

Fire Alarm Control Panel NFS-3030/E Operations Manual

Fire Alarm System Limitations

While a fire alarm system may lower insurance rates, 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 panel 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.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72-1999 (NFPA 72-1999), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on 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.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. 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. Heat detectors are designed to protect property, not life.

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. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication. Please note that:

- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

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 and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. 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. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of fire alarm malfunction is inadequate maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of Chapter 7 of NFPA 72-1999 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

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 the fire alarm control panel. Disconnect all sources of power before servicing. The 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 72-1999 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 also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F) and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. 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 all peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° 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.

Though designed to last many years, system components can fail at any time. 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 by authorized personnel.

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FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

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Section 1 General Information

1.1 About This Manual

The following graphics appear in the manual to indicate a caution, a warning, or a note.



CAUTION: Information about procedures that could cause programming errors, runtime errors, or equipment damage.



WARNING: Information about procedures that could cause irreversible damage to the control panel, irreversible loss of programming data or personal injury.



Note: Information that highlights an important part of the preceding or subsequent text or illustration.

1.2 Supplemental Information

The table below provides a list of document sources (manuals) containing additional information regarding the NFS-3030 and optional peripherals. The NOTIFIER document (DOC-NOT) chart provides the current document revision. A copy of this document is included in every NOTIFIER shipment.

For information on...	Refer to...	Part No.
Installation	NFS-3030/E Installation Manual	51330
Programming	NFS-3030/E Programming Manual	51345
Main Power Supply	AMPS-24/E	51907
SLC Wiring Instructions	SLC Wiring Manual	51253
Off-line programming utility	VeriFire™ Tools CD help file	VERIFIRE-TCD
Compatible Devices	Device Compatibility Document	15378
Annunciators	Annunciator Control System	15842
	Annunciator Fixed Module	15048
	ACM-8R Annunciator Control Module	15342
	LCD-160 Manual	51850
	LCD-80 Manual	15037
	LDM Series Lamp Driver Annunciator	15885
	SCS Smoke Control System	15712
	NCA Network Control Annunciator Manual	51482
Auxiliary Power Supply,Charger	RPT-485W/RPT-485WF EIA-485 Annunciator Loop Repeater	15640
	ACPS-2406 Installation Manual	51304
	APS-6R Instruction Manual	50702
	CHG-120 Battery Charger Manual	50641
Cabinets & Chassis	FCPS-24 Field Charger/Power Supply Manual	50059
	CAB-3/CAB-4 Series Cabinet Installation Instructions	15330
Transponders & Transmitters	DPI-232 Manual	51499
	RFX Wireless Transmitter Manual	51012
	TM-4 Instructions (Reverse Polarity Transmitter)	51490
	UDACT Manual (Universal Digital Alarm Communicator/Transmitter)	50050
	XP Transponders Manual	15888
	XP5 Series Manual	50786
Universal Zone Coder	UZY-256 Universal Zone Coder	15216
	UZY-256 Programming	15976
Voice Alarm Systems & Voice Evacuation	XPIQ Manual	51013
	VEC 25/50 Manual	50686
	Voice Alarm System Manual	51252
	RM-1 Series Remote Microphone Instructions	51138
	ACT-2 Instructions	51118
Networking	Noti•Fire•Net Version 4.0 Manual and Higher	51584
	NCM-W/F Instructions	51533
	NCS ONYX™ Network Version 4.0 and Higher	51658

Table 1 Supplemental Documentation

1.3 Introduction to the Control Panel

The NFS-3030 is an intelligent Fire Alarm Control Panel (FACP) with features suitable for most applications. The CPU-3030 comes with a front display/keypad option, which allows programming and viewing options at the panel.

There are two basic configuration options for the NFS-3030/E. It can be ordered with:

- a front display/keypad, which allows programming and viewing options at the panel, or
- no display keypad.

This manual gives instructions using the front display/keypad.

Displayless Mode

When there is no keypad/display at the NFS-3030, the panel is controlled by remote annunciators. VeriFire™ programming is required. The displayless panel has four buttons on its circuit board that are service-level switches for local operation should it become necessary. They are the only buttons, and are clearly marked with ACK for Acknowledge, SIGSIL for Signal Silence, SYSRST for System Reset, and LAMP TEST. These buttons are mainly for installer use: the operator should utilize a remote annunciator for these functions, if possible. The status indicator LEDs on the circuit board are the same as on the display/keypad (refer to "The Display/Keypad" on page 9 of this manual).

Refer to VeriFire™ Tools or the NCA manual for information on programming without an NFS-3030 display/keypad.

1.4 Operating Features

- Alarm Verification selection, to reduce unwanted alarms
- Positive Alarm Sequence (PAS) and Presignal per NFPA 72
- Silence Inhibit timer and Auto Silence timer for Notification Appliance Circuits (NACs)
- March time/Temporal code for Panel Circuit modules
- Programmable Signal Silence, System Reset, and Alarm Activate functions through monitor modules
- Automatic time-of-day and day-of-week control functions, with holiday option
- AWACS (Advanced Warning Addressable Combustion Sensing) with nine field-adjustable Pre-Alarm levels with programmable Control-By-Event (CBE)
- Operate automatic smoke or heat detector sounder base on action Pre-Alarm level, with general evacuation on alarm level
- Security alarm point option with separate audible signal code
- Centralized voice paging and audible alarm signaling options
- Programmable Control-By-Event control of outputs from individual alarm or supervisory addressable devices
- Networks with other FACP's and equipment for large applications
- Automatic detector sensitivity adjustments based on programmable building occupancy schedules

1.4.1 The Display/Keypad

The display/keypad provides an easy-to-use keypad and large LCD (liquid crystal display) that simplifies the programming process.

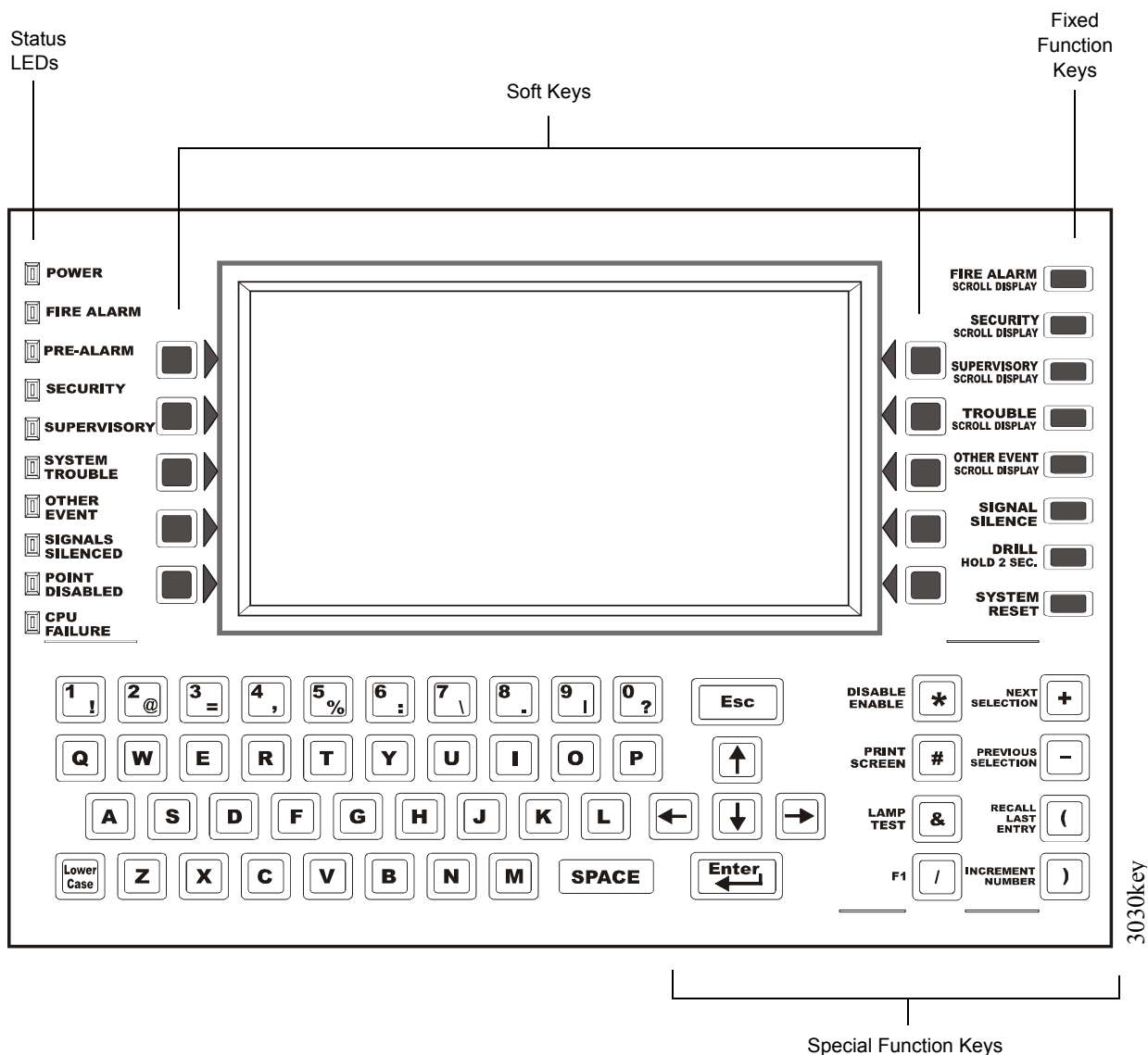


Figure 1.1 The Display/Keypad

The Liquid Crystal Display

The display is 40 characters wide by 16 lines. It displays all programming screens, as well as events, history, device and other information.

Fields may be entered or changed and commands may be issued on the display using the keypad.

The Keypad

The keypad consists of several types of keys: alphanumeric, special function keys, soft keys, and fixed function keys.



Note: Key functions are as described below unless the Local Control option is disabled, or the Display and Control Center (DCC) option is enabled and the DCC is at another location. When the Local Control option is disabled, the panel does not have local control of the Signal Silence,

System Reset, and Drill Fixed Function keys, or the **SIGNAL SILENCE**, **SYSTEM RESET**, and **ACKNOWLEDGE** soft keys. These functions must be performed by a remote device preprogrammed for this purpose. When this panel is not the DCC on a network, permission must be granted from the DCC before Signal Silence, System Reset, Acknowledge or Drill can be performed at this panel. Pressing one of these keys will automatically send a permission request to the DCC.

Keypad

The alphanumeric portion of the keypad is in standard QWERTY format. This keypad is functional mainly when an entry is requested by the system. Otherwise, pressing the keys results in no entry.

Soft Keys

The ten keys to the right and left of the display function to select commands that appear on the display. Each screen has different information, and each key changes function to suit the screen. Beneath each screen in this manual is a description of the function of each soft key.

Fixed Function Keys

The eight keys aligned along the upper right edge of the keypad/display are fixed function keys.

FIRE ALARM SCROLL/DISPLAY
SECURITY SCROLL/DISPLAY
SUPERVISORY SCROLL/DISPLAY
TROUBLE SCROLL/DISPLAY
OTHER EVENT SCROLL/DISPLAY

Scroll through a list of events of these types, each of which will appear on the display once the associated button is pushed. The **OTHER EVENT SCROLL/DISPLAY** key also scrolls between prealarm and disabled events.

SIGNAL SILENCE - Press this key to turn off all control modules and panel output circuits that have been programmed as silenceable. Signal Silence is disabled while the Silence Inhibit Timer is in effect, or when a device with a Waterflow type code initiates a fire alarm.

DRILL HOLD 2 SEC. - Press this key, holding it down for 2 seconds, to activate all silenceable fire output circuits.

SYSTEM RESET - Press this key to clear all latched alarms and other events as well as turn off event LEDs. If alarms or other off-normal events exist after reset, they will resound the system and relight the LEDs. Unacknowledged events will not prevent reset from functioning unless the panel is programmed for Receive Mode (refer to the note on page 21). The **SYSTEM RESET** key will not function if the programmable Silence Inhibit Timer is running.

The System Reset key will not immediately silence active outputs. If the Control-by-event programming conditions for the output are not met after reset, the output will deactivate. (Typically 30 seconds local, 60 seconds network.)

Special Function Keys

To the right of the QWERTY keypad are special function keys.

Arrow Keys - Pressing these keys navigates through the programming fields on a display screen by advancing or reversing the cursor position.

Enter - Pressing this key navigates through the programming fields on a display screen by advancing the cursor.

Esc - Press this key once to leave the current field without saving the entry. Press this key twice in succession to discard any changes made on the screen and exit to the previous screen.

DISABLE/ENABLE - For future use. No function at this time.

PRINT SCREEN - Press this key to print what is displayed on the display screen.

LAMP TEST - Press this key to test the LED indicators on the left of the keypad, the panel circuit LEDs, and the piezo. Pressing the key longer than 5 seconds will display firmware version numbers on the display screen.

F1 - For future use. No function at this time.

NEXT SELECTION/PREVIOUS SELECTION - Use these keys to scroll through the list of possibilities in a data field on the display screen.

RECALL LAST ENTRY -For future use. No function at this time.

INCREMENT NUMBER - For future use. No function at this time.

LED Indicators

There are ten labeled LEDs aligned along the left edge of the keypad. They light to annunciate certain conditions, as described in Table 1.1 below.

LED INDICATOR	COLOR	FUNCTION
Power	Green	Illuminates when AC power is within normal operating limits.
Fire Alarm	Red	Illuminates when at least one fire alarm event exists. It will flash if any of these events are unacknowledged.
Pre-alarm	Red	Illuminates when at least one pre-alarm event exists. It will flash if any of these events are unacknowledged.
Security	Blue	Illuminates when at least one security event exists. It will flash if any of these events are unacknowledged.
Supervisory	Yellow	Illuminates when at least one supervisory event exists. It will flash if any of these events are unacknowledged.
System Trouble	Yellow	Illuminates when at least one trouble event exists. It will flash if any of these events are unacknowledged.
Other Event	Yellow	Illuminates for any category of event not listed above. It will flash if any of these events are unacknowledged.
Signals Silenced	Yellow	Illuminates if the NFS-3030 Notification Appliances have been silenced. It flashes if some but not all of the NFS-3030 NACs have been silenced.
Point Disabled	Yellow	Illuminates when at least one device has been disabled. It will flash until all disabled points have been acknowledged.
CPU Failure	Yellow	Illuminates if there is an abnormal hardware or software condition. Contact technical support. The panel is out of service when this LED is illuminated or flashing.

