

# **AM2020**

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# **AFP1010**

## **CHAPTER THREE**

## **PROGRAMMING**

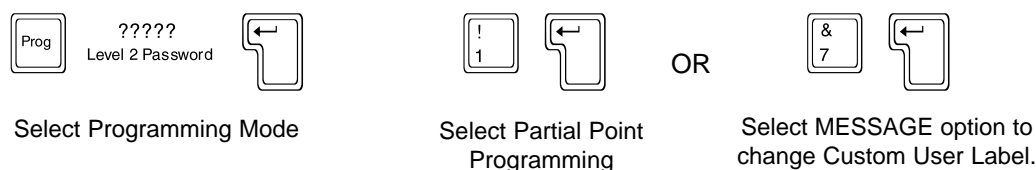


# Introduction

This chapter covers the programming options of the AM2020/AFP1010 Combination Fire/Security Protective Signaling System and the features available to the operator. This chapter is presented through the perspective of the CRT-2 Monitor. The prompts are displayed on the CRT screen in the order that they appear (top to bottom) on the pages that follow. For programming the control panel from the built-in keypad, an overview of the panel's Display Interface Assembly (DIA-2020 or DIA-1010) is illustrated in Chapter Two, Operation. Installation information for the CRT is located in Chapter 1.

## Menus

At the top of each sub-menu in this programming guide, a string of keys are displayed to illustrate the sequence of keys needed to reach a particular menu. For example:



## Passwords

Access to keypad or menu levels one and two require entry of specific passwords. These levels allow an authorized programmer to initialize or alter the programming of the AM2020/AFP1010. Level One and Level Two entry requirements are defined as follows:

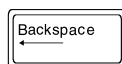
Alter Status \_\_\_\_\_ Level One password required.  
Programming \_\_\_\_\_ Level Two password required.

If the main operator of the system requires access to a function which is password protected, contact the distributor who installed the system for the required password(s). The AM2020 and AFP1010 are shipped with initial Level One and Level Two passwords of five zeroes (00000).

## NOTE

Unacknowledged points must be acknowledged prior to being reprogrammed.

## Backspace key



The Backspace key serves several purposes. At a menu prompt, the Backspace key aborts the selection of that option:

ENTER 40 CHARACTER USER LABEL:

When entering data, the Backspace key erases the last character or digit entered:

ENTER 40 CHARACTER USER LABEL: NOTIFIER

At certain points during operator or programming functions, the Backspace key aborts all the data just entered. For instance, during Full Point Programming, a particular point must be fully programmed before the control panel can use the information. If the Backspace key is pressed at a prompt ( : ) before all parameters (i.e. address, type I.D., equation, etc.) for that point are entered into the control panel, then all previous entries for that point will be ignored.

## About Transponder Rapid All-Call

When the All Call button is pressed on an AMG connected to an AM2020/AFP1010 panel, an All Call activation signal is received by the panel. Upon receipt of the All Call signal, the AM2020/AFP1010 panel will immediately activate all specially programmed XP Transponder "SPKR" circuits. Programming is performed in the XP Transponder using the XRAM-1 (see XP Transponder System Manual).

### About SIB-NET

The SIB-2048A and SIB-NET serial communications boards are available for use on the AM2020/AFP1010 system (see Chapter One). For the AM2020/AFP1010 with **NOTI•FIRE•NET™** system, only the SIB-NET may be used. If a SIB-NET board is not installed, specific **NOTI•FIRE•NET** functions can not be programmed or viewed under Read Status.

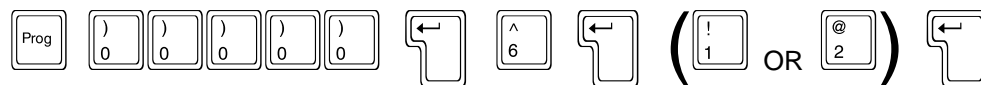
#### NOTE

When a Network Reporting Terminal (NRT) is present on the **NOTI•FIRE•NET**, programming and read status operations should always be performed from the NRT . If an INA is present on the **NOTI•FIRE•NET** and no NRT is employed, programming and read status operations should be performed from the INA. Never attempt to perform programming or read status operations from the local panel when the same operations are being performed from the NRT or INA. For more information on performing read status operations on the NRT or INA, refer to the NRT manual, Document 15090 and the INA manual, Document 15092.

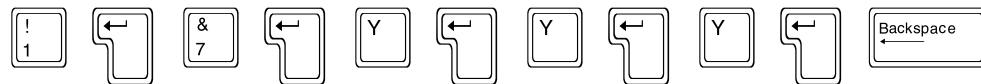
# The Initial Programming Outline

For initial programming of the AM2020 or AFP1010, or for major changes and additions, the following basic procedure is recommended to prevent errors resulting in reprogramming and wasted time.

- Make copies of the Program Work Sheets (contained in the Glossary) in the back of this manual.
- Use these Work Sheets to record the exact information for every detector, module, annunciator point and software zone in the system. Pay special attention to the Software Type I.D.s listed in Section Three. For voice systems, pay close attention to AMG annunciator point commands as described in Voice Alarm Multiplex-2020 manual.
- If a CRT is to be used, configure it as described in Chapter 1.
- Assemble and apply power to the control panel as described in the Installation Chapter (also the VAM-2020 manual, if appropriate). All system boards (including all LIBs) *must be physically installed*.
- The Level 1 and Level 2 passwords can be changed. The AM2020/AFP1010 is delivered from the factory with passwords of 00000. Write down or memorize your passwords! To change the passwords, enter the following:



- If the control panel is to be programmed before installation of LIB SLC Loop devices, the panel will exit programming and sound the piezo when each programmed device is not detected. To avoid the piezo from sounding, use the following key sequence (after entering the password):



When the first device has been programmed into the system, the control panel will report a trouble condition and will exit programming mode. *Important: Do not acknowledge this trouble.* Reenter programming and the control panel will no longer exit programming or sound the piezo for subsequent trouble conditions.

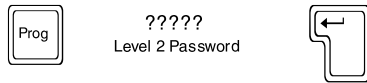
- For initial system programming, read Full System Programming and answer all the questions in that section before entering programming mode. Then, enter Full System Programming and load all the answers into the control panel.
- Enter Full Point Programming. Use the work sheets developed in the second step of this outline and enter information on all points in the system. Program points in the following order:
  - 1) Annunciator Points    2) Zones    3) Detector Points    4) Module Points
- When devising Control-By-Event equations for a particular device, remember that the label of the first software zone in the equation will appear on the panel display, along with the label of the device, when an alarm condition occurs. See *Label option* in *Partial Point Programming* section for more information.
- Enter the System Message.
- Install all devices and thoroughly test the entire system. The Walk Test feature can be used to test devices and their programming.
- Make a hard-copy record of the program on the printer.
- If desired, upload the program to store on an external device (computer hard drive or floppy), see *Intelligent Serial Interface Board Programming*.



# Section One

## Main Programming

The Programming Mode is accessed by entering the following (level 2 password required):



After entering the Programming Mode, the display will show the Main Programming menu:

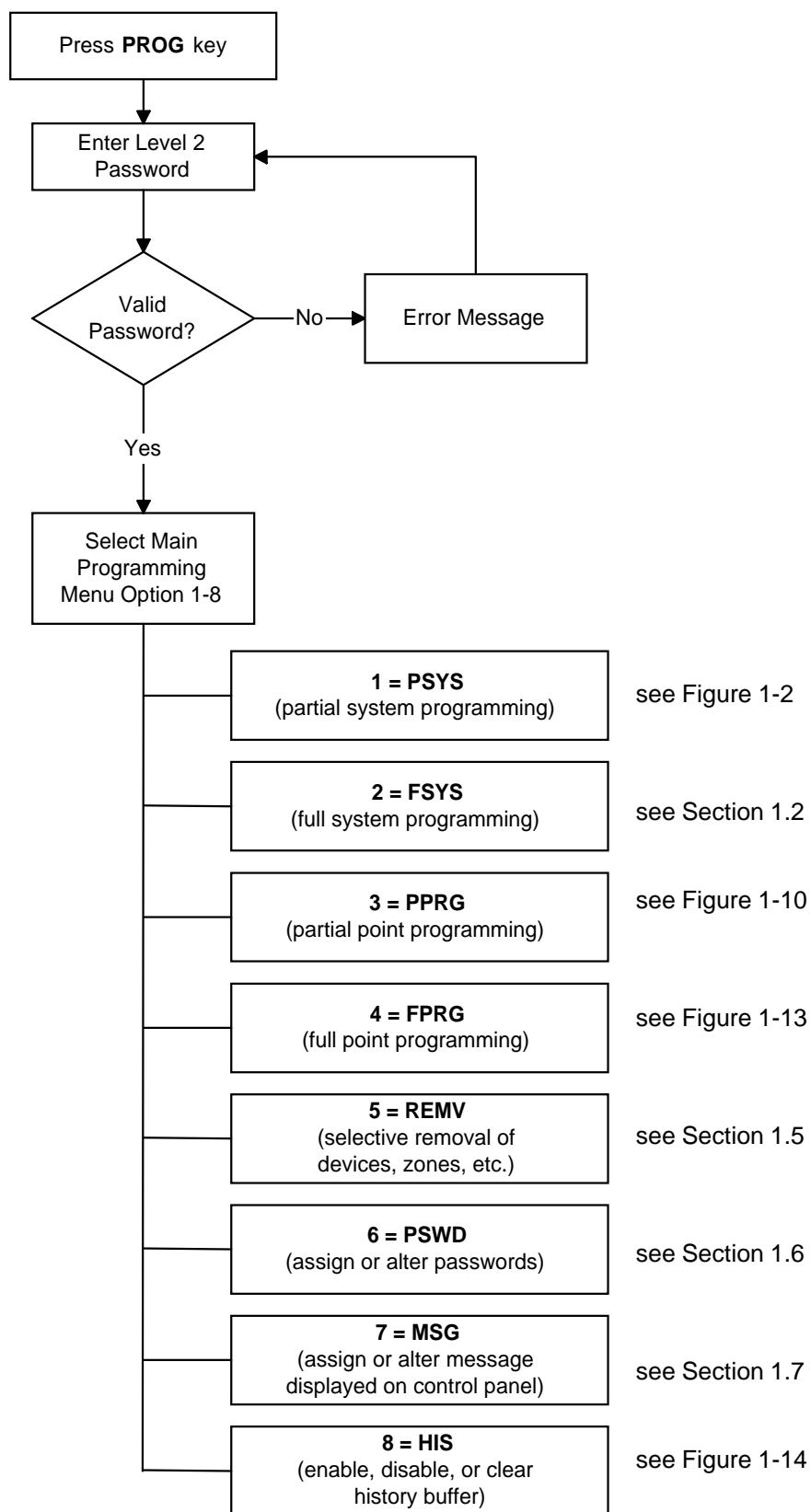
PRESS 1=PSYS, 2=FSYS, 3=PPRG, 4=FPRG, 5=REMV, 6=PSWD, 7=MSG, 8=HIS :

The Main Programming menu has eight options, where:

- 1=PSYS    Partial System Programming** - Selective programming of system-wide functions (number of LIBs, AVPS-24/AVPS-24E\*, ISIB, Signal-Silence Inhibit and Cut-out, Alarm Verification, number of annunciator modules, etc.).
- 2=FSYS    Full System Programming** - Complete programming of system-wide functions (number of LIBs, AVPS-24/AVPS-24E\*, ISIB, Signal-Silence Inhibit and Cutout, Alarm Verification, number of annunciator modules, etc.).
- 3=PPRG    Partial Point Programming** - Selectively altering the operating parameters of LIB SLC Loop devices, software-defined zones and annunciator points.
- 4=FPRG    Full Point Programming** - Complete programming of addressable LIB SLC Loop devices, software-defined zones, annunciator points and their respective operating parameters.
- 5=REMV    Remove** - Permits the selective removal (from control panel memory) of any of the system's addressable SLC Loop devices, software-defined zones or annunciator points.
- 6=PSWD    Password** - Allows the programmer to assign custom five-digit Level One and Level Two passwords.
- 7=MSG    Message** - Allows the Level Two programmer to define the custom 40-Character User Label displayed on the CRT Monitor and the panel's Liquid Crystal Display (LCD).
- 8=HIS    History** - Allows the programmer to enable or disable storage of events and the clearing of stored events.

\* The number of APS-6R power supplies should be included in the AVPS count.

The Main Programming Menu flow chart is located in **Figure 1-1**. Detailed information on the Main Programming options follows.



**Figure 1-1 Main Programming Menu Flow Chart**



## Section 1.1 Partial System Programming



### 1=PSYS

Option 1 from the Main Programming menu allows the programmer to change the programming of system-wide functions such as Alarm Verification of detectors, Signal-Silence Inhibit, Signal Cut-out, disabling the piezo sounder, enabling Rapid Polling, and enabling supervision of peripheral equipment in the system. Additional system parameters, such as the number of AVPS, LIBs, Annunciators and ISIB in the system. The LIB SLC Loops can also be changed in Partial System Programming.

After selecting option 1 from the Main Programming menu, the display will show the Partial System Programming submenu:

PRESS 1=INST, 2=STY, 3=TDLY, 4=AVPS, 5=ZBND, 6=EXTEQ, 7=LOCP, 8=ISIB, 9=PARM :

**NOTE:** Submenu option 4 includes APS-6R as well as AVPS power supplies.

The Partial System Programming submenu has nine options, where:

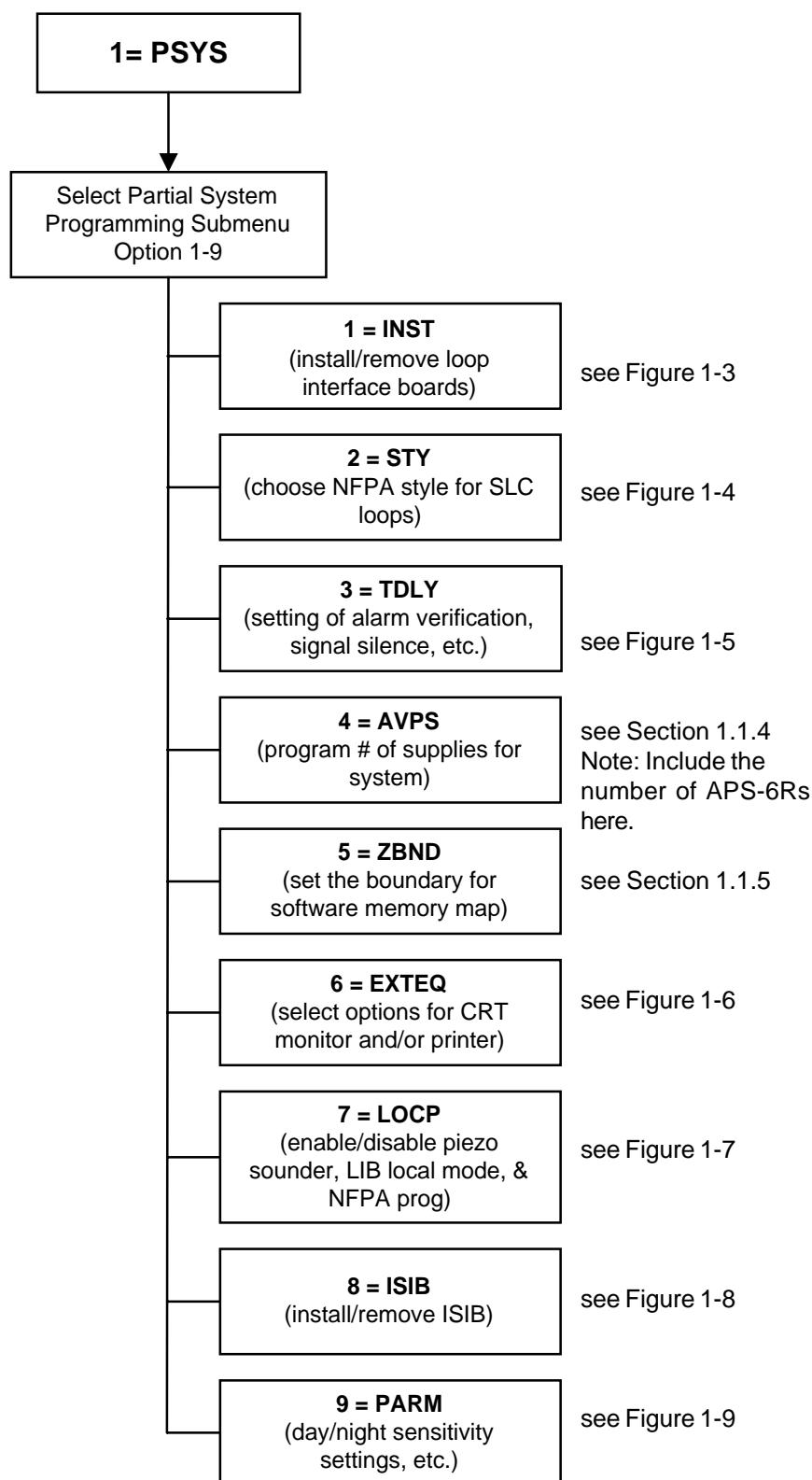
- |                |   |
|----------------|---|
| <b>1=INST</b>  | <b>Installation</b> - Installation or removal of the Loop Interface Boards from memory.   |
| <b>2=STY</b>   | <b>Style</b> - Changing (in memory) the NFPA style of the SLC Loops.  |
| <b>3=TDLY</b>  | <b>Time Delays</b> - Setting the time delays for Alarm Verification, Signal-Silence Inhibit, and Signal Cut-Out.  |
| <b>4=AVPS</b>  | <b>Audio/Visual Power Supplies</b> - Telling the AM2020/AFP1010 how many Audio/Visual Power Supplies and APS-6R Auxiliary Power Supplies are installed in the system.   |
| <b>5=ZBND</b>  | <b>Zone Boundary</b> - Setting the zone boundary for the software memory map.   |
| <b>6=EXTEQ</b> | <b>External Equipment</b> - Changing the external equipment options, such as electrical supervision of the CRT Monitor.   |
| <b>7=LOCP</b>  | <b>Local Parameters</b> - Setting local parameters, such as enabling or disabling the piezo sounder during point programming of SLC Loop devices, LIB local mode and NFPA programming.  |
| <b>8=ISIB</b>  | <b>Intelligent Serial Interface Board</b> - Installation or removal of the Intelligent Serial Interface Board (SIB-2048A or SIB-NET) or annunciator modules (see Chapter One, <i>Serial Communications</i> , for a description of annunciator modules). Also used to enable the external interface for upload/download, and Universal Digital Alarm Communicator Transmitter selection. |
| <b>9=PARM</b>  | <b>Additional System Parameters</b> - Selection of additional system parameters such as the detector day/night sensitivity settings, rapid polling, etc.  |

The Partial System Programming Menu flow chart is located in **Figure 1-2**. Detailed information on the Partial System Programming options follows.

### NOTES

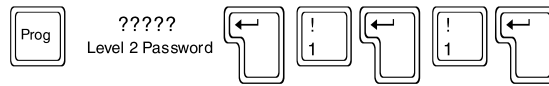
When removing loop interface boards, all installed points on the affected LIBs are automatically removed upon cycling power to the system. Programming information for installed points can be stored in a VeriFire™ database prior to removal of the LIB. Use of the VeriFire™ application for the reprogramming of previously removed points is highly recommended.

When removing annunciator modules, all installed points on the affected annunciators must be removed first for proper system operation.



**Figure 1-2 Partial System Programming Submenu Flow Chart**

## Section 1.1.1 LIB Installation



### 1=INST

Option 1 from the Partial System Programming submenu allows the installation or removal of LIB SLC Loops from memory. The LIB boards must still be physically installed or removed from the system to prevent a system trouble condition. The Installation Option flow chart is located in Figure 1-3.

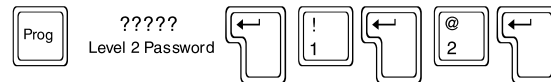
The AM2020 is capable of a maximum of ten LIBs (1980 devices total in the system)  
The AFP1010 is capable of a maximum of four LIBs (792 devices total in the system)

The following programming example illustrates the installation of Loop Interface Board number 3.

```
PRESS 1=INST,2=STY,3=TDLY,4=AVPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 1
ENTER THE LIB BOARD NUMBER TO CHANGE (1 - 10)                             : 3
IS LIB BOARD 03 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO)                   : Y
ENTER THE STYLE OF SLC LOOP 03 (6 OR 4)                                    : 6
DO YOU WANT TO CHANGE ANOTHER LIB BOARD? (Y=YES,N=NO)                   : N
PROGRAMMING COMPLETE - POWER DOWN TO MAKE APPROPRIATE CHANGES
```

Refer to Chapter One of this manual for information on LIB-400 and its correct slot address. See notes in Section 1.1, Partial System Programming.

## Section 1.1.2 LIB SLC Loop Style

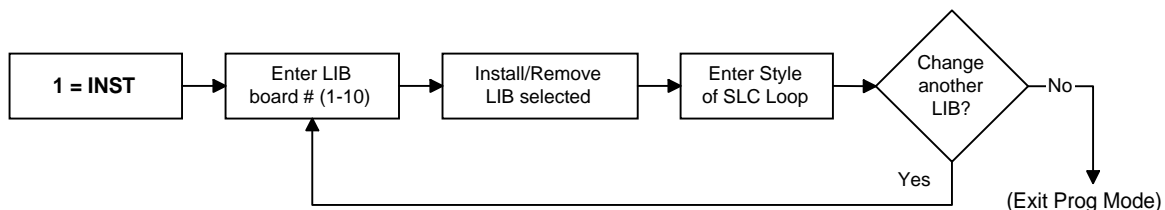


### 2=STY

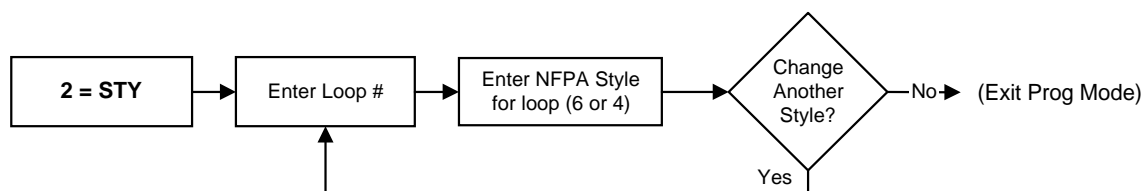
Option 2 from the Partial System Programming submenu allows the programmer to change in AM2020/ AFP1010 memory the NFPA style for the Signaling Line Circuit (SLC Loop) connected to each LIB. The SLC Loop must still be field wired in accordance with the style set in memory (Chapter One-Installation). The Style Option flow chart is located in Figure 1-4.

