NOTIFIER®
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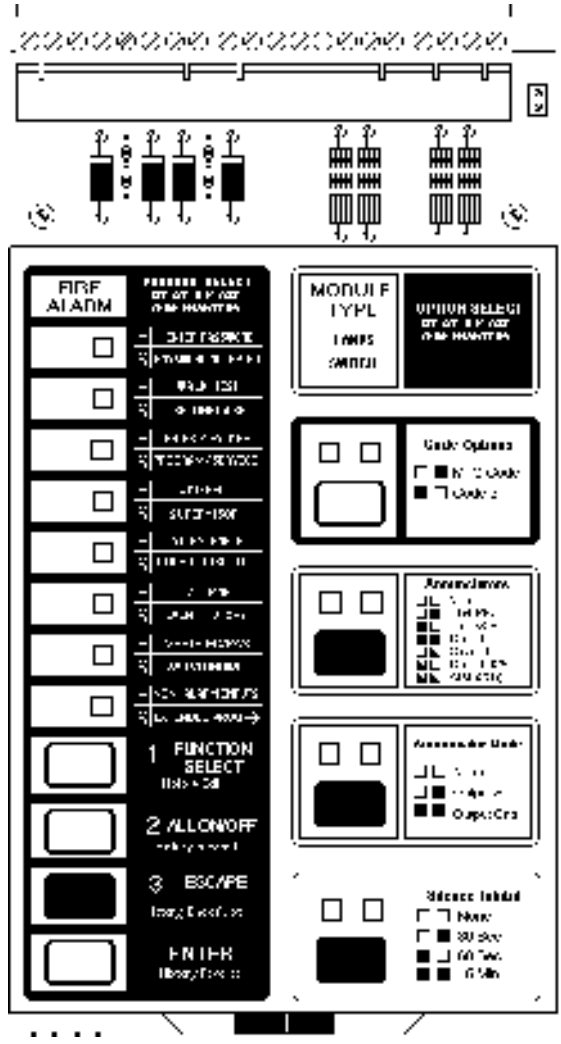
System 5000

Field Programming Manual

Including Walk Test and Event History Log



Document 15584
12/28/95 Revision: H

Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - *Several different sources of power can be connected to this fire alarm control panel.* Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

CAUTION - *System Reacceptance Test after Software Changes:* To ensure proper system operation, this product must be tested in accordance with NFPA 72-1993 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49^{O} C and at a relative humidity of 85% RH (non-condensing) @ 30^{O}C. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of 60-80^{O} F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Fire Alarm System Limitations

While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!

An automatic fire alarm system - typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Furthermore, all types of smoke detectors - both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

IMPORTANT! ***Smoke detectors*** *must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power.* If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist.

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept.

Table of Contents

Left-hand CPU-5000 Programming Label
(Part Number 15596)

Section One:
About Programming the System 5000

This manual contains the information to field program a System 5000 fire alarm control panel. The manual outlines features that have become available with CPU-5000 software, part number 73263. Authorized personnel may gain access to four modes of operation-Reconfigure, Program, Service (Walk Test) and Event History modes. Special passwords allow for the clearing of program memory and the history buffer.

Reconfigure
This mode allows the CPU-5000 to identify the number and types of modules installed in the system.

Program
This mode enables authorized personnel to program the system features and to create a software map between the initiating circuits and the controlled outputs. Includes additional extended feature programming.

Option Program
Allows programming of the features AUTO SILENCE, PRE-SIGNAL DELAY, DRILL SWITCH, and CALIFORNIA CODE/REMINDER modes

Clear Program
A special password enables service personnel to clear the System 5000 programming. Once cleared, the System 5000 must be reconfigured. The resultant system programming will be set for default values which result in general alarm operation (any input activates all output circuits). Specific programming of system features must follow the clearing of memory and reconfiguration.

Service (Walk Test)
A special password enables Walk Test, allowing a single service person to test the system without returning to the panel to reset.

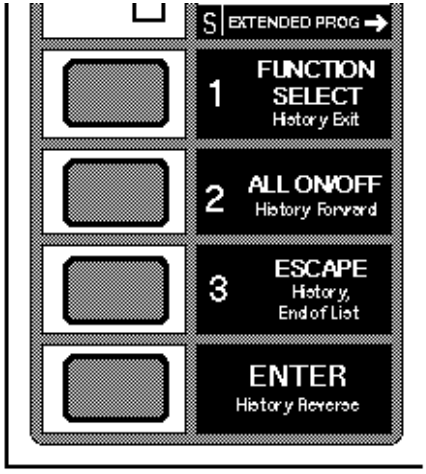
Event History
A valuable tool for the serviceman, Event History mode allows the storage and display of up to 255 past alarm and trouble events. Certain operator actions, such as Acknowledge and Reset, are also stored and can be viewed at a later point in time.

Clear History
A special password enables service personnel to clear the 256-event history file.

Function Keys

Programming of the System 5000 centers around four multifunction keys on the bottom left of the CPU-5000. These keys allow the entry of the system passwords, the selection of various programming functions, and the entry of programmed data. The keys also serve special purposes during the viewing of the Event History.

Note: The program key may be removed at any time during programming.



Press **FUNCTION SELECT** to bypass a programming level and advance to another function.

Pressing **ALL ON/OFF** will select or deselect all controlled outputs or initiating circuits, depending upon the function being programmed

The **ESCAPE** key is used to display a previous programmed (entered) map.

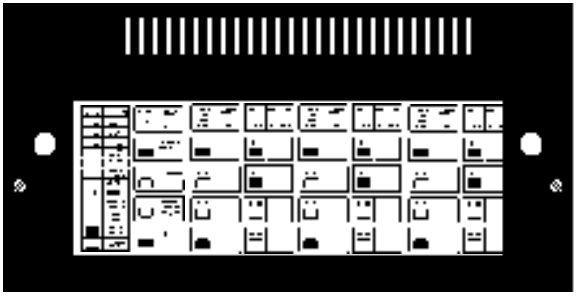
After a programmed function has been completed, pressing the **ENTER** key stores the data in the CPU-5000 and advances to the next programming level.

Mode Entry

WARNING:
The System 5000 will not provide fire protection while not in Operating Mode!

To enter any one of the System 5000 programming/service modes, perform the following procedure:

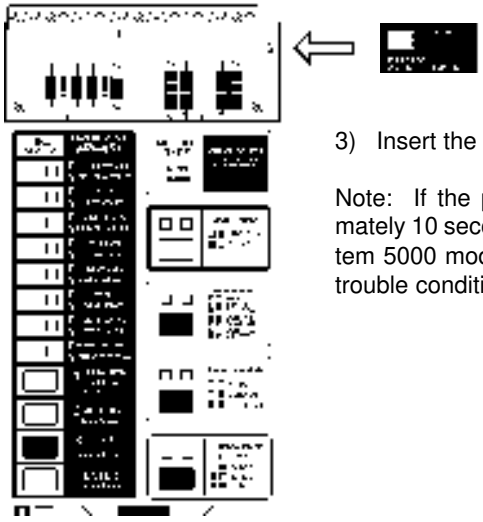
1) Remove the VP-1 Dress Panel.



2) Remove the left system Label from the CPU and replace it with the left Program Label (Part Number 15596). Do not remove the right-hand label for it will be needed to program the controlled outputs on the CPU. Special right-hand CPU labels are provided for certain programming functions:

An Extended Programming Label (Part Number 15925) may be inserted into the right side of the CPU when that level of programming is reached.

For displaying the EVENT HISTORY, the right-hand label can be cutout



3) Insert the PK-1 Program Key into the CPU-5000.

Note: If the password is not entered within approximately 10 seconds after program key insertion, all System 5000 modules will enter a trouble condition. This trouble condition can be ignored.

Entering the Passwords

Once the Programming Key has been inserted, the ENTER PASSWORD LED and the ENTER/ESCAPE LED will flash as a prompt to enter a password. The System 5000 has seven password-protected functions, explained below. When the password has been accepted by the CPU-5000, the PASSWORD ACCEPTED LED and the PROGRAM/ SERVICE LED will light steady. If the password is not accepted then reenter the password and press ENTER.