Table 1.1 LED Indicators

1.5 Message Formats

This section describes the formats for system normal, device events and system events screens. For a definition of these types of events, as well as instructions for dealing with them, refer to Section 2, "Operation of the Control Panel" in this manual.

1.5.1 System Normal Screen

The System Normal message appears at the top of the display when no off-normal events exist. It consists of two lines, each 40 characters long. Line one is a custom network message. Line 2 is a standard message giving the System Normal message, the time, day of the week, and date. The Main Menu is selectable using the lower right soft key.

Line 5 indicates the current time and date.

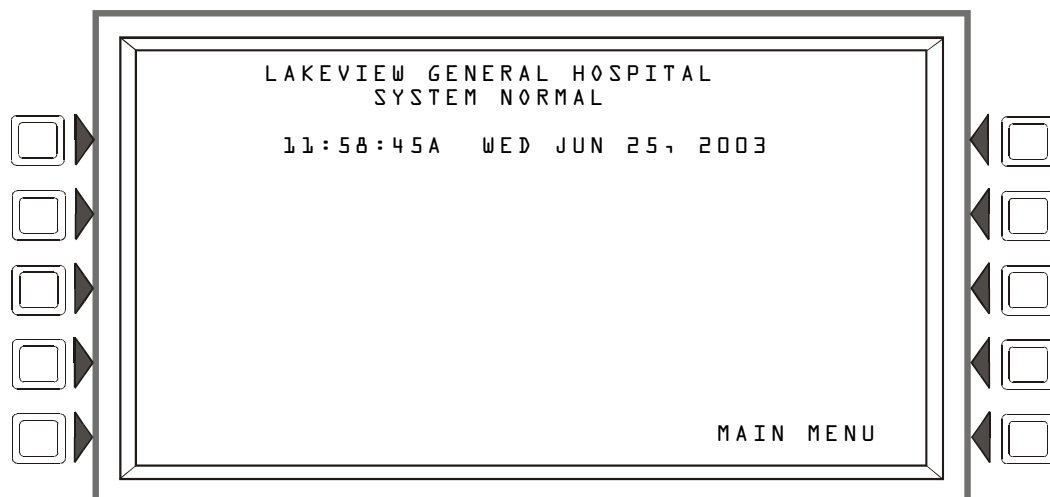


Figure 1.2 System Normal Screen

A custom graphic may be displayed below the system normal message: the graphic must be entered using VeriFire. The text “Main Menu” will overlay the graphic, if it extends into the last line of the display.

1.5.2 Event Reporting Format

The message formats used for event reporting appear at the top of the display, replacing the System Normal message. There are two basic types of message formats: point event formats, which are generated from changes in the state of SLC and panel devices, and system event formats, which are generated from system errors and troubles.

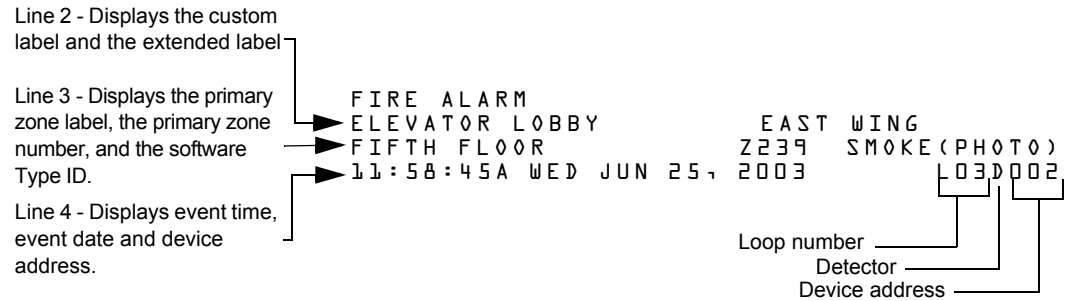
Point Events Format

When a change of state occurs to an SLC or panel point device, a message is generated to the panel that displays on the top of the LCD screen, and soft keys display available functions that may be used to handle the event. The top four lines contain the event and point information. Event counts display in the next three lines, the current time and soft key information appears after the event counts.

The format of the first line will vary slightly as follows, depending on the type of event.:

Event Format (not trouble or pre-alarm)	Line 1 Displays the type of event, and whether it has been acknowledged or cleared.	→	FIRE ALARM ELEVATOR LOBBY FIFTH FLOOR 11:58:45A WED JUN 25, 2003	EAST WING Z239 SMOKE (PHOTO) LO3D002
Event Format (trouble)	Line 1 Displays TROUBLE, the type of trouble, and whether it has been acknowledged or cleared.	→	TROUBLE ELEVATOR LOBBY FIFTH FLOOR 11:58:45A WED JUN 25, 2003	DETECTOR FAILED TEST EAST WING Z239 SMOKE (PHOTO) LO3D002
Event Format (pre-alarm)	Line 1 Displays PREALARM, the sensitivity reading and whether it has been acknowledged or cleared.	→	PREALARM 120% OF FIRE ELEVATOR LOBBY FIFTH FLOOR 11:58:45A WED JUN 25, 2003	SENSITIVITY LEVEL 5 EAST WING Z239 SMOKE (PHOTO) LO3D002

The second, third and fourth lines always contain the same device information, as follows:



The point event example screen below shows a trouble condition that has been generated by the detector on loop 3, address 2.

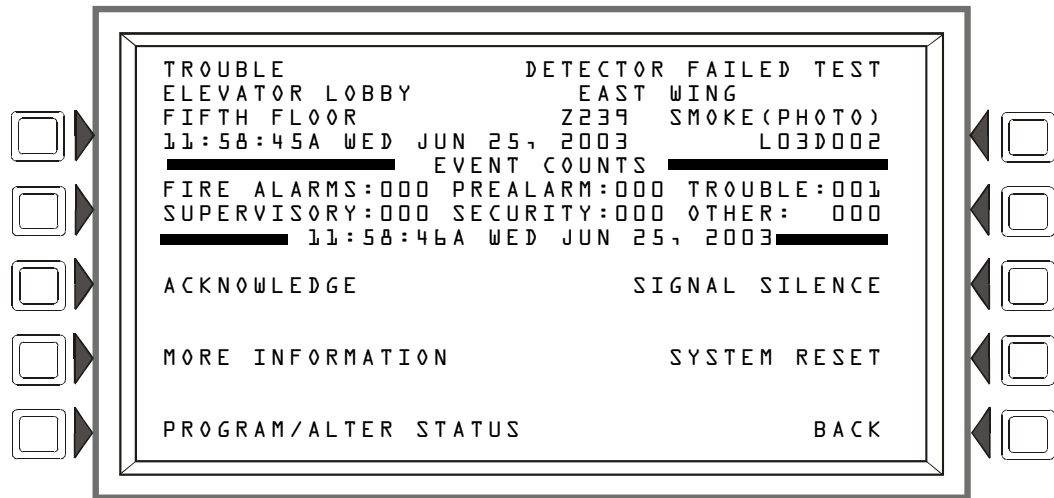


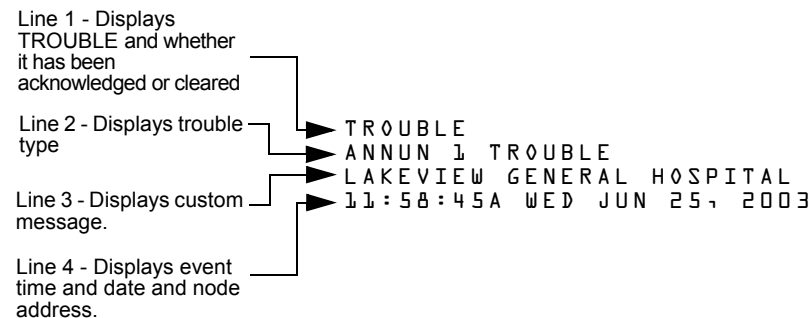
Figure 1.3 Point Event Display Example

The event counts display shows the counts for outstanding events. The date in line eight gives the current time. The soft keys may be used to deal with the event; their functions are described in the Operation section of this manual.

System Events Format

When a system trouble occurs, a message is generated to the panel that displays on the top of the LCD screen, and soft keys display available functions that may be used to handle the event.

The top four lines contain event information, and are formatted as follows:



The system trouble event example screen below shows an annunciator trouble condition.

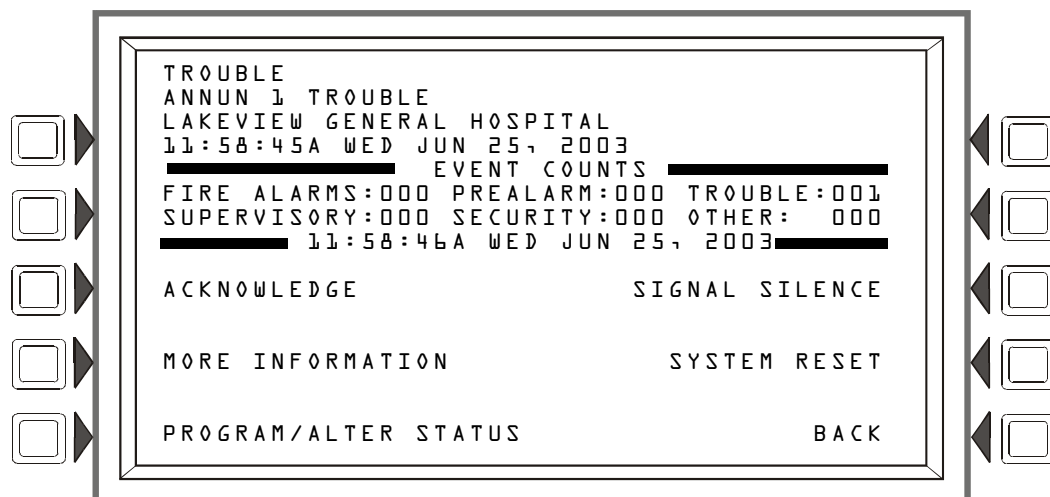


Figure 1.4 System Event Display Example

The event counts display shows the counts for outstanding events. The date in line eight gives the current time. The soft keys may be used to deal with the event; their functions are described in the Operation section of this manual.

1.6 Navigating Menu and Programming Screens

The Main Menu (refer to Figure 1.5) leads to screens with various menu options. Choices may be made from the menu screens by pressing the soft key closest to the menu option.

Field information may be added/modified using the keypad and special function keys.

Arrow keys on the keypad can be used to navigate between fields on a screen if there are no soft keys to select the fields.

Pressing a BACK soft key on a screen returns the programmer to the previous screen without saving the information entered.

Pressing an ACCEPT soft key will save information entered on the screen. It may also return to the previous screen and/or perform other functions as described in the soft key section for each screen.

When the panel can not read a specified point (that is, if the point entered on the screen for processing does not exist in the panel's programming) it will display an error screen for several seconds, then return to the screen where the address was entered. The user must check his input and investigate the state of the point.

1.7 The Main Menu

The Main Menu screen is the means by which the programmer can access displays, history information, printing and programming menus. This screen is accessible from the System Normal Screen (Refer to Figure 1.2), and from most other screens by pressing the BACK soft key until it displays.

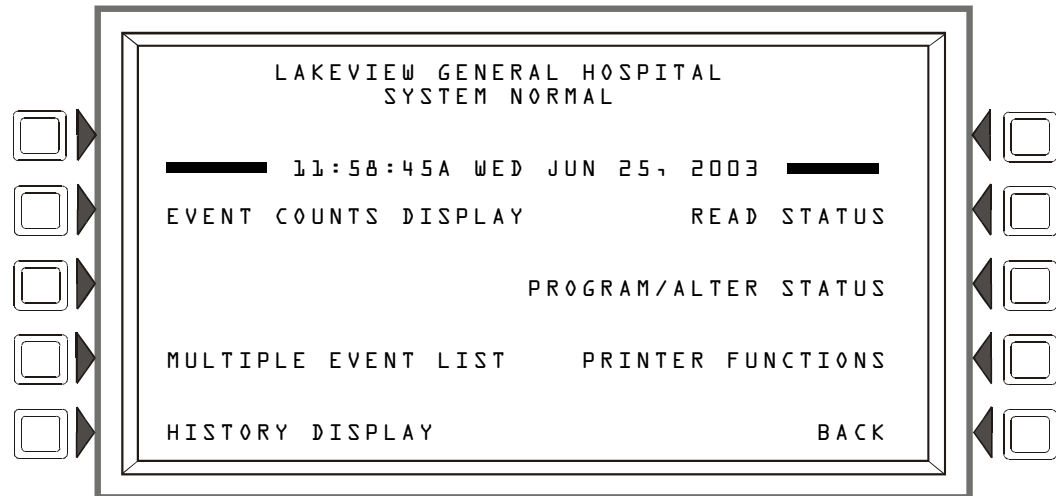


Figure 1.5 Main Menu Screen

Soft Keys

Pressing the soft keys brings the user to the screens described below.

1.7.1 Event Counts Display

Pressing the soft key to the left of the **Event Counts Display** message on the Main Menu brings up the **Event Counts** screen. This screen will automatically display if an off-normal event requiring acknowledgement occurs, unless the panel is in programming mode. Fire alarm events will display even in programming mode.

Lines six and seven display current counts of off-normal events in six categories. The counts include both acknowledged and unacknowledged events.

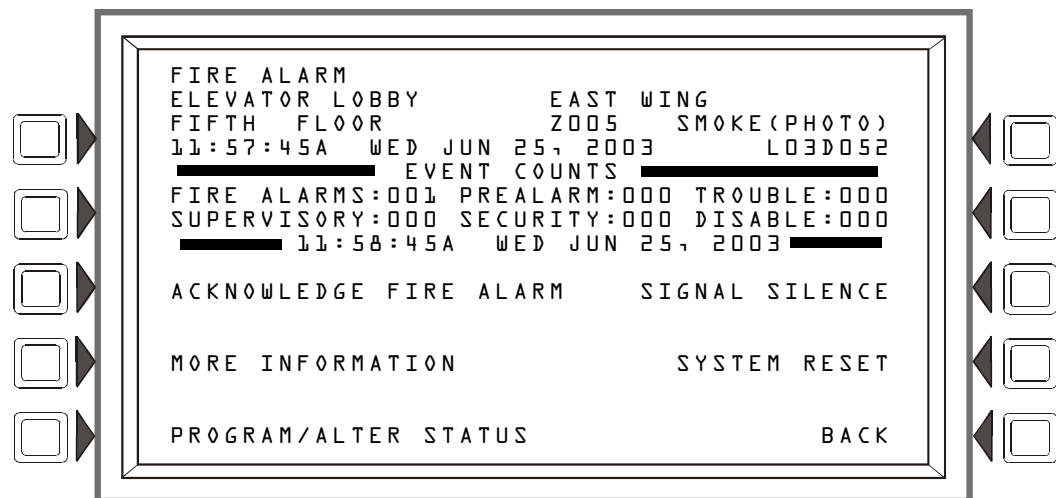


Figure 1.6 Events Count Display Screen

Soft Keys

ACKNOWLEDGE FIRE ALARM - Press this key to acknowledge an event. The command will read **ACKNOWLEDGE FIRE ALARM** if the event is a fire alarm. It will read **ACKNOWLEDGE** if the event is any other type. The command will not display if there are no events to acknowledge.