The following programming example illustrates setting SLC Loop number 5 as an NFPA Style 6 circuit. The CRT screen prompts are displayed in the priority that they appear (top to bottom).

```
PRESS 1=INST,2=STY,3=TDLY,4=AVPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 2
ENTER THE SLC LOOP NUMBER TO CHANGE (1 - 10)                             : 5
ENTER THE STYLE OF SLC LOOP 05 (6 OR 4)                                    : 6
DO YOU WANT TO CHANGE ANOTHER SLC LOOP? (Y=YES,N=NO)                   : N
```

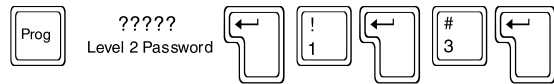


**Figure 1-3 Install Option Flow Chart**



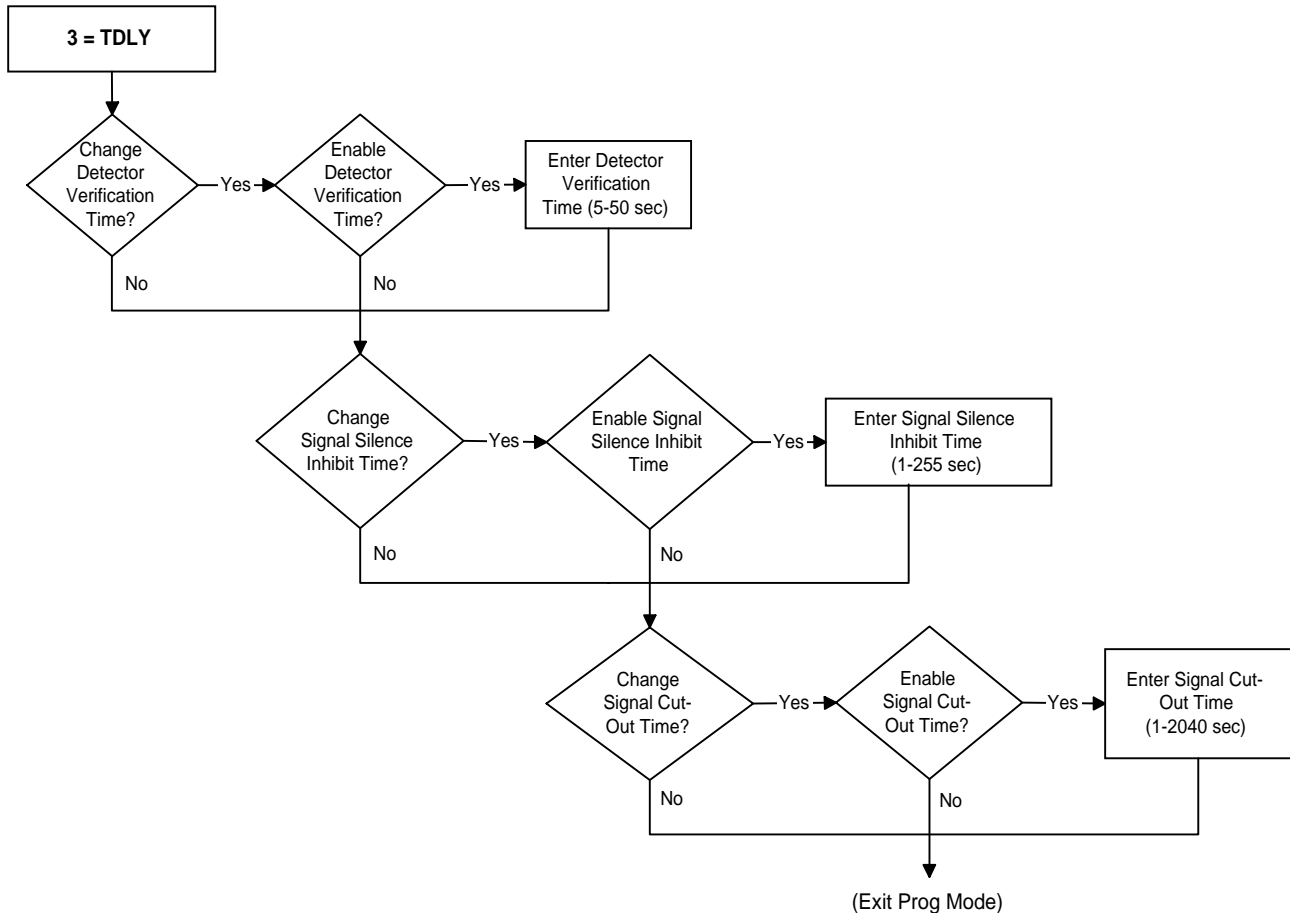
**Figure 1-4 Style Option Flow Chart**

## Section 1.1.3 Time Delays



### 3=TDLY

Option 3 from the Partial System Programming submenu allows the programmer to enable/disable Alarm Verification of detectors, Signal-Silence Inhibit and Signal Cut-out for control modules, as well as setting the appropriate time delays for these functions. For a full description of these functions, see the *Glossary of Terms and Abbreviations* at the end of this manual.



**Figure 1-5 Time Delay Option Flow Chart**

The following programming example illustrates enabling all three functions:

```

PRESS 1=INST,2=STY,3=TDLY,4=AVPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 3
DO YOU WANT TO CHANGE THE DETECTOR VERIFICATION TIME? (Y=YES,N=NO)         : Y
DO YOU WANT THE DETECTOR VERIFICATION TIME ENABLED? (Y=YES,N=NO)           : Y
ENTER THE DETECTOR VERIFICATION TIME (5 - 50 IN 1 SECOND INCREMENTS)       : 35
DO YOU WANT TO CHANGE THE SIGNAL SILENCE INHIBIT TIME? (Y=YES,N=NO)        : Y
DO YOU WANT THE SIGNAL SILENCE INHIBIT TIME ENABLED? (Y=YES,N=NO)          : Y
ENTER THE SIGNAL SILENCE INHIBIT TIME (1 - 255 IN 1 SECOND INCREMENTS)     : 240
DO YOU WANT TO CHANGE THE SIGNAL CUT-OUT TIME? (Y=YES,N=NO)                : Y
DO YOU WANT THE SIGNAL CUT-OUT TIME ENABLED? (Y=YES,N=NO)                  : Y
ENTER THE SIGNAL CUT-OUT TIME (1 - 2040 IN 1 SECOND INCREMENTS)             : 600
  
```

## General Considerations

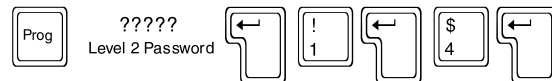
The capability of the control panel to provide the functions of Alarm Verification, Signal Cut-out, and Signal-Silence Inhibit can be enabled/disabled by the programmer in both Full and Partial System Programming. However, to make use of these functions, the Signal Silence option (for silenceable control modules) and the Alarm Verification option (for addressable detectors) must still be enabled/disabled individually for each SLC Loop device under Full or Partial Point Programming.

For instance, when programming Alarm Verification:

- Under Full or Partial System Programming, the programmer turns Alarm Verification ON and sets the verification time period.
- Under Full or Partial Point Programming, the programmer individually selects Alarm Verification for each detector:

Detector 1 = YES  
Detector 2 = NO  
Detector 3 = YES  
Detector 4 = YES  
and so forth for each detector in the system.

### Section 1.1.4 Power Supplies

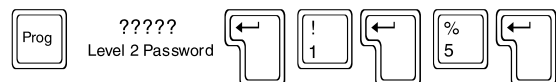


#### 4=AVPS

The number of Audio Visual Power Supplies (AVPS-24/AVPS-24E) and Auxiliary Power Supplies (APS-6R) in the system can be programmed into memory by selecting option 4 from the Partial System Programming submenu. The supplies must be physically installed and connected to P5 on the CPU to prevent creating a system trouble condition. The example below illustrates the software installation of two AVPS, one AVPS and one APS-6R, or two APS-6R power supplies.

```
PRESS 1=INST,2=STY,3=TDLY,4=AVPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 4
ENTER THE NUMBER OF AVPS-24 INSTALLED IN THE SYSTEM (0 - 16)                : 2
```

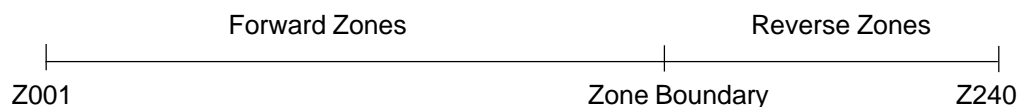
### Section 1.1.5 Zone Boundary



#### 5=ZBND

The AM2020/AFP1010 can make use of up to 240 software-defined “zones.” These zones can be either forward-activated (FZON) or reverse-activated (RZON), depending upon the particular installation requirements. These forward and reverse zones must be grouped separately, with the forward group always preceding the reverse group. The highest forward-activated zone in the system is the Zone Boundary, which must be in the range of Z001 - Z239. For a full description of *Forward* and *Reverse Activating Software Zone*, see the *Glossary of Terms and Abbreviations* at the end of this manual.

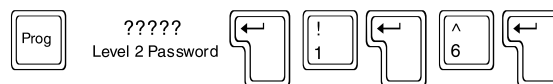
Unless the use of complex Control-By-Event or Cooperative Control-By-Event Equations is required in the system, set the Zone Boundary to Z200 (default). (For more information, see *Control-By-Event Programming and Cooperative Control-By-Event Programming*).



The following programming example illustrates setting the Zone Boundary for zone 200.

```
PRESS 1=INST,2=STY,3=TDLY,4=AVPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 5
ENTER ZXXX OF HIGHEST FORWARD ACTIVATED ZONE IN SYSTEM                      : Z200
```

## Section 1.1.6 External Equipment

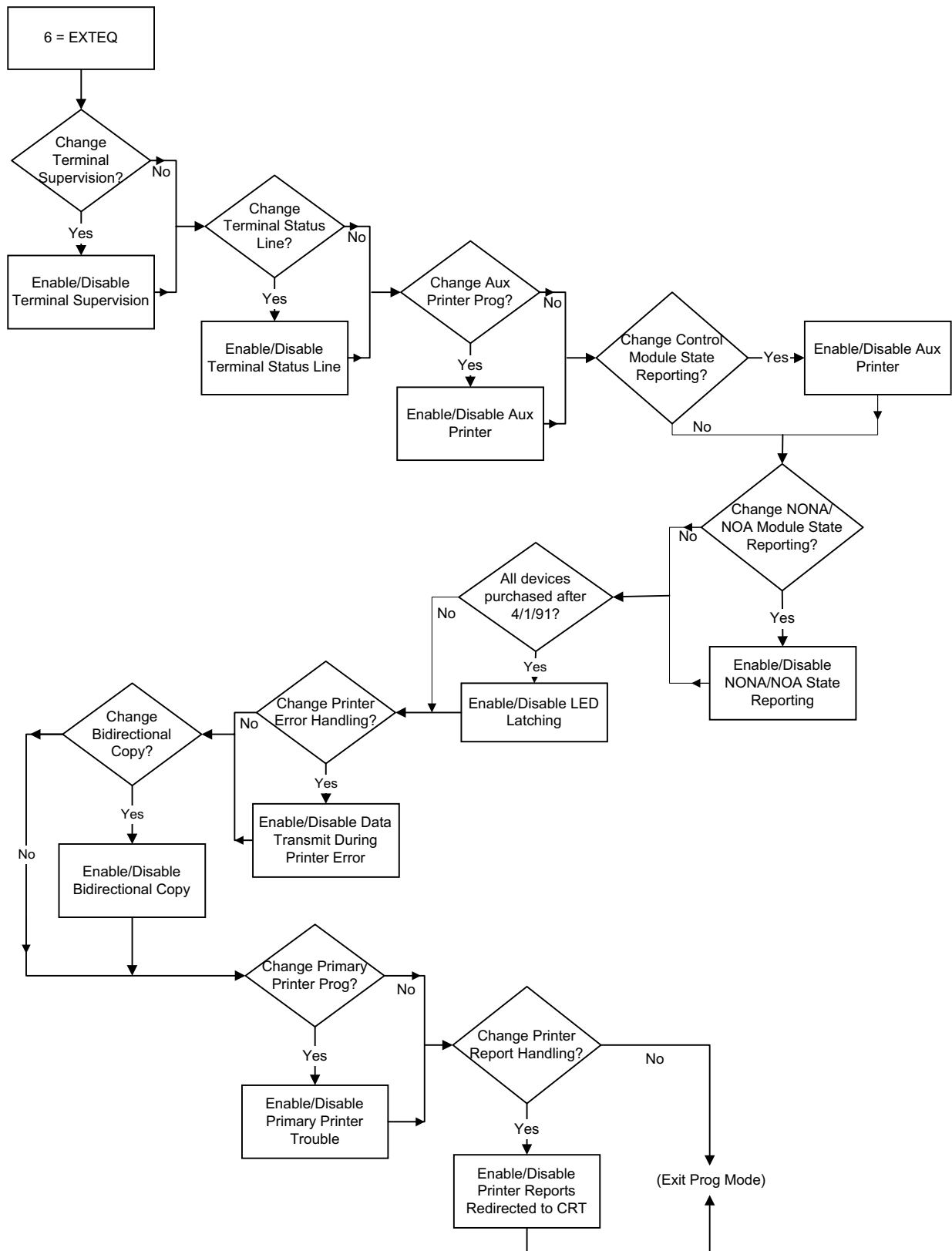


### 6=EXTEQ

Option 6 from the Partial System Programming Menu allows the changing of any optional features associated with the CRT Monitor or Printer(s).

<b>Terminal Supervision -</b>	Electrical supervision of the CRT Monitor. Unless terminal supervision is selected, the CRT will not beep (i.e., no bell characters will be sent) when unacknowledged troubles or unacknowledged alarms are present.
<b>Terminal Status Line -</b>	The bottom line of the CRT will display the number of unacknowledged alarms and troubles, and the total number of alarms and troubles in the system. The Terminal Status Line appears on the CRT display only.
<b>Auxiliary Printer Monitoring -</b>	The AM2020/AFP1010 will monitor the auxiliary printer's Ready/Busy line for error conditions. Note: The P40 is a special internal 40-column printer. This option should not be enabled for external 80-column printers.
<b>Control Module Reporting -</b>	Control module state changes will be printed out.
<b>NONA/NOA Module Reporting -</b>	Module state changes for modules with the software type ID NONA or NOA will be printed out. See <i>Software Type IDs</i> for further information on all software type IDs.
<b>LED LATCH -</b>	Enables 99-device LED latching. See restrictions under LED Latching.
<b>Printer Error Continue -</b>	Data will be transmitted to the printer under <i>Printer Error</i> conditions ( <i>Paper Out</i> or <i>Printer Off Line</i> generates an error condition under which data may be lost). <i>Enable for special applications only (see the CGAS II/AMNET II Manual).</i>
<b>Bidirectional Copy -</b>	The CRT will process data received through its AUX port. <i>Enable for special applications only (see the CGAS II/AMNET II manual and the CCM-1 Product Installation Document).</i>
<b>Printer Trouble Inhibit -</b>	The AM2020/AFP1010 monitors the primary printer's Rx line for error conditions. This option inhibits the generation of a trouble message for <i>Paper Out</i> or <i>Printer Off Line</i> . <i>Enable for special applications only (see the VGAS Installation manual).</i>
<b>Printer Reports Redirected to CRT -</b>	System reports will be echoed to the CRT interface. <i>Enable for special applications only (see the VGAS Installation Manual and the NAM-232 For Use With AM2020/AFP1010 Manual, Document 50424).</i>

The External Equipment Option flow chart is located in Figure 1-6.



**Figure 1-6 External Equipment Option Flow Chart**

The following programming example illustrates enabling of all external equipment functions except transmit of data during printer error conditions, bidirectional copy, primary printer trouble error reporting, and redirecting printer reports to the CRT.

```

PRESS 1=INST,2=STY,3=TDLY,4=AUPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 6
DO YOU WANT TO CHANGE THE TERMINAL SUPERVISION? (Y=YES,N=NO)              : Y
DO YOU WANT THE TERMINAL SUPERVISION ENABLED? (Y=YES,N=NO)                : Y
DO YOU WANT TO CHANGE THE TERMINAL STATUS LINE? (Y=YES,N=NO)              : Y
DO YOU WANT THE TERMINAL STATUS LINE ENABLED? (Y=YES,N=NO)                : Y
DO YOU WANT TO CHANGE THE AUXILIARY PRINTER PROGRAMMING? (Y=YES,N=NO)      : Y
DO YOU WANT THE AUXILIARY PRINTER ENABLED? (Y=YES,N=NO)                   : Y
DO YOU WANT TO CHANGE THE CONTROL MODULE STATE REPORTING? (Y=YES,N=NO)     : Y
DO YOU WANT TO REPORT CONTROL MODULE STATE CHANGES? (Y=YES,N=NO)          : Y
DO YOU WANT TO CHANGE THE "NONA"/"NOA" MODULE STATE REPORTING? (Y=YES,N=NO): Y
DO YOU WANT TO REPORT "NONA"/"NOA" MODULE STATE CHANGES? (Y=YES,N=NO)     : Y
WERE ALL ADDRESSABLE DEVICES FACTORY-PURCHASED AFTER 4/1/91? (Y=YES,N=NO)  : Y
DO YOU WANT TO ENABLE "LED LATCHING" FOR MORE DEVICES? (Y=YES,N=NO)        : Y
DO YOU WANT TO CHANGE THE PRINTER ERROR HANDLING? (Y=YES,N=NO)            : Y
DO YOU WANT TO TRANSMIT DATA UNDER PRINTER ERROR CONDITIONS? (Y=YES,N=NO): N
DO YOU WANT TO CHANGE BIDIRECTIONAL COPY PROGRAMMING? (Y=YES,N=NO)        : Y
DO YOU WANT BIDIRECTIONAL COPY ENABLED? (Y=YES,N=NO)                      : N
DO YOU WANT TO CHANGE THE PRIMARY PRINTER PROGRAMMING? (Y=YES,N=NO)       : Y
DO YOU WANT THE PRIMARY PRINTER TROUBLE INHIBITED? (Y=YES,N=NO)           : N
DO YOU WANT TO CHANGE THE PRINTER REPORT HANDLING? (Y=YES,N=NO)           : Y
DO YOU WANT TO REDIRECT PRINTER REPORTS TO THE TERMINAL? (Y=YES,N=NO)      : N

NEW ALM: 0000   TOT ALM: 0000   NEW TBL: 0000   TOT TBL: 0000

```

### Terminal Status Line

The terminal status line also displays signal silence information in the same manner as the Signal Silence LED. The Signal Silence field displays the messages ALL SILENCED, PARTIAL SILENCE or is blank for a non-silenceable system.

```

ALARM: SMOKE(PHOTO) COMPUTER ROOM      03:58P 03/01/97 101
SIGNAL SILENCE REQUESTED               03:58P 03/01/97 101
NEW ALM: 0001   TOT ALM: 0001   NEW TBL: 0000   TOT TBL: 0000   ALL SILENCED

```

### LED Latching

The AM2020/AFP1010 offers an LED-latching option:

```

DO YOU WANT TO ENABLE "LED LATCHING" FOR MORE DEVICES? (Y=YES,N=NO)      :

```

If you respond N for no, the control panel will employ a default latching algorithm. If you respond Y for yes, optional latching for more devices will be employed.

### Default Latching

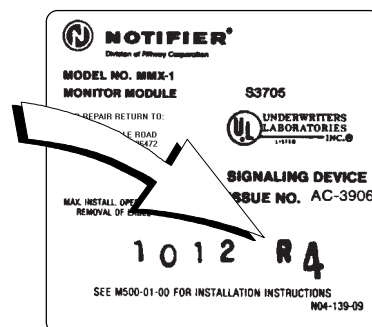
- Maximum of six devices can be latched at once (five modules maximum).
- Detectors have priority over modules. After six devices have been latched, detectors that come into alarm will assume LED-latch priority over previously-latched module LEDs.
- Due to a finite amount of 24 VDC power available for devices on each SLC Loop, illumination of only a certain quantity of LEDs will actually be visible under conditions where large numbers of LEDs have been latched on. Note that remote LEDs off of DHX-501 Duct Detectors will always illuminate since they are powered from a source other than the SLC Loop.
- Under secondary (DC) power, only intelligent detectors (including DHX-501 Duct Detectors) will be latched.



### Optional Latching for More Devices

- The control panel will latch up to 99 devices, subject to the limitations outlined below.
- All devices in the system must be of the R4 variety (see below).
- No RA-400 Remote LEDs can be installed on any device, excluding the DHX-501 Duct Detectors.
- Due to a finite amount of 24 VDC power available for devices on each SLC Loop, illumination of only a certain quantity of LEDs will actually be visible under conditions where large numbers of LEDs have been latched on. Note that remote LEDs off of DHX-501 Duct Detectors will always illuminate since they are powered from a source other than the SLC Loop.
- Under primary (AC) power, 99 devices can be latched.
- Detectors have priority over modules. After 99 devices have been latched, detectors that come into alarm will assume LED-latch priority over previously-latched module LEDs.
- Under secondary (DC) power, only intelligent detectors (including DHX-501 Duct Detectors) will be latched.

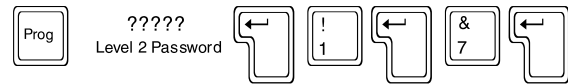
MORE LED latching can only be employed if *ALL* installed addressable devices were purchased from the Notifier factory after April 1, 1991. Use of this feature under any other circumstances can cause the SLC Loops to shut down. Devices compatible with more LED latching will have the code R4 stamped on the product marking label. SDX-551/751 Photoelectric detectors can also have an H code after the model number.



### NOTES

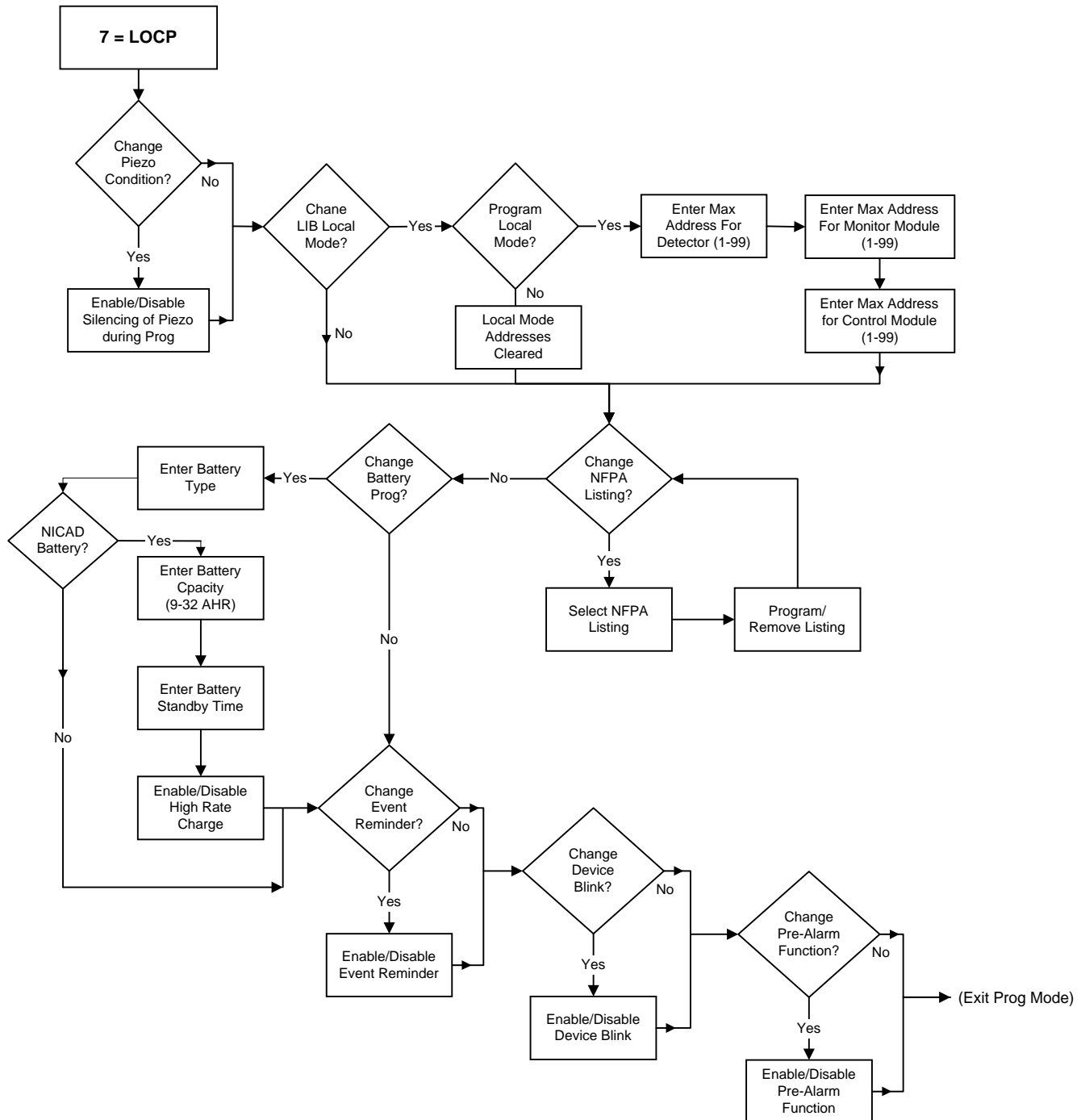
- Modules refer to monitor and control modules, and XP Transponder circuits. Devices are defined as intelligent detectors and modules.
- Software Type I.D.s PWRC, NCMN, SCON and NOA will never latch under Default Latching.

## Section 1.1.7 Local Parameters



### 7=LOCP

Option 7 of the Partial System Programming Menu allows the changing of Local Parameters, such as enabling/disabling the panel's piezo sounder (for trouble conditions while programming SLC Loop devices into memory), LIB Local mode, NFPA listings, battery parameters, event reminder, device blink, and pre-alarm programming.



**Figure 1-7 Local Parameter Option Flow Chart**

The following programming example illustrates the disabling of the panel's piezo sounder, programming LIB Local mode, modifying NFPA listings, programming the battery parameters, changing the event reminder, device blink and pre-alarm programming.

