# INSTALLER'S MANUAL

# PROGRAMMABLE ALARM SYSTEM

## With COMMUNICATOR

# MODEL AV3000

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# SYSTEM DESCRIPTION

The Acron Model AV-3000 "AVENGER II" is an integrated alarm system consisting of a combination 8 zone control panel/digital communicator and one model DK-IIA digital control station. The control panel/digital communicator can be custo̲  tailored for each installation. This is accomplished by programming a "PROM" (included with the system) on an Acron Model DD-1PC Programmer. Both control panel and digital communicator functions are programmed on the same PROM. For installations not requiring digital communication, programming only the panel portion is required. NOTE: THE SYSTEM WILL NOT WORK WITHOUT A PROGRAMMED PROM. For specific AV3000 programming information consult the "DD-1PC programming addendum" included with the system.

# PROGRAMMABLE FUNCTIONS

A list of programmer selected functions are outlined below. The "Memory Location" column refers to the "Memory Location" function switch on the DD-1PC programmer.

## PROGRAMMABLE CONTROL PANEL FUNCTIONS

| Memory Location | Function |
|---|---|
| 27B | Normally Closed Zones |
| 20B | Audible Panic Zones |
| 21B | Audible Burglary Zones |
| 22B | Delay Burglary Zones |
| 26B | Fire Zones |
| 23B | Exit Delay Time |
| 24B | Entrance Delay Time |
| 25B | Bell Shut-Off and Automatic Panel Reset Time |
| 29B | Silent Panic Zones |
| 31B | All Burglary Zones Normally Closed |
| 32B | False Alarm Shutdown (Swinger Rejection) |

Note: Unprogrammed Zones are Silent Zones

## PROGRAMMABLE COMMUNICATOR FUNCTIONS

| Memory Location | Function |
|---|---|
| 1A-13A | First Phone Number |
| 1B-13B | Second Phone Number |
| 14A,16A,28B | Account Number (SEE NOTE 1) |
| 17A | Abort Zones (SEE NOTE 2) |
| 18A,19A | Reporting Delay Zones and Time |
| 20A,21A | Test Cancel Zones and Code |
| 22A,23A | Restore Zones and Code |
| 24A-31A | Zone Codes |
| 32A,18B,19B | Reporting Format |
| 14B | Zones to Dial Second Number Only |
| 17B | Zones to Dial Both Numbers |
| 15B,16B | Listen-in Zones and Time |
| 31B | Opening (SEE NOTE 3) |
| 31B | Closing (SEE NOTE 3) |
| 31B | 24-Hour Self-Test |
| 30B | Forced Arming |
| 30B | Low Battery/Trouble (SEE NOTE) |
| 19B | Non-Emergency Alarm Reports Dial Second Phone Number Only |
| 19B | Non-Emergency Alarm Reports Dial Both Phone Numbers |
| 32B | Dial If No Dial Tone |

Non-Emergency Alarm Reports (Reports In Extended Format) — bracket grouping Opening, Closing, 24-Hour Self-Test, Forced Arming, Low Battery/Trouble

NOTES:
1) NOT ALL RECEIVERS CAN ACCEPT A FOUR-DIGIT ACCOUNT NUMBER.
2) DO NOT USE ABORT IF 24-HOUR SELF-TEST OR FALSE ALARM SHUTDOWN ARE USED
3) CONVENTIONAL OPENING AND CLOSING REPORTING MAY BE ACHIEVED AT THE EXPENSE OF USING ONE OF THE INPUT CHANNELS. CONNECT TERMINAL V14 TO CHANNEL INPUT 5 OR 8. IF CHANNEL 5 IS USED REMOVE LINK J2. IF CHANNEL 8 IS USED REMOVE LINK J1. *(THIS CHANNEL must BE PROGRAMMED FOR A SILENT PAN·· )*
4) CONVENTIONAL LOW BATTERY REPORTING MAY BE ACHIEVED AT THE EXPENSE OF USING ONE OF THE INPUT CHANNELS. CONNECT TERMINAL V13 TO ONE OF THE INPUT CHANNELS. *(MUST BE A N.O. LOOP)*