MORE INFORMATION - Press this key to go to the **MORE INFORMATION** screen, described in Section 1.7.2 below. This button will not display if no off-normal events exist.

PROGRAM/ALTER STATUS - Press this key to go to the PROGRAM/ALTER STATUS screen, which also can be reached from the main menu. This screen will require a password. For programming instructions, refer to the NFS-3030 Programming Manual.

SIGNAL SILENCE - Press this key to silence all NFS-3030 outputs programmed as silenceable.

SYSTEM RESET - Press this key to reset the system.

1.7.2 More Information

Pressing the More Information soft key displays a screen that contains additional information about the event shown in the top four lines.

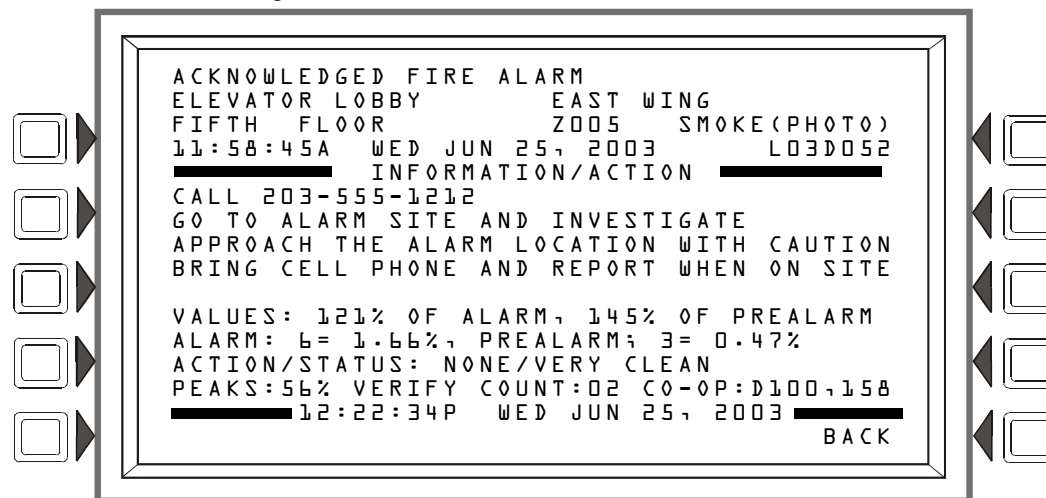


Figure 1.7 More Information Screen

Display

Lines 1 through 4 - Event information

Line 5 - Screen title

Lines 6 through 9 - The Custom Action Message programmed for the point in alarm

Line 10 - blank

Line 11 and 14 - These lines exist only for smoke/heat detectors. They do not display for wireless smoke detectors.

Line 11

VALUES:

The screen displays the Alarm and Prealarm values that are in effect when more information is requested. For example, if occupied settings are in effect, occupied values will display.

121% OF ALARM - This field gives the detector reading as it relates to its preprogrammed alarm level value (indicated in the next line on the screen). The example above shows the detector exceeding the alarm level by 21%.

145% OF PREALARM - This field gives the detector reading as it relates to its preprogrammed prealarm level value (indicated in the next line on the screen). The example above shows the detector exceeding the prealarm level by 45%.

Line 12

The screen displays the Alarm and Prealarm levels that are in effect when more information is requested. For example, if unoccupied settings are in effect, they will display.

ALARM: 6 = 1.66% - Six is the preprogrammed alarm level value for this detector: its value is 1.66%, indicating the percent per foot obscuration value assigned to level 6.

PREALARM: 3 = 0.47% - Three is the preprogrammed alarm level value for this detector: its value is 0.47%, indicating the percent per foot obscuration value assigned to level 3.

Line 13

ACTION/STATUS: NONE/VERY CLEAN - This displays the maintenance status of the device. The message that appears in this field depends on the drift compensation value. A

detector will automatically compensate for environmental contaminants and other factors over time, until the tolerance value has been exceeded. The FACP will signal a trouble condition when this level has been reached. Refer to the following table for messages and required action.

Message	Description
Replace/Malfunction	Replace the defective detector. The detector may not operate properly.
None/Very Clean	No action necessary. The detector readings are near ideal.
None/Clean	No action necessary. Although not ideal, the detector will activate at the selected sensitivity level.
None/Fairly Clean	No action necessary. The detector will activate at the selected sensitivity level.
Needs Cleaning	Clean the detector soon. The detector may cause a false alarm because it has reached the drift compensation tolerance value.
Needs Immediate Cleaning	Clean immediately! The detector is a false alarm risk. The drift compensation tolerance value has been exceeded.

Line 13 does not display for Acclimate detectors.

Line 14

PEAKS : 56% - This value represents the highest percent per foot obscuration reading taken by this detector. It can be a historical figure, and does not necessarily represent the highest reading for this particular alarm. Re-initializing the detector would reset this value to zero.

VERIFY COUNT: 02 - This displays the number of times the detector has gone into alarm. This count aids in differentiating false alarms from actual alarms by showing repeated alarm events that have come into the device. In this example, the detector has gone into alarm two times since the verification count was begun. The FACP will signal a trouble condition when the verify count is exceeded.

CO-OP: D100-158 - Indicates the address(es) of any detector(s) linked with the detector that's in alarm for Co-operative Multi-alarm Sensing. This field does not display for Acclimate detectors.

Line 15 - The current time and date are displayed in this line.

Line 16

BACK - Press to return to the previous screen.

1.7.3 Multiple Event List

Pressing the Multiple Event List soft key shows off-normal events simultaneously in groups of eight. One event is shown at the top, and seven are shown in the list below it. The list will consist of the events immediately following the event at the top, with the priority of event types determined by the programmed Event Ordering setting (USA or Canada).

USA Event Order	Canada Event Order
Fire	Fire
Security	Supervisory
Supervisory	Trouble
Trouble	Prealarm
Prealarm	Disabled
Disabled	

- Using the Next Selection/Previous Selection special function keys to scroll through the list will replace the event at the top of the screen with the first event in the series displayed below it.
- Using the Up/Down arrow keys to scroll through the list will not replace the event at the top of the screen: pressing the arrow keys will scroll a cursor through the seven events below without changing what is displayed at the top. The arrows will scroll through the list of events

sequentially, but will skip the event at the top.

- Pressing Enter while the cursor is present will cause the event selected by the cursor to move to the top of the screen, and the list will reflect the events immediately following it.
- Pressing one of the Scroll Display fixed function keys will cause the first event of that type (e.g., alarm, trouble, etc.) to display at the top, and subsequent events of that type to display in sequence below it. Press the key again to begin scrolling. If there are no events of the type denoted by the Scroll Display key, pressing the key will have no effect.

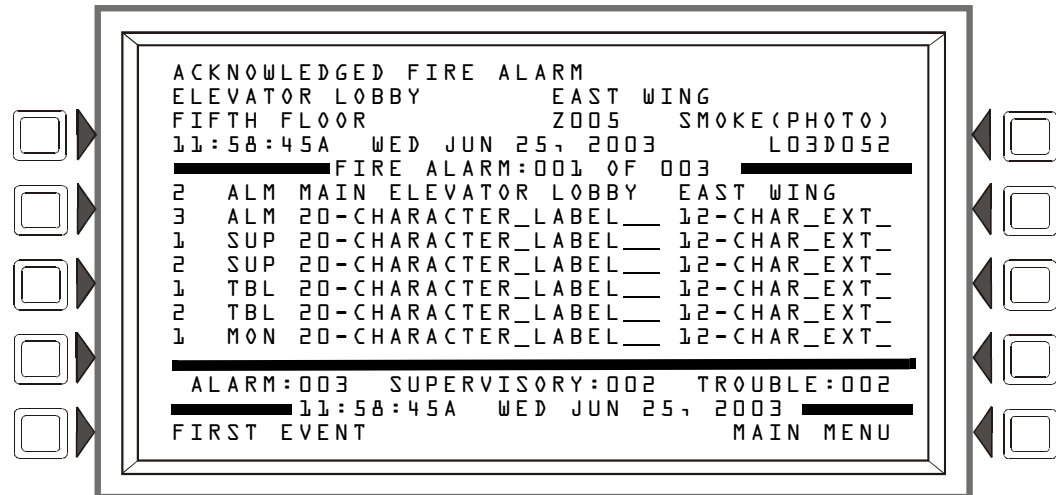


Figure 1.8 Multiple Event List Screen

Soft Key

First Event - Press this soft key to return the first event in the event ordering sequence to the top of the screen if scrolling has placed it elsewhere.



Note: If an unacknowledged event occurs while the Multiple Event list is displayed:

For USA event ordering - the Event Count Screen will appear with the Acknowledge button only. Acknowledging the event(s) will bring the Multiple Event list back up.

For Canadian event ordering - the Multiple Event list screen will display the unacknowledged event at the top.

1.7.4 History Display (History Select Screen)

The History Select screen allows the user to select a type of history file to view, and to set time/date or point range viewing parameters. The particular menu items will not appear on the History

Display screen if no associated events are in the queue.

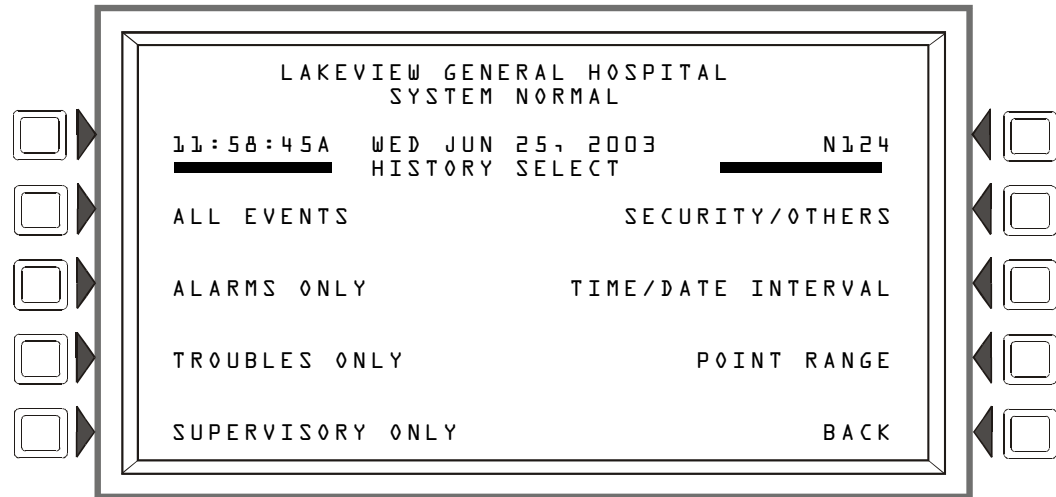


Figure 1.9 History Display Select Screen

Soft Keys

ALL EVENTS, ALARMS ONLY, TROUBLES ONLY, SUPERVISORY ONLY, AND SECURITY/OTHERS - Pushing the associated soft key selects the type of history to be viewed.

TIME/DATE INTERVAL - Sets a time/date interval of events to be displayed.

POINT RANGE - Sets a range of points for which events will be displayed.

Refer to the section "Viewing and Printing History Information" on page 48 for a full description of History Select.

1.7.5 Read Status

Pressing the Read Status soft key brings up screens to view the present status of points, zones, and other system information. Refer to the section "Read Status" on page 38 for a full description of Read Status.

1.7.6 Program/Alter Status

Pressing the Program/Alter Status soft key brings up screens for panel programming, point programming, autoprogramming, clear programming, altering the status of points, walk test, and other information. A password is required. Refer to this panel's programming manual for information on these functions.

1.7.7 Printer Functions

Pressing the Printer Functions soft key brings up screens to print reports. Refer to the section "Printing Reports" on page 51 for descriptions and illustrations. This key will appear only if a printer has been selected through programming. Refer to this panel's programming manual for information on printer selection.

Section 2 Operation of the Control Panel

2.1 Overview

The control panel periodically checks for events. An event can be any change in the status of a device, a transfer of information between a device and the FACP, or a transfer of information between two devices. Some events are considered background events and are not seen by the user. The events that are of primary concern to the operator are those identified as off-normal events. An off-normal event is an event which indicates activity or change in condition that requires the attention and/or response of an operator. Examples of possible off-normal events are:

- Activation or change in condition of a monitoring device such as a detector or module
- System troubles, such as battery problems, device supervision problems, etc.

When there are no off-normal events, the panel displays the System Normal screen (refer to Figure 2.1). When there is an off-normal event, the panel will display it (for event formats, refer to "Event Reporting Format" on page 12). The action required will vary according to the type of event.