#### **NOTE**

The sounder must be enabled upon completion of programming!

```
PRESS 1=INST,2=STY,3=TDLY,4=AVPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM : 7
DO YOU WANT TO CHANGE THE PIEZO TROUBLE CONDITION? (Y=YES,N=NO) : Y
DO YOU WANT THE PIEZO SOUNDER SILENCED WHILE PROGRAMMING? (Y=YES,N=NO) : Y
DO YOU WANT TO CHANGE THE LIB LOCAL MODE PARAMETERS? (Y=YES,N=NO) : Y
DO YOU WANT TO PROGRAM LOCAL MODE? (Y=YES,N=NO) : Y
ENTER MAXIMUM ADDRESS FOR DETECTOR LOCAL MODE (1 - 99) : 99
ENTER MAXIMUM ADDRESS FOR MONITOR MODULE LOCAL MODE (1 - 99) : 99
ENTER MAXIMUM ADDRESS FOR CONTROL MODULE LOCAL MODE (1 - 99) : 99
DO YOU WANT TO MODIFY NFPA LISTINGS? (Y=YES,N=NO) : Y
SELECT NFPA LISTING - 1=72A,2=72B,3=72C,4=72D,5=71,6=RCV : 1
DO YOU WANT TO PROGRAM OR REMOVE THIS LISTING? (Y=PRG,N=RMV) : Y
DO YOU WANT TO MODIFY NFPA LISTINGS? (Y=YES,N=NO) : Y
SELECT NFPA LISTING - 1=72A,2=72B,3=72C,4=72D,5=71,6=RCV : 2
DO YOU WANT TO PROGRAM OR REMOVE THIS LISTING? (Y=PRG,N=RMV) : Y
DO YOU WANT TO MODIFY NFPA LISTINGS? (Y=YES,N=NO) : N
DO YOU WANT TO CHANGE THE BATTERY PROGRAMMING? (Y=YES,N=NO) : Y
ENTER THE TYPE OF BATTERY INSTALLED (L=LEAD-ACID,N=NICAD) : N
DO YOU WANT TO CHANGE THE BATTERY CAPACITY? (Y=YES,N=NO) : Y
ENTER THE BATTERY CAPACITY (9 - 32 IN 1 AHR INCREMENTS) : 12
DO YOU WANT TO CHANGE THE BATTERY STANDBY TIME? (Y=YES,N=NO) : Y
ENTER THE BATTERY STANDBY TIME (4, 24, 48 OR 60 HR) : 48
DO YOU WANT 24 HOUR HIGH RATE CHARGE FOR BATTERY? (Y=YES,N=NO) : Y
DO YOU WANT TO CHANGE THE EVENT REMINDER PROGRAMMING? (Y=YES,N=NO) : Y
DO YOU WANT THE EVENT REMINDER ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT TO CHANGE THE DEVICE BLINK? (Y=YES,N=NO) : Y
DO YOU WANT THE DEVICE BLINK ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT TO CHANGE THE PRE-ALARM FUNCTION? (Y=YES,N=NO) : Y
DO YOU WANT THE PRE-ALARM FUNCTION ENABLED? (Y=YES,N=NO) : Y
```

#### **General Operation of the Piezo Sounder**

- The piezo sounder provides feedback each time a key is pressed on the DIA.
- The piezo sounder sounds for unacknowledged alarm conditions.
- The piezo sounder sounds steadily for unacknowledged trouble or supervisory conditions.
- The piezo sounder chirps periodically (approximately every 12 seconds) for acknowledged conditions remaining in the system upon selection of the Event Reminder option.

## Local Mode Operation

Local mode operation allows the LIB-200, LIB-200A, and LIB-400 boards to run independently of the CPU if CPU to LIB communications should fail.

All LIB boards use the same control-by-event, with the following format:

- IF** Any intelligent detector with an address less than or equal to the maximum detector local mode address is in alarm.
- AND/OR** Any monitor module with an address less than or equal to the maximum monitor module local mode address is in alarm.
- THEN** All control modules with an address less than or equal to the maximum control module local mode address will be activated.

## Extended Local Mode Operation

Devices local to each individual LIB are divided into local mode categories based on Software Type I.D.s. All devices within the local mode address range will participate in local mode. Below is a description of each local mode category and a table showing which device types reside in each category. For complete definitions of Software Type I.D.s, refer to *Section Three, Software Type I.D.s*.

1	2	3	4	5	6	7	8	9	A	B
PHOT	MTRB	SPSU	WAT	CON	TPND	TELE	APND	WFS	SSC	PWRC
ION	MPAG	SUPR		SPKR	GPND	PAGE	EVGA	WFC		
THER	NOA			FORC	GTC		GAS			
MON	SARM			CMXS	TRS		GAC			
PULL	SSYM			CMXC	TRC					
FTHR	SACM			FRCM	DACT					
WAT	SEQM									
SCON	<b>CATEGORY DESCRIPTION</b>									
NCMN	1	If any of the participating standard initiating devices in Category 1 become active, then at a minimum all participating indicating devices in Category 5 will be activated (other indicating devices may activate as a side effect of standard initiating device activation.)								
NONA										
FPHT	2	These initiating devices are never acted on by local mode and have no side effects for other devices.								
MPUL	3	If these initiating devices become active, Type I.D. SSC will activate.								
IOND	4	If these initiating devices become active, Type I.D.s WFS and WFC will activate.								
IONH	5	If any of the participating standard initiating devices in Category 1 become active, then all participating standard indicating devices in Category 5 become active.								
IONL	6	During local mode these indicating devices are always active.								
CMBO	7	These indicating devices will activate if they participate in local mode.								
	8	These indicating devices will activate if any participating or nonparticipating alarm input is active.								
	9	These indicating devices will activate if any initiating module with Type I.D. WAT is active.								
	A	These indicating devices will activate if any initiating module with Type I.D. SPSU or SUPR is active.								
	B	These devices deactivate temporarily upon system reset to remove power to conventional devices allowing them to reset.								

**Table 1-1 Extended Local Mode Categories and Software Type I.D.s**

## NFPA Listings

NFPA listing allows the programmer to change the operation of the panel based on the NFPA listings selected. Each listing will select one or more mandatory modules.

Listing	Software ID	Address
* NFPA 72-1993 (72A) Local Fire Alarm Systems	EVGA	L1M96
NFPA 72-1993 (72B) Auxiliary Fire Alarm Systems	GAS	L1M97
** NFPA 72-1993 (72C) Remote Station Fire Alarm Systems	GAC	L1M98
	GAC	L1M99
** NFPA 72-1993 (72D) Proprietary Fire Alarm Systems	n/a	n/a
** NFPA 72-1993 (71) Central Station Fire Alarm Systems	n/a	n/a
Receiving Unit (RCV) and Central Station Unit	n/a	n/a

\* Fire alarm input devices automatically default to latching operation when the 72A listing is selected.

\*\* NFPA 72-1993 (72C), (72D), and (71) are no longer required and should not be selected during programming.

Once a module is programmed by an NFPA Listing selection, that module can only be removed from the system by de-selection of that same listing. Selection of RCV disables the block acknowledge function. RCV must be enabled for all Central Station Receiving and Proprietary and Protected Premises receiving units. RCV is not supported by **NOTI•FIRE•NET™** systems that contain an NRT or AFP-200 panel.

### NOTES

- Modules must be connected on the LIB SLC Loop with the appropriate address(es) set in order to avoid trouble conditions.
- NFPA modules selected must be in their normal state or acknowledged prior to de-selection otherwise trouble conditions may not clear from the panel memory.

## Pre-Alarm Function

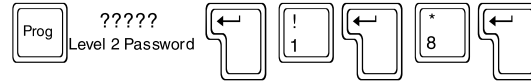
The pre-alarm function causes the FACP to generate a trouble message when the chamber value of the detector has exceeded 80% of the alarm threshold (determined by the sensitivity selection of low, medium, high).

- With pre-alarm enabled, the 80% condition must be present for at least a 60 second period and will indicate a "PRE-ALARM ALERT" message on the FACP after that period.
- With pre-alarm disabled the 80% condition must be present for at least a 26 hour period and will indicate a "MAINTENANCE REQ" message on the FACP after that period.

### NOTE

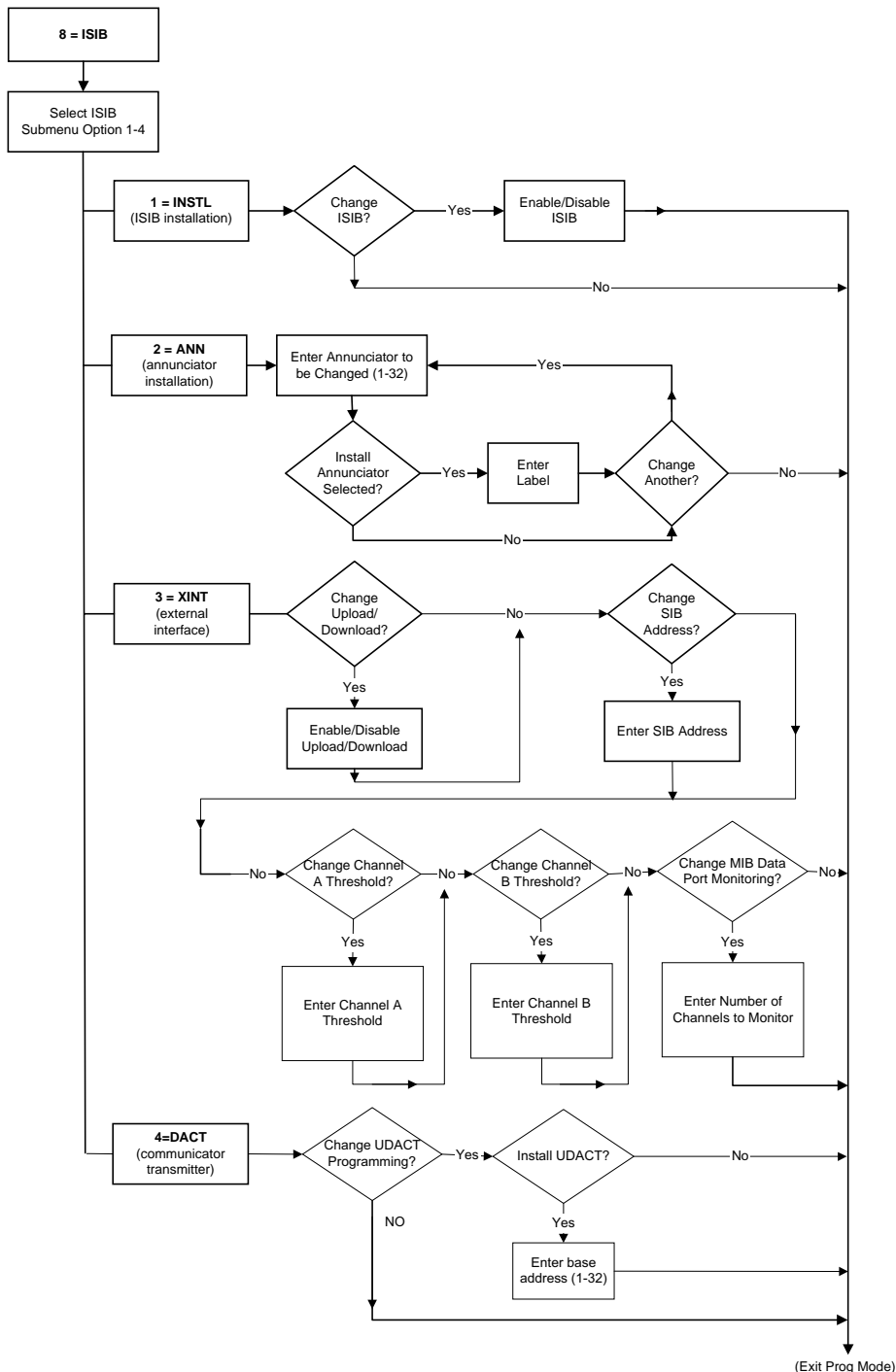
This condition (detector exceeding 80% of alarm threshold) may be due to a dirty detector. The detector should be inspected and cleaned as necessary by an authorized service representative. Failure to do so may result in a false alarm.

## Section 1.1.8 Intelligent Serial Interface Board Programming



### 8=ISIB

Option 8 from the Partial System Programming Menu allows the programmer to change parameters associated with an Intelligent Serial Interface Board (ISIB). ISIB Programming has four submenu options, ISIB Installation, Annunciator Installation, External Interface Parameters and UDACT Selection. Detailed descriptions of the four ISIB programming options are located on the pages that follow. The SIB-2048A and SIB-NET ISIBs are available for use with the AM2020/AFP1010. For AM2020/AFP1010 with **NOTI•FIRE•NET™** the SIB-NET is the only ISIB available. Refer to Chapter One, *Serial Communications*, for a description of available intelligent serial interface boards.

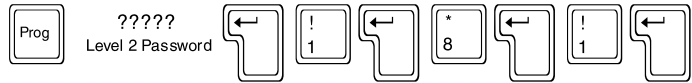


**Figure 1-8 Intelligent Serial Interface Board Option Flow Chart**

After entering option 8 from the Partial System Programming submenu, the display will show the ISIB submenu:

PRESS 1=INSTL,2=ANN,3=XINT,4=DACT

### 1=INSTL - ISIB Installation

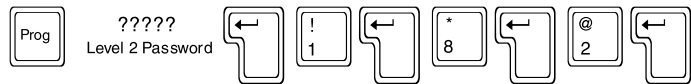


This option allows the installation or removal of the Intelligent Serial Interface Board from control panel memory. The board must still be physically installed or removed from the system to prevent a system trouble condition. The following programming example illustrates the installation of the Intelligent Serial Interface Board.

```
PRESS 1=INSTL,2=ANN,3=XINT,4=DACT           : 1
DO YOU WANT TO CHANGE THE INTELLIGENT SIB? (Y=YES,N=NO) : Y
DO YOU WANT THE INTELLIGENT SIB ENABLED? (Y=YES,N=NO)   : Y
PROGRAMMING COMPLETE - POWER DOWN TO MAKE APPROPRIATE CHANGES
```

See notes in Section 1.1, Partial System Programming.

### 2=ANN - Annunciator Installation

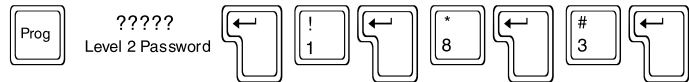


This option allows the installation or removal of annunciators (EIA-485 devices) from the AM2020/AFP1010 memory. The modules must still be physically installed or removed from the system to prevent a system trouble condition. The following programming example illustrates the installation of annunciator module 1.

```
PRESS 1=INSTL,2=ANN,3=XINT,4=DACT           : 2
ENTER THE ANNUNCIATOR NUMBER TO CHANGE (1 - 32) : 1
IS ANNUNCIATOR 01 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : Y
ENTER 20 CHARACTER CUSTOM LABEL                : ANNUNCIATOR ONE
DO YOU WANT TO CHANGE ANOTHER ANNUNCIATOR? (Y=YES,N=NO)   : N
PROGRAMMING COMPLETE - POWER DOWN TO MAKE APPROPRIATE CHANGES
```

\* The SCS-8 and SCS-8L firmware has been updated in conjunction with Software Release 2.8. The new SCS firmware is not backward compatible with older revisions of software.

### 3=XINT - External Interface Parameters



This option allows the programmer to change the parameters associated with the external interface port. The following example illustrates enabling all associated parameters.

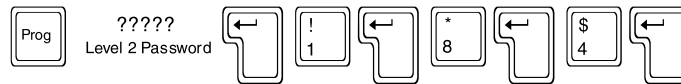
```
PRESS 1=INSTL,2=ANN,3=XINT,4=DACT           : 3
* DO YOU WANT TO CHANGE THE ACS PORT UPLOAD/DOWNLOAD? (Y=YES,N=NO) : Y
* DO YOU WANT THE ACS PORT UPLOAD/DOWNLOAD ENABLED? (Y=YES,N=NO)   : Y
* DO YOU WANT TO CHANGE THE INTELLIGENT SIB ADDRESS? (Y=YES,N=NO)   : Y
* ENTER THE INTELLIGENT SIB ADDRESS (0 - 249)                        : 249
* DO YOU WANT TO CHANGE THE MIB-W THRESHOLD FOR CHANNEL A? (Y=YES,N=NO) : Y
* ENTER THE MIB-W VALUE THRESHOLD FOR CHANNEL A (H=HIGH,L=LOW)       : L
* DO YOU WANT TO CHANGE THE MIB-W THRESHOLD FOR CHANNEL B? (Y=YES,N=NO) : Y
* ENTER THE MIB-W VALUE THRESHOLD FOR CHANNEL B (H=HIGH,L=LOW)       : H
DO YOU WANT TO CHANGE MIB DATA PORT USAGE? (Y=YES,N=NO)           : Y
DO YOU WANT TO USE BOTH MIB DATA PORTS? (Y=YES,N=NO)              : Y
```

\* These items are **NOTI•FIRE•NET™** specific functions and are only programmed when a SIB-NET is used.

### NOTES

- During an upload/download, the fire protection capability of the AM2020/AFP1010 is enabled (it is limited for download). To reduce the risk of incompatible databases, the programmer should *NEVER* program any parameters into the control panel while an upload/download is in progress.
- To communicate over the external interface, the annunciator modules *MUST* first be disconnected since both functions use the same serial port.

## 4=DACT - UDACT Installation



This option allows the installer to program a Notifier UDACT (Universal Digital Alarm Communicator Transmitter) and specify its base annunciator protocol address in the system. The example below illustrates programming a UDACT.

Before programming a UDACT into an AM2020/AFP1010 system, the number of annunciator addresses required must be determined. First, take the number of annunciator points in the system and add 8 points (for the UDACT). Then, divide the total by 64 to obtain the number of annunciator addresses required (round up to next whole number if decimal).

```
PRESS 1=INSTL,2=ANN,3=XINT,4=DACT : 4
DO YOU WANT TO CHANGE THE UDACT PROGRAMMING? (Y=YES,N=NO) : Y
DO YOU WANT A UDACT INSTALLED? (Y=YES,N=NO) : Y
ENTER THE BASE ADDRESS FOR UDACT OPERATION (1 - 32) : 1
```

### NOTES

- The UDACT can only be programmed into or removed from the system through the Partial System Programming Menu.
- The UDACT must be programmed at an installed annunciator address. Once programmed, the first 8 annunciator protocol points (base address only) automatically become unique fire panel status indicators (see UDACT Manual). These 8 functions required by the UDACT override any previous AM2020/AFP1010 annunciator point programming. When a UDACT is installed, the first 8 AM2020/AFP1010 annunciator points associated with the UDACT base address cannot be reprogrammed/removed and have no read status functionality.
- Answering "NO" for the question, "Do you want a UDACT installed?" disables the automatic 8 point UDACT programming and restores these points to their original annunciator point programming.
- Multiple annunciator addresses may need to be programmed depending upon the range specified by the UDACT annunciator address switches.
- The UDACT cannot be used in systems containing an AVPS-24/AVPS-24E, AA-30/AA-30E, AA-120, AA-120E or XP Transponder since a primary power failure signal transmission will not be delayed as required for this application.
- When using the UDACT in a system with a NIB-96, use care to ensure that the EIA-485 addresses selected do not overlap with those of the NIB-96.
- When a UDACT is programmed into the system, both the red and yellow LEDs will illuminate on an annunciator point mapped to a supervisory input during the presence of a supervisory signal for that point, unless the supervisory ACS reporting option has been enabled.
- Off-premises transmission of security alarms using the UDACT must be made by mapping input points with the software type ID "SACM" and "SEQM" to annunciator points within the range of the UDACT. Use of other security type IDs for this purpose will result in simultaneous transmission of a trouble signal.
- Multiple UDACT usage per AM2020/AFP1010 system is not permitted.



## Section 1.1.9 Additional System Parameters

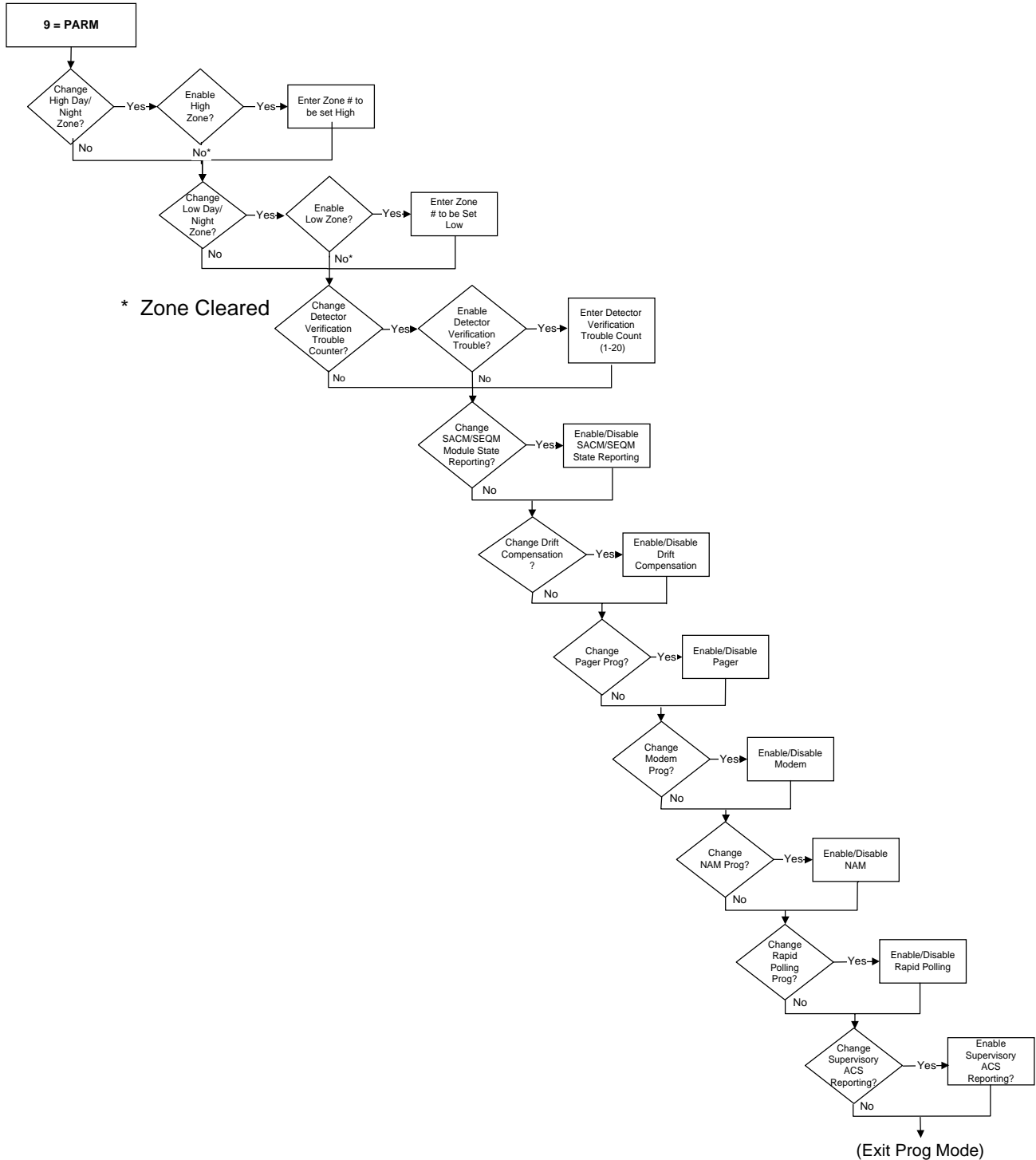


?????  
Level 2 Password



### 9=PARM

This option allows the programmer to enable/disable additional system parameters such as the day/night sensitivity of detectors or rapid polling. For a full description of these functions, see the *Glossary of Terms and Abbreviations* at the end of this manual.



**Figure 1-9 Additional System Parameters Option Flow Chart**

The following programming example illustrates enabling these functions.

```

PRESS 1=INST,2=STY,3=TDLY,4=AUPS,5=ZBND,6=EXTEQ,7=LOCP,8=ISIB,9=PARM      : 9
DO YOU WANT TO CHANGE THE HIGH DAY/NIGHT SENSITIVITY ZONE? (Y=YES,N=NO)    : Y
DO YOU WANT A HIGH DAY/NIGHT SENSITIVITY ZONE? (Y=YES,N=NO)               : Y
ENTER HIGH DAY/NIGHT SENSITIVITY ZONE (ZXXX)                               : Z150
DO YOU WANT TO CHANGE THE LOW DAY/NIGHT SENSITIVITY ZONE? (Y=YES,N=NO)     : Y
DO YOU WANT A LOW DAY/NIGHT SENSITIVITY ZONE? (Y=YES,N=NO)               : Y
ENTER LOW DAY/NIGHT SENSITIVITY ZONE (ZXXX)                               : Z1
DO YOU WANT TO CHANGE THE DETECTOR VER. TROUBLE COUNTER? (Y=YES,N=NO)     : Y
DO YOU WANT THE DETECTOR VERIFICATION TROUBLE ENABLED? (Y=YES,N=NO)       : Y
ENTER DETECTOR VERIFICATION TROUBLE COUNT (1 - 20)                         : 15
DO YOU WANT TO CHANGE "SACM"/"SEQM" MODULE STATE REPORTING? (Y=YES,N=NO)  : Y
DO YOU WANT TO REPORT "SACM"/"SEQM" MODULE STATE CHANGES? (Y=YES,N=NO)  : Y
DO YOU WANT TO CHANGE THE DRIFT COMPENSATION OPERATION? (Y=YES,N=NO)      : Y
DO YOU WANT DRIFT COMPENSATION ENABLED? (Y=YES,N=NO)                     : Y
DO YOU WANT TO CHANGE THE PAGER PROGRAMMING? (Y=YES,N=NO)                : Y
DO YOU WANT THE PAGER ENABLED? (Y=YES,N=NO)                              : Y
DO YOU WANT TO CHANGE THE MODEM PROGRAMMING? (Y=YES,N=NO)                : Y
DO YOU WANT THE MODEM ENABLED? (Y=YES,N=NO)                              : Y
DO YOU WANT TO CHANGE THE NAM PROGRAMMING? (Y=YES,N=NO)                  : Y
DO YOU WANT THE NAM ENABLED? (Y=YES,N=NO)                                : N
DO YOU WANT TO CHANGE THE RAPID POLLING PROGRAMMING? (Y=YES,N=NO)        : Y
DO YOU WANT RAPID POLLING ENABLED? (Y=YES,N=NO)                         : Y
DO YOU WANT TO CHANGE THE SUPERVISORY MODULE ACS REPORTING? (Y=YES,N=NO)  : Y
DO YOU WANT SUPERVISORY MODULES TO ILLUMINATE ACTIVE LED? (Y=YES,N=NO)    : Y

```

### Day/Night Sensitivity

The function of Day/Night sensitivity is to force intelligent detectors into high or low sensitivity when the appropriate zones are active, regardless of the detectors normal sensitivity setting. If both the high and low zones are active, the system is forced to high sensitivity. The Day/Night high and low sensitivity zones may be individually activated by control-by-event (CBE) equations written for this purpose or through the use of control-by-time equations.