*↳ N.O. LOOP WITH THE RESTORE FUNCTION,*
*THE ZONE CODE BECOMES THE CLOSING CODE*
*THE RESTORE CODE BECOMES THE OPENING CODE*

# OPTIONAL ACCESSORIES

In addition to the ability to select control panel and digital communicator characteristics, the system can be expanded through the use of one or more of the following optional modules:

DKIIA-a digital arming station that allows full system control and displays full system status from one or more convenient locations. 8 LED's display zone status and alarm memory for each zone; 8 LED's display armed status of each zone; 3 LED's display general loop status, instant/delay mode and general armed status. Up to 5 DKIIA's maybe used.

CL-1-CABINET LOCK-Use the knockout on the right side of the cabinet door (reviewed from the front).

V300D-LISTEN-IN MODULE-Provides "listen-in" capability from 1 to 15 minutes after kiss-off on desired zone/zones. Use with M1-microphone or equivalent.

EOL-8 SUPERVISED END OF LINE RESISTOR MODULE-converts the eight input zones to fully supervised zones. Each zone has a link to select Burglary or Fire operation. In the Fire position, an open will trigger a Trouble signal.

COURTESY OUTPUT-a +5 Vdc voltage is available at pin v-12 during Exit/Entrance times, and can be used to operate a line carrier lamp driver, etc. A BSR BA-285 Burglar Alarm Interface, Radio Shack 49-526 Burglar Alarm Interface or equivalent product can be used.

LZA-LOCAL ZONE ANNUNCATOR-provides troubleshooting aid by annunciation loop status and alarm memory at the panel.                                          ING

DC-1-DERIVED CHANNEL INTERFACE-provides discreet outputs for use with derived channel or long range wireless systems.

CAUTION:

1. Don't short terminals 5 or 6 to 3 or 26 or the Fuse F2 will blow.
2. Don't connect battery until installation is complete.
3. Zones which aren't programmed for panel functions become Silent Zones.
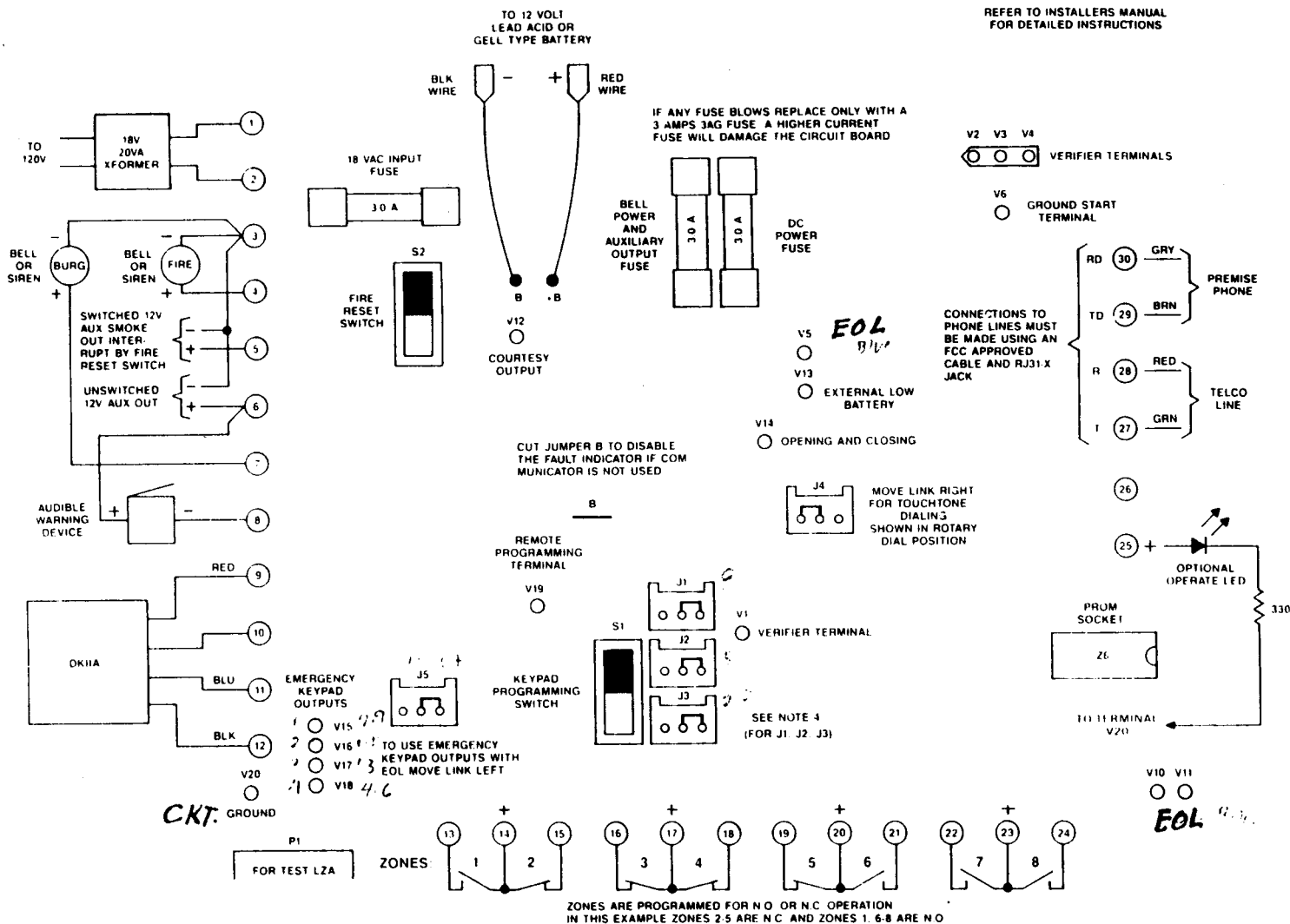
# PROM FACTORS