2.1.1 System Normal

The system operates in System Normal mode when no alarms or troubles exist. In this mode, the control panel displays a System Normal message as follows

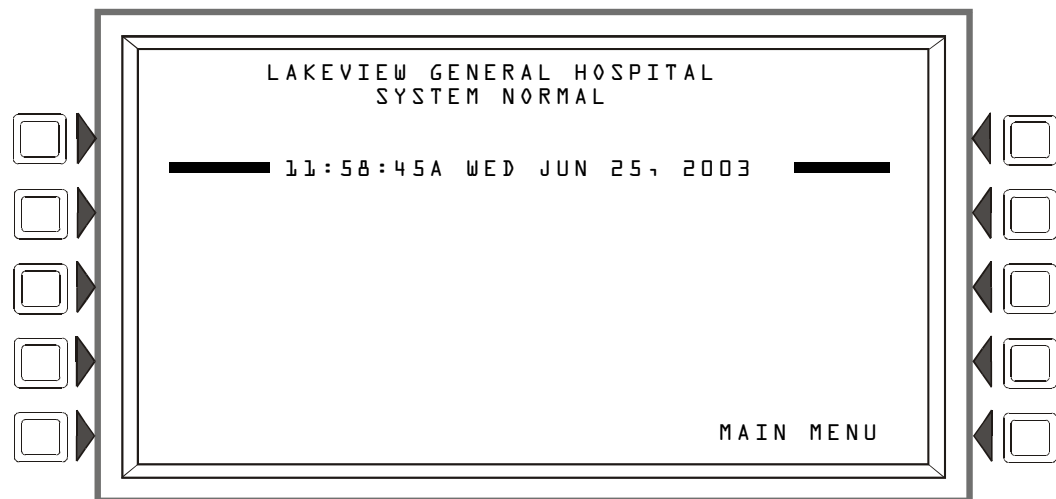


Figure 2.1 System Normal Screen

The control panel performs the following functions at regular intervals:

- Polls all SLC devices and Panel Circuits to check for valid replies, alarms, troubles, circuit integrity, and supervisory signals, etc.
- Checks power supply troubles and batteries
- Refreshes the panel display and updates time
- Scans for any panel screen, keypad, and Control Key entries
- Performs a detector automatic test operation
- Tests system memory
- Monitors for microcontroller failure

No action is required of the operator when the panel is operating in Normal mode.

2.1.2 Acknowledging an Event

When the panel detects an off-normal event and the information is displayed on-screen, one of the soft keys displayed on the screen is **ACKNOWLEDGE**. Use this key to respond to new alarm or trouble signals. When this key is pressed, the control panel does the following:

- It silences the piezo sounder on the panel if it is enabled
- It transfers the event to the history buffer
- If the panel is networked, it will send a network message.

There are two types of acknowledge; point and block. Point acknowledge is for fire alarms: fire alarms are acknowledged one at a time when the Acknowledge soft key is pressed. Block acknowledge is for all other types of off-normal events: these events are acknowledged all at the same time, with a single stroke to the Acknowledge soft key.



Note: If Local Control is disabled, acknowledgements can not be made by pressing the **ACKNOWLEDGE** soft key on the panel display. Events must be acknowledged from a preprogrammed remote location. When DCC (Display and Control Center) participation is enabled, panel acknowledgement can be performed when it is the DCC. When it is not, permission must be granted from the DCC before the panel can make an acknowledgement. Pressing the **ACKNOWLEDGE** soft key will automatically request permission from the DCC.




Note: If the panel is programmed for Receive Mode, events and the clearing of events must be handled one at a time: each event must be acknowledged, and each clear (whether the clear occurs automatically or as the result of a panel reset) must be acknowledged.

2.2 Fire Alarm Event

2.2.1 How the Control Panel Indicates a Fire Alarm

When an initiating device (detector or monitor module) activates, the control panel does the following:

- Produces a steady audible tone (if the piezo is enabled)
- Activates the System Alarm relay (TB4). It will also activate the Security (TB1) and Supervisory (TB2) relays if their switches have been configured for alarm
- Flashes the FIRE ALARM LED
- Displays FIRE ALARM in the upper left corner of the display, a Type Code that indicates the type of device that activated the fire alarm, and other information specific to the device. The message occupies the top four lines of the screen, replacing the System Normal message as shown in Figure 2.2 below. Refer to “Point Events Format” on page 12 for a full description of each message field
- Sends an Alarm message to the History buffer and installed printer and annunciators
- Latches the control panel in alarm. (You cannot return the control panel to normal operation until you correct the alarm condition and reset the control panel)
- Initiates any Control-By-Event actions
- Starts timers (such as Silence Inhibit, Auto Silence)
- Activates the general alarm zone (Z000)

 Note: If a monitor module programmed with a WATERFLOW Type Code initiates a fire alarm, the control panel disables the SIGNAL SILENCE key and the Auto Silence Timer.

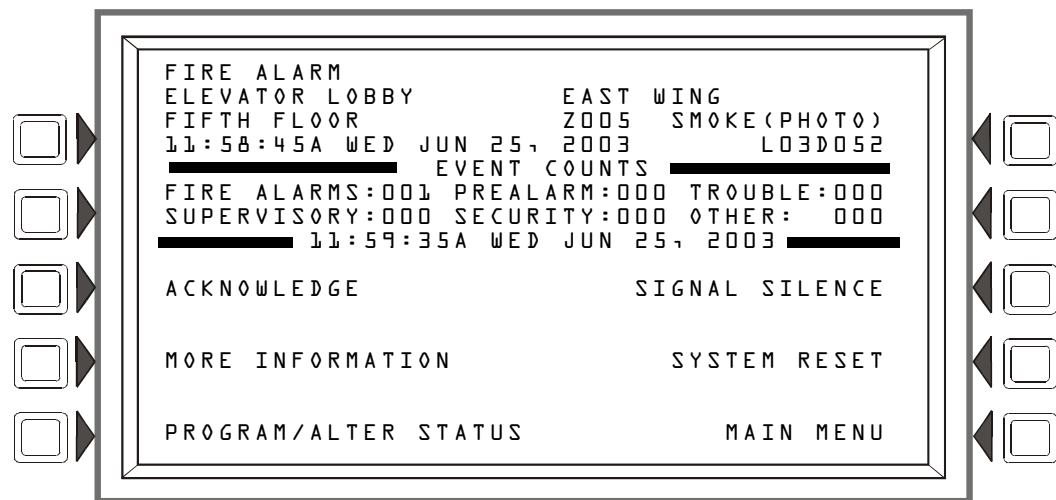


Figure 2.2 Fire Alarm Message Display Example

How to Respond to a Fire Alarm

If the control panel indicates a fire alarm, the operator can do the following:

- To silence the panel sounder:
Press the **ACKNOWLEDGE** soft key. The local sounder will silence and the FIRE ALARM LED will change from flashing to steady. The control panel will send an acknowledge message to the panel display, history buffer, installed printers and annunciators.
 - To silence any activated outputs that are programmed as silenceable:
Press the **SIGNAL SILENCE** soft key. SIGNALS SILENCED LED light steady. The control panel sends a Signal Silenced message to the History buffer, installed printers and annunciators.
1. Check the Alarm message for its location and type. Press the **MORE INFORMATION** soft key

to display the **MORE INFORMATION** screen and view additional information on the device and possibly preprogrammed text for recommended action. (Refer to Figure 1.7 on page 16 for an example of the this screen and an explanation of its fields.)

2. Correct the condition causing the alarm.
3. When the alarm condition is corrected, press the **SYSTEM RESET** soft key to return the control panel to normal operation (indicated by the “System Normal” message). The control panel sends a “System Normal” message to the panel display, History buffer and installed printer.

The soft key **PROGRAM/ALTER STATUS** is also displayed on this screen. A password is required to enter these menus, which are described in the NFS-3030 Programming manual.

2.2.2 Interpreting Type ID Codes

The Type ID code that displays in the fire alarm message is related to the type and function of the point that initiates the fire alarm. For example, a monitor module with a **PULL STATION** Type ID code means that the monitor module connects to a manual pull station. If the Type ID code is unfamiliar, refer to "Software Type ID Codes" on page 59. This appendix is an alphabetical list of Type ID codes with an explanation of each.

2.3 System or Point Trouble Event

How the Control Panel Indicates a System or Point Trouble

A system or point trouble occurs when the control panel detects an electrical or mechanical fault. The panel will react differently depending on whether or not there are higher priority unacknowledged events.

When no higher priority unacknowledged events exist, the control panel:

- Produces a pulsed audible tone (if the piezo is enabled)
- Activates the Trouble relay (TB3)
- Flashes the SYSTEM TROUBLE LED
- Displays a Type Code that indicates the type of device with a trouble (if a point trouble)
- Displays TROUBLE in the upper left corner of the panel display and, if a point trouble, the type of trouble and information specific to the device. (A system and a point trouble message are shown in the figures below)
- Sends a Trouble message to the history buffer, installed printer and annunciators

When an unacknowledged event with a higher priority exists, the control panel retains the indications of the higher priority event (the message, lit LED, audible tone, etc.) while activating the Trouble relay, flashing the SYSTEM TROUBLE LED, and sending a Trouble message to the history buffer, installed printer and annunciators.

A system trouble message is shown in Figure 2.3, and a point trouble is shown in Figure 2.4. Refer to “Event Reporting Format” on page 12 for identification of each message field.

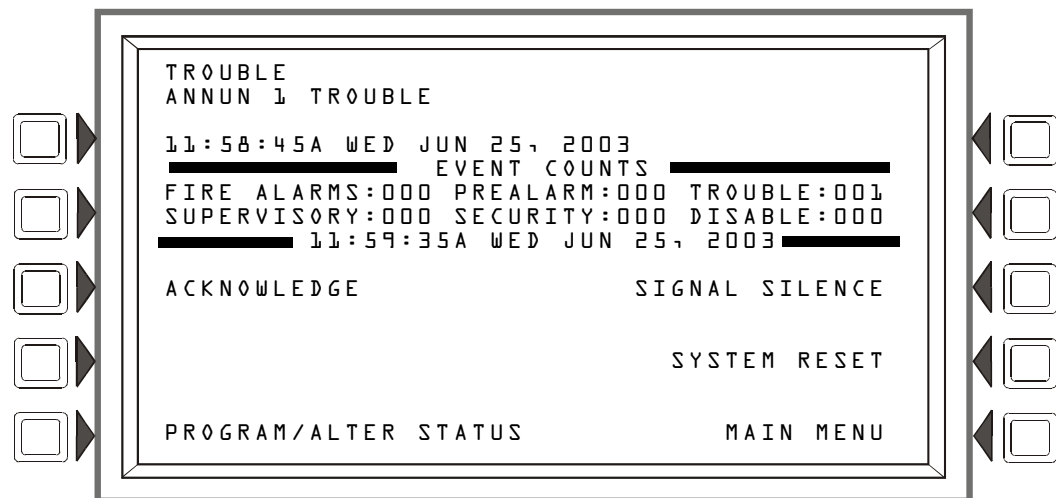


Figure 2.3 Sample Message for System Trouble

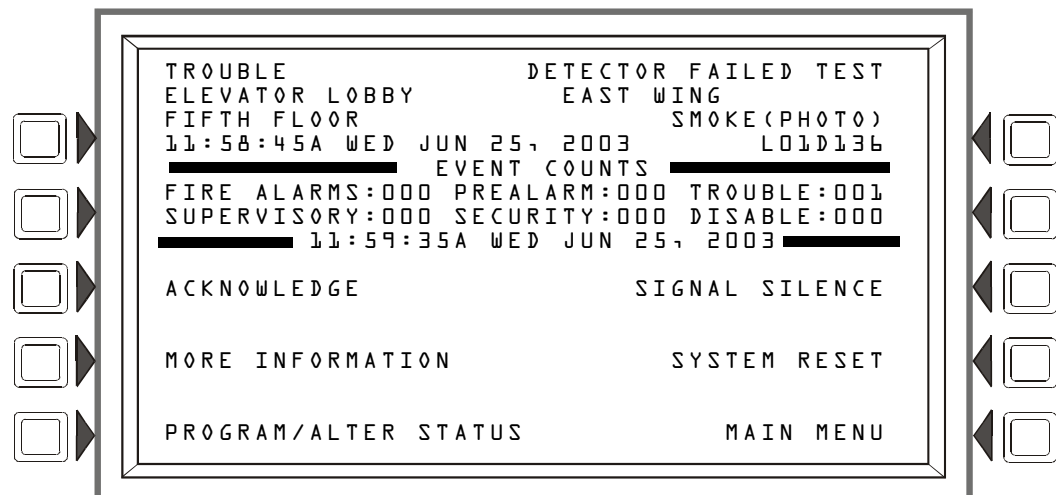


Figure 2.4 Sample Message for Point Trouble

How to Respond to a System or Point Trouble

If the control panel indicates a trouble, the operator can do the following:

1. Press the **ACKNOWLEDGE** soft key to silence the panel sounder and switch the **SYSTEM TROUBLE** LED from flashing to steady—regardless of the number of troubles, alarms, security and supervisory signals.

The control panel sends an acknowledge message to the History buffer, installed printers and annunciators.

2. Check the trouble message for an indication of the trouble.
 - Refer to Table 2.1 or Table 2.2 below for point and system trouble explanations, if necessary.
 - Press the **MORE INFORMATION** soft key to display the **MORE INFORMATION** screen and view additional information on the device and possibly preprogrammed text for recommended action. (Refer to Figure 1.7 on page 16 for an example of the this screen and an explanation of its fields.)

3. Correct the condition causing the trouble. If the trouble clears, the control panel sends a Clear Trouble message to the History buffer, installed printers and annunciators.

If all troubles clear and no supervisory signals or fire alarms exist, the control panel does the following:

- Returns to Normal operation (indicated by the “System Normal” message)
- Sends a “System Normal” message to the panel display, History buffer, installed printers and annunciators
- Restores troubles automatically - even if troubles are not acknowledged

The soft key **PROGRAM/ALTER STATUS** is also displayed on this screen. A password is required to enter these menus, which are described in this panel’s programming manual.

2.3.1 Trouble Types

There are a variety of point or system trouble types that may appear in the trouble message. The tables below give lists of the troubles and indications of their cause.

Point (Device) Troubles

A message from the “Trouble Type” column in Table 2.1 will appear in the upper right corner of the panel display when a point (device) trouble occurs. Use this table to help determine what the trouble is.

POINT TROUBLES		
TROUBLE TYPE	TROUBLE DESCRIPTION	ACTION
AC FAILURE	The main or auxiliary power supply has lost AC power.	Determine whether there is an AC power loss or whether the power supply and wiring is correct.
BATTERY HIGH	The power supply's battery charge is too high.	Check the batteries for problems. Replace batteries if necessary.
BATTERY LOW	The power supply's battery charge is low, or the RFX device's battery charge is low.	Check the batteries for problems. Replace batteries if necessary.
BRAND MISMATCH	The brand of this SLC device is incompatible with this FACP system.	Replace with compatible device.
CHARGER FAULT	The power supply's battery charger is not working properly.	Correct the fault.
DET FAILED TEST	This detector has failed the FACP's periodic detector test for alarm capabilities.	The detector should be removed and replaced by an authorized service representative.

