NAPCO

OPERATING AND INSTALLATION INSTRUCTIONS

MAGNUM ALERT-700 ALARM CONTROL CENTER

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WI314A 6/86

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INTRODUCTION

The MAGNUM ALERT-700 is a microcomputer-based five zone commercial an residential control center. The system consists of a flush-mounte control center with digital keypad arming station and zone statu indicators located on the front of the unit. An optional communicato module (Napco model DD-1490) plugs easily into the control cente circuit board where central station reporting is desired.

Each unit is supplied with a blank PROM which must be programmed a the subscriber PROM for the particular installation. Afte installation, the subscriber PROM gives the alarm system its feature and (when necessary) communicator transmissions.

FACTORY-SUPPLIED FEATURES

- Up to four different 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 normally open zone. (Can be converted to normally closed and/or non-24 hour.)
  - -- AC Loss Zone.
- Built-in digital keypad for arming/disarming system:
  - -- Accepts 2, 3, 4, 5, or 6 digit security code.
  - -- Status and Armed/Alarm Memory lamps indicate trouble or alarm by zone number and system armed/disarmed state.
  - -- Shunt light indicates when zones have been manually shunted. Any zones may be selected by programming for this feature.
- Separate alarm output, capable of powering alarm sounders:
  - -- 12 VDC at 2 A timed steady, or untimed pulsing.
  - -- Auto-reset after alarm time-out can be selected by programming.
- AC power via 16 VAC, 11.2 VA, Class II stepdown transformer.
- 200 mA recharging circuit for standby battery.
- Continuous auxiliary regulated, filtered power output for low-voltage alarm devices.
- Maximum protection against lightning and other transient voltage.

OPTIONAL COMMUNICATOR FEATURES

- Digital communicator with true dial tone detection, double-pole line seizure and anti-jam; compatible with all popular receivers.
- Individual zone number reporting.
- Multiple reporting.
- Low battery detection circuit (jumper selected).

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

- Priority, auto-shunt, or 24 hour zone.
- Manual shunt from keypad on arming.
- Day supervision.
- Exit/entry delay.
- Zone reponse time.
- Pulsing or timed alarm output and alarm time out period. Mini-Sounder on alarm.
- Number of normally open or normally closed zones (up to four).

CUSTOM PROGRAMMED COMMUNICATOR FEATURES

- Alarm/restore reporting by zone.
- Opening/closing reports.
- Abort delay before dialing.
- Rotary or Touchtone dialing.
- Back-up or split reporting.
- 4/2 format or extended format; sum check format reporting.

ORDERING INFORMATION

MA-700	Alarm system package consisting of control center, blank DD-491 PROM, and integral keypad.
RBAT-4	Rechargeable Battery, 12Vdc, 4AH
BRKT-700	Optional Battery Mounting Shelf
TRF-8	Transformer, 16Vac, 11.2VA
DD-1490	Optional Plug-In Communicator
CC-403	Telephone Connection Cord
GSM-400	Ground-Start Module
M-278	Line-Reversal Module
ESM-1	Dual-Channel Siren Driver
ESM-310	Dual-Chanel Siren Driver PC module
A174	Instruction Manual
PF-146	Programming Record Sheets, 100/pad (CCI7/8 PROMs)
SR268A/WI286A	Feature Selector Guide for the MA700 and instructions
PRO-410	PROM Programmer
DD-491	Blank PROM chip

A specific PROM master is required to give a MAGNUM ALERT-700 its features.

Use the list below to select the correct PROM for the central-station receiver. Any of these PROMs may be used for a MAGNUM ALERT-700 system without a DD-1490 communicator.

The DD491 blank PROM may be formatted from any of the master PROMs below.

MASTER PROM FORMAT NUMBER	FORMAT	RECEIVE/ TRANSMIT	DUTY CYCLE ON/OFF	INTERDIGIT TIME
CCI7/8-1	Ademco Format with Pulsing Hold	1400/1900Hz	51/49mSec	600mSec
CCI7/8-2	Ademco, Adcor, Vertex, and Silent Knight "slow" format	1400/1900	51/49	600
CCI7/8-3	Sescoa, Vertex, DCI, and Franklin "fast" format	2300/1800	30/20	800
CCI7/8-4	Radionics "super fast" format	2300/1800	13/12	400
CCI7/8-5	Silent Knight, "fast" format	1400/1900	40/30	560
CCI7/8-6	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 chip) supplied with your control center becomes a subscriber PROM wher programmed with the selected features and communicator informatior required for your installation. Programming is done on a Napco model PRO-410 or DD-490 Programmer (Figure 1), then the subscriber PROM plugged into the control center's PROM socket.

MASTER PROM SERIES - Master PROMs are programmed in the factory. Each master PROM will be used again as often as required, to make copies onto blank PROMs.

CCI7/8(1-6) series master PROMs contain only the background data for general operation of a MAGNUM ALERT-700. After the CCI7/8 master PROM is copied onto the (DD-491) subscriber PROM, features and communicator information are selected on the Programming Record Sheet and added to the subscriber PROM by programming.

Where no communicator will be added, use any CCI7/8(1-6) master PROM. When adding the optional (DD-1490) communicator, select from the Ordering Information the appropriate CCI7/8(1-6) master PROM version corresponding to the digital receiver to which the communicator will be transmitting.

GLOSSARY - Detailed programming instructions for features and communicator information are in the Glossary section of this manual. Glossary items which have names beginning with letters are arranged alphabetically at the front of the Glossary; followed by names beginning with numbers, in numerical order.

PROGRAMMING RECORD SHEET and FEATURE SELECTION GUIDE - A Programming Record Sheet is completed when planning features, communicator and other information to be programmed for your installation. After completion, the Programming Record Sheet is used to program the subscriber PROM, then saved for record purposes.

The Feature Selection Guide works like a 'slide-rule' aid for completing an inserted Programming Record Sheet. The Guide is reused for different installations.

PROGRAMMING STEPS

(1) Call the central station for receiver format and Codes and Subscriber Number(s) (when using DD-1490 communicator).

(2) Complete your Programming Record Sheet.

(3) Select the correct master PROM format. (See Ordering Information.) NOTE: When master PROM background information must be changed from the factory supplied version, some programming steps are different. Use the Glossary item "Changing Location Contents" instead of steps (4) to (6) below. Then procede to step (7) below.

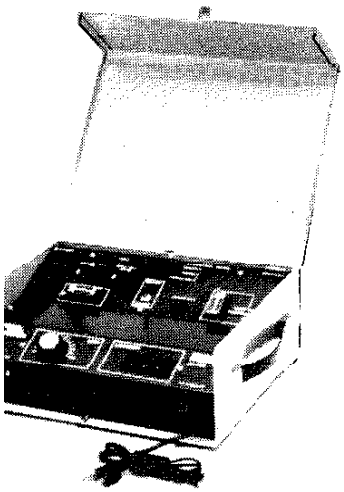
(4) Follow the instructions for the Napco Programmer used.

(5) Copy master PROM chosen onto the blank DD-491 PROM.

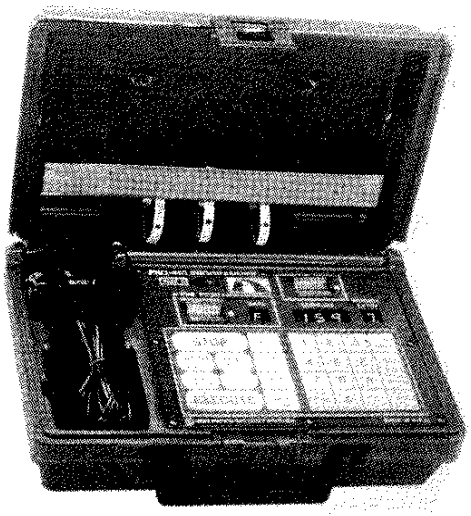
(6) Remove the master PROM from the Programmer. Program any entries in the boxes from your Programming Record Sheet into matching locations on the subscriber (DD-491) PROM. **NOTE: When the PRO-410 Programmer is used, it may be necessary to precede entry numbers**

by the PLUS key.

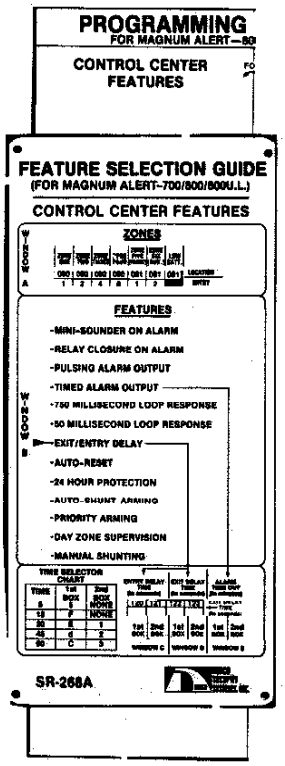
(7) Find the Installation Record label (LA484) in the carton which contains your control center. Complete the Programmable Zone Features portion, and place the label back in the carton. This summary will be used by the installer to match wiring options to programmed features.