Reconfigure Mode 2 3 1 1 3 3 2
Reconfigure identifies the modules installed in the system. Press 231 1332, then ENTER. See Section Two for further instructions.

Program Mode 2 3 1 3 1 1 2
Program mode allows authorized personnel to program the system features and create a software map between the initiating circuits and the controlled outputs. Press 231 3112, and then ENTER. Refer to Section Three for further instructions.

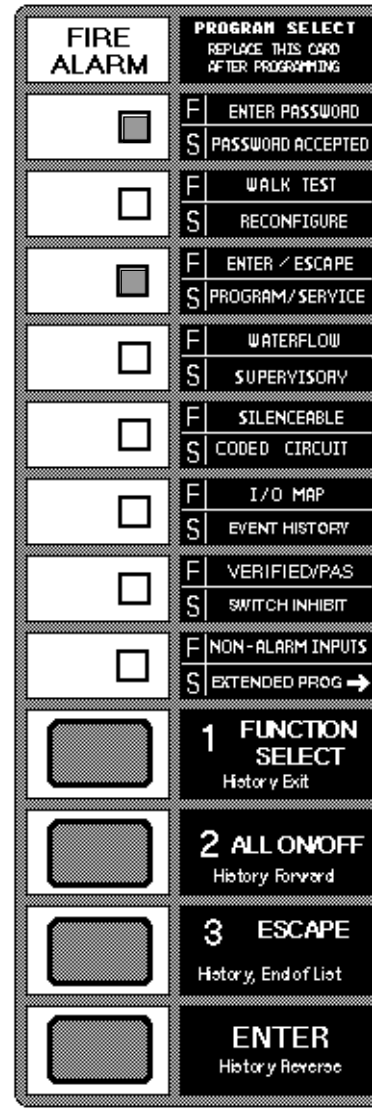
Option Programming 2 3 1 3 2 1 1
Extended Programming allows the latest software features of the System 5000 to be set or enabled. Refer to Section Three.

Clear Programming 3 1 2 1 2 3 3
Clear Program erases all program memory, preparing the system for *Reconfiguration* and reprogramming. Refer to Section Three.

Service (Walk Test) Mode 2 3 1 2 1 3 2
Service mode allows access to Walk Test. Walk Test allows one man to test the field devices without returning to the panel to reset the system. Press 231 2132, and then ENTER. Refer to Section Four for further instructions.

Event History Mode 2 3 1 1 1 1 1
Event History mode allows the storing and displaying of up to 255 past alarm and trouble events. Press 231 1111, then ENTER to access this mode. Refer to Section Five for more information.

Clear History 2 3 1 3 1 2 2
Clear History mode clears the 256-event history. Press 231 3122, then ENTER. Refer to Section Five for more information.



Access Security

Additional access security for the System 5000 can be obtained by setting Jumper JP1 on the lower CPU-5000 board to the Write Inhibit position. When set to the Write Inhibit position (jumper over pins 2 and 3), the System 5000 cannot be programmed. The control panel will still appear to permit the programming of the system but pressing the ENTER key will not result in the storing of any program data.

JP1 (pin type)
Write Inhibit Position

JP1 (pin type)
Write Enable Position

JP1 (switch type)
Write Inhibit Position

JP1 (switch type)
Write Enable Position

Note: The System 5000 will not record any events into history when JP1 is in the Write Inhibit position! In addition, the control panel's Disable feature will not function. If Event History or the Disable feature is required, set JP1 to the Write Enable position.

If these features are not required, Notifier recommends that JP1 be set to the Write Inhibit position.

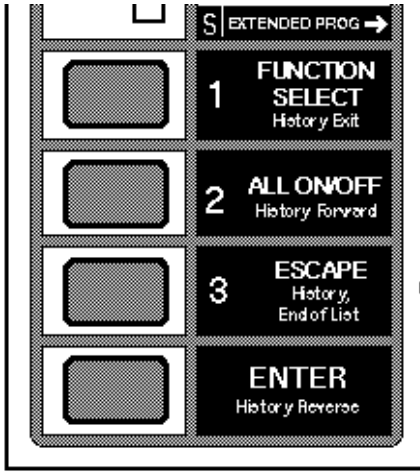
Section Two:
Configuring the System 5000

Upon initial power-up, and whenever a System 5000 module is installed, removed, or shifted from one ribbon cable position to another, reconfiguration is required. After the reconfiguration password is entered, the CPU-5000 will signal all modules to display a type identification code. Check the chart below for proper I.D. code. If a module does not display the correct code, ensure that you have the correct module type and that it is properly connected, then repeat the procedure. Once configured, the System 5000 will supervise itself to ensure that the number and type of modules are maintained.

Press 2 3 1 - 1 3 3 2, then **ENTER:**

On these modules,	these LEDs will light:
IZM-8, IZE-A, and AIM-200	**All eight red and all eight yellow LEDs**
VCM-4 (Speaker Mode)**, ICM-4, and TCM-2** **VCE-4** (Speaker Mode)**, ICE-4, and TCM-4**	**The four green LEDs on the left-hand side.** **The four green LEDs on the right-hand side.**
CRM-4 **CRE-4**	**The four yellow LEDs on the left-hand side.** **The four yellow LED on the right-hand side.**
DCM-2	**All eight green LEDs on the module**
VCM-4 and VCE-4 (Telephone Mode)	**All eight yellow LEDs on the modules**

If any of the modules do not respond properly, abort configuration mode by removing the Programming Key. Refer to the System 5000 Programming Guide to resolve the problem(s).



Optional Step:
Even if all modules do respond properly, this is a convenient point to solve any circuit troubles. Remove the Programming Key, correct all troubles, and reconfigure the system.

Once all modules respond properly, press **ESCAPE** to confirm system configuration. Program changes will be required at this point. The CPU 5000 will automatically advance to *Programming Mode* beginning with the selection of WATERFLOW initiating circuits.

Section Three:
Programming the System 5000

Entering Program Mode

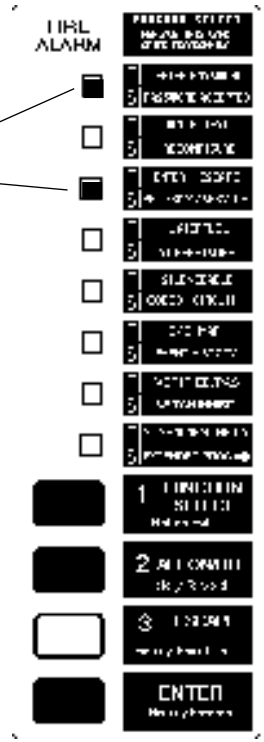
Program Mode cannot be entered when the system is in alarm. However, It may be entered when the system is in a trouble condition. Upon entering Program Mode, the CPU module will activate the system trouble relay and the remote station trouble output. All other controlled outputs will remain in their normal non-alarm state. If the password is not entered within 10 seconds, the module trouble (yellow) LEDs will light with the top left LED flashing (ignore this condition). Program mode may be terminated at any time by removing the programming key.

To enter Program Mode:

Press 231 3112, then **ENTER.**

The PASSWORD ACCEPTED and PROGRAM/SERVICE LEDs will illuminate.

Programming of the System 5000's various functions is performed sequentially. The first function to be programmed on entry into Programming Mode is WATERFLOW.



Waterflow

If no programming is required at this step, press "ENTER" to advance to the next function

Waterflow Operation

Operation of a waterflow zone inhibits operation of the signal silence function. Standard initiating circuits may also employ waterflow devices when those circuits have been programmed (I/O mapped) to a non-silenceable audible output.

Programming Waterflow Circuits

The "WATERFLOW" LED will flash to indicate that the System 5000 is ready to be programmed for waterflow.

LED Illumination note:
The letter "F" (flashing LED) corresponds to programming the upper function of this LED point (in this case WATER-FLOW). The letter "S" (steady LED) corresponds to the lower function (in this case SUPERVISORY).