POINT TROUBLES		
TROUBLE TYPE	TROUBLE DESCRIPTION	ACTION
DUAL ADDRESS	There is more than one device of a single type (detector or module) with the same SLC address. A detector and a module can share the same address on an SLC, but two detectors, or two modules, can not. Note that some addressable devices (e.g. certain power supplies, XPIQs and RFXs) may not appear to be detectors or modules, but are addressed on the SLC as such.	Readdress the incorrect device.
GENERAL TROUBLE	The power supply is not working properly.	Check the battery for problems. Replace battery if necessary.
GROUND FAULT	There is a ground fault on the main or auxiliary power supply.	Correct the fault.
INVALID RESPONSE	The device has returned a response to the panel that the panel did not expect.	Check the device for functionality, addressing and wiring.
LOW TEMPERATURE	The temperature read by a Heat+ or Acclimate™+ detector is too low.	Raise the heat in the area of the detector.
LOW THRESHOLD	The detector chamber reading is too low; the detector is not operating properly.	The detector must be removed and replaced by an authorized service representative.
MAINTENANCE REQ	The detector is dirty and needs cleaning	Clean the detector.
MAINT URGENT	The detector requires cleaning immediately. It is a false alarm risk.	Clean the detector immediately.
MISMAT HDWE TYPE	The programming information in the panel's database for this device does not match the type of device at the address specified.	Correct programming.
MOD EXT PWER LOSS	The control module point has lost external power.	Determine whether there is an AC power loss or whether the power supply wiring is incorrect.
NO ANSWER	The device (module or detector) is not responding to the poll. Either the device is not working or it is not connected properly.	Determine whether the device is functional, and connected and addressed properly on the SLC.
NORMAL	Indicates activated monitor module set to monitor trouble condition.	Correct trouble condition.
OPEN CIRCUIT	The module device has an open circuit on its supervised wiring.	Check the connections from the module to the input or output device to which it is wired.
RFX COMM LOSS	Communication has been lost with an RFX device	Check the RFX to determine the problem.
SECURITY TAMPER	An RFX device has been removed from its base.	Check the RFX device for tampering.
SHORT CIRCUIT	The module device has a short circuit on its supervised wiring.	Check the connections from the module to the input or output device to which it is wired.
VERIFY OVER MAX	This detector, or FZM-1 or panel circuit monitor module, which has been programmed to participate in alarm verification, has gone into and come out of verification its programmed limit without going into alarm. Either something is wrong with the detector or there is a condition nearby (such as someone smoking) that causes it to go into verification frequently.	Check the detector and the conditions nearby to determine the problem.

Table 2.1 Point (Device) Troubles

System Troubles

A message from the “Trouble Type” column in Table 2.2 will appear in the second line on the left of the panel display when a device trouble occurs. Use this table to help determine the cause of the trouble.

SYSTEM TROUBLES	
TROUBLE MESSAGE TYPE	TROUBLE DESCRIPTION
ADV WALK TEST	There is an Advanced Walk Test in progress.
ANNUN <u>x</u> NO ANSWER	The annunciator at address <u>x</u> is not responding.
ANNUN <u>x</u> TROUBLE	The annunciator at address <u>x</u> is in trouble.
AUXILIARY TROUBLE	Auxiliary device connected to the NFS-3030 CPU at J5 is in trouble or cable is missing.
BASIC WALK TEST	A Basic Walk Test is in progress.
CORRUPT LOGIC EQUAT	The database that houses the panel's logic equations is corrupt. It must be re-downloaded, or all programming must be cleared and re-entered.

SYSTEM TROUBLES	
TROUBLE MESSAGE TYPE	TROUBLE DESCRIPTION
DRILL INITIATED	Drill has been initiated locally.
DRILL RECEIVED	Drill has been initiated remotely.
EPROM ERROR	The application and/or boot code is corrupt. Service required.
EXTERNAL RAM ERROR	The external RAM test failed. Service required.
GROUND FAULT	A ground fault has occurred within the panel.
GROUND FAULT LOOP \underline{x}	There is a ground fault on loop \underline{x} .
INTERNAL RAM ERROR	The internal RAM test failed. Service required.
LOADING.NO SERVICE	A program or database download is in progress. The panel is NOT providing fire protection during the download. Proper authorities should be notified while a download is in progress so that other means of fire protection can be supplied.
LOOP \underline{x} - \underline{x} COMM FAILURE	Loops \underline{x} and \underline{x} are not responding. The LCM and LEM for those loops must be serviced.
MAN EVAC INITIATED	Local initiation of DRILL.
MAN EVAC RECEIVED	Network initiation of DRILL.
MANUAL MODE ENTERED	An annunciator has been placed in manual mode.
NCM COMM LOSS	Communication is lost between the CPU-3030 and the NCM.
NETWORK FAIL PORT x	Communication lost between NCM Port x and corresponding node.
NETWORK INCOMPATIBILITY	An incompatible product exists on this network.
NFPA 24HR REMINDER	This message occurs every day at 11 am if any troubles exist.
NVRAM BATT TROUBLE	Battery backup and/or clock backup is low. Replace battery.
NO DEV. INST ON L1	No devices are installed on the system.
NO POWER SUPPLY INST	The AMPS-24 (main power supply) AC fail address (base plus one) has not been correctly entered or the loop is not installed. The AMPS-24 is not configured for "Trouble Reporting". All four of the main power supply addresses are not programmed for MOD TYPE=Monitor and/or TYPE CODE LABEL=Power Monitor and/or FLASHSCAN=PS Mon.
PANEL DOOR OPEN	The panel door is open.
PRINTER OFF LINE	Communication loss with printer. Restore power and/or printer's online status.
PRINTER PAPER OUT	Add paper.
PROGRAM CORRUPTED	The database that houses the panel's programming is corrupt. It must be re-downloaded, or all programming must be cleared and re-entered. Service required.
PROG MODE ACTIVATED	A user is currently using the panel's programming menus.
REMOTE DISPLAY \underline{x} NO ANSWER	The remote display at address \underline{x} is not responding.
REMOTE DISPLAY \underline{x} TROUBLE	The remote display at address \underline{x} is in trouble.
SELF TEST FAILED	Diagnostic test failed. Service required.
SOFTWARE MISMATCH	One or more LCM software revisions do not match other LCMs, and/or the NCM is not network version 5.0, or the LCD-160 is incompatible.
STYLE 4 SHORT \underline{x} LOOP \underline{x}	Service required.
STYLE 6 POS. LOOP \underline{x}	There is a short circuit on the positive side of loop \underline{x} . Style 6 and Style 7 are supervised methods of communicating with addressable devices. If the control panel detects a trouble (open or short), it will drive both ends of the loop, maintaining communication in an unsupervised method. The latching trouble will display on the panel as a Style 6 trouble until you correct the condition and press reset. Style 7 configuration of the SLC requires the use of ISO-X modules.
STYLE 6 NEG. LOOP \underline{x}	There is a short circuit on the negative side of loop \underline{x} . Style 6 and Style 7 are supervised methods of communicating with addressable devices. If the control panel detects a trouble (open or short), it will drive both ends of the loop, maintaining communication in an unsupervised method. The latching trouble will display on the panel as a Style 6 trouble until you correct the condition and press reset. Style 7 configuration of the SLC requires the use of ISO-X modules.
STYLE 6 SHORT LOOP \underline{x}	Style 6 and Style 7 are supervised methods of communicating with addressable devices. If the control panel detects a trouble (open or short), it will drive both ends of the loop, maintaining communication in an unsupervised method. The latching trouble will display on the panel as a Style 6 trouble until you correct the condition and press reset. Style 7 configuration of the SLC requires the use of ISO-X modules.
SYSTEM INITIALIZATION	One or more devices (detectors or modules) can not report activation. This can occur following system startup, when exiting Walk Test, or following a device trouble of No Response.

Table 2.2 System Troubles

2.3.2 Interpreting Type ID Codes

The Type ID code that displays in a point trouble message is related to the type and function of the point that initiates the trouble. For example, a monitor module with a PULL STATION Type ID code means that the monitor module connects to a manual pull station. If the Type ID code is unfamiliar, refer to "Software Type ID Codes" on page 59. This appendix is an alphabetical list of Type ID codes and an explanation of each.

Pre-alarm Event

The Pre-alarm function is used to receive an early warning of potential or incipient fire conditions. The Pre-alarm function provides one of two settings as follows:

- Alert – a non-latching setting that causes a Pre-alarm when a detector reaches its programmed Pre-alarm sensitivity threshold. Non-latching means the condition will automatically restore to normal once the detector's sensitivity readings drop below its Pre-alarm threshold.
- Action – a latching setting that causes a Pre-alarm when a detector reaches its programmed Pre-alarm level. Latching means the condition will not restore itself to normal once the detector's sensitivity readings drop below its Pre-alarm threshold. The panel must be reset.

Alert and Action settings are set individually with detector point programming. Individual detector sensitivity threshold settings can have a value of one through nine, and are set by the programmer. A sensitivity threshold setting of zero indicates the detector does not participate in prealarm.

For more detailed information on Pre-alarm, refer to this panel's programming manual.

How the Control Panel Indicates a Pre-alarm

When a detector activates a Pre-alarm, the control panel does the following if there are no higher priority unacknowledged events:

- Pulses the panel sounder (if the piezo is enabled)
- Flashes the PRE-ALARM LED
- Displays PREALARM in the upper left corner of the LCD, as well as the sensitivity reading, the type code and other information specific to the detector as shown in Figure 2.5.
- Sends a Pre-alarm message to the History buffer, installed printer and annunciators.

When an unacknowledged event with a higher priority exists, the control panel retains indications of the higher priority event (the message, lit LED, audible tone, etc.) while flashing the PRE-ALARM LED and sending a Pre-alarm message to the History buffer, installed printer and annunciators.

The Pre-alarm screen display is the same for both alert and action conditions. Following is a sample screen for a Pre-alarm message.

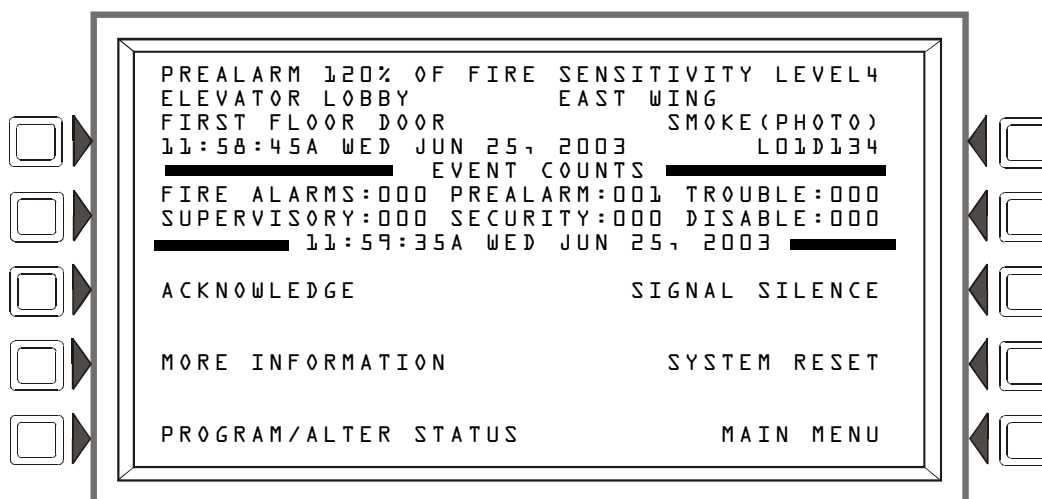


Figure 2.5 Sample Pre-alarm Message

How to Respond to a Pre-Alarm Warning

If the control panel indicates a Pre-alarm, the operator can do the following:

1. Press the **ACKNOWLEDGE** soft key to acknowledge the Pre-alarm.
2. Press the **MORE INFORMATION** soft key to display the **MORE INFORMATION** screen and

view additional information on the device and possibly preprogrammed text for recommended action. (Refer to Figure 1.7 on page 16 for an example of this screen and an explanation of its fields.)

3. Investigate and correct the condition causing the Pre-alarm.

Note: An Alert Pre-alarm automatically restores to normal when the detector sensitivity drops below the programmed Alert level.

4. Press the **SYSTEM RESET** soft key if the Pre-alarm message does not clear when the condition causing it is cleared.

A subsequent alarm condition for this detector clears the Action indication from the panel display.

The soft key **PROGRAM/ALTER STATUS** is also displayed on this screen. A password is required to enter these menus, which are described in the NFS-3030 Programming manual.

2.3.3 Interpreting Type ID Codes

The Type ID code that displays in a pre-alarm message is related to the type and function of the detector point that initiates the pre-alarm. For example, a detector with a **SMOKE(PHOTO)** Type ID code means that the detector is a photoelectric type detector. If the Type ID code is unfamiliar, refer to "Software Type ID Codes" on page 59. This appendix is an alphabetical list of Type ID codes and an explanation of each.

Security Alarm Event

(Not Suitable for Canadian Applications)

How the Control Panel Indicates a Security Alarm

The system indicates a Security alarm when a monitor module point programmed with a security Type Code activates. The panel will react differently depending on whether or not there are higher priority unacknowledged events.

When no higher priority unacknowledged events exist, the control panel:

- Produces a warbling audible tone (if the piezo is enabled)
- Activates the Security relay (TB1) if it has been selected for security
- Flashes the SECURITY LED (blue)
- Displays a Type Code that indicates the type of security alarm being generated
- Displays SECURITY in the upper left corner of the panel display along with information specific to the device
- Sends a Security message to the History buffer, installed printers and annunciators

When an unacknowledged event with a higher priority exists, the control panel retains the indications of the higher priority event (the message, lit LED, audible tone, etc.) while activating the Security relay if it is selected for security, flashing the SECURITY LED, and sending a Security message to the history buffer, installed printer and annunciators. If there are silenced alarms (the SIGNALS SILENCED LED is lighted), a Security alarm will resound the panel sounder.