DD-490 PROGRAMMER



PRO-410 PROGRAMMER



FEATURE SELECTION GUIDE WITH PROGRAMMING SHEET INSERTED

INSTALLATION RECORD

Entry Delay Time = _____ Secs.
Exit Delay Time = _____ Secs.
Alarm Time = _____ Min.

SPECIAL NOTES:

_____
_____
_____

PROGRAMMABLE ZONE FEATURES

ZONE	AREA PROTECTED	TYPE OF DEVICES ON ZONE	N/O - N/C	Manual Shunt	Day Zone	Priority	Auto Shunt	24-Hour	Auto Reset	Entry/Exit	Response Time F/S	Timed/Pulsing Alarm
1												
2												
3												
PANIC												
AUX.												

LA 484

Installer: Phone #: Date Installed: _____

INSTALLATION RECORD (LA484)

FIGURE 1

CC17/8 PROGRAMMING RECORD SHEET

A Programming Record Sheet is inserted following this page which shows the PROM locations and features selectable for the MAGNUM ALERT-700.

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, on the reverse side, COMMUNICATOR TRANSMISSION INFORMATION are completed only when a DD-1490 communicator module is added to the MAGNUM ALERT-700 system.

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 name, not PROM locations. (The Index lists features by 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 the 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 called "Changing Location Contents". If a box is black, the feature cannot be selected for the zone named.

NOTE: BE SURE TO FILL IN THE PROGRAMMED FEATURES ON THE INSTALLATION RECORD (LA484, included inside your control center carton) AND RETURN THIS LABEL TO THE CARTON. THIS WILL ENSURE THAT WIRING MATCHES PROGRAMMING.

INSTALLATION RECORD

Entry Delay Time =_____ Secs.
Exit Delay Time =_____ Secs.
Alarm Time =_____ Min.

SPECIAL NOTES:

PROGRAMMABLE ZONE FEATURES

ZONE	AREA PROTECTED	TYPE OF DEVICES ON ZONE	N/O - N/C	Manual Shunt	Day Zone	Priority	Auto Shunt	24-Hour	Auto Reset	Entry/Exit	Response Time F/S	Timed/Pulsing Alarm
1												
2												
3												
PANIC												
AUX.												

LA 484

Installer: Phone #: Date Installed:_____

FIGURE 1: INSTALLATION RECORD (LA484)

PROGRAMMING RECORD SHEET
FOR MAGNUM ALERT—700

CONTROL CENTER FEATURES

FOLD

ZONE ONE	ZONE TWO	ZONE THREE	A.C. LOSS	PANIC	AUX.	LOW BATT.	
078	078	078	078	079	079	079	MANUAL SHUNTING
1	2	4	8	1	2		
080	080	080	080	081	081	081	DAY ZONE SUPERVISION
1	2	4	8	1	2		
082	082	082	082	083	083	083	PRIORITY ARMING
1	2	4	8	1	2	4	
084	084	084	084	085	085	085	AUTO-SHUNT ARMING
1	2	4	8	1	2		
086	086	086	086	087	087	087	24 HOUR PROTECTION
1	2	4	8	①	②	④	
088	088	088	088	089	089	089	AUTO-RESET
1	2	4	8	1	2		
090	090	090	090	091	091	091	EXIT/ENTRY DELAY
1	2	4	8	1	2		
094	094	094	094	095	095	095	50 MILLISECOND RESPONSE
1	2	4	8	1	2		
096	096	096	096	097	097	097	750 MILLISECOND RESPONSE
①	2	④	⑧	1	②	④	
106	106	106	106	107	107	107	TIMED ALARM OUTPUT
1	2	4	8	1	2		
108	108	108	108	109	109	109	PULSING ALARM OUTPUT
1	2	4	8	1	2		
112	112	112	112	113	113	113	MINI SOUNDER ON ALARM
1	2	4	8	1	2	4	
147	147	147	147	148	148	148	INPUT POLARITY
①	2	④	8	1	2		

TIME SELECTOR CHART

TIME	1st BOX	2nd BOX
5	5	NONE
15	F	NONE
30	E	1
45	d	2
60	C	3

111	RELAY CLOSURE FOR KEY "ON"
8	

ENTRY DELAY TIME (in seconds) → | 120 | 121 | 122 | 123 | ← EXIT DELAY TIME (in seconds)

ALARM TIME OUT (in minutes) → | 126 | 127 |

COMMUNICATOR FEATURES

STANDARD FEATURES

	ZONE ONE	ZONE TWO	ZONE THREE	A.C. LOSS	PANIC	AUX.	LOW BATT.
ABORT DELAY BEFORE DIALING	092	092	092	092	093	093	093
	1	2	4	8	1	2	④
REPORT ON ALARM	098	098	098	098	099	099	099
	1	2	4	8	1	2	4
CONTROL CENTER RESTORAL REPORT	100	100	100	100	101	101	101
	1	2	4	8	1	2	4
ZONE RESTORAL REPORT	114	114	114	114	115	115	115
	1	2	4	8	1	2	4

ADVANCED COMMUNICATOR FEATURES

CLOSING REPORT CODE	014	015
OPENING REPORT CODE	032	033
CONDITIONAL CLOSING CODE	016	017
OPENING REPORT CODE (AFTER ALARM)	032	033

099 / 8	CLOSING REPORT
101 / 8	OPENING REPORT
116 / 2	TOUCH TONE® DIALING
116 / 4	4/2 FORMAT
116 / 8	SUM CHECK
117 / 1	BACK-UP REPORTING
117 / 2	SPLIT REPORTING
118 / 2	CONDITIONAL CLOSING REPORT
118 / 8	OPENING REPORT AFTER ALARM

NOTE: 4/2 OR EXTENDED FORMAT

CUSTOMER: ADDRESS: DATE:

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FIGURE 2:
MAGNUM ALERT-700
PROGRAMMING
RECORD SHEET

PROGRAMMING RECORD SHEET
COMMUNICATOR TRANSMISSION INFORMATION
FOR MAGNUM ALERT—700

ALARM CODES

	ZONE ONE	ZONE TWO	ZONE THREE	A.C. LOSS	PANIC	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	A.C. LOSS	PANIC	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

■ USE ONLY WHERE REQUIRED (see glossary)

FOR 1st TELEPHONE #	FOR 2nd TELEPHONE #
042	060

ACCESS NUMBER FOR AN OUTSIDE LINE

■ USE ONLY WHERE REQUIRED (see glossary)

FOR 1st TELEPHONE #	FOR 2nd TELEPHONE #
043	061

DIAL TONE DETECTION

■ SEE GLOSSARY ENTER "E" FOR DIAL TONE DETECTION

FOR 1st TELEPHONE #	FOR 2nd TELEPHONE #
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, Accor, Vertex, Silent Knight "slow" format
- ☐ CCI-7/8-3: Seacoa, 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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GLOSSARY AND PROGRAMMING INFORMATION

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 canceled by disarming the control center.

Exception: If Abort Delay Before Dialing is selected on 24 hour zone, the device/zone must be reset before the control center can be reset and transmission be canceled. 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 can be extended by programming (locations 124-125). Follow the instructions in this Glossary called TIME SELECTION.

AC LOSS

When there is no 120 volt AC input to the MAGNUM ALERT-700, the AC Loss Zone (Zone 4) will be set into a trouble condition within approximately 2 to 5 seconds. If the control center is disarmed, the green STATUS light will indicate trouble on zone 4. If the control center is armed, the red ALARM/MEMORY light will indicate alarm memory on zone 4.

WARNING: Do not program the AC Loss Zone for 24 Hour Protection (location 086), since 24 hour zones give no flashing indication.

It is recommended that the AC Loss Zone be programmed for Day Zone Supervision (location 080), so that the Mini-Sounder will also give a local audible trouble alert (when disarmed).

If a DD-1490 communicator is also installed, Report On Alarm (location 098) and an Alarm Code (locations 006-007) may also be programmed for the AC Loss Zone. (Before programming this feature, call the central station to ask if AC power loss reporting is allowed.) If programmed, a central station report is sent if the control center is armed when it experiences an AC power loss.

See: Day Zone Supervision, Report On Alarm and Alarm Codes.