Select waterflow circuits by pressing the switch on that point (see Figure 1 on next page). The left-hand LED (red) will illuminate when the circuit is selected, and will extinquish when the circuit has been deselected.

All initiating circuits can be selected or deselected at once for waterflow by pressing "**ALL ON/OFF.**"

The previous map is displayed by "**ESCAPE.**"

When all waterflow circuits have been selected, press the **ENTER** switch to store this programming and proceed to programming the next function – SUPERVISORY.

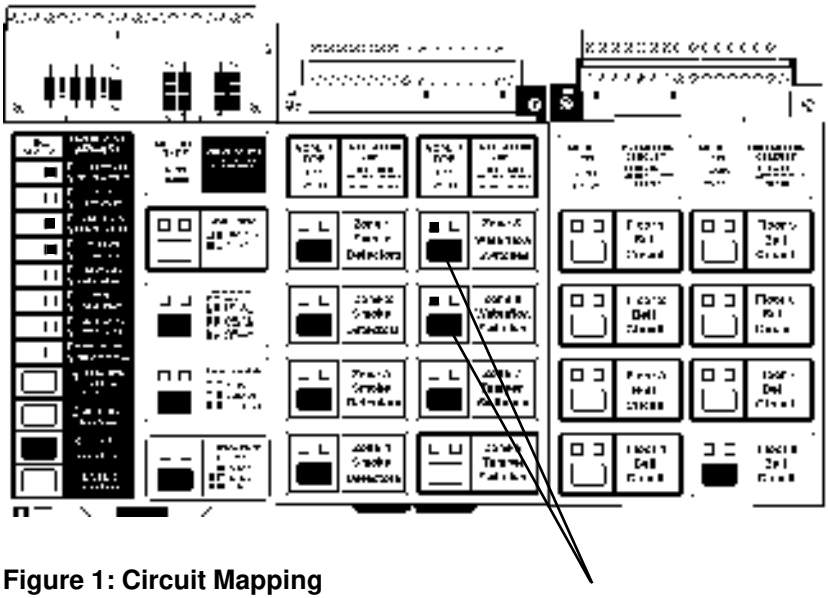
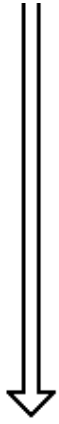


Figure 1: Circuit Mapping
Select waterflow circuits by pressing the switch on those points. The left-hand LED (green or red) or a particular circuit will illuminate when that circuit has been selected. Circuit selection for all System 5000 functions is accomplished in the same manner.

Supervisory

If no programming is required at this step, press "ENTER" to advance to the next function



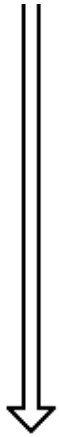
Supervisory Operation
Activation of a device on a circuit programmed for supervisory will light the supervisory signal LED. The system trouble LED and the system trouble outputs will not be activated. Supervisory circuits can be mapped to controlled outputs. System 5000 supervisory circuits will detect the difference between the normally open supervisory switch and open field wiring.

Programming Supervisory Circuits
The LED next to the title "SUPERVISORY" will illuminate steadily to indicate that the System 5000 is ready to be programmed for supervisory circuits. Select supervisory circuits by pressing the switch on all desired circuits. The left-hand LED (red) on a particular point will illuminate when the circuit is selected, and will extinquish when the circuit has been deselected. When all supervisory circuits have been selected, press the **ENTER** switch to store this programming and proceed to programming the next function - SILENCEABLE.

Note: Circuit programmed for both supervisory and non-alarm perform special function. See Remote Command Inputs in Doc. 15583.

Silenceable

If no programming is required at this step, press "ENTER" to advance to the next function



Silenceable Operation

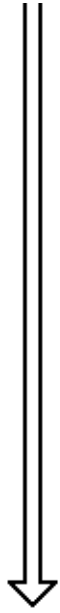
Silenceable circuits are controlled output circuits that, when activated, can be silenced by pressing the SIGNAL SILENCE key on the CPU-5000. Pressing the Signal Silence key allows selected controlled outputs to return to the normal non-alarm state. A subsequent alarm will reactivate all silenced outputs. The signal silence key will not operate after a waterflow circuit is in alarm. **DO NOT** program the Remote Signalling/Municipal Tie, telephone circuit, releasing circuit outputs for silenceable operation.

Programming Silenceable Circuits

The LED next to the title "SILENCEABLE" will flash. Select silenceable circuits. The left-hand LED (green) will illuminate when a particular circuit is selected, and will extinquish when the circuit has been deselected. Press the **ENTER** switch to store this programming and proceed to the next programming function.

Coded Circuit

If no programming is required at this step, press "ENTER" to advance to the next function



Coded Circuit Operation (MTC or Code 3)

Selecting controlled outputs for coded operation enables those outputs to pulse a selected code chosen later in the programming process. See EXTENDED PROGRAMMING for the particular codes available.

Notes

1) DO NOT program the Remote Signaling/Municipal Tie output for coded operation.

2) Special requirements are necessary for coded circuit selections when using the TCM-2 and TCM-4 module. See the System 5000 TCM-2 manual (Notifier Document Number 15805) and the TCM-4 manual (Notifier Document Number 15924) for further information.

3) If Emergency Alert option is to be employed, circuits used for fire must be selected as coded. See "Remote Command Inputs" in Doc. 15583.

Programming Coded Circuits

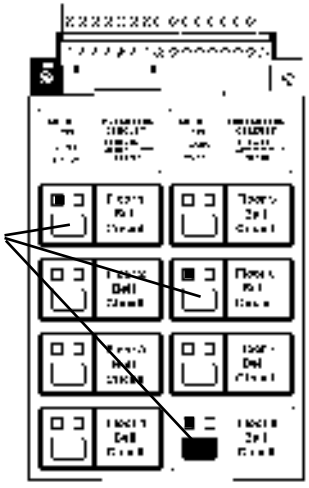
The LED next to the title "CODED CIRCUIT" will illuminate steadily. Select all output circuits to employ coded operation. The left-hand LED (green) will illuminate when a particular circuit is selected, and will extinquish when the circuit has been deselected. Press the **ENTER** switch to store this programming and proceed to the next programming function.

I/O Map

If no programming is required at this step, press "ENTER" to advance to the next function

I/O Mapping is the assignment of controlled outputs that are to be activated by a particular initiating circuit. Unmapped initiating circuits will not generate a system alarm, and unmapped controlled outputs will not operate.

1) Upon entering I/O map mode, the first initiating circuit will light its red LED to indicate readiness for mapping. The System 5000 needs to know which output circuits (bells, relays, etc.) are to be activated when this initiating circuit enters an alarm condition. Select the output circuits by pressing the switch on each desired circuit. The left-hand LED will light when a particular output is selected, and will extinquish when the circuit has been deselected.



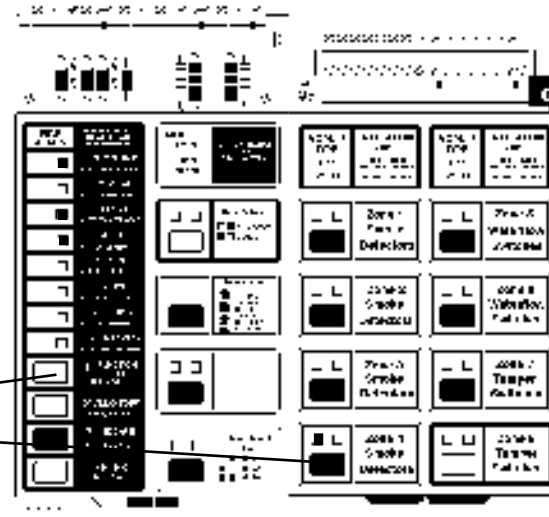
2) Enter mapping for this initiating circuit by pressing the **ENTER** key. The red LED on the next initiating circuit will light.

3) Continue mapping controlled outputs to input circuits until all active initiating circuits have been mapped.

4) After mapping for the last initiating circuit has been entered, the System 5000 will scroll back to the first initiating circuit again. Press the **FUNCTION SELECT** key to display all unmapped initiating and output circuits. The ENTER/ESCAPE LED will flash.