A Typical security message that appears on the panel display:

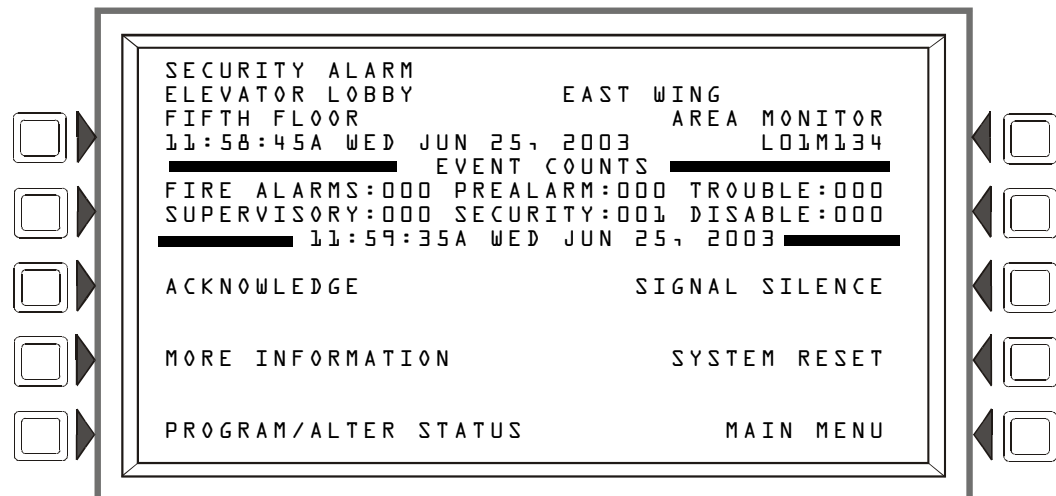


Figure 2.6 Sample Security Alarm Message

How to Respond to a Security Alarm

A latching Security Type Code latches the control panel in a security alarm. To return the control panel to normal operation, it is necessary to correct what is causing the security condition, as indicated in the numbered steps below, then reset the control panel.

If the control panel indicates a security alarm, take the following action:

1. Press the **ACKNOWLEDGE** soft key to silence the panel sounder and switch the SECURITY LED from flashing to steady—regardless of the number of troubles, alarms, supervisory, and security signals. The control panel sends a Security message to the History buffer and installed printers.
2. Press the **MORE INFORMATION** soft key to display the **MORE INFORMATION** screen and view additional information on the device and possibly preprogrammed text for recommended

action. (Refer to Figure 1.7 on page 16 for an example of the this screen and an explanation of its fields.)

3. Correct the condition that activated the Security point.
4. When the Security condition is corrected, press the **SYSTEM RESET** soft key to return the control panel to normal operation (indicated by the “System Normal” message). The control panel sends a “System Normal” message to the panel display, History buffer, installed printers and annunciators.

The soft key **PROGRAM/ALTER STATUS** is also displayed on this screen. A password is required to enter these menus, which are described in the NFS-3030 Programming manual.

2.3.4 Interpreting Security Type Codes

The Type ID code that displays in a security alarm message is related to the type and function of the point that initiates the security alarm. For example, a monitor module with a **TAMPER** Type ID code means that the monitor module connects to a tamper switch. If the Type ID code is unfamiliar, refer to "Software Type ID Codes" on page 59. This appendix is an alphabetical list of Type ID codes and an explanation of each.

Supervisory Signal Event

How the Control Panel Indicates an Active Supervisory

The system indicates a Supervisory alarm when a monitor module point programmed with a supervisory Type Code activates. The panel will react differently depending on whether or not there are higher priority unacknowledged events.

When no higher priority unacknowledged events are exist, the control panel:

- Produces a warbling audible tone (if the piezo is enabled)
- Activates the Supervisory relay (TB2) if it has been selected for supervisory
- Flashes the SUPERVISORY LED (yellow)
- Displays a Type Code that indicates the type of supervisory signal being generated
- Displays SUPERVISORY in the upper left corner of the panel display along with information specific to the device
- Sends a Supervisory message to the History buffer, installed printer and annunciators.

When an unacknowledged event with a higher priority exists, the control panel retains the indications of the higher priority event (the message, lit LED, audible tone, etc.) while activating the Supervisory relay if it is selected for supervision, flashing the SUPERVISORY LED, and sending a Supervisory message to the history buffer, installed printer and annunciators. If there are silenced alarms (the SIGNALS SILENCED LED is lighted), a Supervisory alarm will resound the panel sounder.

Following is a typical supervisory message that would appear on a panel display:

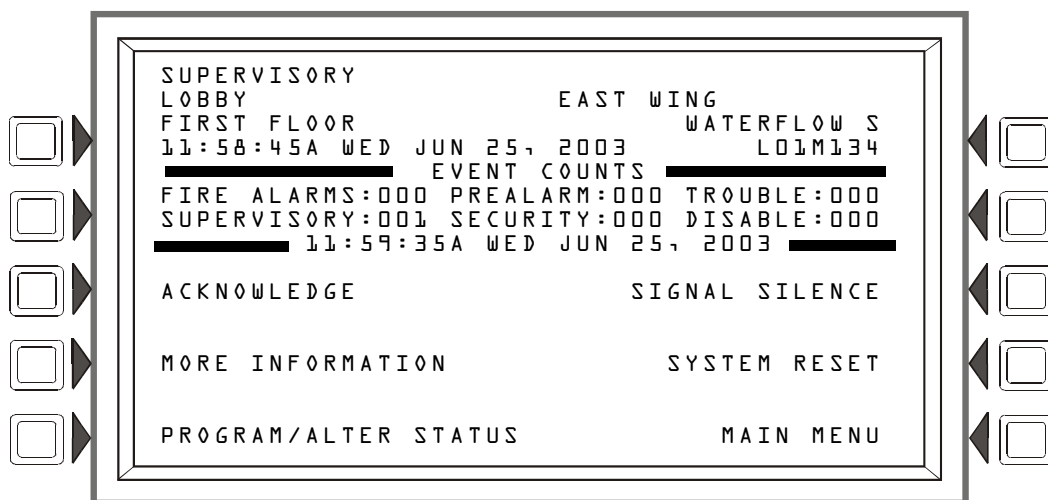


Figure 2.7 Sample Supervisory Trouble Message

How to Respond to an Active Supervisory

If the control panel indicates a Supervisory condition, the operator can do the following:

1. Press the **ACKNOWLEDGE** soft key to acknowledge the Supervisory message.
2. Press the **MORE INFORMATION** soft key to display the **MORE INFORMATION** screen and view additional information on the device and possibly preprogrammed text for recommended action. (Refer to Figure 1.7 on page 16 for an example of this screen and an explanation of its fields.)
3. Investigate and correct the condition causing the Supervisory.

Note: A supervisory condition caused by a device with a “tracking” type code automatically clears and restores the panel to normal when the condition causing its activation disappears.

4. Press the **SYSTEM RESET** soft key to clear any supervisory condition caused by a device with a latching type code: the supervisory will not automatically clear when the condition causing it

is cleared. Latching supervisory type codes are WATERFLOW S, LATCH SUPERV, and SPRINKLR SYS.

The panel will send a system normal message to the History buffer, installed printer and annunciators.

How to Interpret Type Codes

The Type Code that displays in the Supervisory message indicates the function of the point that initiates the Supervisory. For example, a monitor module with a WATERFLOW S Type Code means that the module monitors the state of a waterflow switch. If the Type ID code is unfamiliar, refer to "Software Type ID Codes" on page 59. This appendix is an alphabetical list of Type ID codes and an explanation of each.

Disabled Points Event

The control panel indicates disabled points by displaying a screen for each disabled detector, monitor module, control/relay module, and Panel Circuit module. Disabled points do not cause an alarm or any Control-by-event activity. If more than one point is disabled, the control panel automatically displays each point in the sequence in which the point was disabled.



CAUTION: When a zone is disabled, any input and output devices mapped to the zone are disabled if the zone is the point's primary zone. (The primary zone is the zone in the first position of the zone map.)

When one or more points are disabled, the control panel does the following:

- Holds all disabled output points in the off-state
- Flashes the SYSTEM TROUBLE LED
- Lights the POINT DISABLED LED
- Sends a Disabled Point message to the History buffer, installed printer and annunciators
- Displays a message for each disabled point, with **DISABLED** in the upper left corner of the LCD as well as other information about the point

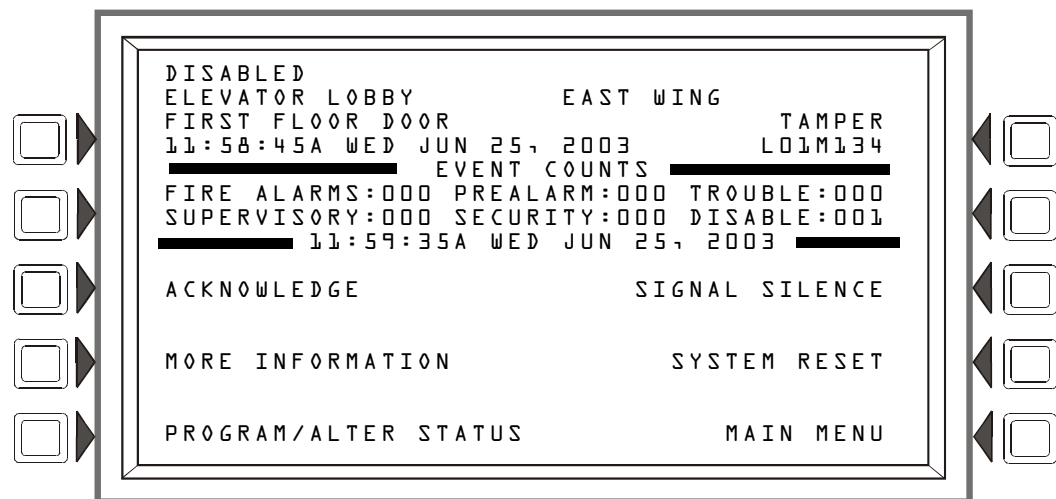


Figure 2.8 Sample Disabled Point Message

Soft Keys

ACKNOWLEDGE: Press to acknowledge the disable message.

MORE INFORMATION: Press to view more information on the disabled point.

PROGRAM/ALTER STATUS: A password is required to enter these menus.

Active Event

How the Control Panel Indicates an Active Fire Control Point

A point with a Type ID of FIRE CONTROL is used for air handler shutdown, intended to override normal operating automatic functions.

Activation of a FIRE CONTROL point causes the control panel to do the following:

- Initiates the monitor module Control-by-Event
- Send a message to the panel display, History buffer, installed printer and annunciators
- Does NOT light an indicator at the control panel
- Displays **ACTIVE** in the upper left corner of the LCD, as well as a FIRE CONTROL Type Code and other information specific to the device

How the Control Panel Indicates an Active Non-fire Point

A point with a Type ID of NON-FIRE is used for energy management or other non-fire situations. NON-FIRE point operation does not affect control panel operation, nor does it display a message at the panel LCD. Activation of a NON-FIRE point activates CBE—but does not cause any indication on the control panel. For example, you can program a NON-FIRE point to turn lights in a zone to a lower setting when activated. In this case, when the point activates the control panel activates the point's CBE to turn the lights down without any audio or visual indication on the control panel.

Operation of Special System Timers, Presignal, and PAS

System (Panel) Timers

There are user-programmable time delays for four specific functions: Alarm Verification, AC Fail, Silence Inhibit, and Auto Silence. Refer to this panel's programming manual for instructions on viewing or modifying these values. (They may be viewed only in programming mode.)

Alarm Verification Timer (VERIFY TIME)

A timer that directs the control panel to ignore a fire alarm for a smoke detector, programmed for Alarm Verification, while the Alarm Verification Timer is counting. The timer value can be set from 0-60 seconds, and may not exceed 30 seconds for ULC installations. Table 2 contains a summary of how the Alarm Verification Timer works.

If this event occurs	The control panel does this
A second fire alarm occurs while the Alarm Verification Timer is counting	Ignores the Alarm Verification Timer
The Alarm Verification Timer elapses and a fire alarm still exists	Activates the fire alarm
The Alarm Verification Timer expires and a fire alarm no longer exists	The control panel returns to normal operation and increments the verification counter

Table 2 Alarm Verification Timer Operation

AC Fail Delay Timer

This timer delays the time from the start of AC failure to when the trouble is reported. The timer value may be set to 0, or from 6-12 hours. The onboard trouble relay and municipal box output will activate when the countdown is complete. Note that this panel notifies the central station communicator as soon as AC failure occurs, and the central station communicator follows its own programmed schedule for reporting the failure.

Silence Inhibit Timer

This timer disables the SIGNAL SILENCE and RESET key function for the programmed time (MM:SS seconds) when a fire alarm occurs. A Silence Inhibit Timer starts at the first fire alarm. A panel reset is required to re-enable this timer. It can be set with a value from 0 (the timer is disabled) to 5 minutes.

Auto Silence Timer

This timer functions like pressing the SIGNAL SILENCE key. When the Auto Silence Timer reaches its programmed value (0, 10 minutes, 15 or 20 minutes, with the setting = 20 for Canadian installations), the control panel automatically shuts off all active outputs programmed as silenceable. To restart the Auto Silence Timer, press the DRILL key.

Presignal

Presignal is a feature that initially delays activation of outputs with ZF0 in their zone map until the Presignal timer has expired. This feature allows for the initial sounding of outputs only in specific areas, monitored by qualified personnel. To participate in Presignal, inputs and outputs must include Special Zone ZF0 in their zone map. The Presignal timer is programmed to a value from 60 to 180 seconds.

How the Panel Indicates a Presignal Alarm

When an initiating device participating in Presignal goes into alarm, the panel LCD displays a fire alarm message. (Refer to “Fire Alarm Event” on page 22.) If a second alarm occurs while the Presignal timer is counting down, the control panel aborts the Presignal timer countdown and activates all programmed outputs. The fire alarm LED flashes and the panel sounder pulses a steady tone. The control panel latches until the alarm is corrected and the SYSTEM RESET key is pressed to reset the panel.

How to Respond to a Presignal Alarm

Once the Presignal timer has begun counting down, the operator has the duration of the countdown time to respond to the alarm before the control panel automatically activates all outputs with ZF0 in their zone map and CBE linkage to the alarm. The operator can reset the panel if the alarm is determined false, or press DRILL to evacuate the building immediately.

PAS (Positive Alarm Sequence)

PAS (Positive Alarm Sequence), used in conjunction with Presignal, allows a 15-second time period for acknowledging an alarm signal from a fire detection/initiating device. If the alarm is not acknowledged within 15 seconds, all programmed outputs activate. If the alarm is acknowledged within 15 seconds, the control panel will enter Presignal mode as described above.

The PAS Inhibit switch can be used to turn off the PAS delay timer when the control panel is unattended.

