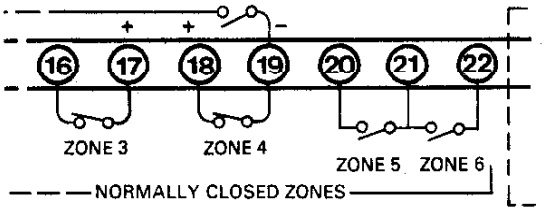


Fig. 4-5b.
6 normally-closed zones.

To convert Zones 5 and 6 to normally-closed zones, refer to Figs. 4-5a and b. Additional programming is required (PROM location 148).

C. 6 SUPERVISED ZONES FOR BOTH NORMALLY-CLOSED AND NORMALLY-OPEN CONTACTS

The EOLR-8 End-of-Line-Resistor Supervisory Module may be added for higher security installations. This provides up to six supervised end-of-line-resistor zones, each of which may contain a combination of normally-open and normally-closed contacts (Fig. 4-5c).

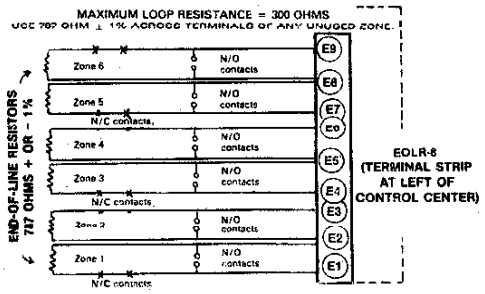


Fig. 4-5c. 6 supervised zones connected to an EOLR-8 Module.

EOLR-8 LEAD	MAGNUM ALERT-800, CCI-8DD or CCI-8 TERMINAL
Brown	12 Zone 1
Blue	14 Zone 2
Violet	16 Zone 3
Gray*	18 Zone 4
White**	20 Zone 5 (Panic)
Green	22 Zone 6 (Aux./Fire)
Red	31 12 V (+) Aux. Output
Black	32 (-) Aux. Output

* If using the control center with an RP-1003U to report fire trouble, do not connect the gray lead to Terminal 18. Trouble will be reported by Zone 4. (See RP-1003U Instructions.)

** Keypad wiring changes. (See keypad instructions.)

Table 4-2. Connecting an EOLR-8 Module to the control center.

When supervising the Panic Zone by connecting it to EOLR-8 Teminals E7 and E8 instead of control-center Terminals 20 and 21, keypad wiring changes. (See keypad wiring instructions, Terminals 1-10, 20).

The Auxiliary Zone (Zone 6) is connected to the EOLR-8 only when used as a Burglary Zone.

Additional programming (PROM location 087) can eliminate 24-Hour Protection on Zones 5 and 6 (if not required), and these zones will then be capable of flashing status indication.

Connect the EOLR-8 to the control center as shown in Table 4-2. Note that Terminal 18 is not connected if reporting fire trouble. (See Terminals 18, 22, 27 or 29, 31, 32, 33.)

Telephone Lines and Phones

23 and 24 Incoming Telephone Lines
25 and 26 Internal Telephone

For installations with a digital communicator only (MA-800 and CCI-8DD).

Reporting options and transmission information must be programmed.

Connections must be made in the following order:
1. Connect a Napco CC-403 cord to control-center incoming and internal telephone lines Terminals 23-26.
2. Complete all other installation wiring.
3. Go through the Power-Up Sequence.
4. Connect a CC-403 cord to the RJ31X jack installed by the telephone company.

Communicator Operation:
1. Communicator dials.
2. Central Station receiver gives handshake.
3. Communicator sends 2 transmission rounds.
4. Receiver gives kissoff.
5. Communicator reports 2 more rounds before shutting down to redial.

The internal phone lines are connected to other telephone handsets on the premises. These will be automatically disconnected when an alarm is activated and the line seized by the communicator.

GSM-400 Ground-Start Module: If the dial tone is not continuously active, ground start is needed to establish it. Refer to the Installation Instructions furnished with the GSM-400 Module.

M-278 Line-Reversal Module: This allows the control center to be monitored by a central station through leased lines. On alarm, the module reverses normal line-voltage polarity. Operation of the optional RP-1003U FIRE RESET and BELL/BATTERY TEST switches will also cause line reversal.

27 (+), 28, 29 (+), 30 (-)

Alarm Output Options

I. DESCRIPTION.

Each control center has two different alarm outputs. The two outputs may signal different alarm conditions, or possibly the same ones. Alarm Outputs 1 and 2 may be used to deliver two different outputs, or Alarm Output 2 may be converted into a pair of isolated relay contacts having the same programmed features as Alarm Output 2.

Maximum total current drain for both Outputs 1 and 2 is 2 amperes.

29 (+) and 30 (-)

Alarm Output 1

This is a 12-volt dc output.

Programmed to provide either a steady timed output (PROM locations 106-107) or untimed pulsing output (PROM locations 108-109) from

any zone. When steady timed output is chosen, the Alarm Time-Out period is chosen in PROM locations 126-127.

This output is generally used to drive a burglary bell or siren.

27 (+) and 30 (-) **Alarm Output 2**

This is a 12-volt dc untimed output generally used to drive a fire or auxiliary sounder, or it may be used to power a heavy-duty relay for switching 110Vac to supply outdoor lamps, a high-power siren, etc.

Programmed in PROM locations 110-111 (Relay Closure on Alarm). If Relay Closure With Key On is also programmed (with an "8" in PROM location 111), arming with the keypad code or key outputs 13Vdc on Terminals 27 and 30.