5) Select any initiating circuits that need to be programmed or which require corrections by pressing the switch for that circuit. Map outputs to this initiating circuit and press **ENTER** to store the new changes for this circuit. Use the **FUNCTION SELECT** key to switch to any initiating circuits still to be programmed. Carefully check the displayed initiating circuits and controlled outputs.

6) When all changes and/or corrections have been made, press the **FUNCTION SELECT** switch followed by **ENTER** to advance to programming the System 5000 for VERIFIED ZONES.



Programming Tip:
During I/O Mapping, to advance to programming any initiating circuit, press the FUNCTION SELECT switch followed by the switch on the next circuit to be programmed.

Verified/PAS

If no programming is required at this step, press "ENTER" to advance to the next function

Verified Zone Operation

Alarm Verification will not work if the system is programmed for PAS operation (see Extended Programming - Pre Signal Delay)!

Alarm Verification is a method of reducing false alarms from two-wire smoke detectors and should only be used on circuits where the false alarm rate cannot be reduced to an acceptable level by other means. When an alarm is detected, the System 5000 removes initiating circuit power for 12 to 13 seconds. During this time, the panel checks the circuit to see if the alarm has come from a shorting-type device (which would subsequently generate an immediate alarm). If no short has been detected, power is reapplied, and a confirmation period begins. Any alarm detected within this 60 second period will initiate an immediate system alarm. Only alarm signals from two-wire smoke detectors can be verified since four-wire smoke detectors are not reset during verification. Both two-wire smoke detectors and N.O. shorting-type initiating devices may be connected to the same circuit; however, verification will not affect the contact-type devices.

<table>
<tr><th colspan="3">Alarm Verification Period (120 seconds)</th></tr>
<tr><td colspan="2">Retard—Reset—Restart Period (max 60 sec)</td><td rowspan="2">Confirmation Period
(min 60 sec)</td></tr>
<tr><td>System 5000
Retard—Reset Period
(12-13 seconds)</td><td>Detector
Restart Period
(power-up time)</td></tr>
</table>

If PAS is not to be programmed, press "ENTER" to advance to the next function.

Positive Alarm Sequence (PAS)

PAS adds a 15 second, post-alarm delay to signal activation. Pressing the ACKNOWLEDGE or SILENCE key before 15 seconds has expired will change the timer to its full value (1, 2, or 3 minutes) programmed.

For proper operation of PAS, the following conditions must be met:

1) The control panel must be located so that an alarm signal can be acknowledged by trained personnel within 15 second.

2) The system must be equipped with a presignal bypass switch.

3) The system must be configured so that activation of a second automatic fire detector bypasses presignal and immediately activates alarm signals.

To accomplish this, the installer must employ AIM-200 modules to provide point annunciation of initiating points OR install one smoke detector per conventional initiating device zone.

4) Zones selected for PAS operation shall contain smoke detectors only. These zones may not contain other initiating devices, such as manual stations, heat detectors, waterflow indicators, etc.

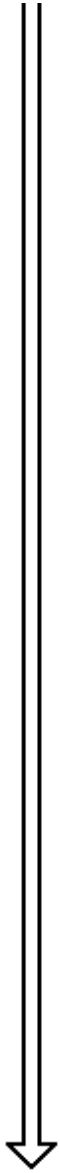
A fire alarm system that fails to meet the above requirements for PAS service will be classified as a presignal system only.

Programming Verified or PAS Zones

The LED next to the title "VERIFIED/PAS" will flash. Select circuits by pressing the switch on all desired points. The left-hand LED (red) on each point will illuminate when the circuit is selected, and extinquishes when the circuit has been deselected. Press the **ENTER** switch to store programming and proceed to the next function.

Switch Inhibit

If no programming is required at this step, press "ENTER" to advance to the next function



Switch Inhibit (Full)

Full Switch Inhibit will disable the on/off switch on any selected initiating, indicating, or control point. When programmed for Switch Inhibit, the switch associated with a particular circuit can't be used to manually enable or disable that circuit, or to activate an output circuit. When the switch is inhibited on a particular output circuit, that circuit can only be activated by an alarmed initiating circuit to which it is mapped. The switch will continue to function in the Program/Service mode and for program display. If all circuits are programmed for Switch Inhibit, the Enable/Disable switch will have no effect.

Switch Inhibit (Partial)

Partial Switch Inhibit will disable the manual on/off functioning of the switch on any selected initiating, indicating, or control point. It will still permit enabling or disabling of each circuit with the switch. (Requires SROM-CPU, Part Number 75120 or greater).

1. If a circuit has Switch Inhibit selected, and the ability to disable or enable that circuit is desired, then it's necessary to program-out the Switch Inhibit, remove the PK-1 key, Disable/Enable the circuit, and then reprogram Switch Inhibit for that circuit.

2. The Display Program function is unaffected by Switch Inhibit. Pressing the switch on an initiating circuit will still Lamp Test the LEDs on that point and will display all output circuits that have been I/O mapped to this zone.

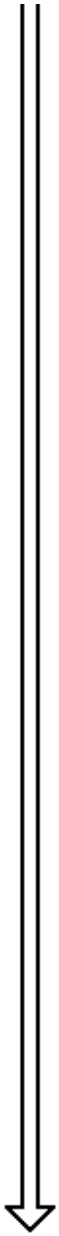
3. The Disable/Enable display function is unaffected by this change to Switch Inhibit (pressing the Enable/Disable switch will still change the display to only disabled circuits, not troubles).

Programming Switch Inhibit

The LED next to the title "SWITCH INHIBIT" will illuminate steadily. Select circuit for switch inhibit. The left-hand LED will illuminate when a particular circuit is selected, and will extinquish when the circuit has been deselected. Press the **ENTER** switch for a full Switch Inhibit OR press the **FUNCTION SELECT** switch to enter a partial Switch Inhibit. Control will proceed to the next programming function.

Non-Alarm Inputs

If no programming is required at this step, press "ENTER" to advance to the next function



Operation of a Non-Alarm Input

A non-alarm input is an initiating circuit that, upon activation, will not light the System Alarm LED or cause the piezo to sound, will not latch and will self-restore (if the system is in alarm, non-alarm inputs WILL latch), and can be mapped to activate output circuits.

When a short circuit occurs on a non-alarm circuit, the IZM-8 red LED is turned on, but the System Alarm LED and the piezo sounder are not activated. Non-alarm points have a lower priority compared to regular IZM-8 alarm zones.

Non-alarm circuits are "tracking" (non-latching), in that they turn on when the circuit is shorted, and turn off when it changes back to normal (unless the system is in alarm). Non-alarm circuits use the I/O map capability of the System 5000 and the mapped controls simply turn on/off as the non-alarm point turns on/off. Non-alarm circuits are supervised for opens.

Applications

Non-Alarm circuits are used to monitor devices that are not fire initiating sensors. Examples of these applications are:

1. Sensors such as thermostats or timers could be connected to Non-Alarm points and used to open/close ventilation dampers connected to System 5000 outputs. In the event of a fire situation, the System 5000 could force the dampers in one position or the other, and subsequent non-alarm state changes would be ignored.

2. A manual drill switch could be connected to an IZM-8 point and used to manually test the alarm system without causing a System Alarm or activating a Remote Station.

3. Door locks connected to CRM-4/CRE-4 modules could be unlocked when a fire is detected by the System 5000. A Non-Alarm point could be used to manually unlock/lock the doors in non-fire situations.

Programming Non-Alarm Inputs

The LED next to the title "NON ALARM INPUTS" will flash. Select initiating circuits for non-alarm operation by pressing the switch on all desired points. The left-hand LED (red) on each point will illuminate when the circuit is selected, and will extinquish when the circuit has been deselected. Press the **ENTER** switch to store this programming and proceed to programming the next function.

Note: Circuit programmed for both supervisory and non-alarm perform special function. See Remote Command Inputs in Doc. 15583.