Section 3 Read Status

This section contains instructions and screen illustrations for Read Status functions and menus using the NFS-3030 display.

Read Status allows viewing of detailed device status information without entering a password or halting full fire protection. Information can be viewed while a fire alarm or trouble condition exists. Read Status screens are refreshed periodically with up-to-date information.

Read Status can be reached from the Main Menu screen, which is accessible from the System Normal screen and from most other screens by pressing the BACK soft key until it displays. (Refer to Figure 1.5 for an illustration of the Main Menu screen.)

Press the READ STATUS soft key on the Main Menu screen to bring up the following screen.

3.1 Point Select Screen

When READ STATUS is pressed at the Main Menu, the following screen appears.

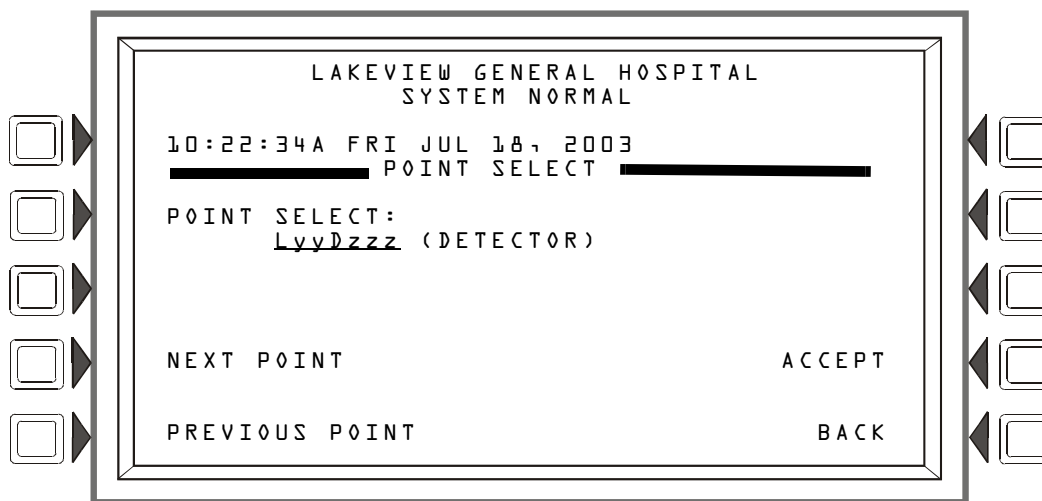


Figure 3.1 Point Select Screen for Read Status

Soft Keys

POINT SELECT - Pressing this soft key scrolls through the various device types. The types and their address formats are illustrated in Table 3.1.

Type	Address Format	
Detector	LyyDzzz	L=Loop, yy=Loop number (1-10) D=Detector, zzz=Detector address (1-159)
Module	LyyMzzz	L=Loop, yy=Loop number (1-10) M=Module, zzz=Module address (1-159)
Panel Circuit	Pyy.z	P=Panel circuit, yy=Panel Module Number (1-12), z=panel module point (1-8)
General Zone	Zyyy	Z=Zone, yyy=Zone number (0-999)
Logic Zone	ZLyyyy	ZL=Logic Zone, yyyy=Logic Zone number(1-1000)
Release Zone	Ryy	R=Releasing Zone, yy=Releasing Zone number (00-09)
Special Function Zone	ZFxx	ZF=Special Function Zone, x=Special Function Zone number (00, 01, 02, 03, 04, 08)
Trouble Zone	ZTyy	ZT=Trouble Zone, yy=Trouble Zone number (1-10)
Annunciator	AxxPyy	A=Annunciator, xx=ACS address (1-32), P=Point, yy=Point address (1-96)


Table 3.1 Address Formats

Enter an address to view its attributes (the cursor will be in the underlined section).

NEXT POINT/PREVIOUS POINT - Press to view next or previous point.

ACCEPT - Press to accept the displayed point for further viewing.

Pressing the ACCEPT soft key on the Point Select Screen will display the information that corresponds to the chosen point. Each point type has its own screen.

 Note: The first four lines of the display may indicate an alarm for a point unrelated to the requested point information displayed below them.

3.2 Smoke Detector

When a detector address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display if the detector is a smoke detector.

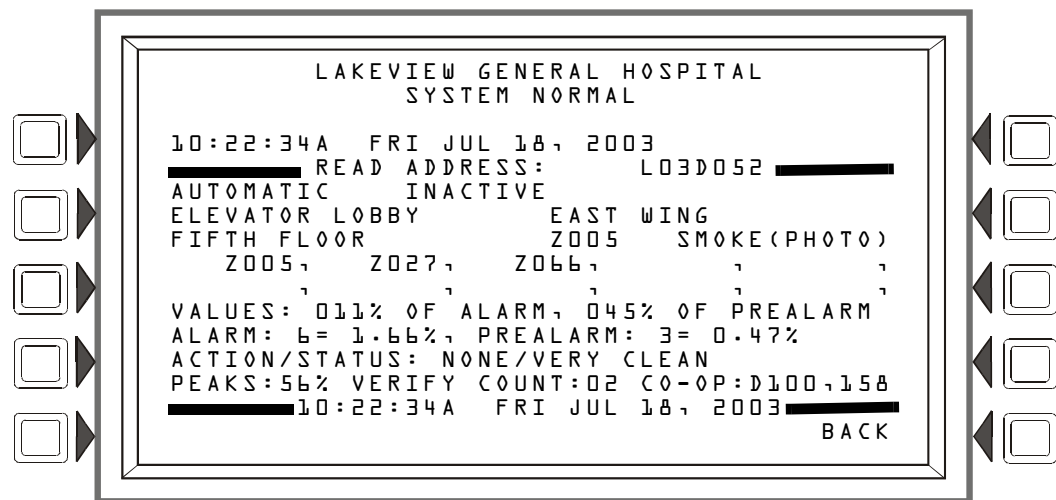


Figure 3.2 Smoke Detector Screen - Read Status

Display

Lines 1- 4 - This could display any current event message, or, as in this example, the System Normal message.

Line 5 - This line contains the screen title and the address of the point being read.

The area between the separator lines, lines 6-14, shows all information concerning the selected point, which is L03D052 in the above example.

Line 6 - Line 6 displays two statistics that display for inputs (detectors and modules) and zones; in the above example they are:

AUTOMATIC INACTIVE

The first field displays the point control. There are three designations that could appear in this field

Point Control Designation	Description
AUTOMATIC	The point is being controlled automatically by the panel.
DISABLED	The point has been disabled by an outside source.
TROUBLE	The point is in a trouble state and is no longer functioning automatically.

The second field displays the point status. There are two designations that could appear in this field.

Point Status Designation	Description
INACTIVE	The point is currently reporting no events.
ACTIVE	The point is currently in an off-normal status.
PREALARM	The point is currently in a prealarm status.

The device is a detector (an input device) so by referring to the descriptions below, it can be determined that the point is in a normal state.

Inputs: (detectors, monitor modules, zones)

If the point is not in trouble or disabled, and the point is automatically controlled by the panel, the display will be one of the following:

AUTOMATIC	INACTIVE
AUTOMATIC	ACTIVE
AUTOMATIC	PREALARM

If the point is disabled, the display will be one of the following. The Trouble Status field will appear if the point is in trouble.

DISABLED	INACTIVE	<Trouble Status>*
DISABLED	ACTIVE	<Trouble Status>*
DISABLED	PREALARM	<Trouble Status>*

If the point is in trouble, the display will read:

TRouble	INACTIVE	<Trouble Status>*
TRouble	ACTIVE	<Trouble Status>*
TRouble	PREALARM	<Trouble Status>*

*The field <Trouble Status> will contain one of the device trouble messages listed in Table 2.1.

Line 7 - The custom label for this point.

Line 8 - Continuation of the point's custom label, first zone, and device type.

Lines 9,10 - a display of all the zones that contain the current point being read. These lines will have values in them only if the device is a detector.

Lines 11 through 14 - These lines display only if the device being read is a smoke or heat detector. Refer to the section More Information on page 16 for an explanation of these fields.

Line 16 - BACK - Press to return to the previous screen.

3.3 Heat Detector

When a detector address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display if the detector is a heat detector.

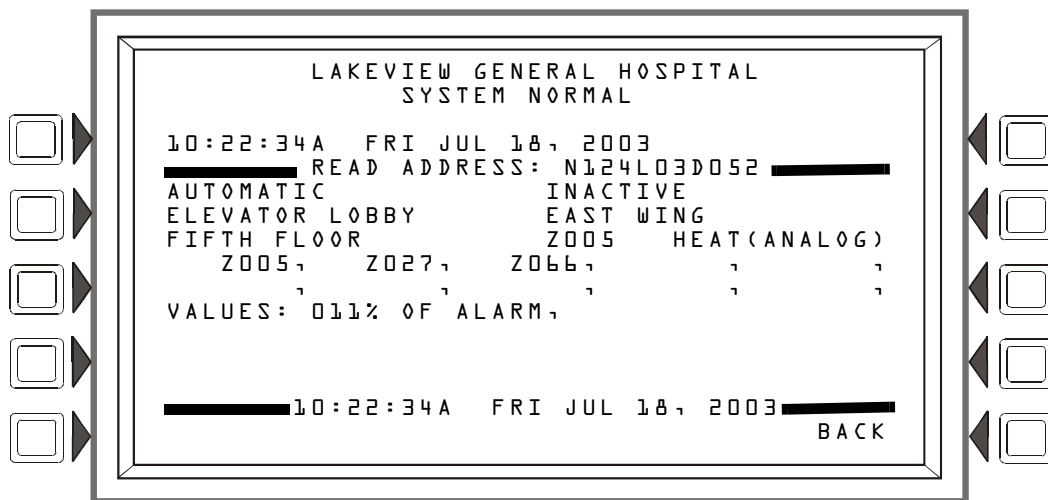


Figure 3.3 Heat Detector Screen - Read Status

Display

Lines 1 through 10 - Refer to the descriptions in "Smoke Detector" on page 39.

Line 11 - VALUES - This field indicates the percentage of alarm value being read by the detector.

Line 15 - The current time and date are displayed in this line.

Line 16 - Press BACK to return to the previous screen.

3.4 Monitor Module

When a module address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display if the point is a monitor module.

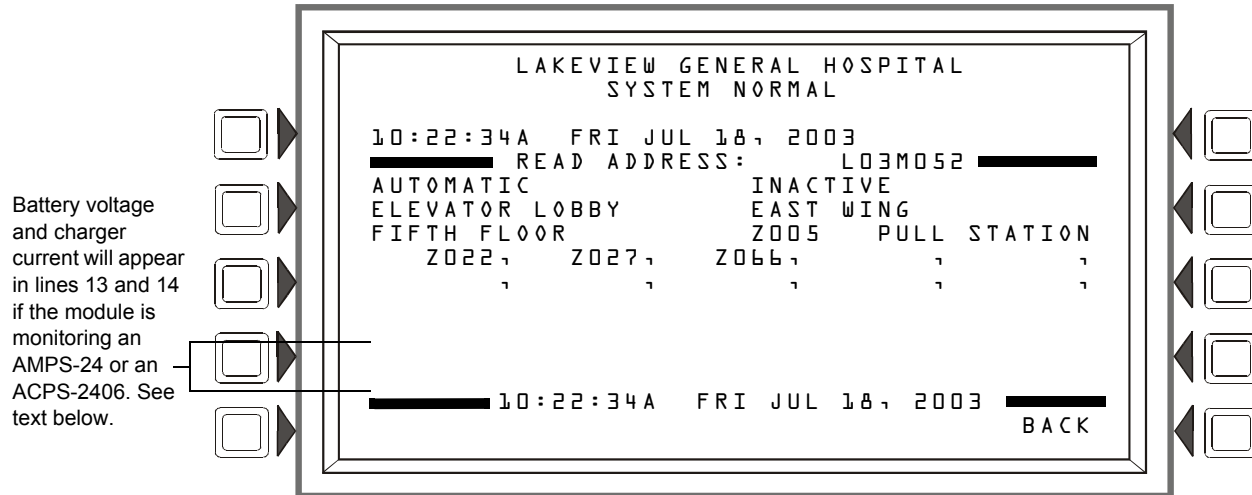


Figure 3.4 Monitor Module Screen - Read Status

Display

Lines 1 through 10 - Refer to the descriptions in "Smoke Detector" on page 39.

Lines 13 and 14 - When a module is monitoring an AMPS-24 or an ACPs-2406, information will appear in these lines in the following format.

BATTERY VOLTAGE: 27.9 VOLTS
CHARGER CURRENT: 0.0 AMPS

Line 15 - The current time and date are displayed in this line.

Line 16 - Press BACK to return to the previous screen.

3.5 Control Module

When a module address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display if the module is a control module.

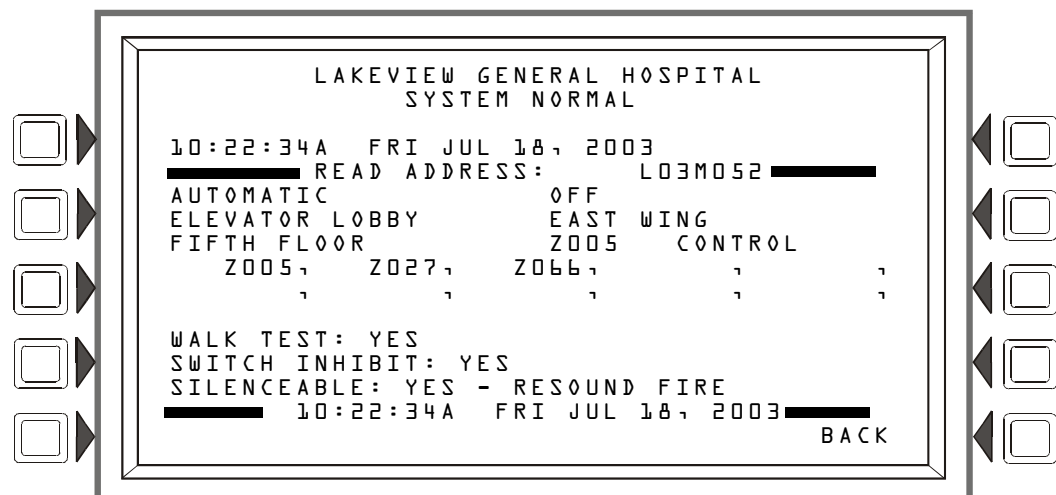


Figure 3.5 Control Module Screen - Read Status

Display

Lines 1 through 10 - Refer to the descriptions in "Smoke Detector" on page 39 with the exception of line 6, which is described below.