27 and 28 **Isolated (Dry) Relay Contacts** (converting Alarm Output 2).

Cut the jumper to the left of Terminals 27 and 28 to isolate these contacts. (Voltage Alarm Output 2 is not usable when the jumper is cut.)

Maximum ratings are 24Vdc at 2A.

Programmed in PROM locations 110-111. If Relay Closure With Key On is also programmed (with an "8" in PROM location 111), arming with with keypad code or key causes a closure of the isolated contacts on Terminals 27 and 28.

II. **SAMPLE ALARM OUTPUT APPLICATIONS**
NOTE: Programming is necessary for each.

1. Two-channel siren for burglary (warble) and fire (steady):

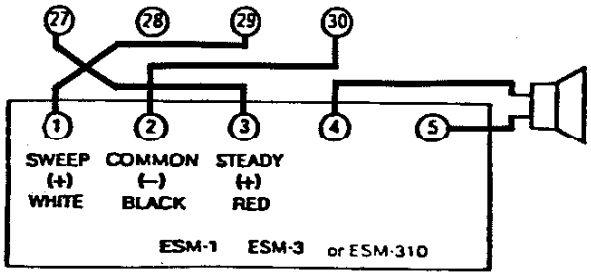


Fig. 4-6a.
Dual-channel siren driver connected for untimed fire signal.

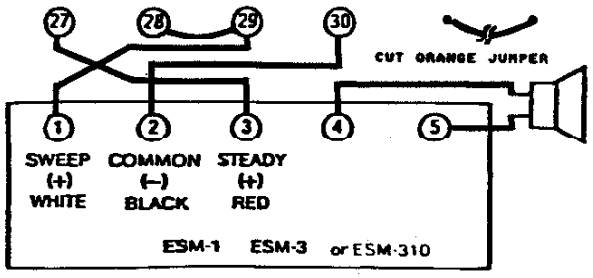


Fig. 4-6b.
Dual-channel siren driver connected for timed fire signal.

For an untimed steady fire signal, connect the siren driver as shown in Fig. 4-6a, or for a timed fire siren (Fig. 4-6b), (1) Cut the jumper to the left of control-center Terminals 27 and 28. (2) Add a jumper connecting Terminals 28 and 29.

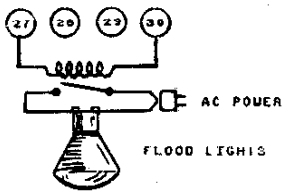


Fig. 4-6c. Relay for switching house lights.

Two 12-Volt Outputs. Examples of use are:

(a) Alarm Output 1 (Terminals 29 and 30) might be used for a timed bell or electronic siren burglary alarm.

(b) Alarm Output 2 (Terminals 27 and 30) might be used for an untimed Fire alarm "Klaxon" horn or to activate a heavy-duty relay for switching on house lights (Fig. 4-6c).

Single Bell and Extra Relay Contacts:
A single bell (connected to Alarm Output 1 Terminals 29 and 30) may be made to sound continuously for burglary and to pulse on and off for fire. (See Fig. 4-6d.)

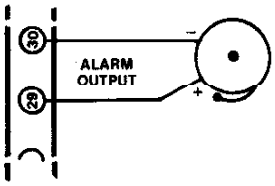


Fig. 4-6d.

NOTE: If using an RP-1003U to monitor the fire circuit, and a single bell to signal both burglary and fire alarms, connect the gray lead from the RP-1003U to Terminal 29, not Terminal 27.

The isolated contacts at Terminals 27 and 28 might be used for switching on low-voltage accessories from an external power supply when an alarm occurs. If converting Output 2 to isolated contacts, cut the jumper to the left of these terminals and do not exceed the contact ratings (2A at 24Vdc maximum).

31 (+) and 32 (-) **Constant Auxiliary Output**

Terminals 31 and 32 connect to the internal power supply of the control center to provide a continuous fused regulated Auxiliary Output voltage of approximately 12Vdc at a maximum total current of 300mA.

This output may be used to power photoelectric, passive infrared, or ultrasonic sensors, or other 12Vdc moderate-current devices.

If latching alarm devices are powered by this Auxiliary Output, wire a momentary normally-closed switch in series between Terminal 31 and the first device. Use this switch to reset the devices when latched in alarm.

TERMINALS	WIRING INFORMATION (Refer to Fig. 4-2)

33 and 34

Ac Power

To supply ac operating power to the control center, connect either the Napco 16Vac, 14.4VA Class II TRF-8 stepdown Transformer or the 16Vac, 20VA TRF-9 Transformer.

NOTE: Use of any transformer other than the Napco TRF-8 or TRF-9 may result in damage or improper operation of the control center.

The transformer must be plugged into an outlet that provides 24-hour continuous power. One of the most common causes of false alarms is the use of an outlet that is switched off at the end of the day with a common circuit breaker.

Battery Leads

Standby Battery

Standby power should be supplied by a 12Vdc 4 or 5AH rechargeable Gel-type battery or by a "starved electrolyte" YUASA-type battery.

Attach the leads at the right side of the circuit board to the battery. Observe battery polarity: red lead positive (+); black lead negative (-).

Maximum operating time with the recommended standby battery is 4 hours. In areas where power outages are frequent or long, a second standby battery should be used.

Fuses

POWER Fuse

This 1A fuse protects the regulated dc Auxiliary Output, RP-1003U Fire Supervision and Indicator Station power, and the sounder supply.

If the fuse is blown or removed, the Auxiliary (Fire) Zone will not be protected if monitored by an RP-1003U.

WARNING: For continued protection against risk of fire, replace only with a fuse of the same type and rating.