1. Determine the characteristics required for the installation. Program a PROM according to the DD-1PC Programming Addendum. The PROM may be programmed by the factory, distribution outlets, or on your own PROM programmer.

NOTE: REFER TO FIG. 1 FOR THE FOLLOWING STEPS:

2. Install the PROM, making sure that the identification notch is located as shown in Fig. 1.

*1000 uF*

DO NOT USE VIBRATING FIRE HORN DEVICE UNLESS A 1000 F CAPACITOR IS PLACED ACROSS THE DEVICE AND A DIODE IS WIRED IN SERIES WITH ONE POWER LEAD.

**WIRING DIAGRAM**
**FOR MODEL**
**AV-3000 AVENGER II**

REFER TO INSTALLERS MANUAL
FOR DETAILED INSTRUCTIONS

TO 12 VOLT
LEAD ACID OR
GELL TYPE BATTERY

BLK WIRE  − + RED WIRE

IF ANY FUSE BLOWS REPLACE ONLY WITH A
3 AMPS 3AG FUSE A HIGHER CURRENT
FUSE WILL DAMAGE THE CIRCUIT BOARD

V2 V3 V4
VERIFIER TERMINALS

V6
GROUND START TERMINAL

18V 20VA XFORMER
TO 120V

18 VAC INPUT FUSE
30 A

S2

FIRE RESET SWITCH

BELL POWER AND AUXILIARY OUTPUT FUSE

DC POWER FUSE

30 A   30 A

V5  *EOL*

BELL OR SIREN  BURG   BELL OR SIREN  FIRE
SWITCHED 12V AUX SMOKE OUT INTER- RUPT BY FIRE RESET SWITCH
UNSWITCHED 12V AUX OUT