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 Back-Up 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.

ALARM CODES (Locations 000-013)

See: Report On Alarm, Extended Format Reporting, 4/2 Format.

ALARM OUTPUT (Locations 106-109, 126-127; Terminals 11-12)

(I) Description:

The Alarm Output for each zone 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.

(II) Programming for typical installations:

Wiring for the following application examples is described in the Installation Instructions for terminals 11-12. **When programming and installation wiring are done by different personnel, advise the installer whether Alarm Output has been programmed as steady or pulsing for each zone.**

If using the Auxiliary Zone for fire protection, use a bell to signal both burglary and fire alarms (sample B, below). To use a siren for burglary only:

(A) Single-channel siren for burglary (warble):

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

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

(B) Single Bell
A single bell may be made to sound continuously for burglary and pulse on and off for fire, by programming as follows:

(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 automatically time out and is only silenced by manually resetting the control center.

See: Installation Instructions: Terminals 11 - 12. See also: Time Selection (for Alarm Time Out).

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 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 dial tone. After 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 11-12)

When a zone is selected for Auto-Reset, reset will occur at the time shown in Table 1, below and explained in the text which follows:

ALARM TYPE	IN LOCATION 119:	ZONE RESETS
Timed Steady	3	After Alarm Time Out.
Timed Steady	2	As soon as alarm condition removed.
Untimed - Pulsing Alarm Output)	2 or 3	As soon as alarm condition removed.
Panic or Fire	2 or 3	After control center (and any latched fire detector) manually reset.

TABLE 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) always reset the instant an alarm condition is removed.

Zones which are not programmed for Auto-Reset will latch when in alarm and will not be capable of signaling a 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 zone) the control center manually rearmed.

It is recommended to program Auto-Reset for the Panic Zone (when also programmed for Pulsing Alarm Output) and the Auxiliary Zone (when used for fire protection). However, it will still be necessary to manually reset the control center. Any latched fire alarm must also be reset with the latched alarm reset switch added to the Auxiliary Output (+) terminal.

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.

See: Alarm Output and Timed Selection (for Alarm Time Out), Control Center Restoral Report, Zone Restoral Report.

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 out) when in trouble. A four-second warning will

sound at the digital 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 Protection zone (locations 086-087) for Auto-Shunt Arming, except to prevent mechanical failures or other "swingers" from causing unwanted alarms. Shunting is not generally recommended for the Auxiliary zone when used for fire protection.

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

BACK-UP REPORTING (Location 117)

When 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 you select Back-up Reporting, you must also enter Subscriber Identification #2 (locations 038-040 or 041) and all the information needed for the 2nd Telephone Number (locations 060-075). Subscriber Identification #2 may be the same as Subscriber Identification #1.

Do not select Back-up Reporting and Split-Reporting together.

b-F AND 10-15

The display of a Napco Programmer shows entries from 0 though 9 as they are programmed, but represents 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 which 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 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 2: PROGRAMMING ENTRIES LARGER THAN 9.

PRO-410 Programmer

When programming with the PRO-410 Programmer you may use "0", "b-F" keys for the numbers 10 to 15. Alternatively, program b through F (11 through 15), use the chart above this way: Enter the number 8, press PLUS, then enter the second number in the same location. See instructions for this Programmer.

CHANGING LOCATION CONTENTS

When instructions in this Glossary indicate 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 and the manual for the Programmer used:

If programming is done with a DD-490 Programmer: (a) **Before** copying the Master PROM, program any changes to preprogrammed entries in their locations on the blank DD-491 subscriber PROM. (b) Copy the Master PROM onto the DD491 subscriber PROM. (c) Program the remaining entries from your Programming Record Sheet into matching locations on the DD491 subscriber PROM.

If programming is done with a PRO-410 Programmer: (a) **First** copy the Master PROM into the memory of the PRO-410. (b) Replace any factory supplied entries displayed for their locations in Programmer memory, by pushing the number keys for the new entry. (c) Add the contents of each box on the Programming Record Sheet into its Programmer memory location: push the PLUS key, then the entry number keys. (d) Verify each location in Programmer memory. (e) Program the contents of the Programmer memory onto the blank DD-491 PROM.

CLOSING REPORT (Locations 099, 014-015)

See: Opening and Closing Report, and Conditional Closing Report.

CONDITIONAL CLOSING REPORT (Locations 118, 016-017)

If either Closing Report or Conditional Closing Report is selected, the communicator transmits 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:
(1) one or more zones have been automatically shunted,
(2) a 24 hour zone is latched in alarm (example...smoke detectors latched in alarm),
(3) a low battery condition exists,
(4) Panic circuit is latched in alarm.

The Mini-Sounder will automatically sound a 4-second "ringback" when the central station kiss-off (verification signal) 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. See also: Opening and Closing Report.

CONTROL CENTER RESTORAL REPORT (Locations 100-101, 018-031)

See: Restoral Report.

"d"

See: b-F And 10-15, Pre-dial Delay.

DAY ZONE SUPERVISION (Locations 080-081)

A zone programmed for Day Zone Supervision will cause the Mini-Sounder to sound immediately upon trouble. This feature can 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.

It is recommended that Day Zone Supervision be programmed for the AC Loss Zone. (Add an 8 in location 080.)

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 DD-1490 communicator dials. Enter an "E" (8 + 6) in location 044 to cause Dial Tone Detection before the 1st Telephone Number. If Back-Up 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 after the "d's" in the first available location before each telephone number used.

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

See also: Access Number for Outside Line, Pre-dial Delay, b-F And 10-15.

"E"

See: b-F And 10-15, Dial Tone Detection.

EXIT/ENTRY DELAY Locations 090-091, 120-123; Instant/Delay Switch)

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

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

Entry Delay and Exit Delay times must also be entered. Follow the instructions called TIME SELECTION.

NOTE: If Auto-Shunt Arming (locations 084-085) is programmed for an exit/entry zone, the door must be closed before arming, or this zone will be shunted.

The INSTANT/DELAY switch on the control center front may be used to to temporarily cancel entry and exit delay. With the switch in the INSTANT position, the zone will respond immediately to an alarm.

EXTENDED FORMAT REPORTING (Locations 000-023, 026-033)

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 Three of an installation programmed this way:

Subscriber Identification Number is 678,
Report on Alarm selected for burglary protection 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 prints 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 standard 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 Closing Report (location 099), enter 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 Conditional Closing Report (location 118), enter Conditional Closing Code (locations 016-017).
(c) For Opening Report (location 101) or Opening Report After Alarm (location 118), enter Opening Report Code (locations 032-033).

"F"

See: b-F And 10-15.

FEATURE SELECTION GUIDE

A specially designed slide card which makes programming fast and simple. See Ordering Information.

INPUT POLARITY (locations 147-148)

Standard MAGNUM ALERT-700 systems have 3 normally closed burglary

zones, two normally open burglary zones sharing normally closed indications, one Panic and one Auxiliary zone, both 24 hour normally open. These zone characteristics can be custom altered to suit the following installation types:

(A) 3 Normally Open Burglary Zones
To convert the three normally closed burglary zones to normally open, change the 5 in location 147 to a 2. (See Changing Location Contents.)

(B) Converting the Auxilliary Zone (Locations 087, 148; Terminals 9-10)
24 hour zones do not indicate loop status by flashing indicator lights. The 24 hour normally open Auxilliary zone may be converted to a normally open or normally closed zone which is not 24 hour. Indicators can then flash Auxilliary zone status by flashing six times.

To convert the Auxilliary zone:
(1) Use the CC17/8 Master PROM series.
(2) Change location 087 to a number 5 to eliminate the preselection of 24 Hour Protection for the Auxilliary zone. (See Changing Location Entries.)
(3) If converting Auxilliary to normally closed, select this zone for Input Polarity with a 2 in location 148.

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 be 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 are:
(a) 7 milliseconds (7/1000 of a 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 (50/1000 of a second) is used for momentary panic buttons and area protection devices such as photoelectric eyes, passive infrareds, floor mats, etc.
(c) 750 milliseconds (750/1000 of a second) is the slowest loop response time, and is recommended for use with magnetic contacts, window foil, etc.

The master PROM has been preprogrammed to provide 750 millisecond response on Zones One,Three, and Auxiliary and 7 milliseconds on Zone Two and Panic.

To optionally change loop response to 50 Milliseconds for any zone, select it in locations 094-095. 50 Millisecond Loop Response will override 750 Millisecond Response, so that if these two response times are selected for the same zone, it will respond in 50 milliseconds.

If they are not selected for 50 Millisecond Response, 750 Millisecond Loop Response may be selected on Zone Two (location 096) and Panic (location 097); however it is not recommended for Panic.