The capability of the control panel to provide the function of day/night sensitivity can be enabled/disabled in both Full and Partial System Programming. However, the day/night sensitivity option (for addressable detectors) must be enabled/disabled individually for each SLC Loop device.

The following must be performed when programming Day/Night Detector Sensitivity:

- Enable the Day/Night Sensitivity and set the zone number. This is a global setting.
- Select Day/Night Sensitivity for each individual detector. For example:

```

Detector 1 = YES
Detector 2 = NO
Detector 3 = YES
Detector 4 = YES

```

### Detector Verification Trouble

If set, the control panel will generate a trouble for each intelligent detector which exceeds the verification counter trouble limit. This feature can be used to isolate those devices which excessively go into detector verification before causing false alarm conditions in the panel. To clear this condition reset the detector verification counters as described in Section 2.6.

### SACM/SEQM Module Reporting

If selected for reporting, module state changes for modules with the software type ID SACM or SEQM will be printed out. See *Software Type IDs* for further information on all software type IDs.

### Drift Compensation

If set, the addressable detectors will automatically compensate for environmental contaminants and other factors over time, until the drift tolerance value has been exceeded. When the drift tolerance value has been exceeded, the control panel will signal a maintenance alert for the appropriate detector.

### **Pager**

The Pager mode must be enabled when a compatible pager is connected to the auxiliary printer port.

### **Modem**

If enabled, the following remote device (CRT) functions are inhibited: ACK STEP, SIGNAL SILENCE, SYSTEM RESET, PROGRAMMING, and ALTER STATUS. This option must be employed when a modem is used to receive signals from an off-premise device. See the TPI-232 manual.

### **NAM**

The NAM-232 is used to tie a remote FACP to the **NOTI•FIRE•NET™** via telephone lines. If the NAM is enabled, the following options are automatically programmed as indicated:

- Terminal Supervision = Enabled
- Terminal Status Line = Enabled
- Receiving Unit Mode = Enabled
- Event Reminder = Disabled
- Reports Redirected to Terminal = Enabled
- Modem = Disabled

This special application only supports the ACKNOWLEDGE, SIGNAL SILENCE, and SYSTEM RESET network functions and is intended for Protected Premises Fire Alarm System (Local) use only. Local use of a CRT, printer or other 232 device from the remote FACP is prohibited. No other system network functions can be implemented due to system constraints. For more information refer to the *NAM-232 for Use With AM2020/AFP1010* Manual, Document 50424.

### **Rapid Polling**

The AM2020/AFP1010 has the option to utilize a rapid polling algorithm to process certain monitor modules on a priority basis. When used properly, this can result in a much faster response from fire alarm call points (pull stations) and security devices. If Rapid Polling is enabled, the first 20 module addresses on each LIB SLC loop are polled more frequently than the other addresses and should be used for high priority input devices when using this feature. XPM-8 circuits and output devices (CMX and XPC-8 circuits) should not be assigned addresses in the rapid polling range.

### **Supervisory Module ACS Reporting**

If selected for reporting, activation of modules with the software type ID SUPR or SPSU will cause the primary (top) LED to light instead of the secondary (bottom) LED for an ACS Annunciator Point.

## Section 1.2 Full System Programming



### 2=FSYS

Option 2 from the Programming Menu walks the programmer through complete initial programming of system-wide functions. Alarm Verification, Signal-Silence Inhibit, Signal Cut-Out, and the supervision of peripherals are all programmed under this option, as well as the number of AVPS, APS-6R, LIBs, ISIB and Annunciator Modules in the system, and SLC Loop styles. The following CRT display illustrates the screen prompts during the installation of three SLC loops, four Annunciator Modules and the enabling of all optional functions. Refer to Chapter One of this manual for information on LIB-400 and its correct slot address.

*For information on the parameters programmed here, refer to Partial System Programming.*

```

PRESS 1=PSYS,2=FSYS,3=PPRG,4=FPRG,5=REMU,6=PSWD,7=MSG,8=HIS           : 2
IS LIB BOARD 01 TO BE INSTALLED IN SYSTEM?                           : Y
ENTER THE STYLE OF SLC LOOP 01 (6 OR 4)                               : 6
IS LIB BOARD 02 TO BE INSTALLED IN SYSTEM?                           : Y
ENTER THE STYLE OF SLC LOOP 02 (6 OR 4)                               : 4
IS LIB BOARD 03 TO BE INSTALLED IN SYSTEM?                           : Y
ENTER THE STYLE OF SLC LOOP 03 (6 OR 4)                               : 6
IS LIB BOARD 04 TO BE INSTALLED IN SYSTEM?                           : N
IS LIB BOARD 05 TO BE INSTALLED IN SYSTEM?                           : N
IS LIB BOARD 06 TO BE INSTALLED IN SYSTEM?                           : N
IS LIB BOARD 07 TO BE INSTALLED IN SYSTEM?                           : N
IS LIB BOARD 08 TO BE INSTALLED IN SYSTEM?                           : N
IS LIB BOARD 09 TO BE INSTALLED IN SYSTEM?                           : N
IS LIB BOARD 10 TO BE INSTALLED IN SYSTEM?                           : N
DO YOU WANT THE DETECTOR VERIFICATION TIME ENABLED? (Y=YES,N=NO)      : Y
ENTER THE DETECTOR VERIFICATION TIME (5 - 50 IN 1 SECOND INCREMENTS) : 45
DO YOU WANT THE SIGNAL SILENCE INHIBIT TIME ENABLED? (Y=YES,N=NO)     : Y
ENTER THE SIGNAL SILENCE INHIBIT TIME (1 - 255 IN 1 SECOND INCREMENTS) : 60
DO YOU WANT THE SIGNAL CUT-OUT TIME ENABLED? (Y=YES,N=NO)             : Y
ENTER THE SIGNAL CUT-OUT TIME (1 - 2040 IN 1 SECOND INCREMENTS)       : 1200
ENTER THE NUMBER OF AVPS-24 INSTALLED IN THE SYSTEM (0 - 16)          : 4
ENTER ZXXX OF HIGHEST FORWARD ACTIVATED ZONE IN SYSTEM                : Z200
DO YOU WANT THE TERMINAL SUPERVISION ENABLED? (Y=YES,N=NO)           : Y
DO YOU WANT THE TERMINAL STATUS LINE ENABLED? (Y=YES,N=NO)           : Y
DO YOU WANT THE AUXILIARY PRINTER ENABLED? (Y=YES,N=NO)              : Y
DO YOU WANT TO REPORT CONTROL MODULE STATE CHANGES? (Y=YES,N=NO)    : Y
DO YOU WANT TO REPORT "NONA"/"NOA" MODULE STATE CHANGES? (Y=YES,N=NO) : Y
WERE ALL ADDRESSABLE DEVICES FACTORY-PURCHASED AFTER 4/1/91? (Y=YES,N=NO) : Y
DO YOU WANT TO ENABLE "LED LATCHING" FOR MORE DEVICES? (Y=YES,N=NO)   : Y
DO YOU WANT TO TRANSMIT DATA UNDER PRINTER ERROR CONDITIONS? (Y=YES,N=NO) : N
DO YOU WANT BIDIRECTIONAL COPY ENABLED? (Y=YES,N=NO)                 : Y
DO YOU WANT THE PRIMARY PRINTER TROUBLE INHIBITED? (Y=YES,N=NO)      : Y
DO YOU WANT TO REDIRECT PRINTER REPORTS TO THE TERMINAL? (Y=YES,N=NO) : N
DO YOU WANT TO PROGRAM LOCAL MODE? (Y=YES,N=NO)                      : Y
ENTER MAXIMUM ADDRESS FOR DETECTOR LOCAL MODE (1 - 99)                : 45
ENTER MAXIMUM ADDRESS FOR MONITOR MODULE LOCAL MODE (1 - 99)          : 26
ENTER MAXIMUM ADDRESS FOR CONTROL MODULE LOCAL MODE (1 - 99)          : 19
DO YOU WANT TO MODIFY NFPA LISTINGS? (Y=YES,N=NO)                    : Y
SELECT NFPA LISTING - 1=72A,2=72B,3=72C,4=72D,5=71,6=RCV              : 1
DO YOU WANT TO PROGRAM OR REMOVE THIS LISTING? (Y=PRG,N=RMV)         : Y
DO YOU WANT TO MODIFY NFPA LISTINGS? (Y=YES,N=NO)                    : Y
SELECT NFPA LISTING - 1=72A,2=72B,3=72C,4=72D,5=71,6=RCV              : 2
DO YOU WANT TO PROGRAM OR REMOVE THIS LISTING? (Y=PRG,N=RMV)         : Y
DO YOU WANT TO MODIFY NFPA LISTINGS? (Y=YES,N=NO)                    : N
ENTER THE TYPE OF BATTERY INSTALLED (L=LEAD-ACID,N=NICAD)            : N
ENTER THE BATTERY CAPACITY (9 - 32 IN 1 AHR INCREMENTS)              : 32
ENTER THE BATTERY STANDBY TIME (4, 24, 48 OR 60 HR)                  : 4
DO YOU WANT 24 HOUR HIGH RATE CHARGE FOR BATTERY? (Y=YES,N=NO)       : Y
```

AM2020 only

Include number of APS-6R here

```

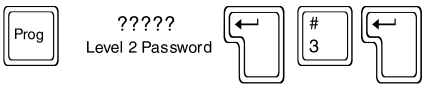
DO YOU WANT THE EVENT REMINDER ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT THE DEVICE BLINK ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT THE PRE-ALARM FUNCTION ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT THE INTELLIGENT SIB ENABLED? (Y=YES,N=NO) : Y
IS ANNUNCIATOR 01 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : Y
ENTER 20 CHARACTER CUSTOM LABEL : ANNUNCIATOR 1
IS ANNUNCIATOR 02 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 04 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 05 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 06 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 07 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 08 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 09 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 10 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 11 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 12 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : Y
ENTER 20 CHARACTER CUSTOM LABEL : ANNUNCIATOR 12
IS ANNUNCIATOR 13 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 14 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 15 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 16 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 17 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 18 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : Y
ENTER 20 CHARACTER CUSTOM LABEL : ANNUNCIATOR 18
IS ANNUNCIATOR 19 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 20 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 21 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 22 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 23 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 24 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 25 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 26 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 27 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 28 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 29 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 30 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
IS ANNUNCIATOR 31 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : Y
ENTER 20 CHARACTER CUSTOM LABEL : ANNUNCIATOR 31
IS ANNUNCIATOR 32 TO BE INSTALLED IN SYSTEM? (Y=YES,N=NO) : N
* ENTER THE INTELLIGENT SIB ADDRESS (0 - 249) : 160
* ENTER THE MIB-W VALUE THRESHOLD FOR CHANNEL A (H=HIGH,L=LOW) : H
* ENTER THE MIB-W VALUE THRESHOLD FOR CHANNEL B (H=HIGH,L=LOW) : H
* DO YOU WANT TO USE BOTH MIB DATA PORTS? (Y=YES,N=NO) : Y
DO YOU WANT A HIGH DAY/NIGHT SENSITIVITY ZONE? (Y=YES,N=NO) : Y
ENTER HIGH DAY/NIGHT SENSITIVITY ZONE (ZXXX) : Z200
DO YOU WANT A LOW DAY/NIGHT SENSITIVITY ZONE? (Y=YES,N=NO) : Y
ENTER LOW DAY/NIGHT SENSITIVITY ZONE (ZXXX) : Z201
DO YOU WANT THE DETECTOR VERIFICATION TROUBLE ENABLED? (Y=YES,N=NO) : Y
ENTER DETECTOR VERIFICATION TROUBLE COUNT (1 - 20) : 15
DO YOU WANT TO REPORT "SACM"/"SEQM" MODULE STATE CHANGES? (Y=YES,N=NO) : Y
DO YOU WANT DRIFT COMPENSATION ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT THE PAGER ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT THE MODEM ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT THE NAM ENABLED? (Y=YES,N=NO) : N
DO YOU WANT RAPID POLLING ENABLED? (Y=YES,N=NO) : Y
DO YOU WANT SUPERVISORY MODULES TO ILLUMINATE ACTIVE LED? (Y=YES,N=NO) : Y
PROGRAMMING COMPLETE - POWER DOWN TO MAKE APPROPRIATE CHANGES

```

\* These items are **NOTI•FIRE•NET™** specific functions and are only programmed when a SIB-NET is used.

See notes in Section 1.1, Partial System Programming.

# Section 1.3 Partial Point Programming



## 3=PPRG

Option 3 from the Programming Menu allows the programmer to change the operational parameters of SLC Loop devices, software-defined zones, and annunciator points.

After selecting option 3 from the Main Programming menu, the display will show the Partial Point Programming submenu:

PRESS 1=TYPID, 2=CBE, 3=LBL, 4=OPTNS, 5=AMAP, 6=CCBE :

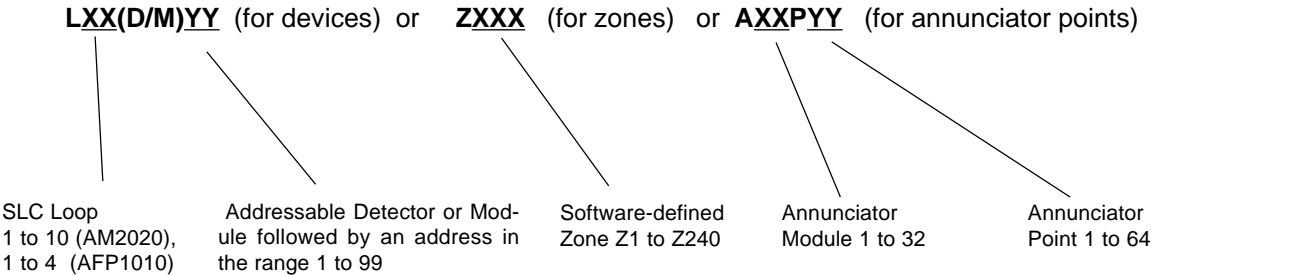
The Partial Point Programming submenu has six options, where:

- 1=TYPID**    **Type ID** - Changing the software type identification of SLC Loop devices, zones and annunciator points.
- 2=CBE**     **Control-By-Event** - Redefining the Control-By-Event associated with each detector, module, or zone.
- 3=LBL**     **Label** - Renaming the custom user label for any detector, module, or zone.
- 4=OPTNS**   **Options** - Selecting the optional features associated with any detector or module.
- 5=AMAP**    **Annunciator Point Mapping** - Selecting Annunciator Point Mapping for any detector, module, or zone.
- 6=CCBE**    **Cooperative Control-By-Event** - Edit the CCBE associated with reverse activated zones for **NOTI•FIRE•NET**.

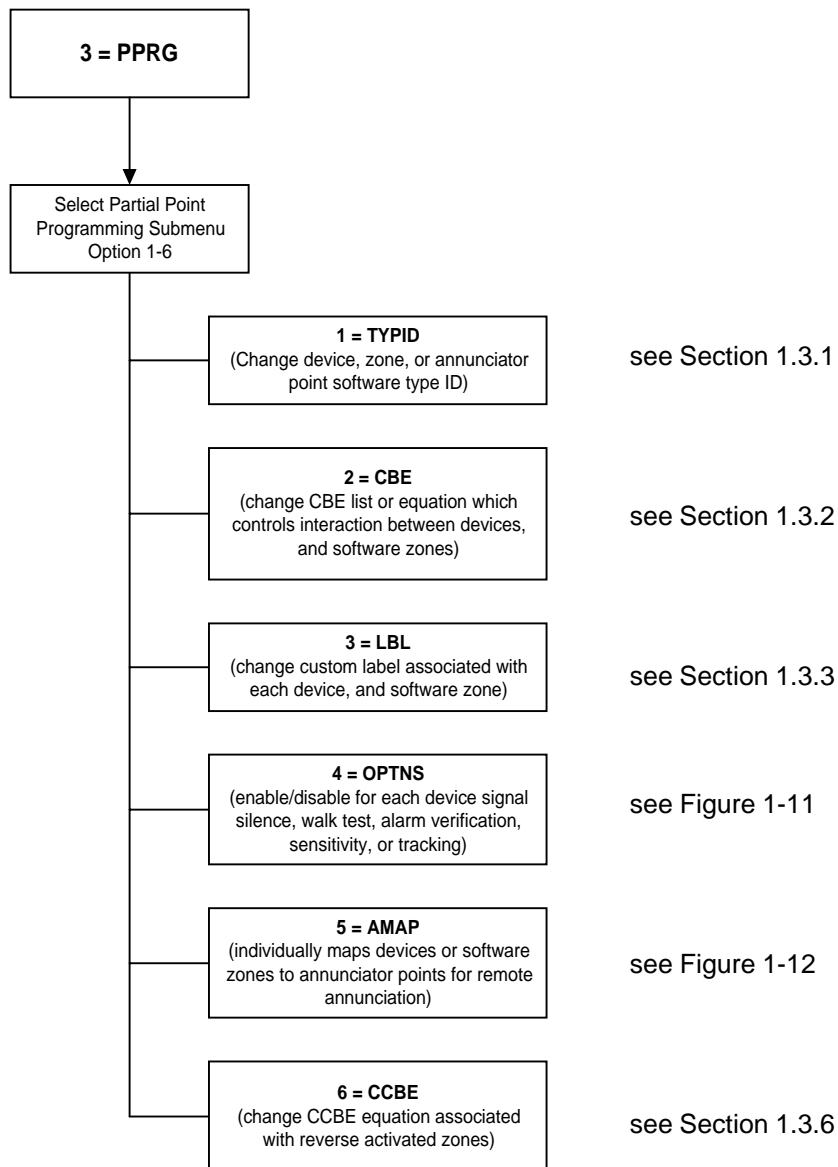
The Partial Point Programming flow chart is located in Figure 1-10. Detailed information on the Partial Point Programming options follows.

### NOTE

Each option under Partial Point Programming prompts the programmer to enter the address of the detector, module, zone, or annunciator point to be affected. Leading zeros are not required. The address assumes the following format:

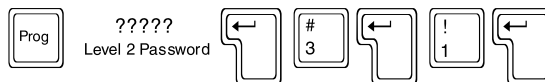


**Example:** For the 44th module on SLC Loop 3, enter **L3M44**



**Figure 1-10 Partial Point Programming Flow Chart**

## Section 1.3.1 Type ID



### 1=TYPID

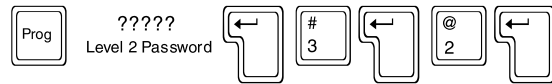
Option 1 of the Partial Point Programming Menu allows the programmer to change the Software Type ID of any detector, module, zone or annunciator point. This pre-setting of all devices in the system gives the control panel the ability to execute specific functions for each device type. The following CRT display illustrates the assignment of the Software Type ID SCON to the 14th monitor module on SLC Loop 3.

```

PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT)
ENTER TYPE ID
: 1
: L3M14
: SCON
  
```

For a complete description of the various software type IDs, see *Software Type IDs*.

## Section 1.3.2 Control-By-Event



### 2=CBE

Option 2 of the Partial Point Programming Menu allows the programmer to change the Control-By-Event (CBE) for any detector, module or software zone. The panel maintains a CBE for each device and zone installed in the system.

#### NOTE

A software zone is not a physical zone, but rather a software grouping in control panel memory.

When programming a particular device, the control panel prompts the programmer with:

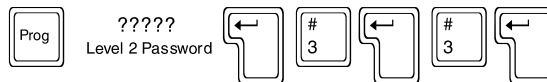
```
ENTER CONTROL-BY-EVENT :
```

The following CRT screen display illustrates CBE programming for smoke detector number 23 on SLC Loop 2 to activate software zones 15 and 29.

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE : 2
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT) : L2D23
ENTER CONTROL-BY-EVENT :
(Z15 Z29)
```

For a complete description of the types, parameters, limitations, and guidelines of CBE programming, see *Control-By-Event Programming* in Section Four.

## Section 1.3.3 Label



### 3=LBL

Option 3 of the Partial Point Programming Menu allows the programmer to change the 20-Character Custom Label associated with each detector, module, or software zone in the system. Acceptable characters for device or zone labels are as follows:

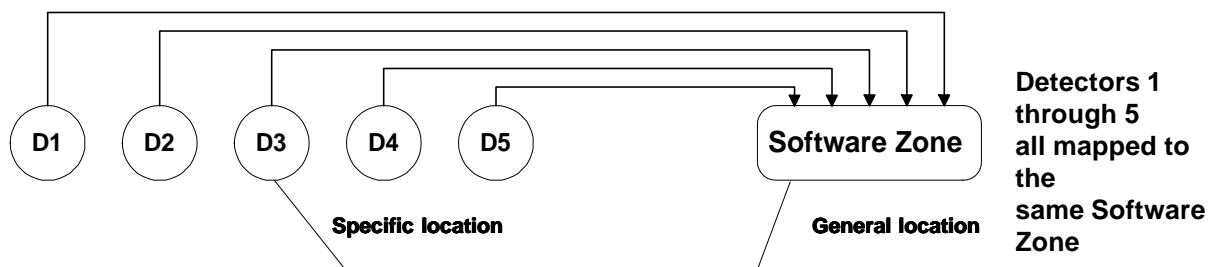
*Letters A through Z, digits 0 through 9, periods (.), dashes (-), and spaces.*

The following CRT display illustrates renaming control module 21 on SLC Loop 1.

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE : 3
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT) : L1M21
ENTER 20 CHARACTER CUSTOM LABEL : MAIN LOBBY BELLS
```

#### Programming Tip:

Creative use of the Label feature allows the programmer to be extremely specific in naming each SLC Loop device. For instance, for a group of addressable devices congregated in a particular area (such as a floor or a section of a building), map each device to the same software zone and label the zone to serve as an additional 20 characters of information to the individual device labels. Assume Detector 3 initiates an alarm:



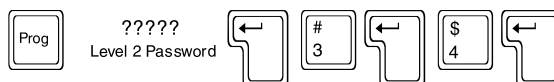
**ALARM: SMOKE(PHOTO) GUEST KITCHEN**

**3RD FLOOR WEST WING 05:48P 03/01/97 103**

The result is a 40-character label that characterizes a particular addressable device.