It is suggested that any sensors powered by the Auxiliary Output voltage have output relays that will cause an alarm condition when power is lost.

BELL Output Fuse

This 3A, 3AG fuse protects the alarm output (Terminals 28, 29 and 30).

If the fuse is blown or removed, the output devices on these terminals will not operate when an alarm output is activated.

SPECIFICATIONS

Operating Temperature	0 - 49 degrees C
Input Power	16Vac furnished by 14.4VA Class II stepdown transformer, or optional 20VA transformer
Loop Voltage	10 to 13Vdc
Loop Current @ Zero Resistance	6mA each (approximate)
Alarm Outputs	2 voltage outputs or 1 voltage output and 1 pair of isolated contacts
Maximum Current Drain	2A max. total for both Outputs 1 & 2
Alarm Output 1	12Vdc, programmable (timed or pulsing)
Alarm Output 2	12Vdc, untimed
Isolated Contacts	(Jumper-selected; replaces voltage Alarm Output 2) 24Vdc at 2A maximum
Regulated Auxiliary Output	12Vdc at 300mA, continuous, fused; 750mA with 20VA transformer
Recommended Battery	4AH or 5AH gel or starved electrolyte
Low-Battery Signal	11.0V
Standby Current Drain @ Idle	200mA
Remote Station	
Current Requirements	15mA for each LED; 9mA for sounder
Maximum Current Drain,	200mA (all stations)
Mini-Sounder Output	20mA
Maximum Zone Resistance	300 ohms max. (series) per loop; 10,000 ohms min. between loops.
Bell Fuse	3A
Power Fuse	1A
Dimensions	13-1/4 x 13-1/4 x 3-3/4" (HxWxD)
Weight	15 lbs

For Canadian Models Only:

Load Number*	6
CSA-Approved Power Supply	Magnetic Coil Model MG1620-D2

*The "Load Number" denotes the percentage of the total load allowed to be connected to a telephone loop that is used by the device. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all devices does not exceed 100.

POWER-UP SEQUENCE

1. *Before connecting power*, insert PROM into socket on circuit board.
2. Connect ac power.
3. Install standby battery.
4. Connect CC-403 telephone cord to RJ31X jack (MA-800 & CCI8-DD only).

TESTING AND OPERATION

If testing indicates problems, refer to the TROUBLESHOOTING GUIDE, which follows this section.

A. LOAD ARMING CODE

1. If a door tamper switch is installed, alert the central station (MA-800 & CCI-8DD only) before opening the control-center door. (An alarm will signal when the door is opened.)

2. Put the RUN/LOAD (or ARM-DISARM/RUN/LOAD) switch on the circuit board in the LOAD position.

3. Press 2 to 6 digits on the keypad.

4. Return the RUN/LOAD switch to the RUN position.
Always leave the switch in the RUN *position after changing the code.*

B. ARM

1. Circuit boards bearing Rev. "F" and later: Use ARM-DISARM/RUN/LOAD switch and ARMED and STATUS LEDs on the circuit board when testing.

2. Check the green STATUS LED.
If STATUS LED is on, arm: (a) if "Easy-Arm" installed (see GLOSSARY), press only Key 8; otherwise, (b) enter full keypad code; or (c) turn key. The red ARMED/MEMORY LED will go on.

   If STATUS LED is flashing, count number of flashes and locate the trouble on the zone(s) indicated. (Search for an open window or door, or problem on the circuit.)

   Test Auto-Shunt Arming (if available) on troubled zone(s). Leave window or door open. Arm. The Red ARMED/MEMORY LED will go on and the Mini-Sounder will sound for a few seconds if the system arms with trouble zone(s) auto-shunted.

   If the red LED does not go on,
   (a) Auto-Shunt has not been programmed.
   (b) A Priority Zone may have trouble (Mini-Sounder sounds continuously.) The system cannot be armed until the circuit is restored.
   (c) Incorrect keypad code used. Control center is "locked out" (prevented from arming) for 5 seconds. Each additional code entry increases this "lockout" by 5 more seconds. Wait 5 seconds before trying to arm again.

   Test Manual Shunting (if available). Push [S] (Shunt) button. *Arm within 10 seconds.* Yellow SHUNT LED will go on. At least one zone is manually shunted. If the yellow LED does not go on, (a) Manual Shunt was not programmed or (b) system armed more than 10 seconds after [S] button pressed. Disarm and try again.

3. Test Exit Delay (if available). Optional Instant/Delay switch (Terminals 11 and 32) must be in Delay position. Red ARMED/MEMORY LED will go on and exit period will start. Mini-Sounder will sound when exit delay expires and entry period starts.

C. DISARM

1. Mini-Sounder is audible as long as entry delay is active. An alarm will signal if the system is not disarmed by the end of the entry period.

2. Check for alarm indication (flashing red ARMED/MEMORY LED). (Exception: LED does not flash for an alarm on a 24-Hour Zone.)

3. Disarm with code or key. Red ARMED/MEMORY LED will go out. If it does not, wait 5 seconds before reentering the code.

4. Check alarm memory (flashing red ARMED/MEMORY LED). Count the number of flashes between pauses to identify violated zone(s); arm and disarm again to cancel the alarm memory. If the Mini-Sounder sounds and/or green STATUS LED flashes, zone(s) are still in alarm. First remove the problem from the circuit, then reset by disarming again. *Exception:* To reset latched devices powered from the control-center Auxiliary Output, press the external switch added between Terminal 31 and the positive power supply lead to the device.

5. Check 24-Hour Zones.

   The red ARMED/MEMORY LED will not flash a 24-Hour Zone alarm.