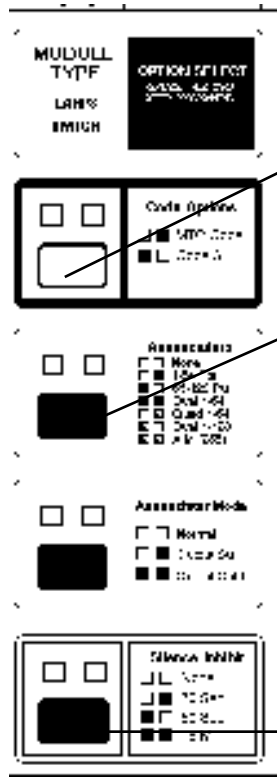
Extended Prog

If no programming is required at this step, remove the PK-1 to exit programming or press "ENTER" to return to the beginning of Programming Mode (WATERFLOW selection)

Extended Programming of the System 5000 involves the programming of four additional features. Remove the right-hand CPU-5000 label and replace it with the Extended Programming Label (15925).

Programming Extended Functions

Upon entering this programming step, the LED next to the title "EXTENDED PROGRAMMING" will illuminate steadily. The programmed status of each of the four features is displayed by the two LEDs next to each point. Feature selections are made by pressing the switch next to a certain function until the proper LED code is displayed. Each time this switch is pressed, a different configuration is displayed. Repeatedly press this switch until the two LEDs reflect the desired configuration. All four features must be set before pressing "ENTER," which stores all the information at once.



Code Options – Push the switch until the LEDs reflect the desired code (March-Time 110 beats-per-minute or Temporal 3-3-3 Code).

Annunciators – Push the switch until the LEDs reflect the number of annunciators installed: none, one annunciator covering points 1-64, two annunciators covering points 1-128, two annunciators both covering points 1-64, four annunciators covering points 1-64, four annunciators covering points 1-128, and annunciating AIM points).

.

Silence Inhibit – Push the switch until the LEDs reflect the amount of time signal silence should be inhibited (None, 30 seconds, 60 seconds, or 5 minutes).

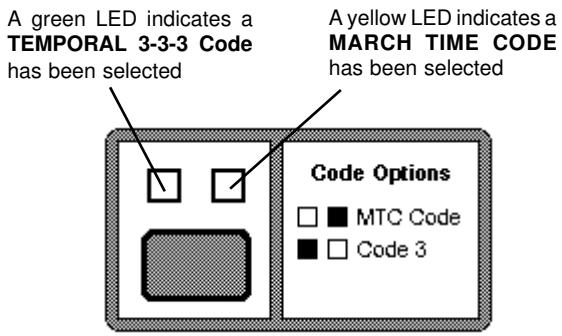
After the desired selections for all four features have been made, store extended programming information in the System 5000 by pressing the ENTER switch. Control will return to the beginning of Programming Mode with the selection of WATERFLOW circuits.

It is important that the System 5000 programmer ensure that the control panel has been programmed properly. Recheck all programming by stepping through all programmed functions, and when correct, remove the PK-1 key to exit.

Extended Programming ——————————— *Code Options*

Code Operation
The selected code will only sound on controlled outputs that were programmed under CODED CIRCUITS. Outputs that were not selected as CODED CIRCUITS will ring steadily when activated.

Available Codes
Two types of output circuit codes, MARCH TIME (110 beats per minute) and TEMPORAL 3-3-3, are available on the System 5000.



Code Option Notes:
1) Special requirements apply to codes and CODED CIRCUITS selections for the TCM–2 and TCM-4 modules. See the TCM-2 manual (Notifier Document 15805) or the TCM-4 (Notifier Document 15924) for further instructions.

Annunciator Operation

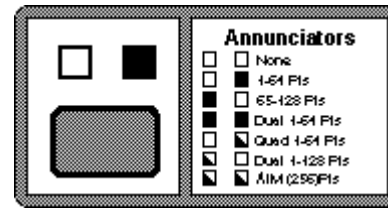
Remote annunciators of the Annunciator Control System must be programmed into the System 5000. In addition to "None," there are six choices for installed annunciators, explained below. For more information on the ACS, refer to The Annunciator Control System (Document Number 15842).

Note: ■ Denotes LED on ☐ Denotes LED off ◪ Denotes Flashing LED

1-64 Pts

One Annunciator address has been assigned. This annunciator/expander combination, which must be set to Address "1," annunciates eight CPU-5000 points, and up to 56 circuits (max).

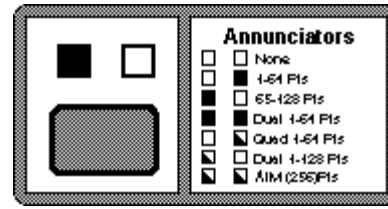
Additional annunciators may be installed, provided they are configured for "Receive Only" operation at address "01."



65-128 Pts

Two Annunciator addresses have been assigned. Address 1 annunciates system points 1-64. Address 2 annunciates system points 65 - 128 (max).

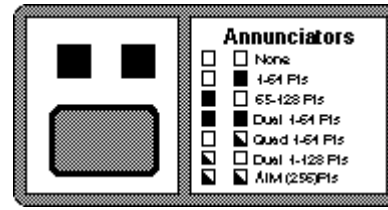
Additional annunciators may be installed, provided they are configured for "Receive Only" operation. Receive Only annunciators displaying points 1-64 must be set for address "01." Receive Only annunciators displaying points 65-128 must be set for address "02."



Dual 1-64

Two Annunciator addresses have been assigned. Addresses 1 and 2 both annunciate system points 1-64. Unlike Receive Only Annunciators, both modules here can be used to remotely execute System 5000 control functions, such as RESET.

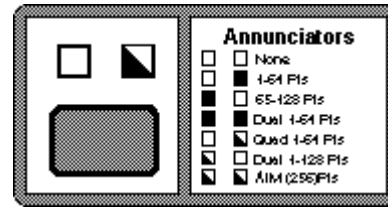
Additional annunciators may be installed, provided they are configured for "Receive Only" operation at either address "01" or "02".



Quad 1-64

Four Annunciator addresses have been assigned (1-4). All addresses annunciate system points 1-64. Unlike Receive Only Annunciators, modules here can be used to remotely execute System 5000 control functions, such as RESET.

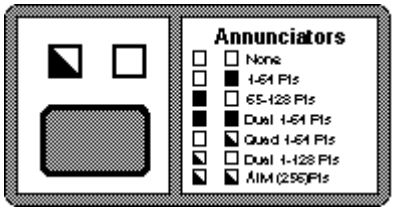
Additional annunciators may be installed, provided they are configured for "Receive Only" operation at address "01."



Dual 1-128

Four Annunciator Addresses have been assigned. Addresses 1 and 3 annunciate system points 1-64 and Addresses 2 and 4 annunciate system points 65-128.

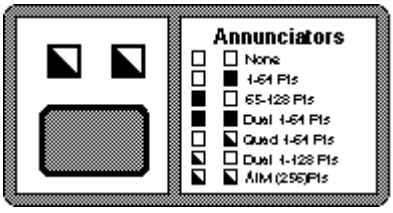
Additional annunciators may be installed, provided they are configured for "Receive Only" operation. Receive Only annunciators displaying points 1-64 must be set for address "01." Receive Only annunciators displaying points 65-128 must be set for address "02."



AIM-256

Four Annunciator addresses have been assigned. Address 1 annunciates system points 1-64. Address 2 annunciates AIM detectors 1-64. Address 3 annunciates AIM modules 1-64. Address 4 annunciates AIM detectors and modules 65-96.

Additional annunciators may be installed, provided they are configured for "Receive Only" operation at address "01" through "04."



Extended Programming ——— *Annunciator Mode*

Annunciator Operation

The CPU-5000 automatically sends the trouble status of a circuit in the System 5000 to remote serial annunciators. Under normal operation, the output status of these controlled outputs is not sent to the annunciators (an annunciator cannot be used to tell if an output circuit can be activated.

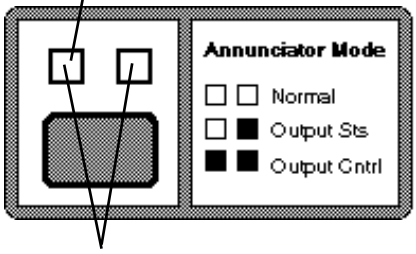
Output Status

The CPU-5000 can be programmed to send the output status (On/Off) of indicating appliances and control relays to serial annunciators. The annunciator point will display the same status as the main control panel.