CONNECTIONS TO PHONE LINES MUST BE MADE USING AN FCC APPROVED CABLE AND RJ31-X JACK

RD (30) GRY   PREMISE PHONE
TD (29) BRN
R (28) RED   TELCO LINE
T (27) GRN

V12
COURTESY OUTPUT

V13
O EXTERNAL LOW BATTERY

V14
O OPENING AND CLOSING

AUDIBLE WARNING DEVICE  + −

CUT JUMPER B TO DISABLE THE FAULT INDICATOR IF COM MUNICATOR IS NOT USED

B

REMOTE PROGRAMMING TERMINAL
V19

J4
MOVE LINK RIGHT FOR TOUCHTONE DIALING SHOWN IN ROTARY DIAL POSITION

(26)

(25) +   OPTIONAL OPERATE LED
330

RED (9)

J1

V1
O VERIFIER TERMINAL

PROM SOCKET
Z6

DK11A

BLU (11)

EMERGENCY KEYPAD OUTPUTS

J5

S1

KEYPAD PROGRAMMING SWITCH

J2

J3

SEE NOTE 4
(FOR J1, J2, J3)

TO TERMINAL V20

BLK (12)
V20

1 O V15
2 O V16   TO USE EMERGENCY KEYPAD OUTPUTS WITH
3 O V17   EOL MOVE LINK LEFT
4 O V18

V10 V11
O O

*EOL*

*CKT.* GROUND

P1
FOR TEST LZA

ZONES

(13)(14)(15)  (16)(17)(18)  (19)(20)(21)  (22)(23)(24)
 1   2        3   4         5   6         7   8

ZONES ARE PROGRAMMED FOR N O OR N.C OPERATION
IN THIS EXAMPLE ZONES 2-5 ARE N C AND ZONES 1, 6-8 ARE N O

NOTES
1 EARTH GROUND GOES TO CABINET
2 FCC REG. NO. AB798Z 67793-AL-E
  RINGER EQUIVALENCE 0.1 B
3 TOUCHTONE  IS A REGISTERED TRADE MARK OF AT&T CO
4 WHEN USING EOL MODULE MOVE LINKS J1, J2 AND J3 LEFT
  WHEN USING OPEN COLLECTOR DEVICES ON ZONE 5 MOVE LINK J2 LEFT
  WHEN USING ZONE 5 FOR CONVENTIONAL OPENING AND CLOSING REPORTS REMOVE LINK J2
  WHEN USING OPEN COLLECTOR RF DEVICES ON ZONE 8 MOVE LINK J2 LEFT
  WHEN USING ZONE 8 FOR CONVENTIONAL OPENING AND CLOSING REPORTS REMOVE LINK J1
5 SWITCHES S1 AND S2 ARE SHOWN IN NORMAL POSITION

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FIGURE 1

# INSTALLATION

1. Install the optional cabinet lock if desired. Use the knockout on the right
   de of the cabinet door (reviewed from the front).

2. An AUDIBLE WARNING DEVICE may be connected between terminals 6 and 8. The
device may be located in the cabinet or it may be remoted. The sounding device
should operate at 12 Vdc, and must not require more than 40 mA. The device will
produce a steady sound during Entrance Delay Time.  The device will pulsate when
the  system has been Forcibly Armed (for the Exit delay time), and when in the
Test mode. When Kiss-Off is received, it will sound momentarily, and if a
receiver is not reached after 8 attempts, it will sound. *continuously while the FAULT LED IS ON.*

NOTES: 1) WHEN A TRIP OCCURS ON A ZONE(S) PROGRAMMED FOR SILENT PANIC IN MEMORY
          LOCATION 29B, THE KISS-OFF INDICATOR WILL NOT OPERATE. *& The LED's will not Flash.*

3.  Connect a 12 Vdc Burglary Bell or Siren to terminals 3 and 7. Observe
polarity.

4.  Connect a 12 Vdc Fire Bell or Siren to terminals 3 and 4. Observe polarity.

5.  12 Vdc is available at terminals 3 and 6 for auxiliary devices.