   If a Burglary-Zone alarm occurred, first remove the cause from the circuit, then disarm, or arm and disarm again to clear the alarm condition.

   If the Fire alarm and circuit is monitored by an RP-1003U Fire Supervision and Indicator Station, use the FIRE RESET switch. If no RP-1003U is installed, reset the detector circuit with the added external switch.

D. TEST PANIC CIRCUIT. Simultaneously press [*] and [#] on the keypad.

E. CHECK BATTERY.

1. Disconnect the transformer from the ac outlet. Check that the system continues to function when powered by the battery only.

2. If the Fire circuit is monitored by an RP-1003U Fire Supervision and Indicator Station, press the BELL/BATTERY TEST switch. This switch should be used to test the battery once a month.

FAMILIARIZING THE USER WITH THE SYSTEM

With the User's Operating Instructions,

1. Complete the Alarm Plan.

2. Use the Alarm Plan to explain zone coverage. Show which are Priority, Auto-Shunt and Manual-Shunt Zones.

3. Help the user practice loading the code and daily operation.

   Demonstrate LED flashing to identify zones in trouble or alarm condition. Explain the operation of 24-Hour Zones.

   NOTE: If a door tamper switch is installed, explain that: (a) authorities must be alerted before opening the control-center door, (b) an alarm will signal when the door is opened, and (c) the control center must be reset to cancel the alarm after the door is closed.

4. Demonstrate Fire-Circuit Operation.

(a) Point out instructions for preparing and rehearsing an escape plan.

(b) Show the location of the fire alarm reset switch, where available.

(c) If monitored by an RP-1003U Fire Supervision and Indicator Station, demonstrate the monthly battery test using the BELL/ BATTERY switch.

WIRING TROUBLESHOOTING GUIDE

This guide provides wiring and operation remedies. Where programming causes are indicated, specific programming remedies are provided in the separate PROGRAMMING TROUBLESHOOTING GUIDE, following the Glossary and Programming section.

SYMPTOM: ANY KEYPAD FAILURE. EXAMPLE: LED(S), SOUNDER, OR ARM/DISARM CIRCUIT DOES NOT WORK PROPERLY.

POSSIBLE CAUSE	REMEDY
Solder splashes.	Check for solder splashes on keypad circuit board. Solder splashes are the most common cause of keypad malfunction. Carefully remove excess solder.

SYMPTOM: NO RED ARMED OR GREEN STATUS LED WHEN RESETTING AFTER POWER-UP.

POSSIBLE CAUSE	REMEDY
PROM missing or incorrectly inserted into control center.	Insert PROM into control center circuit board with dot on PROM aligned with dot on socket. Do not bend pins.
Wrong ac input voltage.	If outlet is not 120Vac, use another power source. If voltage at Terminals 33 and 34 is not 16 - 18Vac, check wiring from transformer to these terminals. If voltage at transformer terminals is not 16-18Vac, replace transformer.
Blown fuses.	Replace.
No code loaded.	Set RUN/LOAD switch to LOAD. Load code (2 to 6 digits) at keypad. Set switch to RUN.
RUN/LOAD switch left in LOAD position.	Put in RUN position.

Wiring problem.	Check for open or short on wires connected to Terminals 6 and 7.
Faulty keypad or keyswitch station.	Try another arming unit.

SYMPTOM: CANNOT ARM OR DISARM

POSSIBLE CAUSE	REMEDY
Incorrect code entry.	*Wait 5 seconds* before trying to arm or disarm again.
Code keys or keyswitch not properly connected.	Check wiring to Terminals 1 through 4 (keypad) or 5 and 9 (keyswitch).
Short circuit or open circuit.	Check wiring from Terminals 1 through 4 to 10. If green and either red or yellow LEDs are on, check wiring from Terminals 1 through 4 to 7 or 8.
Faulty keypad or keyswitch station.	Try another arming unit.
Maintained keyswitch used but not programmed.	Obtain correctly-programmed PROM.

SYMPTOM: NO RED MEMORY LED ON ALARM WHEN ARMED.

POSSIBLE CAUSE	REMEDY
24-Hour Zone in alarm.	Normal operation - 24-Hour Zones do not flash zone-status indication.
Wiring.	Check Terminals 5 and 6 for 9 volts. If present, check wiring to these terminals.

SYMPTOM: GREEN STATUS LED SHOWS ZONES 1 AND 3 OPEN WITH LOOPS JUMPERED OUT.

POSSIBLE CAUSE	REMEDY
PROM copying error.	Obtain correctly-programmed PROM with CCI-7/-8 or SFP-492 series format.

SYMPTOM: YELLOW LED DOES NOT GO ON WHEN [S] (SHUNT) KEY PRESSED BEFORE ARMING.

POSSIBLE CAUSE	REMEDY
Arming too slow.	Disarm. Press Shunt button again. Arm within 10 seconds.

Wiring.	Check for open or short on gray wire to Terminal 8 and brown wire to Terminal 1.
Faulty keypad or keyswitch station.	Check for momentary voltage between Terminal 32 and Terminal 1 when [S] button pressed. If not within specs, change keypad or keyswitch station.

SYMPTOM: PANIC ZONE CANNOT BE ACTIVATED FROM KEYPAD.