Output Control

This selection enables the switch on annunciator point to control the output circuit it corresponds to. The LED on the main control panel for that circuit will turn on it response to remote activation at the annunciator. Output and the trouble status of the circuit is sent to the annunciator by the CPU-5000.

A green LED indicates that the annunciator will receive **Output Status** in addition to trouble status.

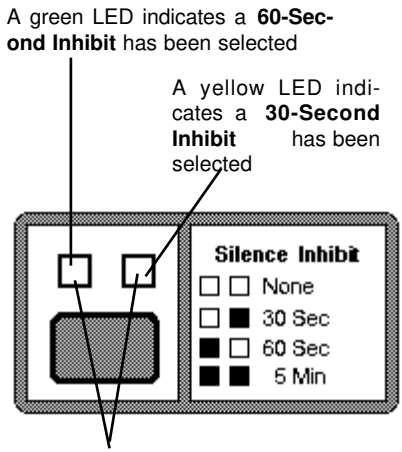


When both the green and yellow LEDs are on, annunciator points will receive output and trouble status, and will function as remote Output Control points for the System 5000.

Silence Inhibit Operation

The Silence Inhibit timer is used to prevent the use of the Signal Silence switch until the System 5000 indicating circuits have been activated for a minimum period of time. If the timer is programmed to operate, it will have an effect only when an alarm is detected and reported by the CPU-5000 module.

From the moment the most recent alarm is detected until the timer expires, the Signal Silence switch on the CPU-5000 or on any ACS Annunciators will not function. After the timer expires, the Signal Silence switch will function normally.



When both the green and yellow LEDs are on, the CPU-5000 will inhibit Signal Silence for **5 minutes.**

Silence Inhibit Times

While the timer is running, the Signal Silence LED will flash. The timer may be programmed to 0 seconds, 30 seconds, 1 minute, or 5 minutes. If a second alarm occurs while the timer is running, or after the timer has expired, the timer is restarted. Non-alarm point or supervisory point activation will not start the timer.

Option Programming

Caution: These extended programming features are not to be used in a Network system employing NIB-96 boards!

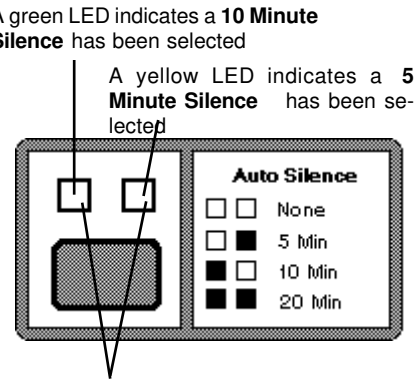
Programming

To program the features of AUTO SILENCE, PRE-SIGNAL DELAY, DRILL SWITCH, and CALIFORNIA CODE/REMINDER modes, a new password must be entered. Insert the *Option Select II* label (contained in this manual) into the right-hand side of the CPU. Insert the programming key and enter the password 231-3211. After a successful password entry, the EXTENDED FEATURES LED will light on the CPU. The new feature option values can be selected by pressing the respective point switch until the desired choice is displayed.

After selecting the desired option, pressing the ENTER or FUNCTION SELECT key will store the option in nonvolatile program memory. Pressing the ESCAPE key will return the display to the last programmed value. The 231-3211 password does not allow access to any other program features and does not cause the system to reconfigure itself.

Option Programming — *Auto Silence Mode*

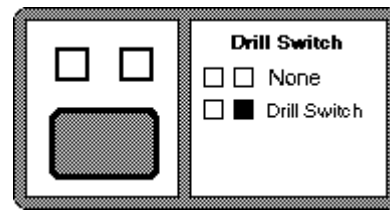
The **AUTO SILENCE** feature will automatically turn off all silenceable circuits after a pre-programmed delay. The delay timer starts after a system alarm. Any subsequent alarms which occur before the auto silence activates will restart the delay from zero.



When both the green and yellow LEDs are on, the CPU-5000 will Auto Silence for **20 minutes.**

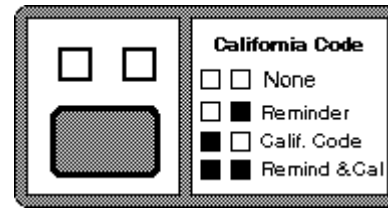
Option Programming — *Drill Switch Mode*

The GENERAL ALARM circuit switch on the CPU may be programmed to function as a **DRILL SWITCH**. In this mode, pressing the switch will turn on/off the status of all system indicating circuits that are not disabled or switch inhibited. If there is a system alarm present, the DRILL SWITCH will turn on these circuits but it will not turn off any circuits. When functioning as a DRILL SWITCH, the GENERAL ALARM switch has no affect on the GENERAL ALARM circuit or LEDs.



Option Programming — *California Code/Reminder*

The CALIFORNIA CODE mode adds a 10-second timer to all *silenceable circuits.* When an alarm occurs, the timer is started. At the end of the 10-second period, all silenceable circuits are shut off for five seconds. At the end of the five seconds, the circuits are turned on again for 10 seconds. This cycle repeats indefinitely.

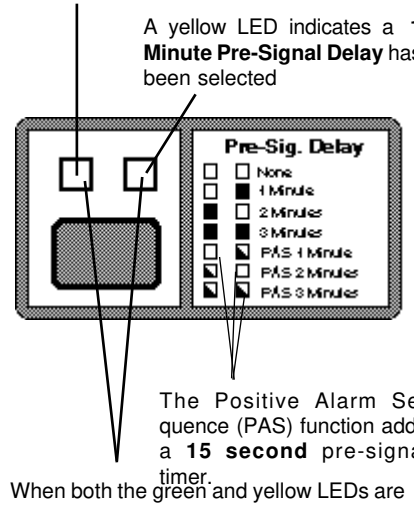


In the event of an acknowledged alarm, the REMINDER mode pulses the piezo every 15 seconds. If an acknowledged trouble exists, but not an alarm, the piezo is pulsed every two minutes.

Option Programming — *Pre-Signal Delay*

The **PRE-SIGNAL DELAY** delays the activation of all *silenceable circuits* mapped to a zone in alarm for a pre-programmed length of time. A subsequent alarm aborts the delay and re-maps all alarm points. Pressing the SIGNAL SILENCE switch before the delay time has expired aborts the delayed activation of the silenceable circuits.

The Positive Alarm Sequence (PAS) function adds a timer. After a first alarm, the timer is set for 15 seconds. If nothing happens in that 15 seconds, all signals are activated. If an ACKNOWLEDGE or SILENCE key (including annunciator keys) is pressed before 15 seconds, the timer changes to its full value (1, 2, or 3 minutes)



Note: When Pre-Signal Delay has been selected, at least one Indicating Appliance Circuit must be programmed as non-silenceable. This will ensure that at least one indicating circuit will sound immediately after initiation of an alarm condition.

Note: NFPA 72 requires that a Day/Night/Weekend switch be installed that will totally inhibit all pre-signal function. On entering pre-signal mode, the CPU checks zone 1 in module 1. If this is an IZM-8 zone or AIM zone set for Non-Alarm and Supervisory, and it is **ACTIVE**, all pre-signal and PAS operation will be ignored.

Section Four:
Walk-Testing the System 5000

Walk Test mode allows one service person to test initiating devices and Initiating Device Circuits from the field without returning to the panel to reset the system. In response to an alarm condition, the System 5000 will activate selected output circuits (Indicating Appliance Circuits, relays, etc.) mapped to the zone being walk-tested. The FACP will exit the walk test mode if an alarm is detected on a zone that is not selected as walk test. After 1 or 4 seconds, the output circuits will automatically be reset by the control panel. This procedure is repeated for as long as a respective circuit is in alarm.

Press 231 2132, followed by 

When the Walk Test password has been accepted, all red LEDs on IZM-8s will light. The green LEDs on all output circuits which can be silenced (a programmable feature) will light.