NOTE: UNSWITCHED POWER FOR AUXILIARY DEVICES IS AVAILABLE AT TERMINAL 6 AND
      TERMINAL 3.  SWITCHED SMOKE DETECTOR POWER IS AVAILABLE AT 5 AND 3.
      TERMINAL 3 IS THE COMMON TERMINAL AND TERMINALS 5 AND 6 ARE THE +12VDC
      TERMINALS.  THE AMOUNT OF AVAILABLE CURRENT IS 600 MA (INCLUDING ANY
      DK II's EVEN THOUGH THEY ARE NOT CONNECTED TO TERMINALS 10 AND 11 OR 12).
      TO DETERMINE THE TOTAL CURRENT REQUIREMENT FOR AN INSTALLATION, TOTAL THE
      CURRENT REQUIREMENTS FOR ALL ITEMS TO BE CONNECTED TO THE AUXILIARY
      OUTPUT. AS WELL AS THE DKIIA'S.  CURRENT REQUIREMENTS FOR ALL APPLICABLE
      ACRON ITEMS ARE:

| Model | Current |
|-------|---------|
| DK II | 80mA |
| EOL-8 | 30mA |

Do not exceed 600 mA total

6. If the COURTESY OUTPUT is to be used to turn on a light during Exit and
Entrance delay times, install a BSR BA-284 Burglar Alarm interface (or
equivalent). Connect the positive (+) terminal of the interface unit to the
COURTESY OUTPUT TERMINAL V12 and the negative (-) lead to terminal 3.

7. Connect the eight (8) input zones to terminals 13-24 as shown. The loops must
be N.C. or N.O. according the the PROM program.

8. If a V300D Listen-In Module is to be used, connect it to terminals V1, V2, V3
and V4.  Refer to the instructions supplied with the Listen-In Module.

9. If an OPERATE LED is desired (ON when unit is in reporting cycle), connect
the anode to terminal 25 and the cathode to one end of a 390 ohm resistor.
Connect the other end of the resistor to terminal V20.

' ^ Connect the telephone connection cable to terminals 27, 28, 29 and 30 as
  wn. Insulate all unused leads. The cable must be physically separated from
power and signal lines.

11. Connect DKIIA to AV3000. Red lead to terminal 9.  Blue lead to terminal ⌐.
Black lead to terminal 12. Remaining lead to terminal 10.  Refer to DKIIA
Installers Manual for complete instructions regarding DKIIA installation and
options.

12. Connect the cabinet to an earth ground.  Do not use a lightning rod ground.

13. Check all connections, verifying polarity.

14. Connect the transformer to terminals 1 and 2. Polarity is not important.

15. Plug the transformer to a 125 Vac receptacle.  The ARMED indicator on the
DKIIA should light.  (The system arms itself on Power-Up.)

16. Connect the BLACK FLYING LEAD to the negative (-) terminal of a 12 volt,
rechargeable gell type battery. Connect the RED FLYING LEAD to the positive (+)
terminal of the battery. If the battery is not fully charged, allow 36 hours for
battery to reach full charge.

17. Plug the telephone connection cable into the RJ31-X jack.

18. For additional information refer to the DK-IIA Installer's manual and DK-IIA
User's manual.

19. Fill in the appropriate information in the User's Manual, and give it to
your customer when you explain how the system operates. Provision is made on ⌐e
back page for your business card.

## ADDITIONAL NOTES

After 8 unsuccessful attempts, the system will wait for one hour before
additional attempts. To silence the Audible Warning Device and clear the Alarm
Memory to prevent further attempts to report the initial alarm, remove AC power
and disconnect one of the battery leads for 15 second. This will clear the Alarm
Memory and reset the system.

You may wish to advise your customer over the phone to use this method to clear
the Alarm Memory until you can cure the problem.

To aid in troubleshooting zone loop problems, use the LZA. (The LZA maybe
connected via P1).
The LZA indicators follow the status of each zone loop.