## Section 1.3.4 Optional Features

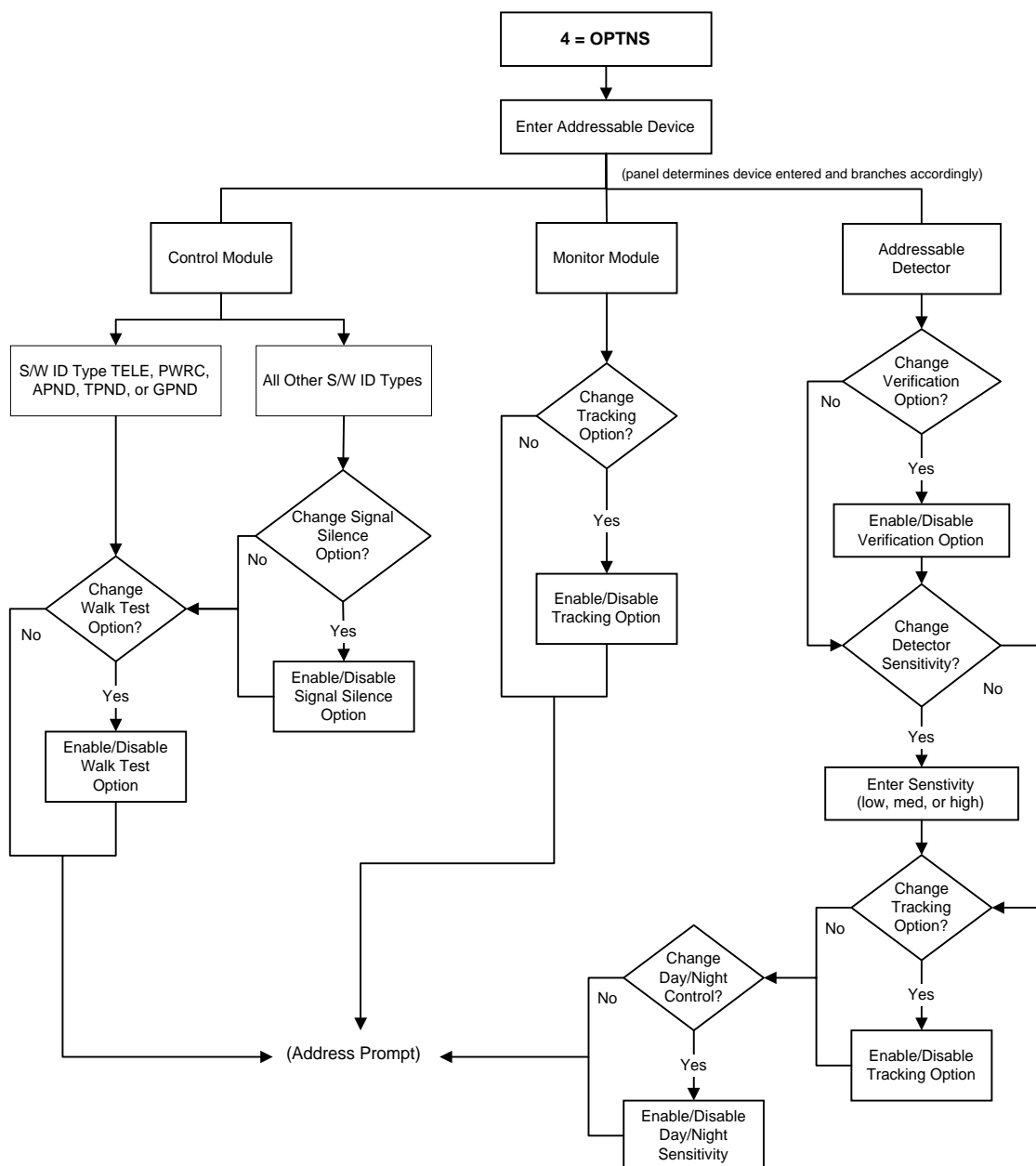


### 4=OPTNS

Option 4 of the Partial Point Programming Menu allows the programmer to individually enable or disable, per device, the functions of Signal Silence and Walk Test (for control modules), Alarm Verification and Sensitivity (for addressable detectors), and Tracking (addressable detectors and monitor modules). These functions must still be enabled or disabled, as appropriate, for the entire system (see *Partial System Programming*). For an explanation of the functions of Signal Silence, Alarm Verification, Sensitivity, and Tracking, see the *Glossary of Terms and Abbreviations* at the end of this manual. The Optional Features flow chart is located in Figure 1-11.

### NOTE

The AM2020/AFP1010 will not permit Signal Silence programming for control modules with software type IDs, TELE, PWRC, APND, TPND, and GPND. See *Software Type IDs* for an explanation of all software type IDs.



**Figure 1-11 Optional Features Flow Chart**

### A control module example:

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE : 4
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT) : L3M20
DO YOU WANT TO CHANGE THE SIGNAL SILENCE OPTION FOR THIS DEVICE? (Y=YES,N=NO): Y
IS THE SIGNAL SILENCE OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO) : Y
DO YOU WANT TO CHANGE THE WALK TEST OPTN FOR THIS DEVICE? (Y=YES,N=NO) : Y
IS THE WALK TEST OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO) : Y
```

### A monitor module example:

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE : 4
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT) : L5M13
DO YOU WANT TO CHANGE THE TRACKING OPTN FOR THIS DEVICE? (Y=YES,N=NO) : Y
IS THE TRACKING OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO) : Y
```

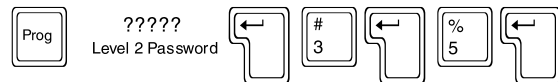
### An addressable smoke detector example:

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE : 4
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT) : L5D17
DO YOU WANT TO CHANGE THIS DETECTORS VERIFICATION OPTION? (Y=YES,N=NO) : Y
IS THE DETECTOR VERIFICATION OPTN TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO): Y
DO YOU WANT TO CHANGE THIS DETECTORS SENSITIVITY SELECTION? (Y=YES,N=NO) : Y
ENTER THE DETECTOR SENSITIVITY SELECTION FOR THIS DEVICE (L=LOW,M=MED,H=HIGH): M
DO YOU WANT TO CHANGE THE TRACKING OPTN FOR THIS DEVICE? (Y=YES,N=NO) : Y
IS THE TRACKING OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO) : Y
DO YOU WANT TO CHANGE THE DAY/NIGHT CONTROL FOR THIS DEVICE? (Y=YES,N=NO) : Y
IS THERE DAY/NIGHT SENSITIVITY CONTROL FOR THIS DEVICE? (Y=YES,N=NO) : Y
```

### NOTE

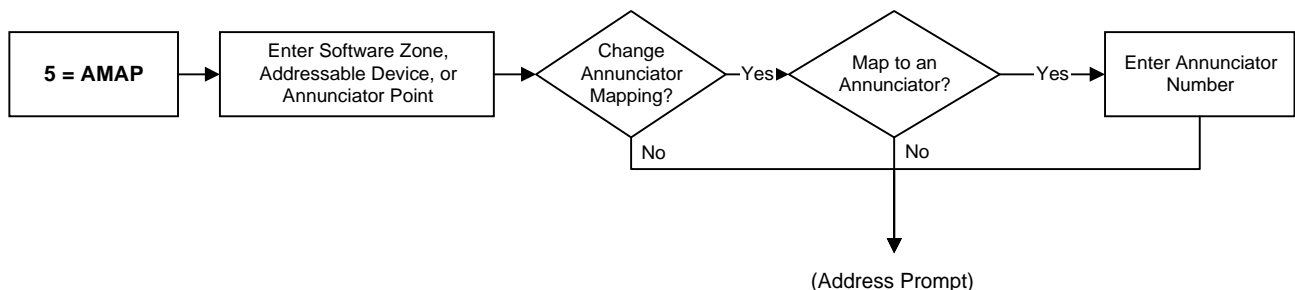
Control modules that activate monitor modules via physical connections must not have the walk test option enabled.

## Section 1.3.5 Annunciator Mapping



### 5=AMAP

Option 5 of the Partial Point Programming Menu allows the programmer to individually map devices or zones to annunciator points for remote annunciation. The Annunciator Point Mapping Option Flow Chart is located in Figure 1-12.



**Figure 1-12 Annunciator Mapping Option Flow Chart**

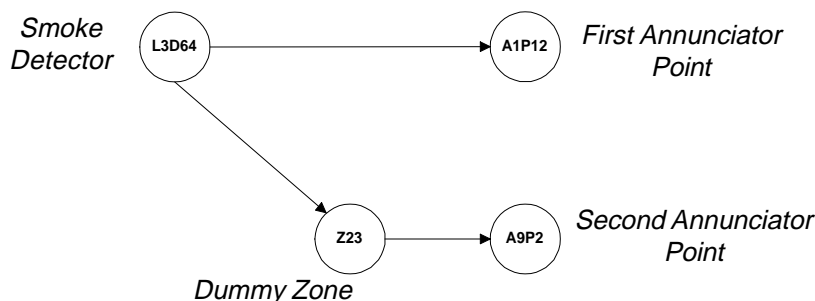
The following CRT display illustrates mapping monitor module 11 on SLC Loop 1 to Annunciator Module 1, Point 1.

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE           : 5
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT) : L1M11
DO YOU WANT TO CHANGE THE ANNUNCIATOR MAPPING FOR THIS POINT? (Y=YES,N=NO) : Y
DO YOU WANT THIS POINT MAPPED TO AN ANNUNCIATOR? (Y=YES,N=NO) : Y
ENTER AXXPPY FOR ANNUNCIATOR POINT MAPPING : A1P1
```

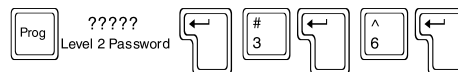
If an annunciator point has more than one control point mapped to it, then all the control points must have identical control-by-event and signal silence programming. Each telephone point must have its own distinct annunciator point for telephone "ring-signal" to function. Each annunciator point must be installed through Full Point Programming before a device, module, or software zone may be mapped to it.

#### NOTE

Each detector, module or zone may only be mapped to one annunciator point. Therefore, if it is desired to map a detector, module or zone to more than one annunciator point; the detector, module or zone may be mapped to a dummy zone and the dummy zone may be mapped to an annunciator point. This is for annunciation purposes only. If control is desired from both annunciators, then custom shadow annunciator software must be used. Contact Notifier for further information. For annunciator point mapping information on an AM2020/AFP1010 with **NOTI•FIRE•NET**, refer to Chapter Two, *Operation*, in the INA manual, document 15092.



### \*Section 1.3.6 Cooperative Control-By-Event



#### 6=CCBE

Option 6 of the Partial Point Programming Menu allows the programmer to change the Cooperative Control-By-Event (CCBE) for any reverse activated zone when using the AM2020/AFP1010 with the **NOTI•FIRE•NET**.

#### NOTE

A software zone is not a physical zone, but rather a software grouping in control panel memory. When programming a particular reverse zone, the control panel prompts the programmer with:

```
ENTER COOPERATIVE CONTROL-BY-EVENT :
```

The following CRT screen display illustrates CCBE programming for reverse zone number 220 to activate other zones on **NOTI•FIRE•NET** network nodes.

```
PRESS 1=TYPID,2=CBE,3=LBL,4=OPTNS,5=AMAP,6=CCBE           : 6
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. INSTALL (BCKSPC TO ABORT) : Z220
ENTER COOPERATIVE CONTROL-BY-EVENT :
OR(N8Z1 N8Z2 N8Z3 N8Z4 AND(N9Z1 N9Z2 N9Z3 N9Z4) AND(N10Z1 N10Z2 N10Z3 N10Z4))
```

For a complete description of the types, parameters, limitations, and guidelines of CCBE programming, see *Control-By-Event Programming* in Section Four.

\*This item is a **NOTI•FIRE•NET** specific function and is only programmed if a SIB-NET is used.

## Section 1.4 Full Point Programming



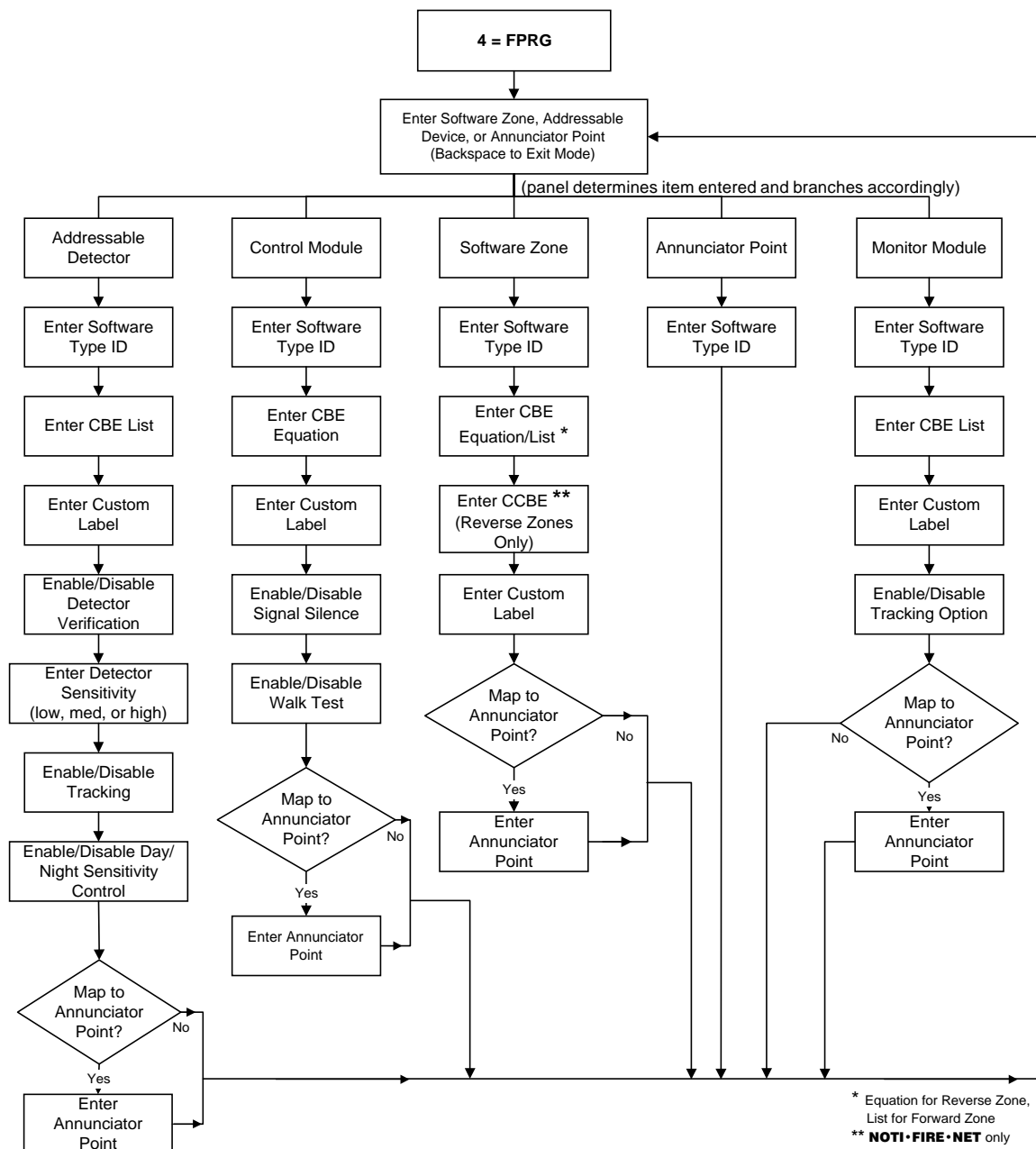
### 4=FPRG

Option 4 from the Programming Menu allows the programmer to completely program of all the addressable detectors, modules, software-defined zones and annunciator points in the AM2020/AFP1010 system. The programming examples illustrate the CRT screen prompts displayed during Full Point Programming.

For a description of each of the parameters programmed here, refer to *Partial Point Programming*.

### NOTE

The control panel continuously loops back through the Full Point Programming routine, allowing the programmer to enter devices, software zones or annunciator points one after the other. Use the Backspace key to exit Full Point Programming.



**Figure 1-13 Full Point Programming Flow Chart**

### Example: Programming Addressable Detectors

Photoelectric Smoke Detector on SLC LOOP 2 programmed to activate two software zones (Z13, Z29) and a control module (L2M19), and also mapped to annunciator module address "02" point "02".

```
PRESS 1=PSYS,2=FSYS,3=PPRG,4=FPRG,5=REMU,6=PSWD,7=MSG,8=HIS      : 4
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. INSTALL (BCKSPC TO ABORT) : L2D23
ENTER TYPE ID                                                       : PHOT
ENTER CONTROL-BY-EVENT                                             :
(Z13 Z29 L2M19)
ENTER 20 CHARACTER CUSTOM LABEL                                     : MAIN LOBBY DETECTOR
IS THE DETECTOR VERIFICATION OPTN TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO): Y
ENTER THE DETECTOR SENSITIVITY SELECTION FOR THIS DEVICE (L=LOW,M=MED,H=HIGH): H
IS THE TRACKING OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO)   : Y
IS THERE DAY/NIGHT SENSITIVITY CONTROL FOR THIS DEVICE? (Y=YES,N=NO) : Y
DO YOU WANT THIS POINT MAPPED TO AN ANNUNCIATOR? (Y=YES,N=NO)       : Y
ENTER AXXPPY FOR ANNUNCIATOR POINT MAPPING                         : A2P2
```

### Example: Programming Annunciator Points

Installation of individual annunciator points.

```
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. INSTALL (BCKSPC TO ABORT) : A12P10
ENTER TYPE ID                                                         : ADET
```

### Example: Programming Monitor Modules

Monitor Module on SLC Loop 3 programmed to monitor a full zone of conventional 4-wire smoke detectors, and activate a software zone (Z13), and also mapped to annunciator module address "02" point "03".

```
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT.INSTALL (BCKSPC TO ABORT) : L3M15
ENTER TYPE ID                                                         : SCON
ENTER CONTROL-BY-EVENT                                             :
(Z13)
ENTER 20 CHARACTER CUSTOM LABEL                                     : BASEMENT DETECTORS
IS THE TRACKING OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO)   : N
DO YOU WANT THIS POINT MAPPED TO AN ANNUNCIATOR? (Y=YES,N=NO)       : Y
ENTER AXXPPY FOR ANNUNCIATOR POINT MAPPING                         : A2P3
```

### Example: Programming Control Modules

Control Module on SLC Loop 2 programmed to turn on in response to an alarm condition on either of two software zones (Z13 or Z29), and also mapped to annunciator module address "02" point "04".

```
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. INSTALL (BCKSPC TO ABORT) : L2M19
ENTER TYPE ID                                                         : CON
ENTER CONTROL-BY-EVENT                                             :
OR(Z13 Z29)
ENTER 20 CHARACTER CUSTOM LABEL                                     : MAIN LOBBY BELLS
IS THE SIGNAL SILENCE OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO) : Y
IS THE WALK TEST OPTION TO BE ENABLED FOR THIS DEVICE? (Y=YES,N=NO)   : Y
DO YOU WANT THIS POINT MAPPED TO AN ANNUNCIATOR? (Y=YES,N=NO)       : Y
ENTER AXXPPY FOR ANNUNCIATOR POINT MAPPING                         : A2P4
```

### NOTE

Control modules that activate monitor modules via physical connections must not have the walk test option enabled.

### Example: Programming Software Zones

Software Zone 13 programmed as a forward zone to activate two other software zones (Z15 and Z29), and also mapped to annunciator module address "02" point "05".

```
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. INSTALL (BCKSPC TO ABORT)      : Z13
ENTER TYPE ID                                                            : FZON
ENTER CONTROL-BY-EVENT                                                  :
(Z15 Z29)
ENTER 20 CHARACTER CUSTOM LABEL                                         : FIRST FLOOR
DO YOU WANT THIS POINT MAPPED TO AN ANNUNCIATOR? (Y=YES,N=NO)          : Y
ENTER AXXPPY FOR ANNUNCIATOR POINT MAPPING                             : A2P5
```

Reverse zones on an AM2020/AFP1010 system with **NOTI•FIRE•NET** can be programmed with both CBE and CCBE equations. Below is an example of Zone 220 programmed as a reverse zone to activate zones on other network nodes.

```
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. INSTALL (BCKSPC TO ABORT)      : Z220
ENTER TYPE ID                                                            : RZON
ENTER CONTROL-BY-EVENT                                                  :
( )
* ENTER COOPERATIVE CONTROL-BY-EVENT                                    :
* OR(N8Z1 N8Z2 N8Z3 N8Z4 AND(N9Z1 N9Z2 N9Z3 N9Z4) AND(N10Z1 N10Z2 N10Z3 N10Z4))
ENTER 20 CHARACTER CUSTOM LABEL                                         : LIBRARY
DO YOU WANT THIS POINT MAPPED TO AN ANNUNCIATOR? (Y=YES,N=NO)          : N
```

\* This item is a **NOTI•FIRE•NET** specific function and is only programmed when a SIB-NET is used.

## Section 1.5 Remove



### 5=REMV

Option 5 from the Programming Menu allows the programmer to remove (from control panel memory) SLC Loop devices, software-defined zones or annunciator points. The devices can still be installed in the system, but the AM2020/AFP1010 will stop looking for these devices by not addressing them.

#### NOTES

- Devices that are removed will not function in any capacity until reinstalled under Full Point Programming. *CAUTION - devices that have had their LEDs latched ON must be returned to their normal state before removal (execute System Reset for detectors or control OFF for modules).*
- Unacknowledged points must be acknowledged prior to removal.

The programming example below illustrates the CRT screen prompts during removal of an SLC Loop device (smoke detector 34 on SLC Loop 10).

```
PRESS 1=PSYS,2=FSYS,3=PPRG,4=FPRG,5=REMV,6=PSWD,7=MSG,8=HIS          : 5
ENTER LXX(D/M)YY, ZXXX OR AXXPPYY FOR PT. REMOVAL (BCKSPC TO ABORT)      : L10D34
```

## Section 1.6 Password



### 6=PSWD

Option 6 from the Programming Menu allows the programmer to change the Level One and Level Two passwords for the AM2020/AFP1010.

#### NOTES

- The AM2020/AFP1010s are shipped with initial Level One and Level Two passwords of 00000. As a security measure, the control panel does not echo password digits to the DIA and CRT screen. Rather, it displays an asterisk (\*) for each digit entered. After entering five password digits, pressing ENTER (on the DIA) or RETURN (on the CRT) places the new password into operation.
- Acceptable characters for a password are the digits 0-9.

```
PRESS 1=PSYS,2=FSYS,3=PPRG,4=FPRG,5=REMV,6=PSWD,7=MSG,8=HIS          : 6
PRESS 1=LEVEL ONE,2=LEVEL TWO                                           : 2
ENTER LEVEL TWO PASSWORD: *****
```

### A Forgotten Password?

If a Level One or Level Two password is incorrectly entered, the panel will respond by displaying a special code word and prompt the programmer to reenter the password. If the password has been forgotten, record this code word and contact NOTIFIER. After proper authentication, the original password can be determined from deciphering the code word. An example of this code word follows:

```
ENTER LEVEL ONE PASSWORD: *****
INVALID PASSWORD:          7129406      REENTER PASSWORD:
```

## Section 1.7 Message



### 7=MSG

Option 7 from the Programming Menu allows the programmer to change the 40-Character Custom User Label for the system. Acceptable characters for the label include Letters A through Z, digits 0 through 9, periods (.), dashes (-), and spaces.

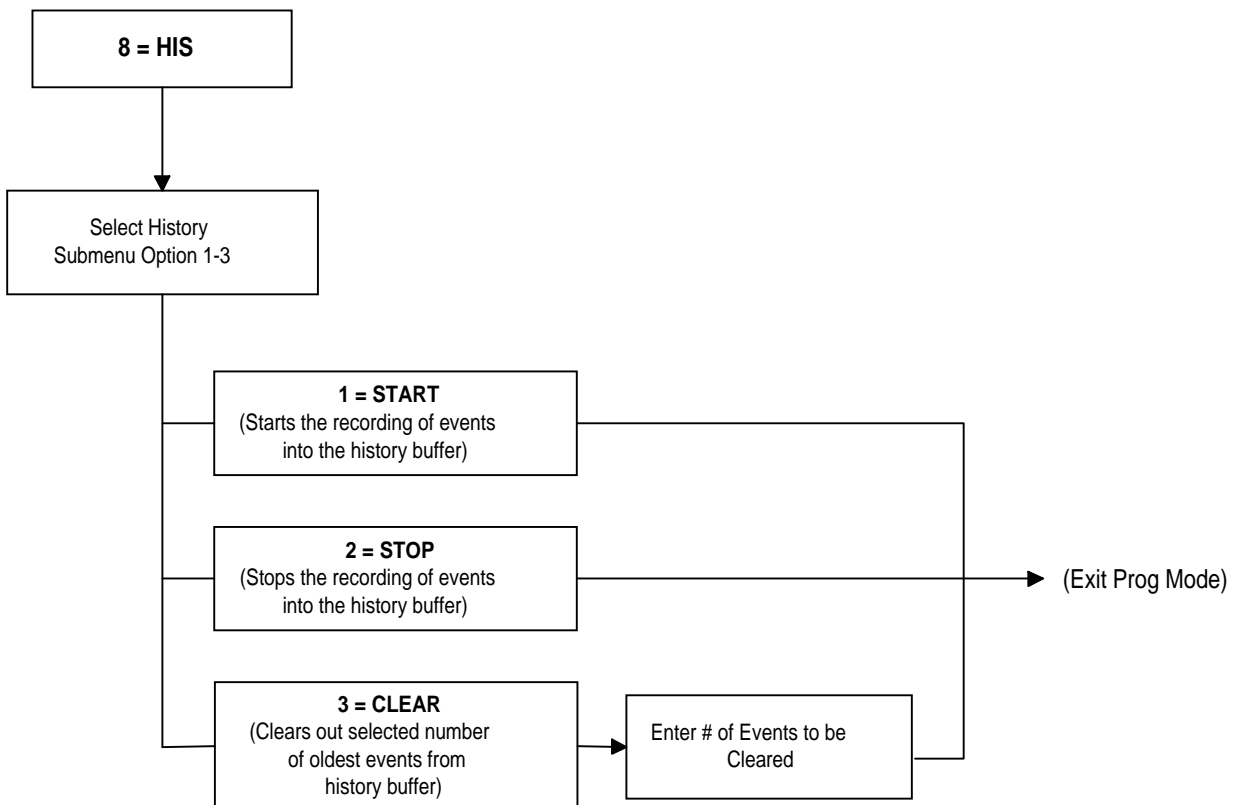
```
PRESS 1=PSYS,2=FSYS,3=PPRG,4=FPRG,5=REMV,6=PSWD,7=MSG,8=HIS          : 7
ENTER 40 CHARACTER CUSTOM USER LABEL : NOTIFIER
```

## Section 1.8 History Mode



### 8=HIS

Option 8 from the Programming Menu allows the programmer to change the parameters associated with History Mode. Once the History option is enabled, the AM2020/AFP1010 has the capability to store the most recent 400 system events.