Selecting Initiating Device Circuits for Walk Test Capability
To select the Initiating Device Circuits that should not operate under walk test, press the ON/OFF switch for each appropriate circuit and wait for the red LED to extinguish.

To select output circuits that will operate during walk test, press the ON/OFF switch next to the desired output circuit. The green LED will light indicating the output was selected to operate under walk test. To deselect a circuit, press the switch until the LED extinquishes. The Remote Signaling/Municipal Tie circuit will not operate in walk test.

Press 

to confirm the selections and proceed with the test.

Testing Initiating Device Circuits for Alarms
Upon activation of a field device the controlled outputs that are programmed to operate with that initiating circuit and were selected to operate under Walk Test will activate for approximately four seconds. Each activation of that initiating circuit after the first activation will activate the controlled outputs for approximately one second. Once the initiating circuit has been tested the red LED will flash. (Note: occasionally because of reset timing, the yellow LED may be activated. Ignore this indication).

Testing Initiating Device Circuits for Trouble
Inducing a trouble into the initiating circuit will activate the programmed controlled outputs as in the alarm test. The controlled outputs will activate and remain activated until the trouble is cleared. After testing the initiating circuit for trouble, the yellow LED on that circuit will flash, indicating that is was tested.

Testing Indicating Appliance Circuits for Trouble
Inducing a trouble into the indicating circuit will activate the particular circuit and pulse the circuit at a one second on/off rate until the trouble is cleared.

Section Five:
Viewing the Event History Log

While the PK-1 Programming Key is inserted, the System 5000 cannot function as a fire detection and alarm system. The trouble relay is activated, and at least one yellow LED is illuminated at the CPU-5000.

Capabilities

Event History Mode allows the storing and displaying of past alarm and trouble events, in the order that they have occurred. Certain operator actions, such as Acknowledge and Reset are also stored and displayed. Event history is a valuable tool for the serviceman, providing the following capabilities for the System 5000:

- Record of actual alarm sequence and Acknowledge/Silence/Reset.
- Record of intermittent trouble problems, for troubleshooting.
- Record of unverified detector alarms, for maintenance.
- Record of program change attempts or circuit disable action by all individuals.
- Delineation of *MODULE FAIL* troubles between annunciators and standard modules.

Type of events stored

The System 5000 will store the last 255 events in a nonvolatile buffer memory. If multiple alarms/troubles occur simultaneously on the same module, the system will store all of them in the same buffer entry. The following events are stored as they occur:

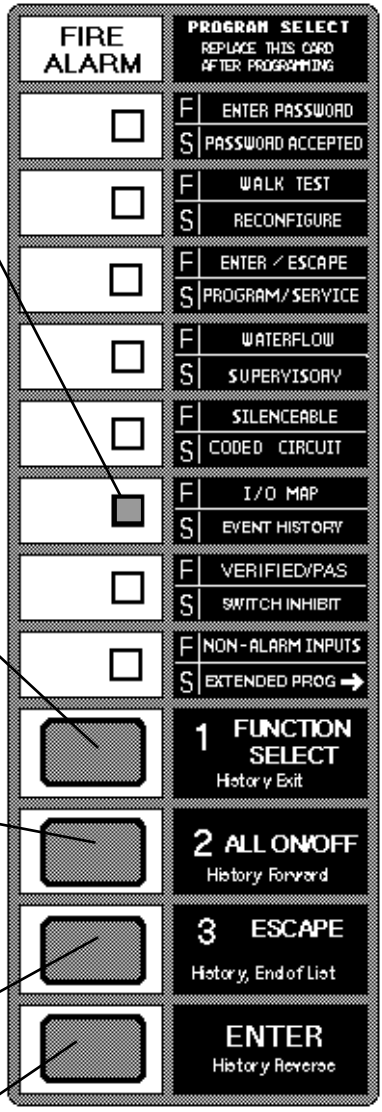
1. **Point troubles** (from any slave module)
2. **Point alarms** (from IZM-8 points) **- including unverified alarms**
3. **Point supervisory indications** (if the point has been programmed as supervisory)
4. **System troubles, as detected by the CPU-5000:**
   a. Power Trouble
   b. Module Failure (including annunciators)
   c. Bell Circuit 1 Trouble
   d. Bell Circuit 2 Trouble
   e. Municipal Tie Trouble
   f. Alarm Relay Trouble
5. **CPU actions by operator:**
   a. Acknowledge Switch Activation
   b. Signal Silence Switch Activation
   c. System Reset Switch Activation
   d. Enable/Disable Switch Activation
   e. Program Key Insertion

Display Operation
Enter Event History Mode by with the following password: **2 3 1 - 1 1 1 1**.

* The LED next to the title "EVENT HISTORY" on the left-hand CPU-5000 Programming Label will illuminate steadily.

* Display of the "END-OF-LIST" indicator (the LEDs on all the modules in the system except the CPU-5000, will flash)

The four keys on the left of the CPU-5000 are used to control the display operation as follows:



1 To exit Event History Mode, press the *HISTORY EXIT* switch (FUNCTION SELECT). The 5000 will return to the "ENTER PASSWORD" level of programming.

2 If the *HISTORY FORWARD* switch (ALL ON/OFF) is pressed, the System 5000 steps in forward time order, displaying more recent events with each switch press. If the display is at the END-OF-LIST indicator, pressing the HISTORY FORWARD switch will cause the display to go to the oldest event in time (event number 255).

3 Pressing *HISTORY, END OF LIST* switch (ESCAPE) causes the display to return to the END-OF LIST indicator.

4 Pressing the *HISTORY REVERSE* switch (ENTER) causes most recent event in the buffer is displayed. This is always an indication of program key insertion, which was just done on the previous step. On the next activation of the HISTORY REVERSE key, the next most recent event is displayed. This may be continued, displaying events in reverse time order, until the oldest event is displayed. After the oldest event (the 255th event) is displayed, another press of the HISTORY REVERSE switch will return the display to the END-OF-LIST indicator.

Clearing the History Buffer
To clear out the 256-event history memory, press 231-3122. This will cause all LEDs on the control panel to flash. If you wish to abort Clear History at this point, press ESCAPE. Otherwise, press and hold in the ENTER switch for 5 seconds. Program control returns to the ENTER PASSWORD point.

Event History Display Patterns

Alarms
Initiating circuits that have gone into alarm are indicated by illumination of the red LED on that point.

Supervisory Conditions
Supervisory conditions on initiating circuits programmed for supervisory operation are indicated by illumination of the red LED on that point.

Troubles
Trouble with initiating or indicating points are indicated by illumination of the yellow LED on that point.

Other Recorded Events
All other events recorded by the history feature are displayed in a code that uses the eight LEDs on the right-hand-side of the CPU-5000 (see **History Log Label**).

Events not Recorded
To conserve memory and avoid confusion, the following events are not stored or displayed:

- Output point ON/OFF state changes.
- Output point manual switch activations.
- Individual point disable indications.
- Any event occurring within Program Mode or Walk Test.
- VCM/VCE telephone call-in.
- Non-Alarm point activation

Event History Application Notes

Password
Entry into Event History Mode requires a different password from Reconfigure or Program Mode, and exiting from Event History Mode jumps to "Enter Password" programming level (not Program Mode or Reconfigure). This permits some control over who may read the history file, and who may reprogram the system.

Overwriting Event History Memory
It is not possible to erase the Event History file. However, the file may be overwritten by new events or key activations, since it is limited to 256 events, and new events are written over the oldest information. This would be too complex (and tedious) to do accidently.

Time of Event
Event History does not record the time-of-day for each event. Only the sequence of events is stored.

Record Markers
The Event History software automatically stores a "marker" whenever the PK-1 key is inserted (8 green/yellow LEDs on the CPU). In addition to the keeping a record of any possible (unauthorized) program mode actions, this Key Insertion Marker is a valuable reference for the serviceman's own use. The record marker may easily be customized, by performing a sequence of key insertion/removals interspersed with activations of the ACKNOWLEDGE/SILENCE/RESET/DISABLE keys.