POSSIBLE CAUSE	REMEDY
Panic buttons incorrectly pressed.	Push [*] and [#] *at the same time.*
Zone still latched from previous alarm.	Arm and disarm control center. (To avoid future latching, have Panic zone programmed for Auto-Reset.)
Wiring.	Check at keypad that one white wire firmly attached to Terminal 20 and the other white wire is spliced to the green wire on Terminal 5. (*Exception:* Supervised panic circuit. See Installation Instructions for keypad.)
Faulty keypad.	Check for momentary voltage between Terminals 32 and 20 when [*] and [#] buttons pressed. If no voltage, check wiring to Terminals 1 through 10. If wiring okay, replace keypad.

SYMPTOM: SOUNDER ON, BUT WEAK.

POSSIBLE CAUSE	REMEDY
Short circuit on wiring between terminals.	Check wiring between Terminals 9 and 10, and 1 through 4 to 10.

SYMPTOM: SOUNDER GOES ON DURING RESET AFTER PANIC ALARM.

POSSIBLE CAUSE	REMEDY
Panic button latched.	Check that button is reset.
Short circuit.	Check green and white wires between Terminals 20 and 21 (Fig. 4-2).

SYMPTOM: SOUNDER GOES ON WHEN ARMING.

POSSIBLE CAUSE	REMEDY
24-Hour Zone in trouble.	Disarm. Check 24-Hour Zones. Remove any problem. Arm and disarm quickly to reset control center.
Short circuit.	Check for a short on the two wires between Terminals 10 and 6.
Programming error.	Obtain correctly-programmed PROM.

SYMPTOM: SOUNDER AND LED BOTH ON.

POSSIBLE CAUSE	REMEDY
Sounder short-circuited to LED wire.	Check Sounder wire on Terminal 10 and wire connected to LED that is on: Red, Terminal 6; Green, Terminal 7.

SYMPTOM: SOUNDER ON AND CANNOT BE RESET.

POSSIBLE CAUSE	REMEDY
PROM missing or incorrectly inserted in control center.	Insert PROM into control-center circuit board with dot on PROM aligned with dot on socket. Do not bend pins.
Low battery.	Measure voltage on battery terminals. (should be at least 12.5Vdc). If not, remove wires from battery and measure voltage on red and black leads. If this is not more than 12.5 volts dc and the input voltage at Terminals 33 and 34 is 16 - 18Vac, return control center to Napco.
Short circuit.	If either red or green LED is on, check Sounder wire on Terminal 10 and wire connected to LED that is on: Red, Terminal 6; Green, Terminal 7. Check wiring between remote station and control center by connecting keypad or keyswitch station, with short wires, close to control-center terminal strip.
PROM copying error or bad PROM.	If red and green LEDs are both off, a new PROM may be needed.

SYMPTOM: NO OUTPUT ON SOUNDER.

POSSIBLE CAUSE	REMEDY
Wiring problem or faulty component.	Check that black wire is firmly connected to Terminal 10.
	Use jumper to short Terminal 10 to Terminal 32. If sounder does not come on, replace keypad or keyswitch station.
Feature not programmed for zone. (Exit/Entry Delay, Entry Delay Time or Mini-Sounder On Alarm).	Obtain PROM correctly programmed for desired feature.
Bad PROM.	Obtain new PROM.

SYMPTOM: ZONE 2 OR 4 VIOLATED, FAILS TO TRIP, PANEL ARMED.

POSSIBLE CAUSE	REMEDY
Grounded loop.	Remove wire from zone negative terminal (Zone 2, Terminal 15; Zone 4, Terminal 19). If zone still does not trip, remove wire from zone positive terminal (Zone 2, Terminal 14; Zone 4, Terminal 18). If control center now goes into alarm, locate ground on loop.

SYMPTOM: ZONES 1, 3, ALWAYS IN TROUBLE; PANIC ALWAYS IN ALARM.

POSSIBLE CAUSE	REMEDY
Wrong PROM.	Obtain PROM made from CCI-7/-8 or SFP-492 series format.

SYMPTOM: ALARM OUTPUT DEVICE DOES NOT GO ON WHEN ZONE TRIPPED.

POSSIBLE CAUSE	REMEDY
Wiring problem.	Check that alarms using Alarm Output 1 are connected to Terminals 29 and 30, those using Alarm Output 2 to Terminals 27 and 30, and those using isolated contacts to Terminals 27 and 28.
	Check for loose wires, opens or shorts in wiring to these terminals (27 through 30).

Jumper not cut to isolate relay contacts for device with its own power supply.	Cut jumper to left of Terminals 27 and 28 to isolate these terminals.
Power loss.	Check voltage at battery terminals. If not 10.2 - 13.9Vdc, (a) check for ac power outage; (b) check that the transformer is plugged into a continuous power source; (c) disconnect battery and measure the voltage across the battery leads (should be approximately 13.9Vdc).
Battery, or battery connections.	Check that the red lead from the circuit board is connected to the (+) battery terminal, and black lead to the (-) battery terminal. Check battery for discharged condition or defect. (a) If RP-1003U Fire Supervision and Indicator Station is installed, use the BELL/BATTERY TEST switch to check the battery. (b) With battery disconnected, check voltage on red and black leads from the control center. If voltage is 13 to 14 volts and battery cannot be fully charged (to 13 to 14 volts) within about 2 days, the battery is defective.
Fuse blown.	If the device is connected to Alarm Output Terminals 29 and 30, check 3A BELL Output fuse. Check if alarm device is drawing too much current. If device is powered by Auxiliary Output Terminals 31 and 32, check 1A POWER fuse. Check for short circuit on Auxiliary Output terminals.
Alarm Output programming error.	Obtain PROM with programming of alarm outputs matching terminals used.

SYMPTOM: GREEN STATUS LED PULSING WHEN WIRES FROM ZONE ARE ATTACHED.