Mark Response Time on the Installation Record (LA484) with an "F" (fast) for 50 Millisecond zones and an "S" (slow) for 750 Millisecond zones.

Zones can be programmed to respond in 7 milliseconds. (The low battery circuit must have a response time of 750 milliseconds.) Follow the instructions in the paragraph for your Programmer.

(1) PRO-410 Programmer: To make all zones respond in 7 milliseconds, and the low battery circuit in 750 milliseconds: Use new blank PROM. Change locations 094, and 096 to blank, and locations 097 to a 4 (low battery). (See Changing Location Contents.) Leave an 8 in location 095.

(2) DD-490 Programmer: To make most zones respond in 7 milliseconds, and the low battey circuit in 750 milliseconds: Before copying the master PROM, select at least one zone 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 (750 millisecond response on Zone 1 and Low Battery circuit on DD-1490 communicator, 7 millisecond response on zones 2, 3, Panic and Auxiliary), then copy the master PROM.

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 "S" button, then **within 10 seconds** arm with keypad digits. The yellow light will go on to indicate that all zones selected for Manual Shunting have been made inactive. The red light will go on to indicate the system is armed.

Manual Shunting is often used for interior protection zones. For example: area protection devices such as passive infrared detectors can be shunted out so that a user may move around his premises with the 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 to select Manual Shunting and Priority Arming (locations 082-083) together on the same zone, although it is possible. It is generally not recommended to select Manual Shunting on a 24 Hour Protection 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 will provide local warning of an alarm on any zone for which this feature is selected. If a DD-1490 communicator has been added and low battery detection jumper selected, Mini-Sounder On Alarm can be selected to alert the user to a low battery condition (location 113).

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

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 kiss-off (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 is transmitted to the central station in the morning, 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. See also: 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 inserting a "d" in location 042 for the 1st Telephone Number. If Back-Up or Split Reporting are selected (location 117), enter a second "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. Entering more than one consecutive "d" may require higher number locations for entry of Access Number for Outside Line, Dial Tone Detection (if used) and Telephone Number.

See: b-F And 10-15, 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 a second time to silence the

sounder.

If Priority Arming is selected on the same zone with Auto-Shunt Arming (locations 084-085) or Manual Shunting (locations 078-079), 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 for the installation.

The MAGNUM ALERT-700 Programming Record Sheet (CC17/8 PROM) appears at the beginning of this Glossary.

PULSING ALARM OUTPUT (Locations 108-109; Terminals 11-12)

A Pulsing Alarm Output will not automatically time out and is only 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 overrides steady Timed Alarm Output.
See: Alarm Output.

RECEIVER FORMAT MASTER PROM

Different makes and models of receivers recognize only certain transmission characteristics. Use only the proper receiver format PROM for the central station's particular receiver. (See Ordering Information.)

HIGH KEY SECURITY (Location 111)

The High Key Security feature is recommended for all MAGNUM ALERT-700 installations. When this feature is selected, putting the RUN/LOAD switch in the LOAD position when the control center is armed has no affect, preventing unauthorized loading of a new arming/disarming code. To select High Key Security, program an 8 in location 111.

REPORT ON ALARM (Locations 096-099, 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 11-12.

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.

See: Extended Format Reporting, 4/2 Format. See also: 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 communicated 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), program zone feature selection in the locations shown on the table, and a restore code for every 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: A) Zone resets (alarm times out and zone is repaired). B) Control center is disarmed.	When zone resets (alarm times out and zone is repaired), regardless of whether control center is armed or disarmed.
INSTANT [1] AUTO-RESET (locations 088-089; 2 in 119 or Untimed alarm)	As soon as one of the following occurs: A) Zone is repaired. B) Control Center is disarmed.	As soon as zone is repaired, regardles 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.

[1] Auto-Reset is always instant with untimed alarms. Auto-Reset is also instant with timed alarms if location 119 is a 2.

TABLE 3: DIFFERENT 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.

See: Alarm Time Out. See also: Auto-Reset, Extended Format Reporting, 4/2 Format.

SPLIT REPORTING (Location 117)

Split Reporting results in certain reports being sent to one receiver and other reports being sent to a second receiver. Alarms on Zones One, Two, Three, and Panic will be transmitted to the 1st Telephone Number. Alarms on the Auxiliary zone, low Battery, and openings and closings will be transmitted to the 2nd Telephone Number.

Further, in the event that one telephone number is inoperative, the communicator will automatically operate in the Back-Up Reporting mode when Split Reporting is selected. All information will be transmitted through the 2nd Telephone Number.

If Split Reporting 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 using the Split Reporting Feature, do not also select Back-Up Reporting.

See: Back-Up 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 Back-Up 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 though the first and second may be zeros. (Examples are 001, 057.)

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

See also: Back-Up Reporting, Split Reporting, 4/2 Format.

SUM CHECK (Location 116)

Sum Check is a sophisticated data transmission format used to enhance both the speed and accuracy with which a transmission is received. Select this feature when the central station receiver is capable of receiving this format.

Sum Check works in the following way: Following the transmission of 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.

TELEPHONE NUMBER (Locations 044 and 045-057, 062 and 063-075, 042, 043, 060, 061 where needed)

Telephone Numbers are entered on the Communicator Transmission Information side of the Programming Record Sheet. For standard telephone exchanges, enter the Dial Tone Detection (generally location 044 and 062) before each Telephone Number used. For non-standard exchanges (dial tone not 440 Hz.), enter at least one Pre-dial Delay beginning in location 043 (and 061 for 2nd Telephone Number). Unless several Pre-dial Delays are needed, the first digit of the 1st Telephone Number is entered in location 045.

If Back-Up Reporting or Split Reporting feature is selected (location 117), enter the the 2nd Telephone Number (usually starting at location 063).

Correcting telephone number errors: If a wrong digit has been programmed on the PROM, and there are unused locations available, the digit may be eliminated by inserting the number 15 (8 plus 7) at the 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 as a digit to be dialed. Enter the correct digit in the next location following the "F".

See: Access Number For Outside Line, Dial Tone Detection, Pre-dial Delay, Backup Reporting, Split Reporting, b-F And 10-15.

TIMED ALARM OUTPUT (Locations 106-107, 126-127; Terminals 11-12)

When a zone programmed for Timed Alarm Output is tripped, a voltage will be supplied at the alarm output terminals, numbers 11 and 12. Timed Alarm output is usually selected for Burglary protection 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.

See also: Alarm Time Out, Alarm Output

TIME SELECTION (Locations 120-127)

Select times this way:

(1) Alarm Time Out is in minutes. All the 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 remaining 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 remaining 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, entitled 1st Box, represents single seconds or minutes (up to 15). The values 12 through 15 are entered as C, d, E, and F. The 1st Box column tells you what to enter in the the first location for each time period.

(c) The third column, entitled 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, F, F.

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

Example 1: If you wish 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 below.

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

(c) Check your calculation before programming this way: 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 when the subscriber has touch tone service. Touch Tone Dialing is faster than, but not always as reliable as rotary dialing.

TRANSMISSION CODES (Locations 014-017, 032-033)

See: Opening and Closing Report, Conditional Closing Report and Opening Report After Alarm.

ZONE RESTORAL REPORT (Locations 100-101, 114-115, 018-031)

See: Restoral Report.

4/2 FORMAT (Locations 116, 001-005, 008-023, 026-033, 037 and 041)

Select the 4/2 Format feature only where the central station receiver will accept a four-digit Subscriber Identification Number and two-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 marked "Standard" (even locations 000-012).
(b) Enter each second digit for each Alarm Code needed in the row marked "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 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.

4/2 Format and Extended Format cannot be used for the same installation.

3 NORMALLY OPEN BURGLARY ZONES
See Input Polarity.

4-SECOND PRE-DIAL DELAY
See Pre-dial Delay.

4 NORMALLY CLOSED ZONES
See Input Polarity - Converting the Auxiliary Zone.

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 lights 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.

Do not program the AC Loss Zone for 24 Hour Protection, since 24 hour zones do not give flashing indication. 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 it 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 TROUBLE SHOOTING GUIDE

Wiring problems are covered in the TROUBLE SHOOTING GUIDE included with the installation instructions. This guide describes only programming problems.

GENERAL SYMPTOMS

Specific Symptoms occur at an installation. Many Specific Symptoms have the same causes. Instructions for these are grouped below 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 CCI7/8 master PROM. See Ordering Information for correct receiver format (when DD-1490 communicator installed).
	When using PRO-410 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. 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 communicator); or 1, 2, 3, 4, 5, or 6 (receiver format, when DD-1490 installed). 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

Specific Symptoms describe what can be seen at individual installations.