**Figure 1-14 History Buffer Option Flow Chart**

After selecting option 8 from the Main Programming menu, the display will show the History Mode Programming submenu:

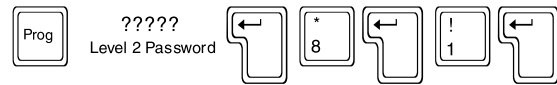
PRESS 1=START,2=STOP,3=CLEAR

:



The History Mode Programming submenu has three options as described below:

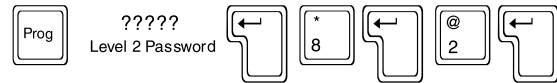
### 1=START



This option allows the programmer to start storing events into the panel's history mode buffer. The following example enables history mode:

```
PRESS 1=START,2=STOP,3=CLEAR                                : 1
```

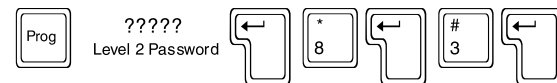
### 2=STOP



This option allows the programmer to stop storing events into the panel's history mode buffer. The following example disables history mode:

```
PRESS 1=START,2=STOP,3=CLEAR                                : 2
```

### 3=CLEAR



This option allows the programmer to clear out of history buffer memory a selected number (1-N, where N represents the number of stored events) of the oldest history events recorded. The following example illustrates this by clearing out the entire history mode buffer.

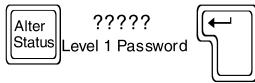
```
PRESS 1=START,2=STOP,3=CLEAR                                : 3
ENTER NUMBER ENTRIES TO CLEAR (1 - 400)                    : 400
```



# Section Two

## The Alter Status Menu

The Alter Status Mode is accessed by entering the following (level 1 password required):



After entering the Alter Status Mode, the display will show the Alter Status menu:

PRESS 1=DIS, 2=CTL, 3=DSEN, 4=TIME, 5=DIAG, 6=WALK, 7=GZON :

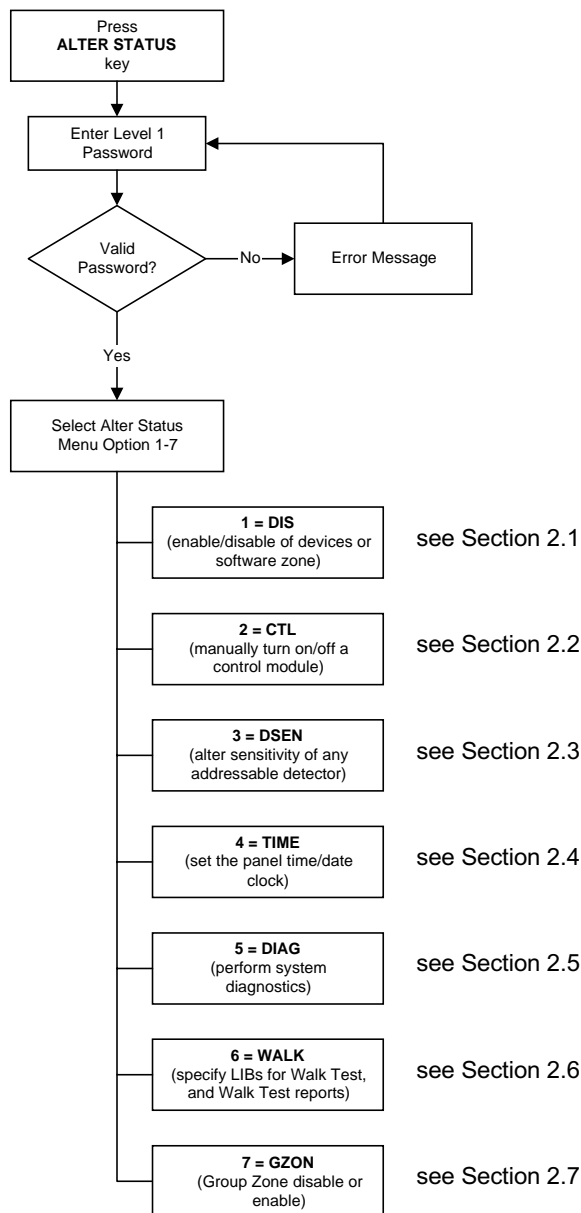
The Alter Status menu has six options, where:

- 1=DIS**     **Disable** - Disabling or enabling any individual addressable detector, module, or software zone in the system.
- 2=CTL**     **Control** - Manually turning on and off a control module.
- 3=DSEN**     **Detector Sensitivity** - Altering the sensitivity of any of the addressable detectors in the system.
- 4=TIME**     **Time** - Resetting the system time/date clock.
- 5=DIAG**     **Diagnostics** - Performing system diagnostics.
- 6=WALK**     **Walk Test** - Allows the programmer to select which Loop Interface Boards will participate in walk test and generates the walk test reports.
- 7=GZON**     **Group Zone** - Allows the programmer to select which zone (and its associated points) to be disabled or enabled as a group.

The Alter Status Menu flow chart is located in Figure 2-1. Detailed information on the Alter Status options follows.

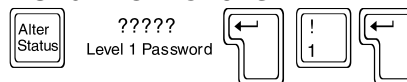
### NOTE

When an AM2020/AFP1010 with **NOTI•FIRE•NET** is in walk test mode, a trouble condition will appear for that AM2020/AFP1010 node at the INA and/or NRT.



**Figure 2-1 Alter Status Menu Flow Chart**

## Section 2.1 Disable Point



### 1=DIS

Option 1 from the Alter Status Menu allows the programmer to disable and subsequently re-enable individual devices or zones. When a point is disabled, it is no longer polled by the AM2020/AFP1010.

The following example illustrates disabling monitor module 4 on SLC Loop 1.

### NOTE

The programmer should **NEVER** disable a point that is in alarm.  
The programmer should never turn on (using option 2 of the Alter Status Menu) or program a disabled point.  
Telephone (TELE) and remote page (PAGE) Type IDs can not be disabled.

```

PRESS 1=DIS,2=CTL,3=DSEN,4=TIME,5=DIAG,6=WALK,7=GZON          : 1
ENTER LXX(D/M)YY, ZXXX OR AXXPPY FOR PT. CHANGE (BCKSPC TO ABORT): L1M4
DO YOU WANT THIS POINT DISABLED? (Y=YES,N=NO)                  : Y

```

## Section 2.2 Control Module



### 2=CTL

Option 2 from the Alter Status Menu allows the programmer to selectively turn on or off control modules from the control panel.

The following example illustrates turning on control module 22 on SLC Loop 1.

```
PRESS 1=DIS,2=CTL,3=DSEN,4=TIME,5=DIAG,6=WALK,7=GZON          : 2
ENTER LXXMY Y FOR CONTROL MODULE CHANGE (BCKSPC TO ABORT)      : L1M22
DO YOU WANT POINT TO BE ON OR OFF? (Y=ON,N=OFF)                : Y
```

## Section 2.3 Detector Sensitivity



### 3=DSEN

Option 3 from the Alter Status Menu allows the programmer to alter the sensitivity of any addressable detector. The sensitivity of a detector can be set at one of three levels - *low, medium and high*.

The following example illustrates setting a high sensitivity for Detector 14 on SLC Loop 3.

```
PRESS 1=DIS,2=CTL,3=DSEN,4=TIME,5=DIAG,6=WALK,7=GZON          : 3
ENTER LXXDYY FOR DETECTOR TO CHANGE (BCKSPC TO ABORT)          : L3D14
ENTER THE DETECTOR SENSITIVITY SELECTION FOR THIS DEVICE (L=LOW,M=MED,H=HIGH): H
```

## Section 2.4 Time



### 4=TIME

Option 4 from the Alter Status Menu allows the programmer to reset the time/date system clock.

```
PRESS 1=DIS,2=CTL,3=DSEN,4=TIME,5=DIAG,6=WALK,7=GZON          : 4
ENTER THE MONTH (1 - 12)                                       : 3
ENTER THE DAY-OF-MONTH (1 - 31)                                  : 1
ENTER THE YEAR (0 - 99)                                         : 93
ENTER THE DAY-OF-WEEK (1=SUN,...,7=SAT)                         : 2
ENTER THE HOURS IN MILITARY TIME (0 - 23)                       : 15
ENTER THE MINUTES (0 - 59)                                      : 37
NOTIFIER                                                         ALL SYSTEMS NORMAL 03:37P 03/01/97
```

### NOTES

- Military time and conventional time are the same for the hours of 1:00 am to noon. To convert conventional time to military time for the hours of 1:00 pm to midnight remove the colon from the conventional time and add the resulting number to 1200. *Example: 1:34 pm conventional time is  $134 + 1200 = 1334$  hours military time (13 hours and 34 minutes).*
- On the **NOTI•FIRE•NET** system, the time and date are synchronized every hour by the master clock node on the network. The last AM2020/AFP1010, INA, or NRT on the network where the time and date were manually programmed is the master clock node.

## Section 2.5 Diagnostics



### 5=DIAG

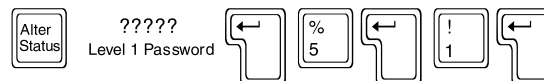
Option 5 from the Alter Status Menu allows the programmer to perform system diagnostics.

The Diagnostics Option submenu is shown below:

PRESS 1=RVER

:

### 1=RVER - Reset Detector Verification Counters



This option allows the programmer to reset the detector verification counters for all installed intelligent detectors and clear all detector verification error conditions.

The detector verification counter associated with each detector indicates how many times that detector has entered the alarm verification routine without producing a valid fire alarm.

The following example illustrates the execution of this option:

PRESS 1=RVER

DO YOU WANT TO RESET THE DETECTOR VERIFICATION COUNTERS? (Y=YES,N=NO)

: 1  
: Y

## Section 2.6 Walk Test



### 6=WALK

Option 6 from the Alter Status Menu allows the programmer to select which LIBs will participate in walk test. Upon completion of walk test, the programmer will be able to choose from the optional walk test reports.

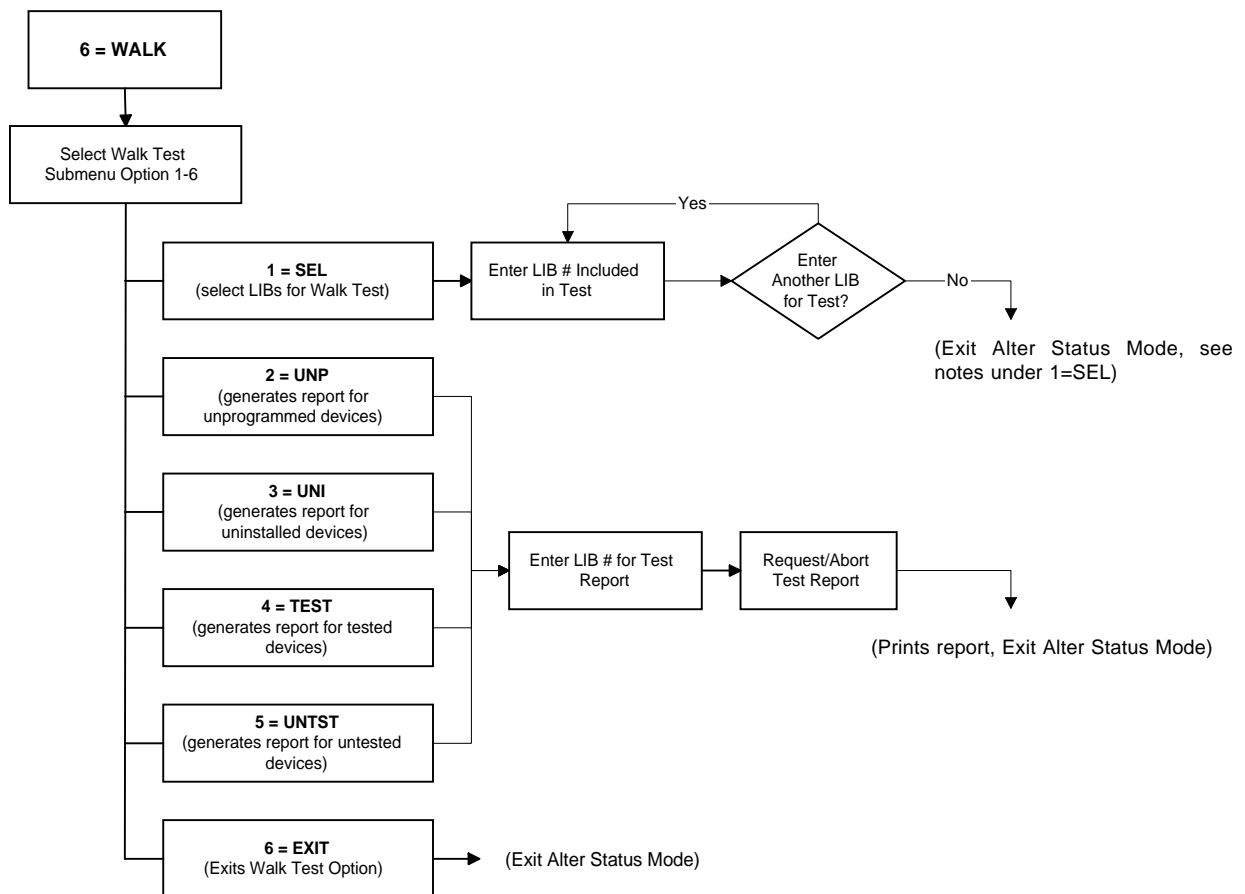
After Selecting option 6 from the Alter Status menu, the display will show the Walk Test submenu:

PRESS 1=SEL, 2=UNP, 3=UNI, 4=TEST, 5=UNTST, 6=EXIT

:

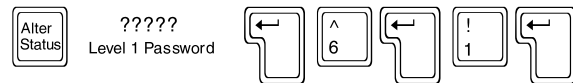
The Walk Test submenu has six options, where:

- 1=SEL    Select** - Select which LIB boards will participate in Walk Test.
- 2=UNP    Unprogrammed Device Report** - Allows the programmer to generate a report for unprogrammed devices in the area designated for Walk Test.
- 3=UNI    Uninstalled Device Report** - Allows the programmer to generate a report for uninstalled devices in the area designated for Walk Test.
- 4=TEST    Tested Devices Report** - Allows the programmer to generate a report for tested devices in the area designated for Walk Test.
- 5=UNTST    Untested Device Report** - Allows the programmer to generate a report for untested devices in the area designated for Walk Test.
- 6=EXIT    Exit Walk Test** - Allows the programmer to exit/abort the Walk Test Mode.



**Figure 2-2 Walk Test Option Flow Chart**

### 1=SEL - Select



This option allows the programmer to select which LIBs will participate in Walk Test. The following example selects LIBs 1 and 3 for Walk Test:

```

PRESS 1=SEL,2=UNP,3=UNI,4=TEST,5=UNTST,6=EXIT           : 1
ENTER LIB NUMBER TO BE INCLUDED IN WALK TEST (1 - 10)      : 1
DO YOU WANT TO ENABLE MORE LIBS FOR WALK TEST? (Y=YES,N=NO) : Y
ENTER LIB NUMBER TO BE INCLUDED IN WALK TEST (1 - 10)      : 3
DO YOU WANT TO ENABLE MORE LIBS FOR WALK TEST? (Y=YES,N=NO) : N
  
```

### NOTES

- Upon completion of the walk test LIB selection, a system trouble is generated to indicate the control panel is operating under limited fire protection. Only the LIBs selected for walk test are affected.
- Each LIB collects information immediately after it is selected. The programmer should not generate a walk test report until 20 seconds after LIB selection or the report will be missing data and should be considered invalid. If this happens, abort the walk test and start again.
- If one or more LIBs have been selected for walk test, additional LIBs cannot be selected without exiting walk test.
- For every device activated during walk test, a walk test count message is sent to the printer.
- Conventional devices attached to device SCON (or equivalent) can not be individually tested with walk test, because walk test does not perform a reset on PWRC (or equivalent) devices. *Do not perform a System Reset during a Walk Test. System Reset does not function properly while in Walk Test mode of operation and may result in unwanted activation of various output modules. If a system reset occurs during a Walk Test, exit Walk Test mode and re-enter.*
- Walk Test will automatically abort if no devices are tested for 15 minutes.



- 2=UNP - Unprogrammed Device Report**
- 3=UNI - Uninstalled Device Report**
- 4=TEST - Tested Device Report**
- 5=UNTST - Untested Device Report**

These options allow the programmer to generate the desired Walk Test report. These reports are generated on a LIB basis. They use the same display format as the Point Read option under Read Status except for the status field which is report-specific (no Control-by-Event or annunciator point mapping is reported). The results of the report are not displayed on the CRT screen but are printed out on the printer.

- 1=REQUEST** Begins the selected report.
- 2=ABORT** Aborts the selected report in progress.

**NOTE**

Only one report can be conducted at any one time.

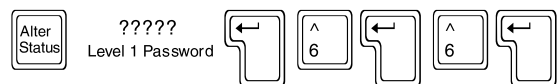
***WARNING:*** Do not reset the Control Panel while in Walk Test mode. Execution of a System Reset during a Walk Test may cause unwanted activation of various output modules (CMX, XPC, etc.). If a System Reset occurs during a Walk Test, exit Walk Test Mode and re-enter.

The following CRT screen illustrates conducting a Tested Device Report. The printout of this test is illustrated in **Figure 2-3**.

```

PRESS 1=SEL,2=UNP,3=UNI,4=TEST,5=UNTST,6=EXIT           : 4
ENTER LIB NUMBER FOR WALK TEST REPORT (1 - 10)           : 1
PRESS 1=REQUEST,2=ABORT                                   : 1
LIB 01 TESTED DEVICE REPORT BEGIN
NOTIFIER
LIB 01 TESTED DEVICE REPORT END
NOTIFIER
ALL SYSTEMS NORMAL 04:32P 03/01/97
ALL SYSTEMS NORMAL 04:32P 03/01/97
ALL SYSTEMS NORMAL 04:32P 03/01/97
ALL SYSTEMS NORMAL 04:32P 03/01/97
  
```

**6=EXIT - Exit Walk Test**



This option allows the programmer to exit/abort Walk Test. In order to exit/abort Walk Test Mode, reenter Alter Status Mode and choose option 6 from the Walk Test submenu.

The following example demonstrates exiting/aborting Walk Test:

```

PRESS 1=SEL,2=UNP,3=UNI,4=TEST,5=UNTST,6=EXIT           : 6
  
```

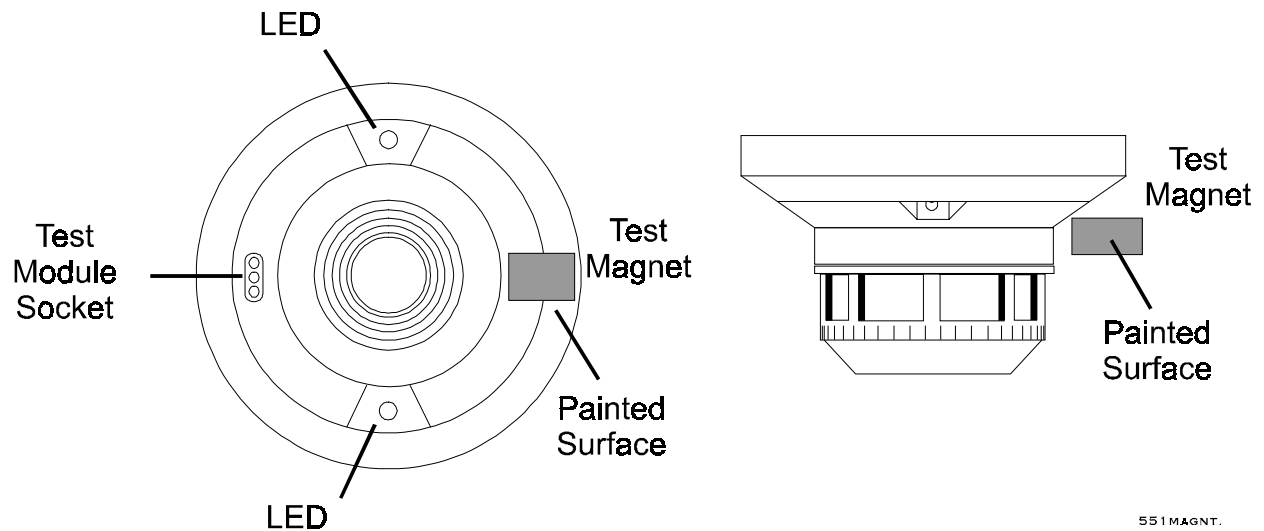
**NOTE**

Upon exiting/aborting Walk Test, the Walk Test system trouble is cleared and the AM2020/AFP1010 resumes full fire protection.



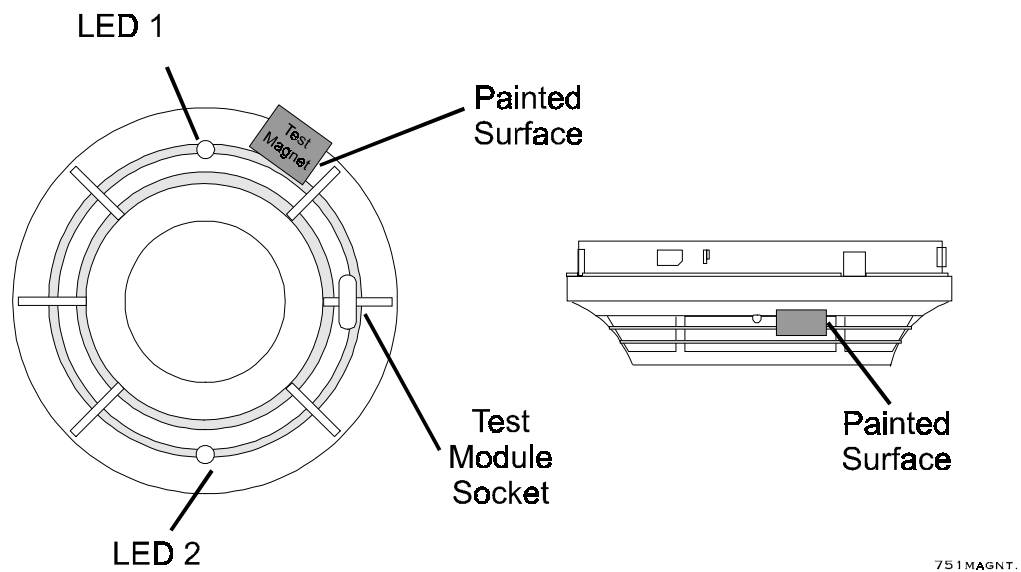
### Smoke Detector Activation During Walk Test

Activation of smoke detectors during Walk Test for the Series 500 smoke detectors can be accomplished by placing the optional Test Magnet (System Sensor model number M02-24) against the cover opposite the test module socket, as shown below:



The LEDs should latch within 10 seconds indicating alarm and annunciating the panel.

The Series 700 smoke detectors can be activated during Walk Test by placing the Test Magnet against the cover between LED 1 and the test module socket in the area shown below:



The LEDs should latch within 30 seconds, indicating an alarm and annunciating the panel.

```

PRESS 1=SEL,2=UNP,3=UNI,4=TEST,5=UNTST,6=EXIT          : 4
ENTER LIB NUMBER FOR WALK TEST REPORT (1 - 10)           : 1
PRESS 1=REQUEST,2=ABORT                                   : 1
LIB 01 TESTED DEVICE REPORT BEGIN                        04:32P 03/01/97
TEST01 SMOKE (ION) OFFICE AREA                           101
TEST01 SMOKE(PHOTO) FACTORY                             102
TEST01 HEAT(ANALOG) MAINTENANCE                          103
TEST01 MONITOR FIRST AID                                104
TEST03 CONTROL FIRST FLOOR                               101
TEST02 CONTROL SECOND FLOOR                             102
LIB 01 TESTED DEVICE REPORT END                          04:32P 03/01/97

```

**Troubleshooting Tip:** The test count indicates the number of times the device has been activated during Walk Test. If two devices have been mistakenly set to the same address, and these two devices are activated once each during walk test, a TEST02 indication will be indicated for one device and the missing device address will not show up on the report at all.

**Figure 2-3 Printout of an AM2020/AFP1010 Walk Test Report**

## Section 2.7 Group Zone Disable



### 7=GZON

Option 7 from the Alter Status Menu allows the programmer to disable and subsequently re-enable all appropriately mapped points (input devices and zones) associated with a particular software zone. When a point is disabled, it is no longer polled by the AM2020/AFP1010.