POSSIBLE CAUSE	REMEDY
Normally-open Zone 2 or 4 wired with normally-closed devices or normally-closed Zone 5 or 6 wired with normally-open devices.	Check if zone was converted from normally-closed to normally-open (or normally-open to normally-closed) by programming.

SYMPTOM: COMMUNICATOR LED* DOES NOT GO ON (RELAY DOES NOT ENGAGE) TO INDICATE AN ALARM REPORT.

POSSIBLE CAUSE	REMEDY
Zone not programmed to Report On Alarm or zone restores faster than programmed loop-response time.	Obtain correctly-programmed PROM.

SYMPTOM: COMMUNICATOR LED* GOES ON (RELAY ENGAGES) BUT FAILS TO BLINK (ROTARY DIAL) OR LIGHT STEADILY LONGER THAN 12 SECONDS (TOUCH TONE DIAL).

POSSIBLE CAUSE	REMEDY
PROM missing or incorrectly inserted in control center.	Insert PROM into control center circuit board with dot on PROM aligned with dot on socket. Do not bend pins.
Wiring problem at terminals.	Disconnect CC-403 cord from RJ31X jack. Check for loose wires, opens or shorts at Terminals 23 to 26.
Phone company wiring error.	With CC-403 cord connected, put handset on Terminals 23 and 24. Try to dial out. If dial tone is lost, RJ31X wires are reversed. If handset cannot dial out, problem is on phone line.

SYMPTOM: COMMUNICATOR LED* LIGHTS STEADILY FOR 12 SECONDS, THEN GOES OUT, (REPEATED 3 TIMES) BEFORE BLINKING (ROTARY DIAL) OR LIGHTING STEADILY LONGER THAN 12 SECONDS (TOUCH-TONE DIAL).

POSSIBLE CAUSE	REMEDY
Bent pin.	Straighten pins and reinsert PROM.
Ground start needed to establish dial tone.	Where dial tone is not continually active, install GSM-400 Ground Start Module.
Programming for Dial-Tone Detection or Pre-Dial Delay needed.	Obtain properly-programmed PROM.

*Located near the middle of the control center circuit board.

SYMPTOM: COMMUNICATOR LED* BLINKS (ROTARY DIAL) OR LIGHTS STEADILY FOR MORE THAN 12 SECONDS (TOUCH-TONE DIAL) 8 TIMES, BUT COMMUNICATOR DOES NOT REPORT.

POSSIBLE CAUSE	REMEDY
Wrong receiver-format PROM or programming problem.	Connect handset to Terminals 23 and 24. Listen to communicator dial. If phone rings but receiver does not answer, obtain PROM with correct telephone number programmed. If receiver does give tone, obtain PROM with correct format for central station receiver.

SYMPTOM: COMMUNICATOR SENDS 4 ROUNDS 8 TIMES.

POSSIBLE CAUSE	REMEDY
Central-station problem.	Connect handset to Terminals 23 and 24. Listen to communicator dial. If no handshake given by receiver, call central station.
Wrong receiver-format PROM or programming problem.	Consult central station for reporting and receiver formats. Sum-Check Report Format, when needed, must be programmed. If necessary, have programming corrected. If reporting format okay, obtain a PROM made from correct format master for central-station receiver.

SYMPTOM: RECEIVER OR COMMUNICATOR NOT RECOGNIZING SIGNALS.

POSSIBLE CAUSE	REMEDY
Wrong receiver-format PROM.	Obtain PROM made from correct master format for central-station receiver.

SYMPTOM: COMMUNICATOR SENDS INCORRECT SUBSCRIBER IDENTIFICATION NUMBER AND ALARM-CODE TRANSMISSION.

POSSIBLE CAUSE	REMEDY
Noise on telephone line.	Connect handset to Terminals 23 and 24. Listen for static on the line.
Wrong PROM.	Obtain PROM made from correct master format for central-station receiver.

*Located near the middle of the control center circuit board.

Error in programming Communicator Transmission Information.	Call the central station to verify correct Subscriber Identification Number and transmission codes. If Subscriber Code is 4 digits, 4/2 Format may be needed. Obtain correctly-programmed PROM.

SYMPTOM: ABORT DELAY FAILS.

POSSIBLE CAUSE	REMEDY
Abort Delay selected on 24-Hour Aone.	If an alarm remains on a 24-Hour Zone for the duration of the abort-delay period (15 seconds unless extended by programming) the communicator will report. The device/zone must be reset before the control center can be reset to abort report. If Abort Delay is selected and the zone is a 24-Hour Zone, advise subscriber to restore the device/zone and reset the control center before the abort-delay period ends to abort the transmission.

SYMPTOM: ZONE DOES NOT REPORT A RESTORAL AFTER BEING CLEARED OF ALARM CONDITION.

POSSIBLE CAUSE	REMEDY
Zone not reset.	If zone is not programmed for Auto-Reset, arm/disarm control center to reset.
Zone has been programmed for Control-Center Restoral Report, but not Zone-Restoral Report.	Arm/disarm to reset control center. Report will then be sent. To obtain report when zone resets, zone must be programmed for Auto-Reset, Zone-Restoral Report, and Control-Center Restoral Report. If desired, obtain correctly-programmed PROM.
Zone not programmed for any Restoral Report.	Obtain correctly-programmed PROM.

SYMPTOM: STANDBY BATTERY NOT RECHARGING.

POSSIBLE CAUSE	REMEDY
Power loss.	Check for an ac power outage. Check that the transformer is plugged into a continuous power source.