SYMPTOM... GREEN STATUS LIGHT 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 to 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 LIGHTS 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 Output not selected for zone.	Check Alarm Output locations: Timed Alarm Output- selected in locations 106-107, Alarm Time Out period programmed in locations 126-127. Pulsing Alarm Output- locations 108-109. If programmed incorrectly, follow instructions for General Symptom II.
Alarm Time Out not programmed for Timed Alarm Output.	If device is a timed alarm, 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 AND PANIC ALWAYS IN ALARM:-

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

SYMPTOM... COMMUNICATOR LIGHT(1) 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 11.
Zone contact restores to normal condition faster than programmed	Zones 1, 3 and Auxiliary are preselected for 750 Millisecond Response. If zone contact restores in less than 750 milliseconds, program for faster loop response. Select 50 milliseconds 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 new blank PROM. Change locations 094 and 096 to blank and 097 to 4. Leave an 8 in location 095. Most zones can be programmed to respond in 7 milliseconds. if using DD-490 Programmer. Before copying master PROM, select at least one zone location 096 and low battery (with a 4) in 097.

SYMPTOM... COMMUNICATOR LIGHT(1) SHINES STEADILY FOR 12 SECONDS, THEN GOES OUT, (REPEATED 3 TIMES) BEFORE BLINKING (ROTARY DIAL) OR SHINING 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 2nd Telephone Number used). If more than one 4-second delay period needed before dialing, program more 'd's following the first. For telephone exchanges which use a non-standard dial tone frequency (not 440 hertz), do not program the Dial Tone Detection 'E' following the last Pre-dial Delay 'd'. Follow instructions for General Symptom 1.

(1) Communicator light is on the DD1490 circuit board.

SYMPTOM ... COMMUNICATOR LIGHT[1] BLINKS (ROTARY DIAL) OR SHINES STEADILY FOR MORE THAN 12 SECONDS (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.
Telephone number not programmed correctly. (Receiver did not answer.)	Check locations 045-57 for correct Telephone #1 (and 063-075 for correct Telephone #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), 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	Call Central Station. If Sum Check required, follow instructions for

1) Communicator light is on the DD1490 circuit board.

programmed.	General Symptom II to program location 116 for Sum Check.

SYMPTOM... ZONE DOES NOT REPORT A RESTORE 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 optionally extend Abort Delay period (locations 124-125).

INSTALLATION INSTRUCTIONS

PREPARATION FOR MOUNTING

Choose mounting place accessible to: (a) a continuously powered AC source, (b) a cold water ground, ideally no further than 10 feet distant. (c) Systems using the optional DD-1490 digital communicator must also have access to telephone lines.

Place metal template at a convenient mounting height (Figure 1A). Secure template with mounting screws supplied (Figure 1B). Use the template as a guide to cut the control unit mounting hole in the wall. To secure the template permanently, loosen the screws slightly, reach inside the wall hole and twist one of the supplied tinnerman nuts on the back of each screw until the head of the screw is again flush against the template. Optionally add a (Napco BRKT-700) battery shelf (Figure 1C). (See the separate instructions with the BRKT-700.)

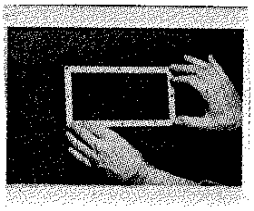


FIGURE 1A: CHOOSE MOUNTING PLACE.

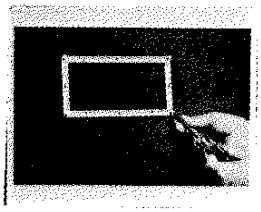


FIGURE 1B: SCREW TEMPLATE IN WALL TO CUT MOUNTING HOLE.

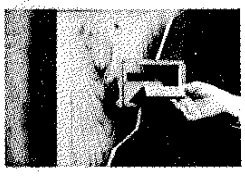


FIGURE 1C: INSERT BATTERY SHELF (OPTIONAL).

Remove any wall insulation that may interfere with the control center or alarm system wiring.

Rest the control center unit close to the opening with the front plate facing the wall. (Installation Tip: Hook a triangular wire coat hanger in the wall opening and place the control center in the body of the hanger.) Ground and wire the control center using the instructions which follow. All wiring must be completed, and DC (battery) and AC power applied before the unit is inserted in the wall. See "Mounting The Control Unit" following wiring and Power Up Sequence instructions.)

GROUNDING

Connect control center terminal 1 (Cold Water Ground) 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 turns in the wire.

SELECTING FEATURES AND WIRING OPTIONS

Your PROM's features have been listed, when programmed, on the Installation Record (LA484), placed in your control center carton. Use this information when wiring. When you have completed installation, fill in the remainder of the Installation Record as a reminder of wiring options used. Peel the backing off the Installation Record and attach it upside-down to the fish paper insulation on the rear of the control center circuit board (Figure 2).

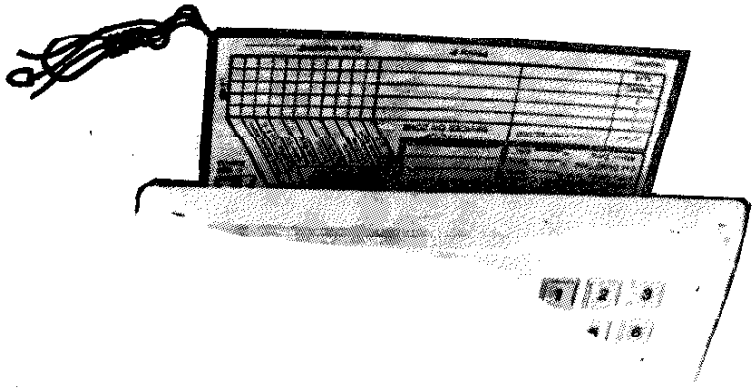


FIGURE 2: ATTACH INSTALLATION RECORD (UPSIDE-DOWN) TO INSULATION PAPER

SPECIFICATIONS

Input power	16 VAC; 11.2 VA Class II stepdown transformer.
Loop voltage	10 to 13 VDC.
Loop current at zero resistance	6 mA each (approximate).
Alarm Output	12 VDC, programmably timed or pulsing; 2 A total maximum current drain.
Regulated Auxiliary Output	12 VDC at 300 mA, continuous, fused.
Recommended Battery	4 or 5 A/H Gel-type or YUASA type 'Starved Electrolyte' battery.
Low Battery signal	10.2 volts.
Standby current drain at idle	180 mA. (approximate);
with DD-1490 installed	200 mA. (approximate).
Maximum zone resistance	300 ohms maximum series resistance per loop; 10,000 ohms minimum allowed between loops.
Alarm Output fuse	3 A., AGC type.
Aux. Power fuse	1 A., AGC type.
Dimensions	
Cover plate	8 5/8" X 4 3/4"
Depth	3 1/4"
Weight	1.5 lbs.

WIRING

CAUTION: To avoid sparking and possible fire hazards, take care that battery leads or other wiring to the control center is not capable of short-circuiting. Be sure alarm installation wires do not touch each other or any wiring that may exist inside the walls for other purposes.

Insulate any exposed alarm wires within the wall with electrician's tape before connecting the power. Leave no leads bare.