Alarm Verification Analysis
Unverified alarms are stored and displayed the same as actual (verified) alarms. However, the user can differentiate between them by observing subsequent System Reset events, which normally occur after actual alarms (latched). For example, a serviceman could check on unverified alarm activity by entering History Display Mode, and stepping back through time to see if any alarm indications (red LEDs) were stored between the latest Key Insertion Marker and the previous Key Insertion Marker. Unverified Alarms would not be followed by a System Reset indication, unless System Reset was intentionally pressed for some other reason. Unverified alarm activity on a zone may be indicative of incipient false alarms, and may require service action.

Intermittent Troubles
The System 5000 has self-restoring trouble operation to prevent unnecessary service calls for transient problems. However, repeated intermittent trouble indications may require service action, and the Event History storage and recall capability allows the serviceman to make a determination if a such a situation exists, and take appropriate action at his convenience. Trouble indications are stored for indicating circuits, as well as initiating.

Delineation of Annunciator and Module Troubles
The System 5000 lumps annunciator trouble indications (for both possible supervised annunciators) into the "Module Trouble" LED indicator. The Event History breaks this out into System 5000 slave module trouble; Annunciator #1 trouble; and Annunciator #2 trouble. Note: The three types of trouble are still combined with each annunciator trouble: *Invalid/no answer from annunciator; Annunciator local trouble loop open; Annunciator expander removed.* Note also that slave module trouble does not delineate which of the 15 modules caused the trouble.

Write Inhibit Jumper
The Write Inhibit hardware jumper on the CPU-5000 lower board can not be set to the write inhibit position, or the Event History option will not function.

Program Key Notes
The PK-1 key is ignored by the System 5000 if an alarm exists, therefore History Display Mode cannot be entered when the control panel is in alarm. Also if a trouble exists in the system when the PK-1 key is removed, trouble will resound, and be rewritten to the Event History file.

Repeated Troubles/Alarms
If a trouble or unverified alarm comes and goes repeatedly, it will be stored each time in the history file. When displaying repetitive alarm/trouble occurrences the display will remain the same through several Forward or Reverse history key presses. It is necessary to carefully count such multiple key activations.

Password Card

Cut out this wallet-size label for quick reference to System 5000 Passwords.

NOTIFIER

System 5000

Mode Passwords

Reconfigure	2 3 1 1 3 3 2
Program	2 3 1 3 1 1 2
Clear Program	3 1 2 1 2 3 3
Walk Test	2 3 1 2 1 3 2
Event History	2 3 1 1 1 1 1
Clear History	2 3 1 3 1 2 2
Option Prog.	2 3 1 3 2 1 1

Limited Warranty

Notifier warrants its products to be free from defects in materials or workmanship for eighteen (18) months from date of manufacture, under normal use and service. Products are date stamped at time of manufacture. Notifier's obligation is limited to repairing or replacing, at its option, free of charge for parts or labor, any part which, in it opinion, shall be proved defective in materials or workmanship under normal use and service. For products not under Notifier manufacturing date stamp control, the warranty is eighteen (18) months from date of original purchase unless the installation instructions or catalog sets forth a shorter period, which case the shorter period shall apply. This warranty is void if the product is altered, repaired or serviced by anyone other than Notifier. In case of defect, secure a Return Material Authorization form from our customer service department. Return product, transportation prepaid, to Notifier, Division of PITTWAY, 12 Clintonville Road, Northford, CT 06472.

This writing constitutes the entire agreement between the buyer and seller. Seller does not represent that its products will prevent any loss by fire or otherwise; or that the product will in all cases provide the protection for which it is installed or ,intended. Buyer acknowledges that Seller is not an insurer and assumes no risk for loss or damages or the cost of any inconvenience, transportation damage, misuse, abuse, accident or similar incident. THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ALL IMPLIED WARRANTIES MADE BY NOTIFIER IN CONNECTION WITH THE PRODUCTS, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED IN DURATION TO A PERIOD OF EIGHTEEN (18) MONTHS FROM THE DATE OF MANUFACTURE OR, FOR PRODUCTS NOT UNDER NOTIFIER MANUFACTURING DATE-OF-STAMP CONTROL, THE WARRANTY IS EIGHTEEN (18) MONTHS FROM DATE OF ORIGINAL PURCHASE UNLESS THE INSTALLATION INSTRUCTIONS OR CATALOG SETS FORTH A SHORTER PERIOD, IN WHICH CASE THE SHORTER PERIOD SHALL APPLY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. UNDER NO CIRCUMSTANCES SHALL NOTIFIER BE LIABLE FOR ANY LOSS OF, OR DAMAGE TO PROPERTY, DIRECT, INCIDENTAL OR CONSEQUENTIAL, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT. FURTHERMORE, NOTIFIER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY WHICH ARISES IN THE COURSE OF, OR AS A RESULT OF, COMMERCIAL OR INDUSTRIAL USE.

This warranty replaces all previous warranties and is the only warranty made by Notifier on this product. No increase or alteration, written or verbal, of the obligation of this warranty is authorized.

NOTIFIER®

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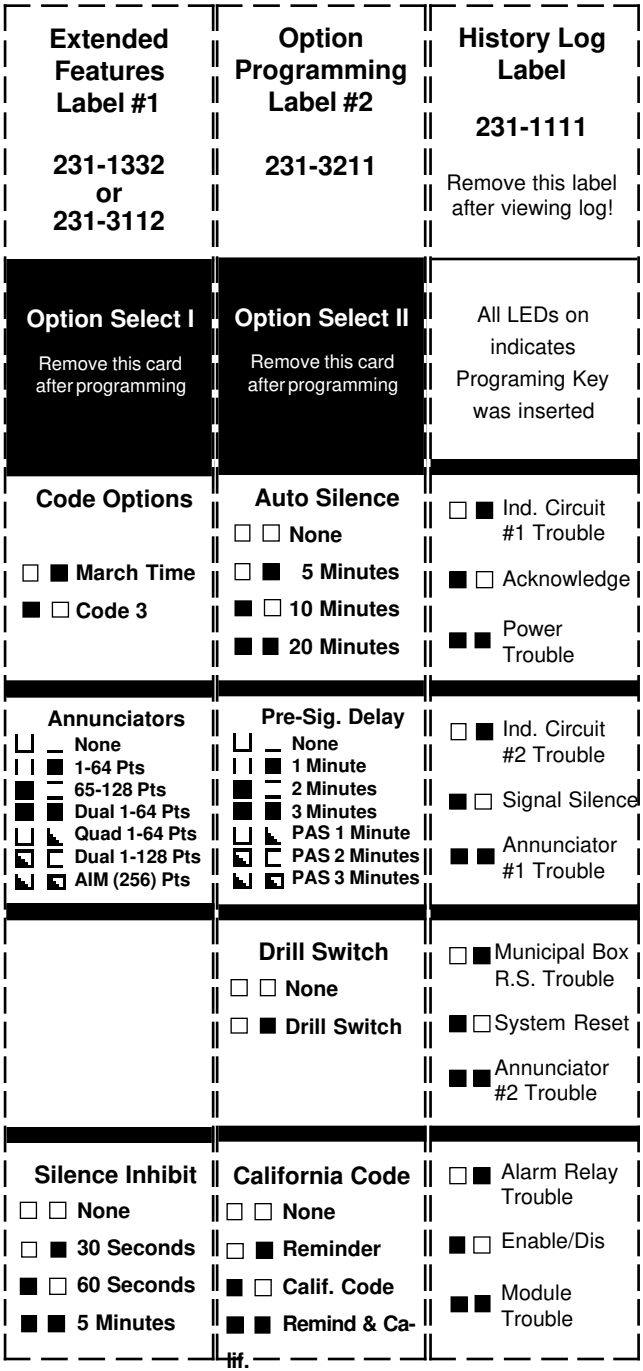

Actual size Slide-In CPU labels

Cut out these labels for insertion into right-hand side of CPU-5000. Use the Extended Features Labels during programming of the system. Use the History Log Label when servicing the System 5000. ■ *Indicates LED "ON"*