Defective battery.	With the battery disconnected, check voltage on red and black leads from the control center. If voltage is 13 to 14 volts, the battery should fully charge (to 13 to 14 volts) within about two days. Otherwise, the battery is defective.

5. KEYPAD

When connected to the control center, the RP-1003H Digital Keypad provides coded arming and disarming, Mini-Sounder and LED indication, manual shunting and panic alarm capability. It has a hinged flip-up front panel for easy access to mounting holes.

WIRING

KEYPAD WIRE COLOR	CONTROL-CENTER TERMINAL
Brown	1
Red	2
Orange	3
Yellow	4
Green	5
Blue	6
Violet	7
Gray	8
Black	10
White	to Panic Zone
White	Splice to Green Wire

Table 5-1. Keypad Connections.
Caution: If using a soldering iron, avoid splashing solder onto circuit board or components.

OPERATION

Enabling the System from the Keypad

1. At the control center, put RUN/LOAD switch in LOAD position.
2. Enter user code.
3. Return RUN/LOAD switch to RUN position.
4. At keypad, enter code once to arm system (red ARMED/MEMORY LED will light), and again to disarm system (green STATUS LED will light).

Keypad Functions

Panic - Press [*] and [#] at the same time.
Shunt - Press [S] and enter code to arm.

Keypad Indications

ARMED/MEMORY (Red) LED
- On - Armed
- Regular-Interval Flash - Alarm occurred. Control Center still armed.
- Irregular-Interval Flash - Control Center disarmed. The number of flashes identify which zone or zones were violated.

Zone STATUS (Green) LED
- On - Zones Okay.
- Irregular-Interval Flash - Control Center disarmed. The number of flashes identify which zone or zones are in trouble.

SHUNT (Yellow) LED
- On - Armed with zone shunted.

Mini-Sounder on Arming
- 4-second tone - Partial protection: zones auto-shunted or 24-Hour Zone in alarm.
- Continuous tone - Priority-Zone trouble.

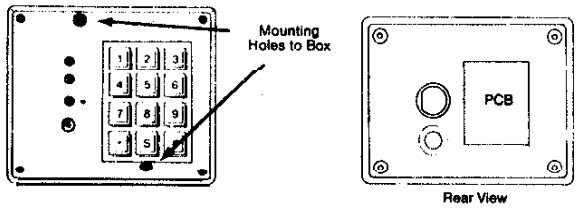
Mini-Sounder on Disarming
- Continuous tone - entry period delay.

MOUNTING

Preparation. Raise the hinged front panel for access to the mounting to the mounting holes and proceed as follows.

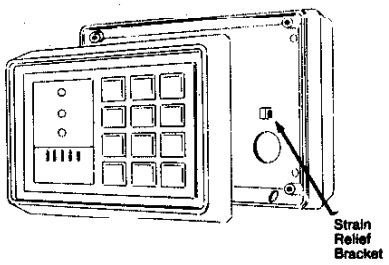
Mounting on a Control-Center Door

1. Use a screwdriver to remove the knockout in the front door.
2. Align mounting holes on keypad with mounting slots in cabinet door.
3. Secure in place with #6 screws and nuts.
4. Lower front panel.



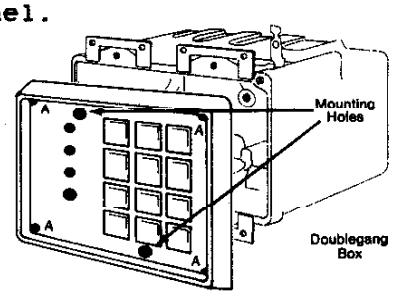
Surface Mounting on a Wall Using the RPB-1

1. Mount the RPB-1 onto the wall.
2. Pull the wires through the hole in the back or run a 10-conductor cable through the smaller hole in the side.
3. Using a cable tie, secure wires to the strain-relief bracket.
4. Shorten keypad wires so that they fit into the RPB-1.
5. Mount the keypad onto the RPB-1 with the screws provided.



Flush Mounting in a Wall Using RPB-2

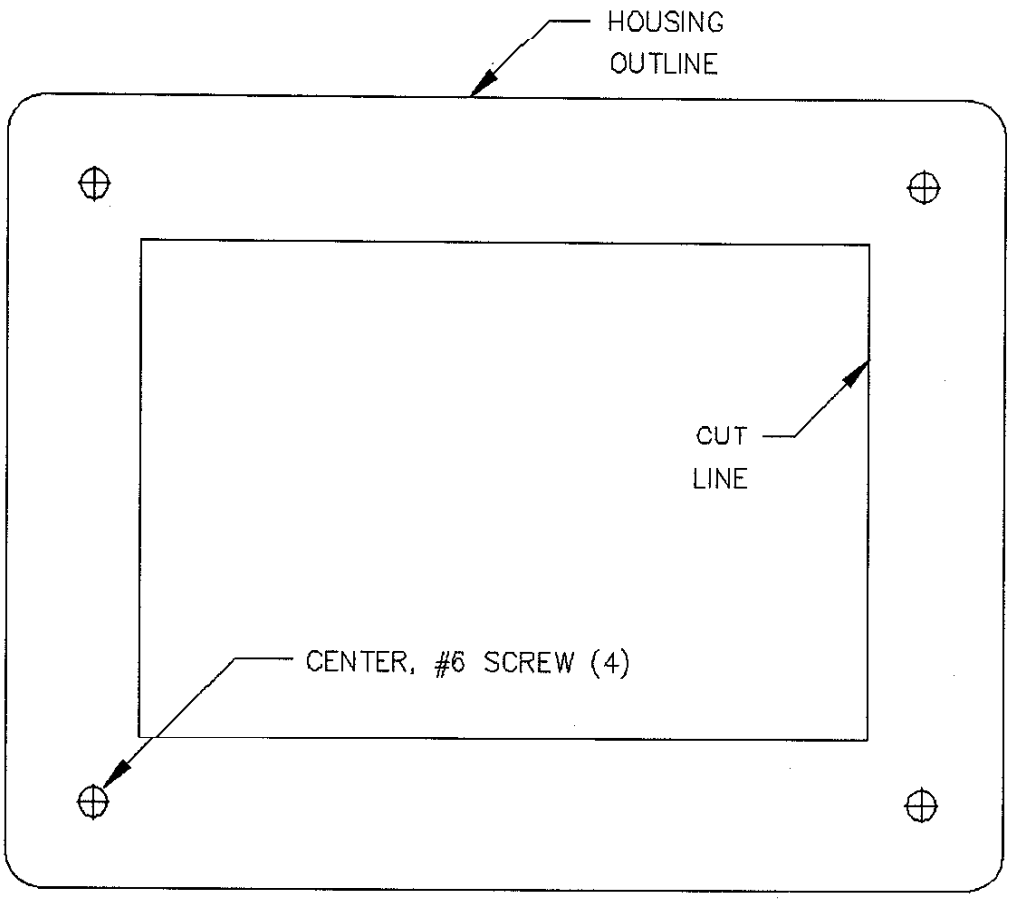
1. Position the keypad on a NAPCO RPB-2 box.
2. Use the mounting holes to secure the keypad to the junction box with #6 screws.
3. Lower the front panel.