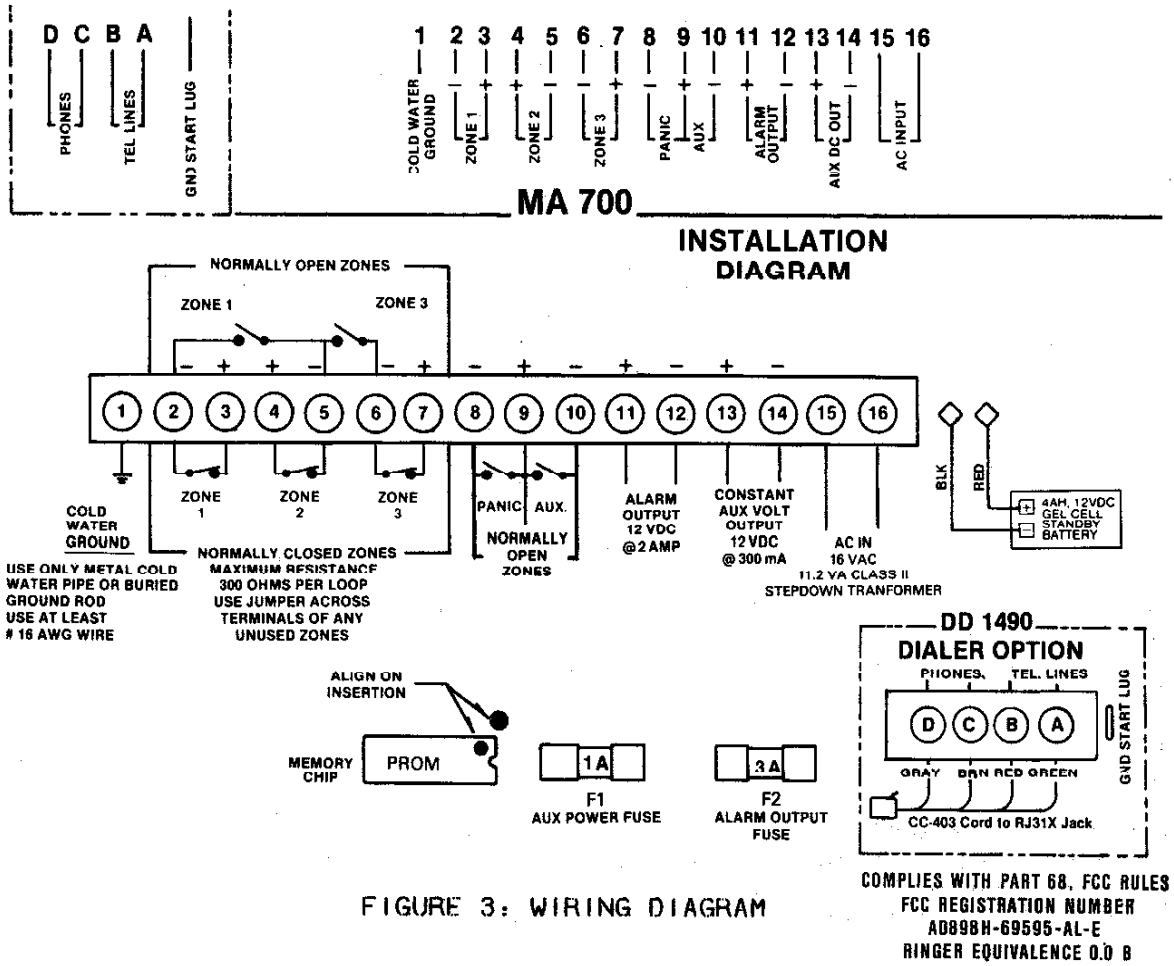


FIGURE 3: WIRING DIAGRAM

TERMINAL CONNECTIONS

TERMINALS	WIRING INFORMATION (SEE FIGURE 3)
1 to 10	**Protective Zones**

Loop Response is the length of time that a normally closed loop (circuit) must remain open or a normally open circuit must be closed in order to trigger an alarm. The slower the response time, the safer the installation is from false alarms resulting from intermittent openings ("swingers") in the loops.

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

(A) 7 milliseconds (7/1000 of a 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.

(B) 50 milliseconds (50/1000 of a second) is used for momentary panic buttons and area

protection devices such as photoelectric eyes, passive infrareds, floor mats, etc.

(C) 750 milliseconds (750/1000 of a second) is the slowest loop response time, and is recommended for use with magnetic contacts, window foil, etc. Zones 1, 3, and 5 (Auxiliary) are preselected for 750 millisecond loop response.

The letter F (fast) or S (slow) should have been used on the Installation Record (LA484, Figure 2) to show whether a zone has been programmed for 50 Millisecond or 750 Millisecond Response.

Protective Zone Options:

(A) 3 Normally Closed (and 2 optional Normally Open) Burglary Zones, plus Normally Open 24 Hour Panic and Auxiliary Zones

Normally Closed Burglary Protection Zones

2 (-) and 3 (+)	Zone One
4 (+) and 5 (-)	Zone Two
6 (-) and 7 (+)	Zone Three

Maximum loop resistance is 300 ohms.

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

Normally Open Burglary Protection Circuits

2 (-) and 5 (-)	Zone One
5 (-) and 6 (-)	Zone Three

For 4 or 5 normally closed zone systems, optionally connect devices such as floor mats to these normally open Burglary protection loops.

The first normally open circuit will have all the characteristics programmed for Zone One and the second normally open circuit will operate the same as Zone Three.

8 (-) and 9 (+) Panic Zone

9 (+) and 10 (-) Auxiliary

Usually normally Open, 24 hour zones. May have been programmed as normally closed zones.

Simultaneously pressing # and * on the keypad will activate, through terminal 8, a Panic alarm. A Panic alarm can also be initiated from any other normally open momentary devices optionally added on the Panic circuit.

Where permitted by local fire codes, the Auxiliary zone may be used for fire detection. Wire all detectors in parallel with no branch system.

Connect circuits containing <u>thermostats only</u> (not powered smoke detectors) between terminals 9 (+) and 10 (-).

To connect <u>powered fire detectors</u>:

(1) Connect the positive (+) lead of the first detector to terminal 9 (+), and the negative lead to terminal 10 (-).

(2) If fire detectors are powered by the auxiliary output of the control center, connect the voltage supply (+) of the first detector to terminal 13 (+) and the voltage supply (-) to terminal 14 (-) (Figure 4).

(3) NOTE: Powered fire detectors which are not self-resetting require a switch to reset a latched fire alarm. If powered detectors are not self-resetting, connect a momentary normally closed switch between the voltage supply (+) (which may be an external source or Auxiliary Output terminal 13) and the fire detector. Place the switch where it is easily accessible to the user and point out its location and function. (Figure 4 shows a reset switch on a fire detector circuit which is powered by the control center.)

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

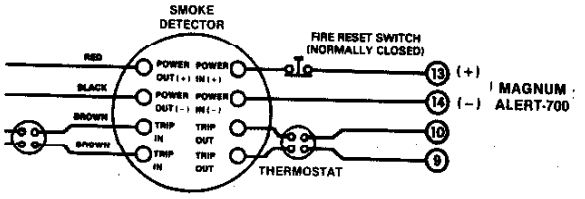


FIGURE 4: FIRE CIRCUIT WITH RESET SWITCH

(B) Auxiliary Zone Conversion:

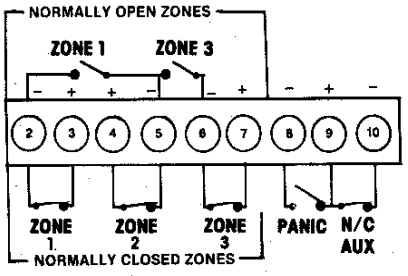


FIGURE 5: NORMALLY CLOSED AUXILIARY ZONE

24 hour zones do not give flashing zone status indications. The Auxiliary zone may be converted by programming (location 087) to a zone which is not 24 hour. Indicators will then flash six times when reporting status for this zone.

To convert the Auxiliary zone to normally closed, see Figure 5. Additional program selection is required at PROM location 148.

11 (+), 12 (-) **Alarm Output Options**

A 12 volt DC output. Maximum total current drain is 2 amps.

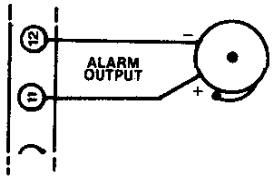
Program selected to drive either a steady timed (PROM locations 106-107) or pulsing untimed (PROM locations 108-109) alarm from any zone. When choosing steady, timed, the , Alarm Timeout period chosen in PROM locations 126-127

If 'Relay Closure With Key On' is also programmed (with an 8 in PROM location 111), putting the RUN/LOAD switch in the LOAD position when the control center is armed has no effect, preventing unwarranted loading of new arm/disarm code.

Sample Alarm Output Applications
Possible Alarm Output wiring is described in the sections immediately following. NOTE: Programming is necessary for each.

(1) Single-channel siren for burglary (warble): If using the Auxiliary Zone for fire protection, use a bell to signal both burglary and fire alarms (sample (2), below). To use a siren for burglary only, connect the Sweep input of the siren to control center

terminal 11 (+) and the siren Common terminal to control center terminal 12 (-). If using a dual-channel driver, do not connect the siren Steady input terminal.



(2) Single Bell:
A single bell may be made to sound continuously for burglary and pulse on and off for fire (Figure 6.) The fire sound will override the burglary sound if both alarm conditions occur together.

FIGURE 6

13 (+) and 14 (-)

Constant Auxiliary Output
Terminals 13 and 14 connect to the internal power supply of the control center which delivers a continuous, fused, regulated auxiliary output voltage of approximately 12 volts DC at a maximum total current of 300 milliamps.

Can be used to power photoelectric, passive infrared, ultrasonic or other 12 Volt DC moderate current devices.