When a zone is disabled using this feature, a trouble message is generated for this zone. Then the entire CBE database is searched for all input devices and zones, looking for this "group" zone to be the first zone in each point's individual CBE. A trouble message will be generated for each point (input device or zone) matching the above criteria as it is found and disabled. During the search process the user interface is locked out.

The following example illustrates group disabling Zone 2.

#### **NOTE:**

The programmer should never program a disabled point.

```
PRESS 1=DIS,2=CTL,3=DSEN,4=TIME,5=DIAG,6=WALK,7=GZON      : 7
ENTER ZXXX FOR GROUP ZONE CHANGE                          : Z2
DO YOU WANT THIS GROUP ZONE DISABLED? (Y=YES,N=NO)         : Y
```

Example:	<b>Point</b>	<b>CBE</b>
	Z1	( )
	Z2	( )
	Z3	( )
	L1D1	(Z1)
	L1D2	(Z2)
	L1D3	(Z3)
	L1M1	(Z1)
	L1M2	(Z2)
	L1M3	(Z3)

As a result of disabling Z2 using the group zone disable function, L1D2 and L1M2 will automatically be disabled as well.

The "first zone" does not necessarily mean being the first operand in a CBE. A zone can be located anywhere within the CBE. The following CBE examples all have the same effect for group zone functions:

```
(Z1)
(Z1 L1M1)
(L1M1 Z1)
(L1M1 L1M2 Z1 Z2)
```

Z1 is the first zone found in each individual CBE.

# Section Three

## Software Type I.D.s

All point addresses for devices, software zones, and annunciator points must be programmed with an appropriate software type identification. Software type I.D.s allow the AM2020/AFP1010 to identify the type and configuration of specific devices, zones, and annunciator points associated with the panel.

Each type I.D. is categorized by groups. There are 18 separate groups of software type I.D.s which are defined in the tables on the following pages. Each table consists of the following format.

**Type I.D.** - This is the software type entered by the programmer for a particular point.

**Display Label** - The characters displayed for addressable devices, zones, and annunciator points on the control panel during alarm, trouble, and read status conditions.

**Type of Device** - Type of devices compatible with, and/or description of operating parameters for, the particular type I.D.

The control panel will not permit the changing of a Software Type I.D. in one group to a Software Type I.D. in another group. To accomplish this, the device must be reinstated with the Software Type I.D. of the desired group by using the **Full Point Programming** option of the Main Programming Menu.

### NOTE

The XP Transponder will revert to local program operation upon loss of communications with the AM2020/AFP1010. Therefore, use extreme care when assigning software Type I.D.s to XP Transponder circuits. For instance, an XP circuit assigned software type I.D. SPSU will initiate a supervisory condition under communication with the AM2020/AFP1010, but will result in an alarm condition under local XP operation.

#### Group 1: Addressable Detectors

Type I.D.	Display Label	Type of Device
CMBO	SMOKE(COMBO)	IPX-751 Intelligent Combination Ionization/Photoelectric/Thermal Detector.
FPHT	FIXED PHOT D	SDX-551/751 Intelligent Photoelectric Smoke Detector with a fixed sensitivity level. (This software type is obsolete and should not be used).
FTHR	FIXED THER D	FDX-551 Intelligent Thermal Sensor with a fixed sensitivity level. (This software type can only be used in Canadian applications and does not meet UL sensitivity requirements for use in the U.S.).
ION	SMOKE(ION)	CPX-551/751 Intelligent Ionization Smoke Detector.
IOND	ION DUCT DET	CPX-551-751 Intelligent Ionization Smoke Detector with a fixed sensitivity level. (The sensitivity of this detector can not be adjusted. All other detector functions will be equivalent to type ION). This detector is used in conjunction with the DHX-501 duct detector housing.
IONH	SMOKE ION HP	CPX-751 Intelligent Ionization Smoke Detector. (This Software Type can only be used in Canadian applications and has the same programming options as type ION).
IONL	SMOKE ION LP	CPX-551 Intelligent Ionization Smoke Detector. (This Software Type can only be used in Canadian applications and has the same programming options as type ION).
PHOT	SMOKE(PHOTO)	SDX-551/751 Intelligent Photoelectric Smoke Detector. The SDX-551/751 photo detector does not require a different software type when used with the DHX-501 duct detector housing.
THER	HEAT(ANALOG)	FDX-551 or FDX-551R Intelligent Thermal Sensor.

## Group 2: *Output Modules*

- These software types cannot be programmed for Signal Silence.
- These software types do not have any control-by-event programming.
- The two tabs on the CMX must not be broken for these software types unless they are Form-C relay type devices.

Type I.D.	Display Label	Type of Device
APND	ALARMS PEND	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> that will activate upon receipt of an alarm condition, and remain in the ON state until all alarms have been ACKNOWLEDGED.
DACT	DACT CONNECT	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> that will delay the reporting of AC power loss. Any other trouble condition will be reported immediately. This module is used in conjunction with a digital alarm communicator.
GAC	GN ALRM FORC	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> to switch power to a Reverse Polarity Trip Device for NFPA 72-1993 Remote Station Fire Alarm Systems applications (RPT-680 required). <i>This type can also be used for general alarm activation.</i>
GAS	GN ALARM	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured as a Municipal Box Transmitter for NFPA 72-1993 Auxiliary Fire Alarm Systems applications (MBT-1 required). <i>This type can also be used for general alarm activation.</i>
GPND	GENERAL PEND	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> that will activate upon receipt of an alarm and/or trouble condition, and remain in the ON state until all events have been ACKNOWLEDGED.
GTC	GN TRBL FORC	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> activated under any System Trouble condition.
PAGE	PAGE	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured for remote paging (RPJ-1 required).
PWRC	POWER (CONV)	<b>CMX Control Module</b> configured as a Form-C relay used to momentarily interrupt power (during system reset) to conventional 4-wire smoke detectors powered from a remote main power supply.
SSC	GN SUPR FORC	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> activated under any Supervisory condition (includes sprinkler type).
TELE	TELEPHONE	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured for telephone operation. <i>Note: The CMX will not provide a ring-back signal when a call is placed.</i>
TPND	TRBLS PEND	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> that will activate upon receipt of a trouble condition, and remain in the ON state until all troubles have been ACKNOWLEDGED.
TRC	TROUBLE FORC	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> that will activate upon receipt of a trouble condition(s) and remain in the ON state until the trouble(s) clear(s).
TRS	TROUBLE	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> that will activate upon receipt of a trouble condition(s) and remain in the ON state until the trouble(s) clear(s).
WFC	GN WAT FORC	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> activated under any Water Flow condition.
WFS	GN WATER FLW	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured as a Notification Appliance Circuit, activated under any Water Flow alarm condition.

### Group 3: Software Zones

Type I.D.	Display Label	Type of Device
FZON RZON	FORWARD ZONE REVERSE ZONE	A software-defined zone that is <i>forward-activating</i> . A software-defined zone that is <i>reverse-activating</i> .

- A Forward-Activating Zone is a software zone in control panel memory which once activated by an input device or other forward zone may in turn activate other zones and/or output devices directly. Zones and output devices activated by a forward zone are contained in the CBE List of that forward zone.
- A Reverse-Activating Zone is a software zone in control panel memory which if not activated directly by an input device or forward zone may be activated through an associated CBE equation. A Reverse Zone may be referenced in other CBE Equations.

### Group 4: Alarm Initiation Modules

Type I.D.	Display Label	Type of Device
MON	MONITOR	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> used to monitor <i>normally-open</i> contact, shorting-type devices other than 4-wire smoke detectors (i.e. conventional heat detectors, pull stations, etc.).
MPUL	MON PULL STA	<b>BGX-101L Addressable Manual Pull Station.</b>
NCMN	MON NORM CLD	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> used to monitor <i>normally-closed</i> contact, opening-type devices.
NOA	NON ALARM	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> that functions identically to Software Type I.D. NONA with one exception - subsequent alarms from this type will not reactivate silenced output devices - once silenced, outputs will remain silenced until reactivated by another software type (or cleared by System Reset and reactivated).
NONA	NON ALM MON	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> used to monitor normally-open contact, shorting-type non-alarm devices. Activation of a module with Software Type I.D. NONA will not initiate a fire alarm condition: <ul style="list-style-type: none"> <li>• System Alarm LED will not illuminate.</li> <li>• Does not activate alarm status line count on a CRT.</li> <li>• No affect on modules programmed as APND (alarm pending) or GPND (general event pending).</li> <li>• Alarm, clear alarm, or acknowledgments are not reported for this type.</li> </ul>
PULL	PULL STATION	<b>BGX-10 Addressable Manual Pull Station.</b>
SCON	SMOKE (CONV)	<b>MMX Monitor Module</b> used to monitor conventional 4-wire smoke detectors. This module has a longer reset period than modules programmed as MON.
WAT	WATER FLOW	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> dedicated to a Water Flow Alarm device.

### Group 5: Output Modules

Type I.D.	Display Label	Type of Device
CMXC	CMX FORM C	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> .
CMXS	CMX CONTROL	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured as a Notification Appliance Circuit.
CON	CONTROL	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured as a Notification Appliance Circuit.
FORC	FORM C RELAY	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> .
FRCM	FORMC MANUAL	<b>CMX Control Module</b> configured as a Form-C relay or an <b>XPR-8 relay</b> . This device is not deactivated when a system reset occurs. This module can be used for some fan control applications and can be mapped only to an AFCM annunciator point.
SPKR	SPEAKER	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured as a speaker circuit.

**Note:** Each type ID listed above is prompted for Signal Silence during programming. If the silence option has been programmed for these devices, they can be turned off using the Control OFF function under the Alter Status Menu or by pushing the appropriate annunciator point switch. Of the above types, only CON, FORC, and SPKR can be silenced by pressing the Signal Silence button, initiating a partial signal silence. The two tabs on the CMX must be broken for Form-C relay type devices.

### Group 6: Supervisory/Security Modules

Type I.D.	Display Label	Type of Device
SACM	ACCESS MONTR	<b>MMX Monitor Module</b> used to monitor a security device. This module will be activated by an open or a short condition. Activation of a module with this software type will not initiate a security alarm condition: <ul style="list-style-type: none"> <li>• Security Alarm LED will not illuminate.</li> <li>• Does not activate trouble status line count on a CRT.</li> <li>• No effect on modules programmed as TPND (trouble pending) or GPND (general event pending).</li> <li>• Trouble, clear trouble or acknowledgments are not reported for this type.</li> </ul>
SARM	AREA MONITOR	<b>MMX Monitor Module</b> used to monitor a security device. This module will be activated by either an open or a short condition and produces a SECURITY ALARM message in the display.
SEQM	EQUIP MONITR	<b>MMX Monitor Module</b> that functions identically to Type I.D. SACM.
SPSU	SPRNKLR MNTR	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> dedicated to a normally open sprinkler supervisory switch. Activation of a module with Software Type I.D. SPSU will generate a trouble condition (produces a SPRNKLR TROUBLE message) not an alarm. The option of <b>Tracking</b> (troubles self-restore) is automatically selected for this software type.
SSYM	SYSTEM MONTR	<b>MMX Monitor Module</b> used to monitor a security device. This module will be activated by either an open or a short condition and produces a SECURITY TAMPER message in the display.
SUPR	SPRVSRY MNTR	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> dedicated to a normally open supervisory switch. Activation of a module with Software Type I.D. SUPR will generate a trouble condition (produces a SUPRVSRY SIGNAL message) not an alarm.

**Group 7: Evacuation Modules**

Type I.D.	Display Label	Type of Device
EVGA	GN ALARM EVC	<b>CMX Control Module</b> or an <b>XPC-8 circuit</b> configured as a Notification Appliance Circuit, activated on General Alarm, for NFPA 72-1993 Local Fire Alarm Systems applications.
<b>Note:</b> This software type cannot be silenced if a module of software type WAT (Water Flow) has been activated.		

**Group 8: Annunciator Control**

Type I.D.	Display Label	Type of Device
AAST	ANN ACK/STEP	<b>Annunciator Point</b> used to execute ACKNOWLEDGE/STEP.
ALMP	ANN LAMP TST	<b>Annunciator Point</b> used to execute LAMP TEST.
ARES	ANN RESET	<b>Annunciator Point</b> used to execute SYSTEM RESET.
ASGS	ANN SIG SIL	<b>Annunciator Point</b> used to execute SIGNAL SILENCE.

**Group 9: Annunciator Zone**

Type I.D.	Display Label	Type of Device
AZON	ANN ZONE	<b>Annunciator Point</b> that indicates the state of any software zone mapped to it.

**Group 10: Annunciator Detector**

Type I.D.	Display Label	Type of Device
ADET	ANN DETECTOR	<b>Annunciator Point</b> that indicates the state of any intelligent detector mapped to it.

**Group 11: Annunciator Module**

Type I.D.	Display Label	Type of Device
AMON	ANN MONITOR	<b>Annunciator Point</b> that indicates the state of any MMX Monitor Module or XPM-8 circuit mapped to it.

**Group 12: Annunciator Input**

Type I.D.	Display Label	Type of Device
AINP	ANN INPUT	<b>Annunciator Point</b> that indicates the state of any generic input (software zone, intelligent detector, monitor module or XPM-8 circuit) mapped to it.
<b>Note:</b> Items in groups 9,10 and 11 may be re-mapped to group 12 only.		



**Group 13: Annunciator Output**

Type I.D.	Display Label	Type of Device
<b>ACON</b>	<b>ANN CONTROL</b>	<b>Annunciator Point</b> that indicates the state of any CMX Control Module, XPC-8 circuit or XPR-8 relay mapped to it. This annunciator point can also be used for manual control of relays, speaker and notification circuits.
<b>AFCM</b>	<b>ANN FORC MAN</b>	<b>Annunciator Point</b> that is not deactivated upon system reset. Used for fan control and similar applications only with an FRCM control device.

**Group 14: Annunciator Telephone**

Type I.D.	Display Label	Type of Device
<b>ATEL</b>	<b>ANN TELEPHON</b>	<b>Annunciator Point</b> that indicates the state of any CMX Control Module or XPC-8 circuit configured for telephone operation. This annunciator point can also control the state (connect/disconnect) of the circuit.

**Group 15: Annunciator Supervisory**

Type I.D.	Display Label	Type of Device
<b>ASUP</b>	<b>ANN SUPRVSRY</b>	<b>Annunciator Point</b> that indicates the state of any SPSU or SUPR module mapped to it.

**Group 16: Trouble Module**

Type I.D.	Display Label	Type of Device
<b>MTRB</b>	<b>TRBL MONITOR</b>	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> used to monitor any trouble contacts external to the system. This module will be activated by either an open or a short condition, and produces a POINT TROUBLE message in the display. Tracking operation (non-latching in that troubles will self-restore) is automatically selected for this software type. A Control-By-Event equation need not be entered for this type since it only produces a trouble signal, not an alarm.
<b>Note:</b> This software type can be used to monitor power from an Uninterruptable Power Supply (UPS) under NFPA 72-1993 Proprietary Fire Alarm Systems applications or to monitor remote Main Power Supply in XP Transponder systems.		

**Group 17: Page Module**

Type I.D.	Display Label	Type of Device
<b>MPAG</b>	<b>MONITOR PAGE</b>	<b>MMX Monitor Module</b> or an <b>XPM-8 circuit</b> dedicated to a normally open switch. Activation of a module with software type MPAG connects the remotely located Fire Fighter's Telephone handset to the paging system. This type ID is used in conjunction with the PAGE type ID (RPJ-1 required).

**Group 18: *Annunciator Manual Mode***

<b>Type I.D.</b>	<b>Display Label</b>	<b>Type of Device</b>
<b>AMAN</b>	<b>ANN MANUAL</b>	<b>Annunciator Point</b> that indicates manual mode for an annunciator module. The annunciator point can also turn the manual mode off or on. This type I.D. is used in conjunction with INA ACS or FACP shadow point programming.

# Section Four

## Control-By-Event Programming

### 4.1 Control-By-Event Programming

#### Introduction

Control-By-Event (CBE) Programming is used to provide a variety of responses based on various combinations of events (initiating conditions). The Control-By-Event Programming controls the interaction between the alarm initiating devices, the internal software zones, and the alarm notification appliances associated with an AM2020/AFP1010.

#### NOTE

A software zone is not a physical zone, but rather a software grouping in control panel memory.

#### Software Zones

The AM2020/AFP1010 contains 240 software zones to be used in CBE programming. These software zones are broken into two types, Forward-Activating Zones (FZON) and Reverse-Activating Zones (RZON). These forward and reverse zones must be grouped separately, with the forward group always preceding the reverse group. This is accomplished by setting the Zone Boundary (see Section 1.1.5, *Zone Boundary*, for more information on setting the zone boundary). Once the boundary is set, all software zone numbers above the Zone Boundary are RZONs and all software zones below and including the Zone Boundary are FZONs.

#### *Forward-Activating Zones*

FZONs are used to activate output devices and/or other software zones. The software zones that can be activated, however, must have a higher zone number than the FZON being utilized.

#### *Reverse Activating Zones*

RZONs are activated from input devices and/or other software zones. The software zones that can be used to activate a reverse zone must have a lower zone number than the RZON being activated.

#### Lists and Equations

Control-By-Event Programming can be accomplished in two ways, via the *List* and the *Equation*. Lists are used for initiating devices (detectors and monitor modules) and forward activating zones, where as, Equations are used for output devices (control modules) and reverse activating zones.

When an initiating device or forward-activating zone is programmed with a List, the AM2020/AFP1010 activates all the items, called *Operands*, in the list when activation of the device or zone occurs. The operands listed for an initiating device can be notification modules and/or software zones (forward or reverse activating). For a forward activating zone, the operands can be forward zones that are higher than its address, reverse activating zones and/or control modules.

#### *Example:*

A photoelectric detector has a List of (L1M1 L2M2), where L1M1 and L2M2 are control modules. When the detector is in alarm, all the items in the Control-By-Event List are enabled so both control modules are activated.

The real power of the CBE Programming comes from the equation, which is evaluated by the control panel to determine a variety of alarm initiating conditions. The equation provides the real decision-making ability through the use of an operator acting on a set of operands. The operands for an output module can be initiating devices, software zones (forward or reverse-activating), or control modules assigned an address lower than its own. For a reverse-activating zone, the operands can be initiating devices, forward zones, or reverse zones that are lower than its address.

The format for an equation is shown below, where the operators are OR, AND, NOT, XZONE, DEL, SDEL, and TIM; and the operands are groupings of initiating devices and/or software zones, as well as information specific to the format of individual operators.

*Operator(- - - Operands - - -)*

Examples:      OR(Z9 Z15 Z23)  
                  AND(L1D1 Z3 L1D35 L1D72)  
                  NOT(Z23)  
                  XZONE(Z23)  
                  DEL(HH.MM.SS HH.MM.SS (L1M1))  
                  SDEL(HH.MM.SS HH.MM.SS (Z1))  
                  TIM(SU MO TU WE TR FR SA HH.MM HH.MM)

All of the operator formats above are explained in detail on the following pages.

### **Control-By-Event Programming Constraints**

- There can only be one DEL or SDEL operator in a control-by-event equation, not both.
- If there is no duration time field in a DEL or SDEL, the equation will always be activated.
- The maximum value of DELAY TIME + DURATION TIME is 255:59:59.
- If either the day, month or year field is omitted, that field is assumed to be all allowable values of the field omitted. Example: 12--90 is equivalent to any day in December 1990.
- The HH.MM field for START TIME and STOP TIME uses military time.
- The HH.MM field for STOP TIME must be greater than the START TIME.
- The maximum value of START TIME or STOP TIME is 24:00.
- If an alarm condition occurs, all active TIM devices will be deactivated. All TIM equations will be ignored until all alarms are restored, at which point all TIM devices will return to their proper state.

## 4.2 Operators

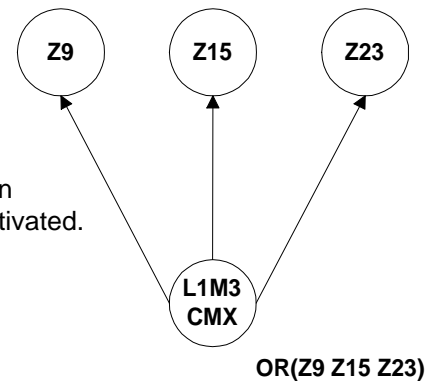
### OR

**Operator:** The first (and most useful) operator is **OR**.

**Equation:** **OR(Z9 Z15 Z23)**

If **ANY** one of the three operands in the equation are in alarm, then the control module will be activated.

**IF** Software Zone 9 is in alarm **OR**  
**IF** Software Zone 15 is in alarm **OR**  
**IF** Software Zone 23 is in alarm,  
**THEN** this control module will be activated.



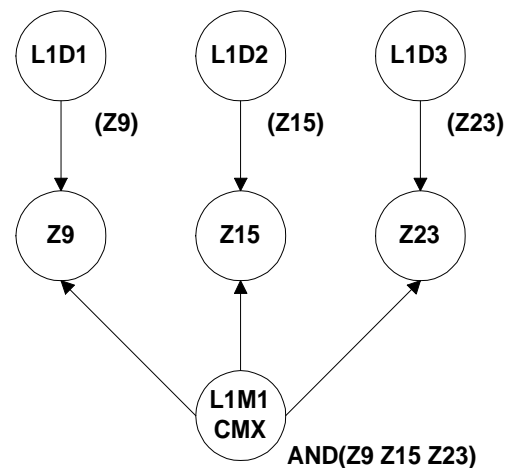
### AND

**Operator:** The **AND** operator requires that each operand be in alarm.

**Equation:** **AND(Z9 Z15 Z23)**

**ALL three** operands in the equation **MUST** be in alarm for the control module to be activated.

**IF** Software Zone 9 is in alarm **AND**  
**IF** Software Zone 15 is in alarm **AND**  
**IF** Software Zone 23 is in alarm,  
**THEN** this control module will be activated.



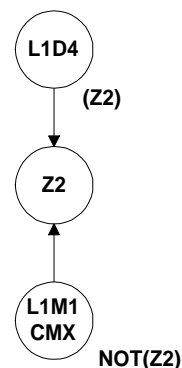
# NOT

**Operator:** The **NOT** operator inverts the state of the operand (activated to deactivated OR deactivated to activated).

**Equation:** **NOT(Z2)**

The control module will remain activated **UNTIL** the operand comes into alarm.

**IF** Software Zone 2 is in alarm,  
**THEN** this control module will be deactivated.

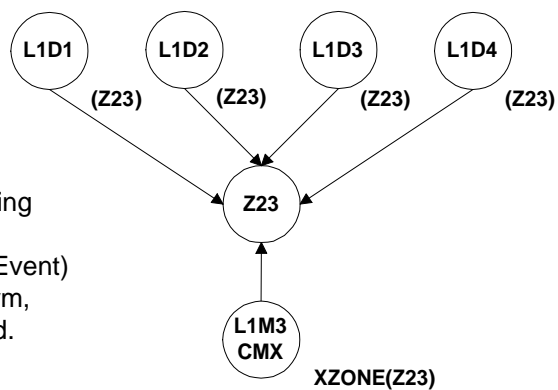


# XZONE

**Operator:** For *Cross Zone* operation, the **XZONE** counting operator may be used.

**Equation:** **XZONE(Z23)**

**IF ANY** combination of **two** or more initiating devices (L1D1, L1D2, L1D3, L1D4) that have been programmed (Control-By-Event) to this software zone (Z23) come into alarm, **THEN** this control module will be activated.



# DEL

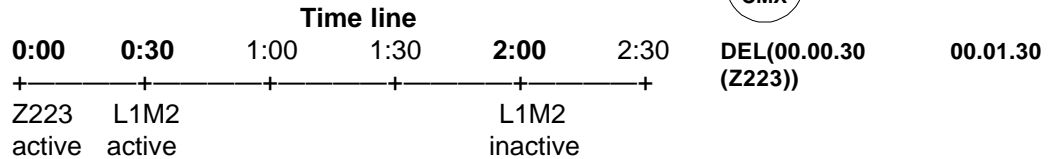
**Operator:** For delayed operation, the **DEL** operator is used.

**Equation:** **DEL(HH.MM.SS HH.MM.SS (Z1))**

Delay
Duration  
(optional)
Internal  
Equation

**Example:** L1M3 activates Forward Activating Zone 223 (Z223).  
L1M2 CBE is: DEL(00.00.30 00.01.30 (Z223))

**IF** Z223 has been active for 30 seconds  
**THEN** L1M2 will become active. L1M2 will stay active  
for 1 minute and 30 seconds provided that Zone Z223  
remains active.



## NOTES

- The entire DEL equation consumes at least 11 bytes (including a 3-byte internal equation). The internal equation can be a complex equation many bytes in size.
- If a delay of zero is entered (00.00.00), the equation will evaluate true as soon as the internal equation evaluates true and will remain that way for the specified duration, unless the internal equation becomes false.
- If no duration is specified, then the device will not be deactivated until a reset occurs or the internal equation evaluates false.