NOTE: Four corner holes (A) may be used for flush mounting directly into the wall.

After mounting is completed, peel off the clear vinyl covering protecting the front panel.

KEYPAD MOUNTING TEMPLATE



Mounting Template

INSTRUCTIONS: Should removal of the circuit board be necessary, use this wiring legend to relocate leads to their proper terminals. Enter wire identification number or color code in WIRE NUMBER column; enter wire function in DESCRIPTION column (optional).

TERMINAL NUMBER	WIRE NUMBER	DESCRIPTION
1		
2		
3		
4		
5		
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NOTES:

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NAPCO LIMITED WARRANTY

NAPCO SECURITY SYSTEMS, INC. (NAPCO) warrants its products to be free from manufacturing defects in materials and workmanship for fifteen months following the date of manufacture. NAPCO will, within said period, at its option, repair or replace any product failing to operate correctly without charge to the original purchaser or user.

This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to acts of God, or on which any serial numbers have been altered, defaced or removed. Seller will not be responsible for any dismantling or reinstallation charges.

In case of defect, contact the security professional who installed and maintains your security system. NAPCO shall have no obligation under this warranty, or otherwise, if the product has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to accident, nuisance, flood, fire or acts of God, or on which any serial numbers have been altered, defaced or removed. NAPCO will not be responsible for any dismantling, reassembly or reinstallation charges.

In order to exercise the warranty, the product must be returned by the user or purchaser, shipping costs prepaid and insured to NAPCO. After repair or replacement, NAPCO assumes the cost of returning products under warranty.

There are no warranties, express or implied, which extend beyond the description on the face hereof. There is no express or implied warranty of merchantability or a warranty of fitness for a particular purpose. Additionally, this warranty is in lieu of all other obligations or liabilities on the part of NAPCO.

Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within the six months following the end of the warranty period. In no case shall NAPCO be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, express or implied, even if the loss or damage is caused by the seller's own negligence or fault.

This warranty contains the entire warranty. It is the sole warranty and any prior agreements or representations, whether oral or written, are either merged herein or are expressly cancelled. NAPCO neither assumes, nor authorizes any other person purporting to act on its behalf to modify, to change, or to assume for it, any other warranty or liability concerning its products.

In no event shall NAPCO be liable for an amount in excess of NAPCO's original selling price of the product, for any loss or damage, whether direct, indirect, incidental, consequential, or otherwise arising out of any failure of the product. Seller's warranty, as hereinabove set forth, shall not be enlarged, diminished or affected by and no obligation or liability shall arise or grow out of Seller's rendering of technical advice or service in connection with Buyer's order of the goods furnished hereunder.

NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

Warning: Despite frequent testing, and due to, but not limited to, any or all of the following; criminal tampering, electrical or communications disruption, it is possible for the system to fail to perform as expected. NAPCO does not represent that the product/system may not be compromised or circumvented; or that the product or system will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; nor that the product or system will in all cases provide adequate warning or protection. A properly installed and maintained alarm may only reduce risk of burglary, robbery, fire or otherwise but it is not insurance or a guarantee that these events will not occur. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. Therefore, the installer should in turn advise the consumer to take any and all precautions for his or her safety including, but not limited to, fleeing the premises and calling police or fire department, in order to mitigate the possibilities of harm and/or damage.

NAPCO is not an insurer of either the property or safety of the user's family or employees, and limits its liability for any loss or damage including incidental or consequential damages to NAPCO's original selling price of the product regardless of the cause of such loss or damage. If the user wishes to protect itself to a greater extent, NAPCO will, at user's sole cost and expense, obtain an insurance policy to protect the user, supplemental to user's own policy, at a premium to be determined by NAPCO's insurer upon written notice from user by Certified Mail, Return Receipt Requested, to NAPCO's home office address, and upon payment of the annual premium cost by user.

Some states do not allow limitations on how long an implied Warranty lasts or do not allow the exclusion or limitation of Incidental or consequential damages, or differentiate in their treatment of limitations of liability for ordinary or gross negligence, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.