If latching alarm devices are powered by this Auxiliary Output, wire a momentary normally closed switch in series between terminal 13 and the first device. Use this switch to reset the devices when latched in alarm.

15 and 16

AC Power
To supply AC operating power to the control center, connect the 16 Volt AC, 11.2 VA, Class II stepdown Napco TRF-8 Transformer. Use of any transformer other than the NAPCO TRF-8 may result in damage, or improper operation of the control center.

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 outlets that are switched off at the end of the day with a common circuit breaker.

Battery Leads

Standby Battery
Standby power should be supplied by a 12 volts DC 4 or 5 AH rechargeable Gel-type, or 'Starved Electrolyte' YUASA type battery.

Attach the flying leads on the circuit board to the battery observing polarity: red lead is positive (+), black lead is 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 also be used.

F1

Aux Power Fuse
1 amp. normal-blow fuse. Protects regulated DC auxiliary output.

When the fuse is removed or blown, the Auxiliary Zone will not be protected. WARNING: For continued protection against risk of fire, replace only with same type and rating of fuse.

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

F2

Alarm Output Fuse
3 amp., 3AG, normal-blow fuse.

Protects the alarm output (terminals 11 and 12).

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

DD-1490

DD-1490 Communicator (Optional)
Follow the separate instructions with the communicator. (A Napco CC-403 cord will also be needed.)

Reporting options and transmission information must be programmed.

Jumper B

Low Battery Detection
The communicator includes jumper-selected low battery detection circuit. If selected, low battery condition is detected if the MAGNUM ALERT-700 voltage drops below 10.2 volts.

Telephone Lines and Phones

A and B — Incoming Telephone Lines
C and D — Internal Telephone

Telephone connection terminals are located on the optional DD-1490 communicator.

Note: Power Up Sequence must occur before the connecting the (CC-403) cord attached to these terminals to the telephone company (RJ31X) jack.

GS

GSM-400 Ground Start Module: If dial tone is not continuously active, ground start is needed to establish dial tone. Use the GS lug near terminals A through D on the DD-1490 communicator. Follow the separate Installation Instructions for the GSM-400 module.

M-278 Line Reversal Module: allows the control center to be monitored by a central station

through leased lines. On alarm, the module reverses normal line voltage polarity.

POWER UP SEQUENCE

(1) Insert PROM in socket on circuit board before connecting power.

(2) Install and connect standby battery. **Do not plug AC transformer into wall socket before control center is tested and permanently mounted.**

(3) Test system locally. Use the instructions in the TESTING AND OPERATION section, which follows. (NOTE: If installed, the DD-1490 communicator relay will engage when a zone is tripped, but the communicator can not dial out because the telephone jack will not be connected at time of test.)

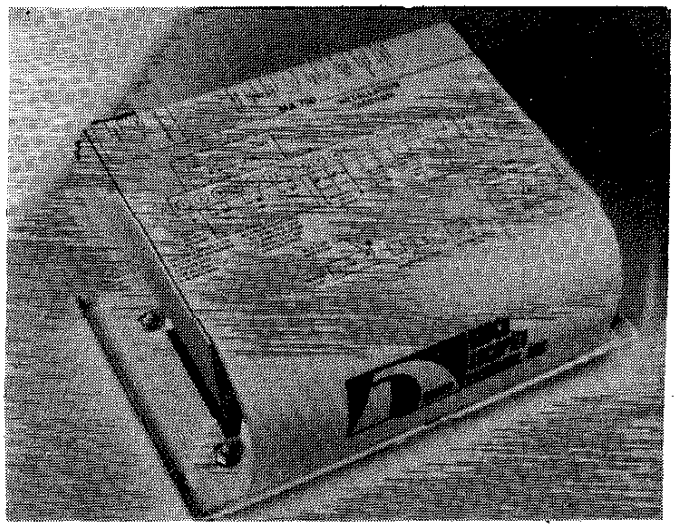
(4) After successful test, insert the control center into the wall and secure. Plug AC transformer into wall socket.

(5) If DD-1490 communicator installed, connect CC-403 telephone cord to RJ31X jack.

MOUNTING THE CONTROL UNIT

(1) If the control center is temporarily supported on a wire coat hanger, unhook the hanger from the wall.
(2) Before inserting the control center unit in the wall, tuck the loose edge of the wiring label inside the frame of the front plate to insulate the fuses from the metal wall template (Figure 7A).
(3) Insert the back of the control unit through the mounting template into the hole you have cut in the wall (Figure 7B).
(4) Lift the cover and secure the control unit with screws and screw holes provided (Figure 7C).
(5) With cover closed, mounted control center will look as shown in Figure 7D.

FIGURE 7A: **CAUTION** - BEFORE INSERTING UNIT IN WALL, TUCK WIRING LABEL INSIDE FRONT PLATE EDGE.



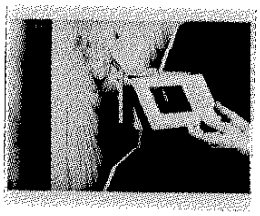


FIGURE 7B: INSERT UNIT IN WALL.

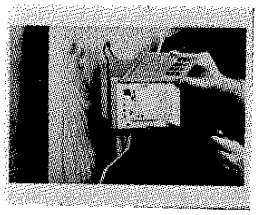


FIGURE 7C: SECURE WITH MOUNTING SCREWS.

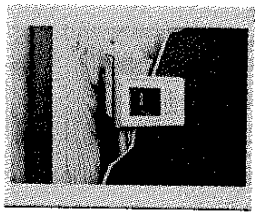


FIGURE 7D: MOUNTED CONTROL CENTER

TESTING AND OPERATION

If testing indicates problems, see the TROUBLE SHOOTING GUIDE.

(A) Check DC battery: System should operate when powered only by battery.

(B) Load Arming Code:

PUSH SWITCH UP TO RUN, DOWN TO LOAD CODE.

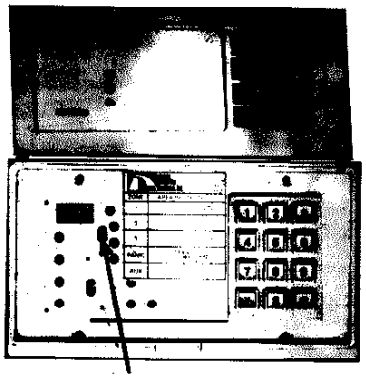


FIGURE 8: RUN/LOAD SWITCH

(1) Lift cover.

(2) Use small screwdriver to push RUN/LOAD switch down to LOAD position.[1] (Figure 8.)

(3) Press 2 to 6 digits on keypad.

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

(5) Replace cover.

[1]NOTE: Security Feature - If Relay Closure With Key On is programmed (8 in PROM location 111), putting the RUN/LOAD switch in the LOAD position when the control center is armed has no effect. **To change arming code, first disarm the control center.**

(C) Arm:

(1) Check the green STATUS light.
If steady, enter keypad code to arm. Red ARMED/MEMORY light goes on.

If green light flashing: count number of flashes, locate trouble on zone or zones indicated. (Search for open window or door, or problem on circuit.)

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

If the red light 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 "locked out" 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 the "S" (Shunt) button. **Arm within 10 seconds.** Yellow SHUNT light goes on. At least one zone is manually shunted. If yellow light does not go on: (a) Manual Shunt has not been programmed, or (b) system armed more than 10 seconds after S button pressed. Disarm and try again.

(2) Test Exit Delay (if available). INSTANT/DELAY switch must be in DELAY position. Red ARMED/MEMORY light goes on. Exit period begins.

D)Disarm:

(1) Test Entry Delay: Mini-Sounder sounds when exit delay expires and entry period starts. Mini-Sounder is audible as long as entry delay is active. An alarm signals if system is not disarmed by end of the entry period.

(2) Check for alarm indication (flashing red ARMED/MEMORY light). (Exception: Does not flash for an alarm on a 24 hour zone.)

(3) Disarm with code or key. Red ARMED/MEMORY light goes out. If not, wait 5 seconds before reentering code.

(4) Check alarm memory (flashing red ARMED/MEMORY light). Count the number of flashes between pauses to identify violated zone(s), arm and disarm again to cancel the alarm memory. If Mini-Sounder sounds and/or green STATUS light flashes, zone(s) are still in alarm: (a) **first** remove the problem from the circuit, (b) then reset by disarming again. Exception: To reset latched devices powered from control center Auxiliary Output, press external switch added between terminal 13 and the positive power supply lead to the device.

(5) Check 24 hour zones.

Red ARMED/MEMORY light will not flash for 24 hour zone alarm.

If burglary zone alarm occured: (a) first remove the cause from the circuit, (b) then disarm, or arm and disarm again to clear the alarm condition.