# SPECIFICATIONS

**POWER REQUIREMENTS:** 125 Vac, 20 VA, 18V transformer supplied. 12 volt battery, rechargeable gell type, not supplied.

**Bell Outputs:** Burglary and fire Outputs, 12 Vdc, total current not to exceed 3 Amps

**Auxiliary Power Output:** 12 Vdc, regulated, 600 mA. See NOTE preceding Step 6.

**Transient and Lightning Protection:** Lightning and surge protection provided on all input, power line, and telephone line.

**Zone Response Time:** 300 mSec. During reporting cycle, response time increases to 1 sec.

**Maximum Loop Resistance:** Do Not exceed 300 ohms on any zone loop (does not apply when Supervised End of Line Module is used)

**Dimensions:** 12" H x 10 1/2" W x 2 3/4" D

**Shipping Weight:** 10 lbs.

**FCC Registration Number:** AB798Z-67793-AL-E

**Ringer Equivalence:** 0.1B


## FCC COMPLIANCE

This equipment generates and uses radio frequency energy and if not installed and used pro-perly, that is, in strict accordance with the manufacturer's instructions, may cause inter-ference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications of Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient the TV or radio antenna.
2. Relocate or move the alarm control away from the receiver.
3. Plug the transformer for the alarm control into a different outlet so that the receiver and the alarm are on different branch circuits.
4. If necessary, the user should consult the alarm dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, stock #004-000-00345-4.


FOR TECHNICAL ASSISTANCE CALL:
800-631-2144
IN N.J. (201) 364-7200

| MEM. LOC. | PAGE A DESCRIPTION | DATA ENTRY | PAGE B DESCRIPTION | DATA ENTRY | MEM. LOC. |
|---|---|---|---|---|---|
| 1 | 1ST DIALED DIGIT | | 1ST DIALED DIGIT | | 1 |
| 2 | 2ND DIALED DIGIT | | 2ND DIALED DIGIT | | 2 |
| 3 | 3RD DIALED DIGIT | | 3RD DIALED DIGIT | | 3 |
| 4 | 4TH DIALED DIGIT | | 4TH DIALED DIGIT | | 4 |
| 5 | 5TH DIALED DIGIT | | 5TH DIALED DIGIT | | 5 |
| 6 | 6TH DIALED DIGIT — FIRST TELEPHONE NO. | | 6TH DIALED DIGIT — SECOND TELEPHONE NO. | | 6 |
| 7 | 7TH DIALED DIGIT | | 7TH DIALED DIGIT | | 7 |
| 8 | 8TH DIALED DIGIT | | 8TH DIALED DIGIT | | 8 |
| 9 | 9TH DIALED DIGIT | | 9TH DIALED DIGIT | | 9 |
| 10 | 10TH DIALED DIGIT | | 10TH DIALED DIGIT | | 10 |
| 11 | 11TH DIALED DIGIT | | 11TH DIALED DIGIT | | 11 |
| 12 | 12TH DIALED DIGIT | | 12TH DIALED DIGIT | | 12 |
| 13 | 13TH DIALED DIGIT | | 13TH DIALED DIGIT | | 13 |
| 14 | 1ST DIGIT — ACCOUNT NO. | | ◄ SELECT ZONES TO DIAL SECOND NO. ONLY | | 14 |
| 15 | 2ND DIGIT | | ◄ LISTEN-IN. SELECT ZONES | | 15 |
| 16 | 3RD DIGIT | | LISTEN-IN TIME. 1 MIN. INCREMENTS | | 16 |
| 17 | | | ◄ SELECT ZONES TO DIAL BOTH NUMBERS | | 17 |
| 18 | ◄ ABORT/DELAY-SELECT ZONES (COMMUNICATOR ONLY) | | ◄ EXTENDED FORMAT. SELECT ZONES | | 18 |
| 19 | DELAY TIME-10 SEC. INCREMENTS | | ■ FAST/SLOW INVERT ■ BOTH NUMBERS ■ SECOND NUMBER | | 19 |
| 20 | ◄ TEST CANCEL. SELECT ZONES | | ◄ AUDIBLE PANIC. SELECT ZONES (24 HOURS) | | 20 |
| 21 | TEST CANCEL. CODE (U) = 9 (C†) | | ◄ AUDIBLE BURGLARY. SELECT ZONES | | 21 |
| 22 | ◄ RESTORE. SELECT ZONES | | ◄ DELAY BURGLARY. SELECT ZONE (MUST ALSO BE AUD. BURG.) | | 22 |
| 23 | RESTORE. CODE (U) = 0 (A†) | | EXIT DELAY TIME. 10 SEC. INCREMENTS (U) = 30 SEC. | | 23 |
| 24 | ZONE 1 REPORTING CODE (U) = 1 (F†) | | ENTRANCE DELAY TIME. 10SEC. INCREMENTS (U) = 30 SEC. | | 24 |
| 25 | ZONE 2 REPORTING CODE (U) = 2 | | BELL SHUTOFF TIME. 2 MIN. INCREMENTS (U) = 16 MIN. | | 25 |
| 26 | ZONE 3 REPORTING CODE (U) = 3 | | ● AUDIBLE FIRE. SELECT ZONES (24 HOURS) | | 26 |
| 27 | ZONE 4 REPORTING CODE (U) = 4 | | ◄ NORMALLY CLOSED LOOP. SELECT ZONES | | 27 |
| 28 | ZONE 5 REPORTING CODE (U) = 5 | | ACCOUNT NUMBER 4TH DIGIT | | 28 |
| 29 | ZONE 6 REPORTING CODE (U) = 6 | | SILENT PANIC. SELECT ZONES (24 HRS.) | | 29 |
| 30 | ZONE 7 REPORTING CODE (U) = 7 | | ■ FORCED ARMING REPORTS ■ LOW BATTERY/TROUBLE | | 30 |
| 31 | ZONE 8 REPORTING CODE (U) = 8 | | 24 HR. TEST ■ CLOSING ■ OPENING ■ ALL BURG. N.C. | | 31 |
| 32 | ■ VOID PAGE ■ SK 4 = 2 ■ ACRON FORMAT | | ■ VOID PAGE ■ DIAL IF NO DIAL TONE ■ FALSE ALARM | | 32 |