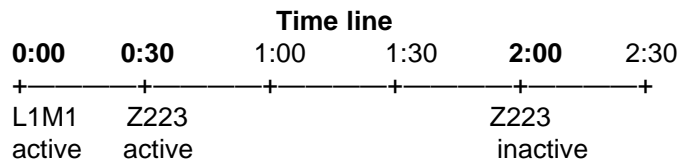
# SDEL

**Operator:** The **SDEL** operator is also used for delayed operation. This is a latched version of the DEL operator. Once the equation evaluates True, it remains activated until a reset, even if the internal equation becomes false.

**Equation:** **SDEL(HH.MM.SS HH.MM.SS (Z1))**

Delay
Duration  
(optional)
Internal  
Equation

**Example:** **If Z223 CBE is: SDEL(00.00.30 00.01.30 (L1M1))**  
**IF** L1M1 has been active for 30 seconds  
**THEN** Z223 will become active. Z223 will stay active for 1 minute and 30 seconds.



## NOTES

- The entire SDEL equation consumes at least 11 bytes (including a 3-byte Internal Equation). The Internal Equation can be a complex equation many bytes in size.
- If a delay of zero is entered (00.00.00), the equation will evaluate true as soon as the Internal Equation evaluates True and will remain that way for the specified duration.
- If no duration is specified, then the device will not deactivate until reset.

# TIM

**Operator:** The **TIM** operator is used to specify activation on specific days of the week or year.

**Equation:** **TIM(SU MO TU WE TR FR SA HH.MM HH.MM)**  
*(Type 1)*

Activation Day  
(optional)
Start Time  
(optional)
Stop Time  
(optional)

**Example:** **If Z221 CBE is: TIM(SA SU 7.30 13.59)**  
Zone Z221 will be active on Saturdays and Sundays from 7:30AM to 1:59PM.

**Equation:** **TIM(MM-DD-YY HH.MM HH.MM)**  
*(Type 2)*

Activation Date  
(optional)
Start Time  
(optional)
Stop Time  
(optional)

**Examples:** **If Z222 CBE is: TIM(7-4-)**  
Zone Z222 will be active on July 4th for every year.

**If Z222 CBE is: TIM(12-25- 9.00 17.00)**  
Zone Z222 will be active on December 25th for every year from 9:00AM to 5:00PM.



## 4.3 Size Limitations

Each Control-By-Event has a physical size limitation of 14 bytes in control panel memory.

For initiating devices, the Control-By-Event size can be calculated by the following formula:

$$\text{Size in bytes} = 1 + (\text{Number of Zones}) + (\text{Number of Control Modules} \times 3)$$

**Example:** The following Control-By-Event takes up 10 bytes in memory.

**(Z1 Z6 Z12 L2M4 L7M15)**

$$\text{Size in bytes} = 1 + (3) + (2 \times 3) = 10$$

For notification devices, the Control-By-Event size can be calculated by adding the components involved using the following values:

( = 1 byte  
 ) = 1 byte  
 OR( = 1 byte  
 AND( = 1 byte  
 NOT( = 1 byte  
 XZONE( = 1 byte  
 DEL( = 1 byte  
 TIM( = 1 byte  
 SDEL( = 1 byte

**Zones** = 1 byte each  
**Initiating devices** = 3 bytes each  
 The **time specifications** for the  
**DEL, TIM, and SDEL** operators = 6 bytes

**Examples:**

1) The following Control-By-Event takes up 13 bytes in memory:

**OR( Z1 Z4 Z9 Z16 Z23 LID3 L2M7 )**

$$\text{Size in bytes} = 1 + 1 + 1 + 1 + 1 + 1 + 3 + 3 + 1 = 13$$

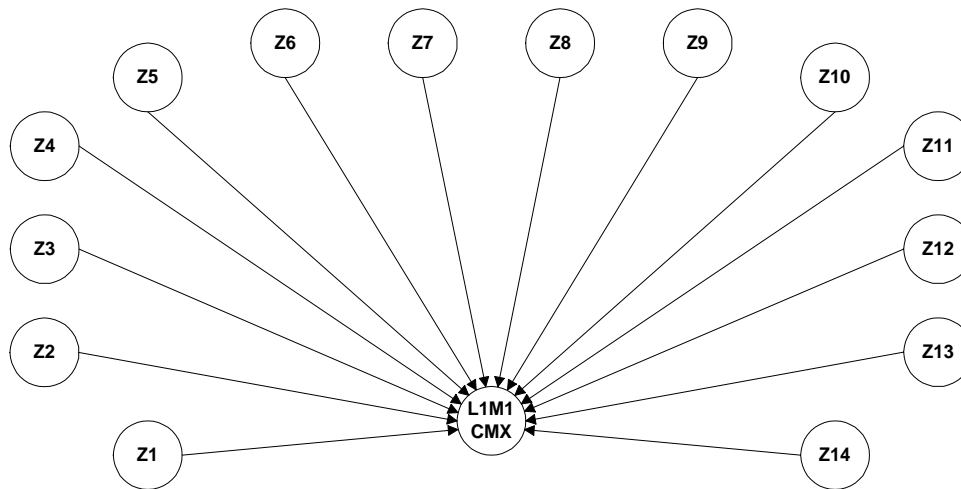
2) The following CBE takes up 11 bytes in memory:

**DEL( 00.00.30 00.01.30 ( Z1 ) )**

$$\text{Size in bytes} = 1 + 6 + 1 + 1 + 1 + 1 = 11$$

Due to the 14-byte size limitation, it may be necessary to use more than one equation or list to accomplish a desired result. Through the use of reverse activating zones, an equation which normally would contain too many bytes can be broken up into several smaller equations.

In the example below, a control module (CMX) is to be activated by any one of 14 software zones:



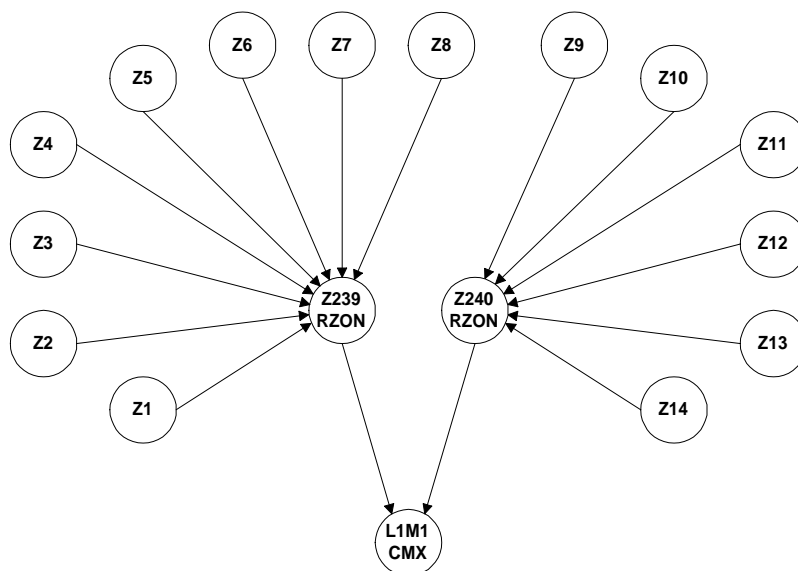
CBE Equation for **L1M1**:

OR( Z1 Z2 Z3 Z4 Z5 Z6 Z7 Z8 Z9 Z10 Z11 Z12 Z13 Z14 )



$$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 16 \text{ Bytes (too many)}$$

By using two reverse-activating zones, the equation with 16 bytes is broken into two smaller equations and the CBE for the control module uses the two reverse-activating zones as its operands.



CBE Equation for **Z239**:

OR(Z1 Z2 Z3 Z4 Z5 Z6 Z7 Z8)  
= 10 Bytes

CBE Equation for **Z240**:

OR(Z9 Z10 Z11 Z12 Z13 Z14)  
= 8 Bytes

CBE Equation for **L1M1**:

OR(Z239 Z240) = 4 Bytes

## 4.4 Cooperative Control-By-Event

Cooperative Control-By-Event equations pertain to reverse activated software zones on the AM2020/AFP1010 **NOTI•FIRE•NET** system only.

CCBE, like Control-By-Event (CBE), is used to provide a variety of responses based on various combinations of events (initiating conditions). Where CBE programming controls the interaction between devices and software zones within one AM2020/AFP1010, CCBE programming controls events between multiple panels on a **NOTI•FIRE•NET** system. For example, an initiating device in one panel turning on an output device of another panel through a reverse activated software zone. The formats and uses for CBE and CCBE are similar in many ways with the following exceptions:

- Only reverse activating software zones can be programmed with a CCBE equation.
- CCBE equations can only be programmed for software zones from the AM2020/AFP1010 node that the zones reside in. For instance, if a CCBE equation is to be programmed for software zone 23 of node 10 the user must program the equation on the AM2020/AFP1010 that is declared as node 10.
- CCBE can only use the **AND**(, **OR**(, and **NOT**( operands.
- CCBE equations have a size limitation of 80 characters.

### NOTE

Forward activating software zones **can not** have CCBE equations but can be used as operands in other CCBE equations.

Each AM2020/AFP1010 has 240 software zones for both CBE and CCBE programming. Although there are 240 software zones, only zones 2-240 can have CCBE equations associated with them. Since a zone boundary must be declared, at least one of the software zones will be a forward activating zone and can not have a CCBE equation associated with it. If Zone 1 is used as the zone boundary, then there are only 239 zones left for CCBE programming.

It is possible for a reverse-activated software zone to have both a CBE and CCBE equation associated with it. If this occurs, the software zone will become active if either equation becomes active. The format for a CCBE equation is the same as a CBE equation. The operators for CCBE can only be AND(, OR(, and NOT(. The operands for CCBE are most often a zone with the format N(XXX)Z(YYY), where XXX is the node number for the particular panel on the network and YYY is one of the 240 software zones available to CCBE programming.

## 4.5 The Null Control-By-Event

The simplest type of Control-By-Event is the **Null**, which means empty. **For initiating devices**, the Null is denoted by entering ( ) as the Control-By-Event. In response to an alarm on a device programmed with a Null Control-By-Event, the AM2020/AFP1010 will do the following:

- **Initiate a System Alarm condition** (Alarm LED flashes, piezo sounds and the Form-C alarm contacts on the CPU will be activated).
- **Activate no control modules or software zones** (no notification appliances will sound and no output relays will be activated due to the fact that there are no entries in the Control-By-Event for this initiating device).

**For Output Devices**, the Null is denoted by entering **OR( )** or **( )**. *Note: Entering ( is equivalent to entering OR(.* A control module programmed with a Null Control-By-Event will not be activated unless it is included in the Control-By-Event of a software zone or initiating device.

### **Example - Resetting 4-wire Smoke Detectors**

A control module is needed to reset power to 4-wire smoke detectors in an AM2020 or AFP1010 system. This module must **not** be activated in response to an alarm condition. Rather, this module must only be activated during system reset. This can be accomplished by assigning the module a Null Control-By-Event and the Software Type ID **PWRC** (the control panel automatically resets modules with type PWRC upon system reset).

# 4.6 Programming Examples

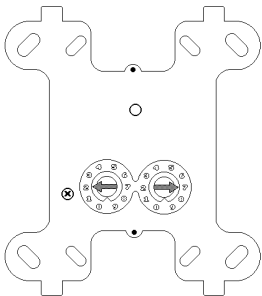
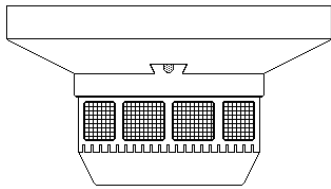
## Options

The example below illustrates three ways to accomplish the simple programming task of programming a Notification Appliance (control module) on SLC Loop 1 to indicate activation of an Initiating Device (smoke detector) also on SLC Loop 1.

### Solution A

Program the smoke detector with the Control-By-Event:

**(Z1)**

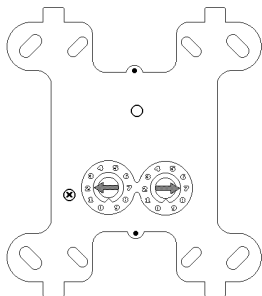
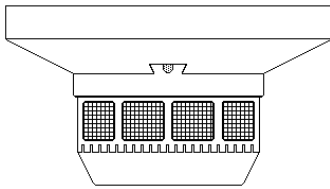


Program the control module with the Control-By-Event

**OR(Z1)**

### Solution B

No Control-By-Event required for the smoke detector.



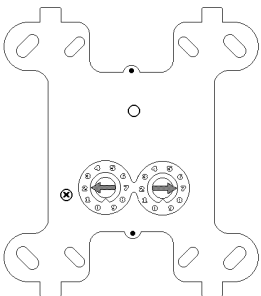
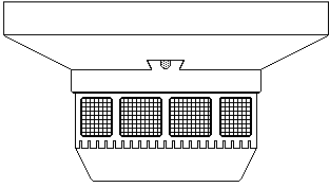
Program the control module with the Control-By-Event

**OR(L1D1)**

### Solution C

Program the smoke detector with the Control-By-Event:

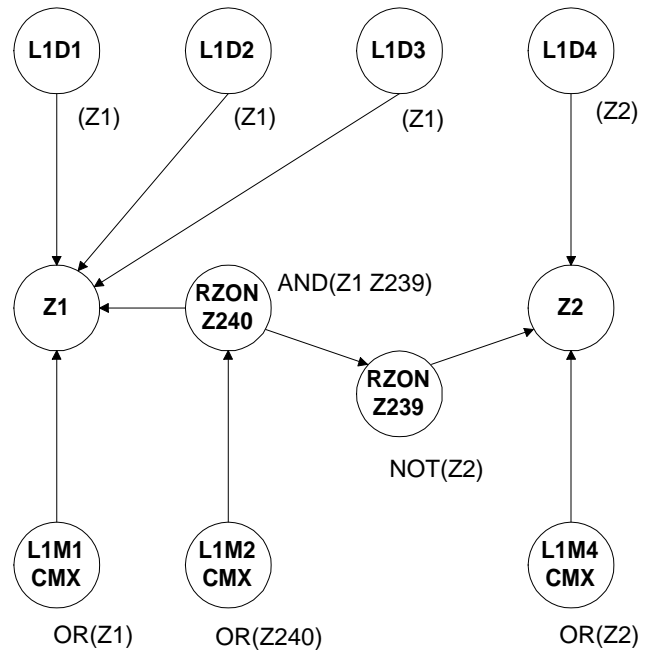
**(L1M1)**



No Control-By-Event required for the control module.

### Example # 1: Combinational Logic

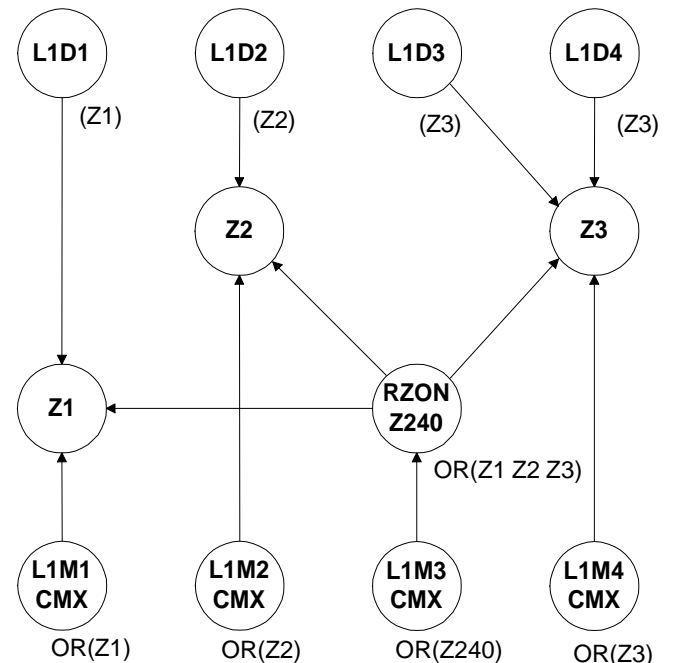
**L1D1**, **L1D2**, and **L1D3** activate **Z1**. **L1D4** activates **Z2**. If **Z1** activates, **L1M1** will activate. If **Z2** activates then **L1M4** will activate. The equation **AND(Z1 Z239)** requires both to be active for an output. Because reverse zone 239 has a NOT operand, it is active as long as **L1D4** is inactive.



### Example # 2: General Alarm

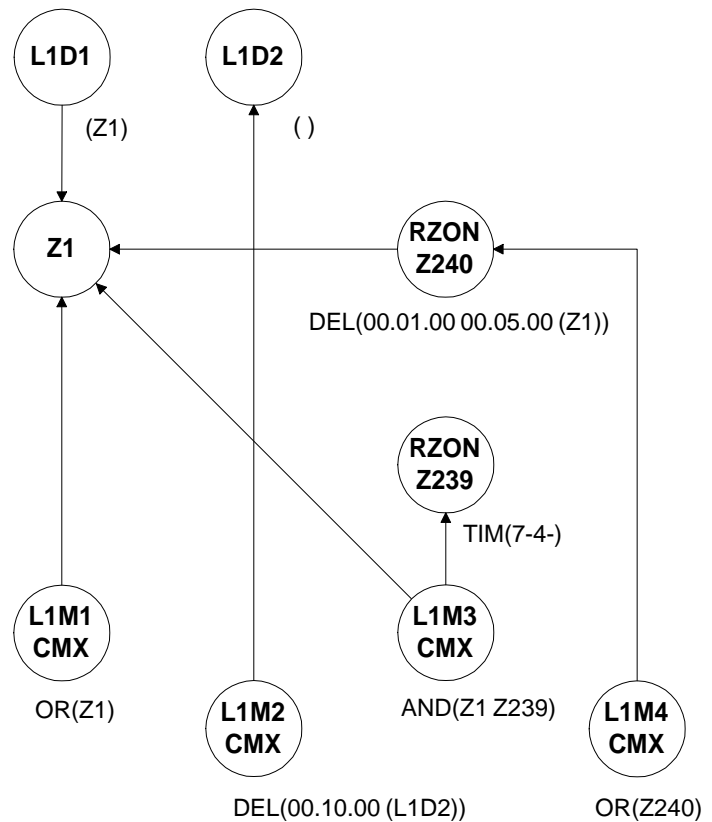
**L1D1** activates **L1M1** through **Z1**. **L1D2** activates **L1M2** through **Z2**. **L1D3** and **L1D4** activate **L1M4** through **Z3**. **L1M3** will activate when reverse zone 240 is activated. **Z240** will activate when **Z1**, **Z2** or **Z3** are activated.

Notification Appliance **L1M3** serves as the General Alarm device. It will be activated whenever an alarm occurs on any initiating device in the system, due to the fact that all initiating devices activate a Software Zone, and activation of any zone activates software zone **Z240**.



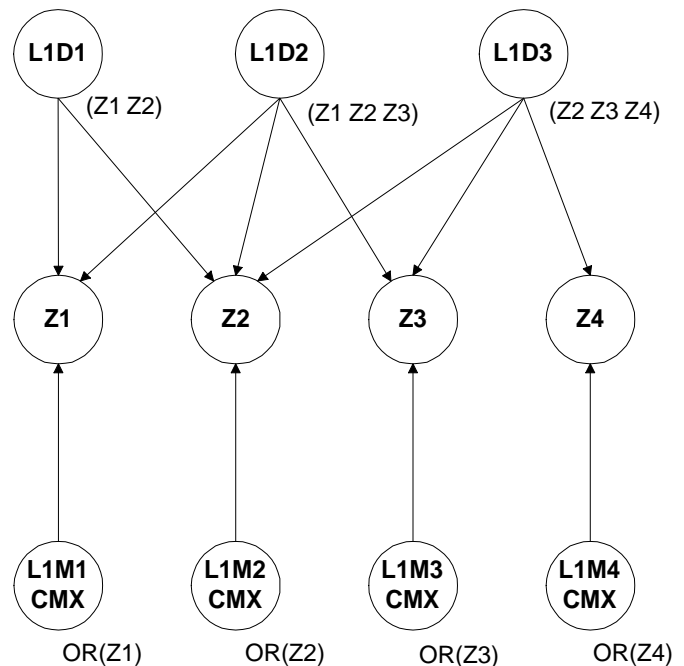
### Example # 3: Delay and Time

**L1D1** activates **Z1**. **L1M1** turns on when **Z1** is active. **L1D2** is a null equation. **L1M2** activates with **L1D2** after a ten minute delay. **Z239** is active July 4th of every year. **L1M3** will activate when **Z1** and **Z239** are active. **Z240** is active when **Z1** is on after a one minute delay and will stay on for 5 minutes. **L1M4** turns on when **Z240** is active.



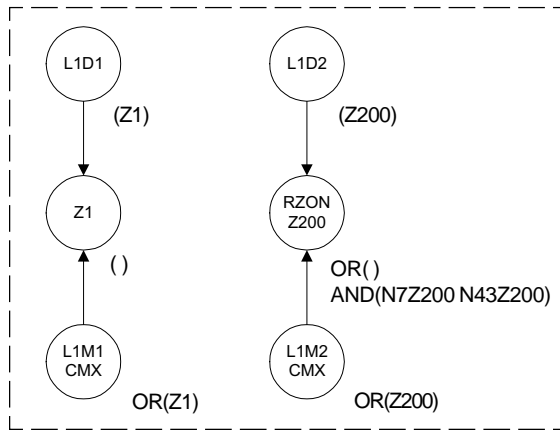
### Example # 4: Fire Floor, Floor Above, Floor Below

**L1D1** activates **Z1** and **Z2**. **L1D2** activates **Z1**, **Z2** and **Z3**. **L1D3** activates **Z2**, **Z3** and **Z4**. **L1M1** will activate when **Z1** is active. **L1M2** will activate when **Z2** is active. **L1M3** will activate when **Z3** is active. **L1M4** will activate when **Z4** is active.

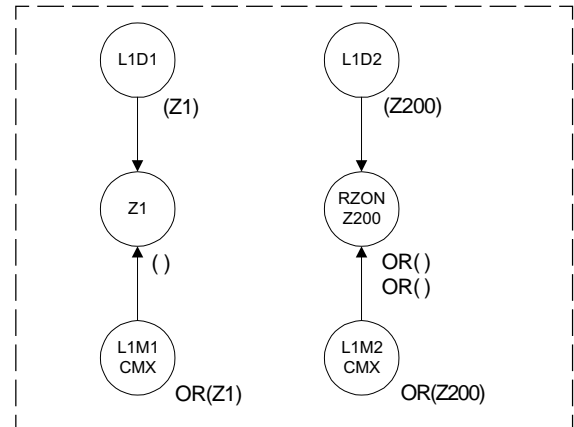


## Example # 5: CCBE for **NOTI•FIRE•NET**

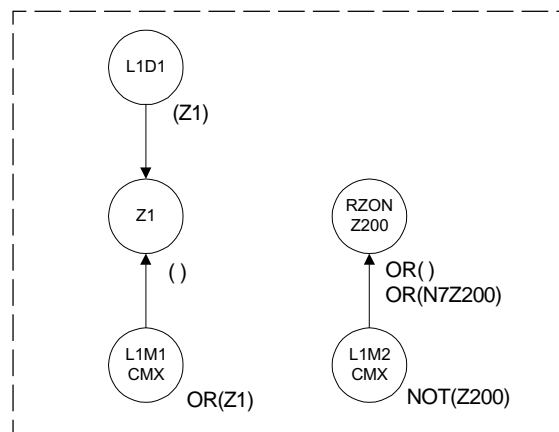
**Node 1** will activate **L1M1** if **Z1** is active locally. **Node 1** will activate **L1M2** if **Z200** is active locally or in both **Nodes 7** and **43** simultaneously. **Node 43** will activate **L1M2** if **Z200** is not active locally and not activated in **Node 7**.



**NODE 1**



**NODE 7**



**NODE 43**

# **Section Five**

## **Dual Stage Alert/Evacuation**

### **Programming for Dual Stage Alert/Evacuation operation (for use in Canada only)**

An XPC-8 Notification Appliance Circuit module can be configured for Dual Stage Alert/Evacuation operation. Under this mode of operation each circuit operates in one of two stages: alert or evacuation. In the alert stage the notification appliance circuit pulses at 20 PPM (pulses per minute). In the evacuation stage the circuit pulses at 120 PPM. When configured this way, each notification appliance circuit has two addresses associated with it. Refer to the XP Series Transponder Manual for additional information.

The first address is the control address. Activating this point (through its Control-By-Event programming) will turn the notification appliance circuit on. This point uses the Software Type ID CON.

The second address is the stage selection address. This point decides what state an active notification appliance circuit will be in. Activating this point will put the notification appliance circuit into evacuation mode. If this point is not activated the circuit will be in alert mode. This point uses the Software Type ID FORC.

#### **NOTE**

If an unacknowledged circuit is in alert mode for more than five minutes, all activated circuits on the XPC-8 will change to the evacuation pulse rate.