Reset the fire detector circuit (if not self-resetting) with the added external switch.

(E) Test the Panic circuit. Push (at same time) '*' and '#' on keypad.

FAMILIARIZING END-USER WITH SYSTEM

(A) Complete the Alarm Plan.

(B) Use Alarm Plan to explain zone coverages. Show which are priority, auto- and manual-shunt.

With the User Operating Manual:

(C) Help the user practice loading code and daily operation:

(1) If Relay With Key On programmed (in PROM location 111), explain that control center must be disarmed to load new code.

(2) Demonstrate indicator light flashing to identify zones in trouble or alarm condition.

(3) Explain operation of 24 hour zones.

(4) Demonstrate use of INSTANT/DELAY switch, S (Shunt) button and Panic (* and #) keys.

(D) Demonstrate fire circuit operation:

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

(2) Show the location of the fire alarm reset switch connected to terminal 13.

WIRING TROUBLE SHOOTING GUIDE

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

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

POSSIBLE CAUSE	REMEDY
PROM missing or	Insert PROM in control center

incorrectly inserted in control center.	circuit board with dot on PROM aligned with dot on socket. Do not bend pins.
Wrong AC input voltage.	If outlet not 120 VAC, use another power source.
	If voltage at terminals 15 and 16 not 16 to 18 VAC, check wiring from transformer to these terminals.
	If output voltage at transformer terminals not 16 to 18 VAC, replace transformer.
Blown fuses.	Replace, if necessary.
No code loaded.	Push RUN/LOAD switch to LOAD. Press code (2 to 6 digits) at keypad. Push switch to RUN.
RUN/LOAD switch left in LOAD position.	Put in RUN position.

SYMPTOM... CANNOT ARM OR DISARM:-

POSSIBLE CAUSE	REMEDY
Incorrect code entry.	Wait 5 seconds before trying to arm or disarm again.

SYMPTOM... NO RED MEMORY LIGHT ON ALARM WHEN ARMED:-

POSSIBLE CAUSE	REMEDY
24 hour zone in alarm.	Normal Operation: 24 hour zones do not flash zone status indication.

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

POSSIBLE CAUSE	REMEDY
PROM copying error.	Obtain correctly programmed PROM with CC17/8 series format.

SYMPTOM... YELLOW LIGHT DOES NOT GO ON WHEN S (SHUNT) BUTTON PUSHED BEFORE ARMING.-

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

SYMPTOM... PANIC ZONE CANNOT BE ACTIVATED FROM KEYPAD:-

POSSIBLE CAUSE	REMEDY
Panic buttons incorrectly pressed.	Push * and # at same time.
Zone still latched from previous alarm.	Arm and disarm control center. (To avoid future latching, have Panic zone programmed for Auto-Reset.)

SYMPTOM... SOUNDER GOES ON DURING RESET AFTER PANIC ALARM:-

POSSIBLE CAUSE	REMEDY
Panic button latched.	Check to make sure button reset.

SYMPTOM... SOUNDER GOES ON WHEN ARM:-

POSSIBLE CAUSE	REMEDY
24 hour zone in trouble.	Disarm. Check 24 hour zones. Remove any problem. Arm and disarm quickly to reset control center.
Programming error.	Obtain correctly programmed PROM.

SYMPTOM... SOUNDER ON AND CANNOT BE RESET:-

POSSIBLE CAUSE	REMEDY
PROM missing or incorrectly inserted in control center.	Insert PROM in control center circuit board with dot on PROM aligned with dot on socket. Do not bend pins.
Low battery.	If communicator removed, and Mini-Sounder On Alarm programmed for low battery, replace Jumper B. Measure voltage on battery terminals. Should be at least 12.5 volts DC. If not, remove wires from battery and measure voltage on red and black leads. If this not more than 12.5 volts DC and the input voltage at terminals 15 and 16 is 16 to 18 volts AC, return control center to Napco.
PROM copying error or bad PROM.	If red and green lights are both off, new PROM may be needed.

SYMPTOM... NO OUTPUT ON SOUNDER:-

POSSIBLE CAUSE	REMEDY
Feature not programmed for zone. (Exit/Entry	Obtain PROM correctly programmed for desired feature.

Delay, Entry Delay Time or Mini-Sounder On Alarm).	
Bad PROM.	Obtain new PROM.

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

POSSIBLE CAUSE	REMEDY
Grounded loop.	Remove wire from zone negative terminal 5. If zone still does not trip, remove wire from zone positive terminal 4. 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 CC17/8 series format.

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

POSSIBLE CAUSE	REMEDY
Alarm device wiring problem.	Check for loose wires, opens or shorts in wiring to alarm output terminals 11 and 12.
Power loss.	Check voltage at battery terminals. If not between 10.2 and 13.9 VDC, (1) Check flashing indicators for AC Loss (zone 4). (2) Check transformer plugged into continuous power source. (3) Disconnect battery to measure the voltage across the battery connecting leads. This should be 13.9 VDC.
Battery, or battery connections.	Check that red lead from circuit board is connected to (+) terminal of battery, and black lead to the (-) battery terminal. Check battery for discharged condition or defect: With battery disconnected, check voltage on red and black leads from control center. If voltage between is 13 to 14 volts, and battery can not be fully charged (also to 13 to 14 volts) within approximately 2 days, battery is defective.
Fuse blown.	Check 3 amp. ALARM OUTPUT FUSE. Check whether alarm device is

	drawing too much current. If device powered by Auxiliary Output terminals 13 and 14, check 1 amp. AUX POWER fuse. Check for short on Auxiliary Output terminals.
Alarm Output programming error.	Obtain PROM with programming of alarm outputs matching terminals used.

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

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

SYMPTOM... COMMUNICATOR LIGHT(1) DOES NOT GO ON (RELAY DOES NOT ENGAGE) TO REPORT AN ALARM:-

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 LIGHT(1) GOES ON (RELAY ENGAGES) BUT FAILS TO BLINK (ROTARY DIAL) OR SHINE STEADILY LONGER THAN 12 SECONDS (TOUCH TONE DIAL):-

POSSIBLE CAUSE	REMEDY
PROM missing or incorrectly inserted in control center.	Insert PROM in 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 A to D.
Phone company wiring error.	With CC-403 cord connected, put handset on terminals A and B. Try to dial out. If dial tone lost, RJ31X wires are reversed. If handset cannot dial out, problem is on phone line.

(1)Communicator light is on the DD1490 circuit board.

SYMPTOM... COMMUNICATOR LIGHT[1] SHINES STEADILY FOR 12 SECONDS, THEN GOES OUT, (REPEATED 3 TIMES) BEFORE BLINKING (ROTARY DIAL) OR SHINING STEADILY LONGER THAN 12 SECONDS (TOUCH TONE DIAL):-

POSSIBLE CAUSE	REMEDY
Bent pin.	Insert PROM without pins bent.
Groundstart 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.

SYMPTOM... COMMUNICATOR LIGHT[1] BLINKS (ROTARY DIAL) OR SHINES 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 A and B. 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 A and B. 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 OK, obtain PROM made from correct format master for central station receiver.

(1)Communicator light is on the 001490 circuit board.

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 A and B. Listen for static on line.
Wrong PROM.	Obtain PROM made from correct master format for central station receiver.
Error in programming Communicator Transmission Information.	Call central station to verify correct Subscriber Identification Number and Transmission codes. Obtain correctly programmed PROM.

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 can be reset to abort report. If Abort Delay selected and zone is 24 hour, advise subscriber to (1) restore the device/zone, (2) reset control center before the abort delay period ends to abort transmission.

SYMPTOM... ZONE DOES NOT REPORT RESTORE 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 Reporting.	Obtain correctly programmed PROM.

SYMPTOM... STANDBY BATTERY NOT RECHARGING:-

POSSIBLE CAUSE	REMEDY
Power Loss.	(1) Check for flashing indicators for AC Loss (zone 4). (2) Check transformer plugged into continuous power source.
Defective battery.	With battery disconnected, check voltage on red and black leads from control center. If voltage is 13 to 14 volts, battery should be fully charged (also to 13 to 14 volts) after approximately two days of charge. Otherwise, battery is defective.

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NAPCO LIMITED WARRANTY

NAPCO SECURITY SYSTEMS, INC. (NAPCO) warrants each of 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 accident, nuisance, flood, fire or acts of God, or on which any serial numbers have been altered, defaced or removed. Seller 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 of 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.

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, nor 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 commercial 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. Therefore, the consumer is advised 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.

This warranty shall be construed in accordance with the laws of the State of New York.

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