■ = PROGRAM NUMBER FOR DESIRED FUNCTION

◄ = USE ZONE SELECT MATRIX (FIG. III).

⊏ = CONTROL PANEL FUNCTIONS-USE ONLY WITH ACRON CONTROL PANELS

● = USE FIRE ZONE SELECT MATRIX (FIG. II).

(U) = UNPROGRAMMED

† = VALUE FOR ACRON FORMAT

**FIRE ZONE SELECT MATRIX — FIG. II**

| DATA SWITCH ENTRY POSITION | Zone 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| OFF | | | | | | | | |
| 1 | | | | | ● | | | |
| 2 | | | | | | ● | | |
| 3 | | | | | | | ● | |
| 4 | | | | | | | | ● |
| 9 | ● | ● | ● | ● | ● | ● | ● | ● |
| 10 | | | | | | ● | ● | |
| 12 | | | | | | | ● | ● |
| 14 | | | | | | ● | ● | ● |

**ZONE SELECT MATRIX — FIG. III**

| DATA SWITCH ENTRY POSITION | Zone 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| OFF | | | | | | | | |
| 1 | ● | | | | | | | |
| 2 | | ● | | | | | | |
| 3 | | | ● | | | | | |
| 4 | | | | ● | | | | |
| 5 | | | | | ● | | | |
| 6 | | | | | | ● | | |
| 7 | | | | | | | ● | |
| 8 | | | | | | | | ● |
| 9 | ● | ● | ● | ● | ● | ● | ● | ● |
| 10 | | ● | ● | | | | | |
| 11 | | | | ● | ● | | | |
| 12 | | | ● | ● | | | | |
| 13 | | ● | | | ● | | | |
| 14 | | ● | ● | ● | | | | |
| 15 | | ● | ● | ● | ● | | | |

**FOR TECHNICAL ASSISTANCE CALL:**
**800-631-2144**

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