Line 6 - This line displays statistics that display for control module output points; in the above example they are:

AUTOMATIC OFF

The first field displays the point control. There are four designations that could appear in this field

Point Control Designation	Description
AUTOMATIC	The point is being controlled automatically by the panel.
MANUAL	The point has been forced into manual control state by an outside source.
DISABLED	A status change other than a change to MANUAL control has caused the point to go off automatic control.
TROUBLE	

The second field displays the point status. There are two designations that could appear in this field.

Point Status Designation	Description
OFF	The point is currently not activated.
ON	The point is currently activated.
OFF-HOOK	The telephone point is currently off-hook.

The device is a control module (an output device) so by referring to the descriptions below, it can be determined that the point is in a normal state.

Outputs: (Control Modules)

If the point is not in trouble or disabled and the status is Automatic, the display will read:

AUTOMATIC OFF
 AUTOMATIC ON
 AUTOMATIC OFF-HOOK

If the point has been forced into a manual control state, the display will read as follows. <Trouble Status> will appear when there is a point trouble.

MANUAL OFF <Trouble Status>*
 MANUAL ON <Trouble Status>*
 MANUAL OFF-HOOK <Trouble Status>*

If the point is disabled, the display will read as follows. <Trouble Status> will appear when there is a point trouble.

DISABLED OFF <Trouble Status>*
 DISABLED ON <Trouble Status>*
 DISABLED OFF-HOOK <Trouble Status>*

If the point is in trouble, the display will read:

TROUBLE OFF <Trouble Status>*
 TROUBLE ON <Trouble Status>*
 TROUBLE OFF-HOOK <Trouble Status>*

*The field <Trouble Status> will contain one of the device trouble messages listed in Table 2.1.

Line 11 - blank.

Line 12 - WALK TEST - Displays YES if the device sounds during audible Walk Test.

Line 13 - SILENCEABLE - Displays YES if the operator can manually silence an activated output. The output resounds for fire.

Line 14 - SWITCH INHIBIT: YES - Displays YES if the operator can not manually activate an output.

Line 15 - The current time and date are displayed in this line.

Line 16 - Press BACK to return to the previous screen.

3.6 Panel Input

When a Panel Input address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display.

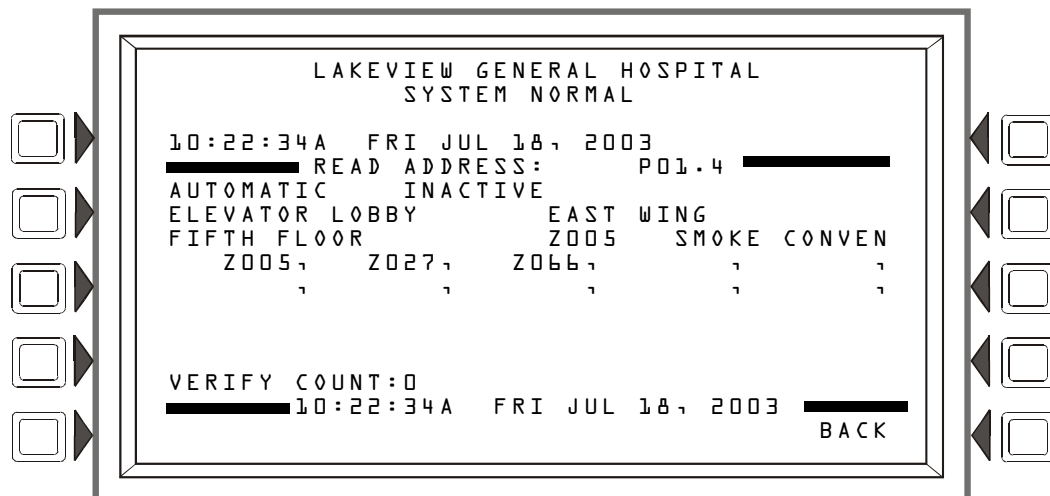


Figure 3.6 Panel Input Screen - Read Status

Display

Lines 1 through 10 - Refer to the descriptions in "Smoke Detector" on page 39.

Line 15 - Current time and date.

3.7 Panel Output

When a Panel Output address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display

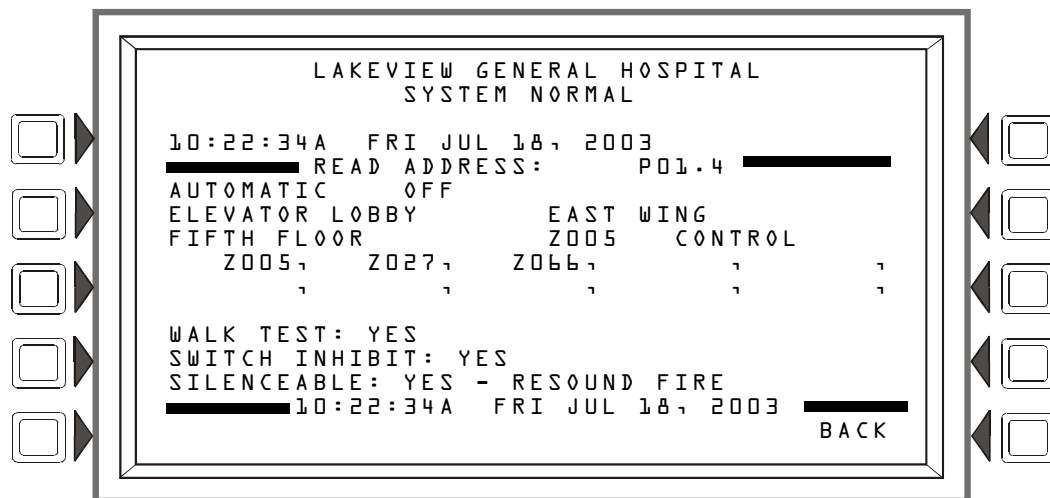


Figure 3.7 Panel Output Screen - Read Status

Display

Lines 1 through 10 - Refer to the descriptions in "Smoke Detector" on page 39 with the exception of line 6. Refer to the section Control Module on page 41 for a description of line 6.

WALK TEST - Displays YES if the device sounds during audible Walk Test.

SILENCEABLE - Displays YES if the operator can manually silence an activated output. The output resounds for fire.

SWITCH INHIBIT: NO - Displays NO if the operator can manually activate an output.

3.8 General Zone

When a general zone address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display

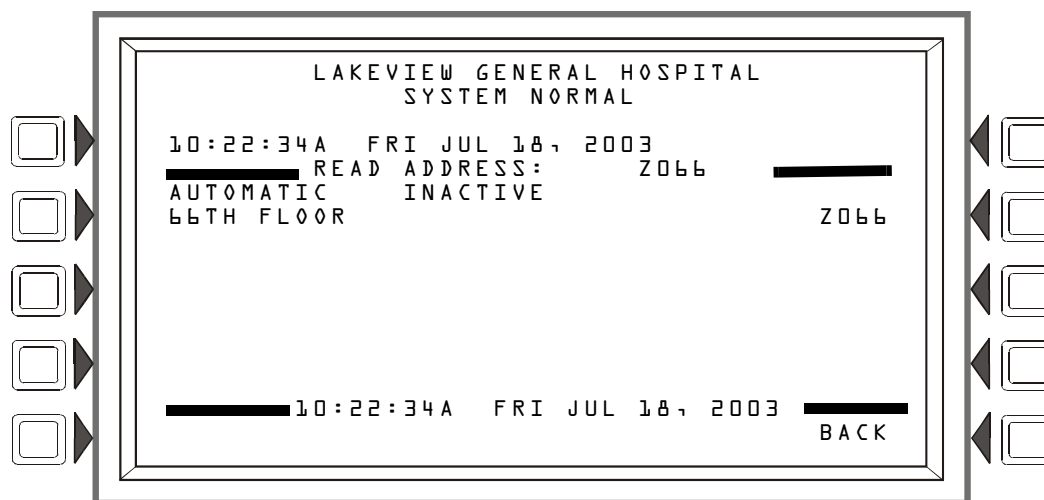


Figure 3.8 General Zone Screen - Read Status

Display

Lines 1 through 7 - Refer to the descriptions in "Smoke Detector" on page 39.

Line 15 - the current time and date

3.9 Logic Zone

When a logic zone address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display

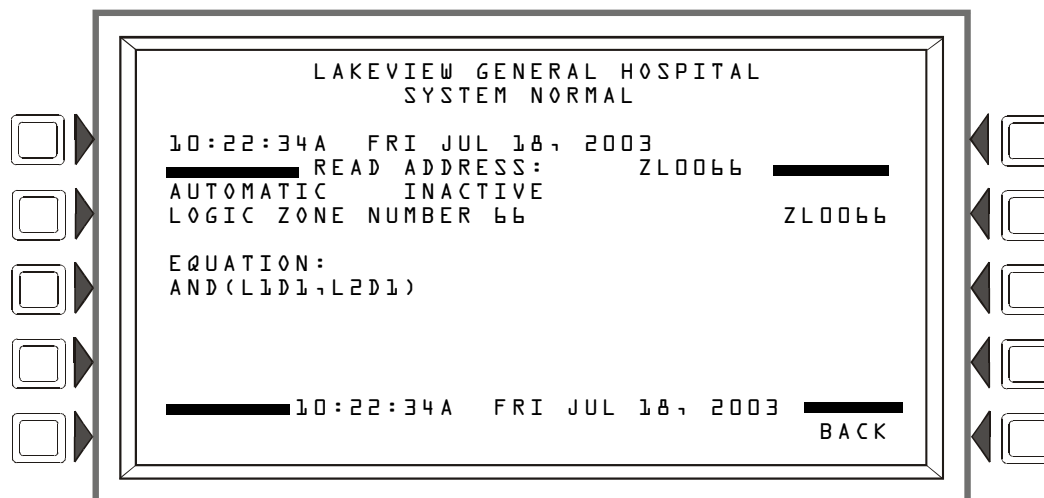


Figure 3.9 Logic Zone Screen - Read Status

Display

Lines 1 through 6 - Refer to the descriptions in "Smoke Detector" on page 39.

EQUATION: The logic equation for this logic zone is displayed here

Line 15 - Current time and date.

3.10 Releasing Zone

When a releasing zone address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display.

```

LAKEVIEW GENERAL HOSPITAL
SYSTEM NORMAL

10:22:34A  FRI JUL 18, 2003
READ ADDRESS:  ZR08
AUTOMATIC      INACTIVE
RELEASING ZONE NUMBER 08      ZR08

DELAY TIME: 30 SECONDS
ABORT SWITCH: AHJ
CROSS ZONE: NO
SOAK TIME: 3600 SECONDS

10:22:34A  FRI JUL 18, 2003
BACK
  
```

Figure 3.10 Releasing Zone Screen - Read Status

Display

Lines 9 through 7 - Refer to the descriptions in "Smoke Detector" on page 39.

Line 9 - DELAY TIME - Gives the delay time setting - a value from 0 to 60 seconds - for this releasing zone.

Line 10 - ABORT SWITCH - Displays the type of abort switch; ULJ, IRI, NYC or AHJ.

Line 11 - CROSS ZONE - Displays the cross zone setting; NO, YES, ZONE, or HEAT.

Line 12 - SOAK TIME - Displays the Soak Time setting; 0 to 9999 seconds.

Line 15 - Displays the current time and date.

For further information on Releasing Zones, refer to Appendix B of this manual.

3.11 Special Function Zone

When a special function zone address is entered into the Point Select Screen and the ACCEPT soft key is pressed, the following screen will display:

```

LAKEVIEW GENERAL HOSPITAL
SYSTEM NORMAL

10:22:34A  FRI JUN 13, 2003
READ ADDRESS:  ZF03
AUTOMATIC      INACTIVE
SPECIAL ZONE NUMBER 03      ZF03

SECURITY

BACK
  
```

Figure 3.11 Special Function Zone Screen - Read Status

Display

Lines 1 through 6 - Refer to the descriptions in "Smoke Detector" on page 39.

Line 7 - The special zone number and function is displayed here.

3.12 Trouble Zone

When a trouble zone address is entered into the Point Select Screen and the **ACCEPT** soft key is pressed, the following screen will display.

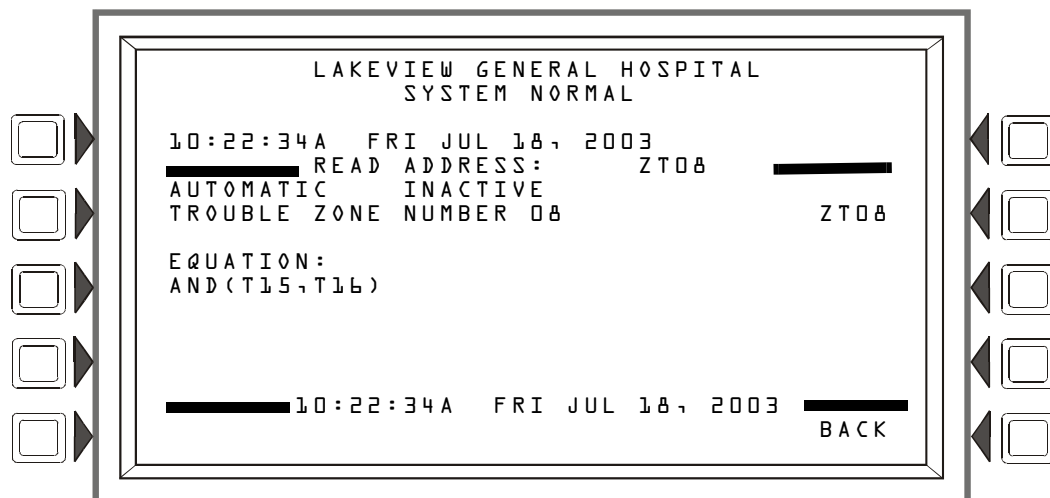


Figure 3.12 Trouble Zone Screen - Read Status

Display

Lines 1 through 6 - Refer to the descriptions in "Smoke Detector" on page 39.

EQUATION: The equation for this trouble zone is displayed here.

Line 15 - Current time and date.

3.13 Annunciator

When an annunciator address is entered into the Point Select Screen and the **ACCEPT** soft key is pressed, the following screen will display if the point is a monitor module.

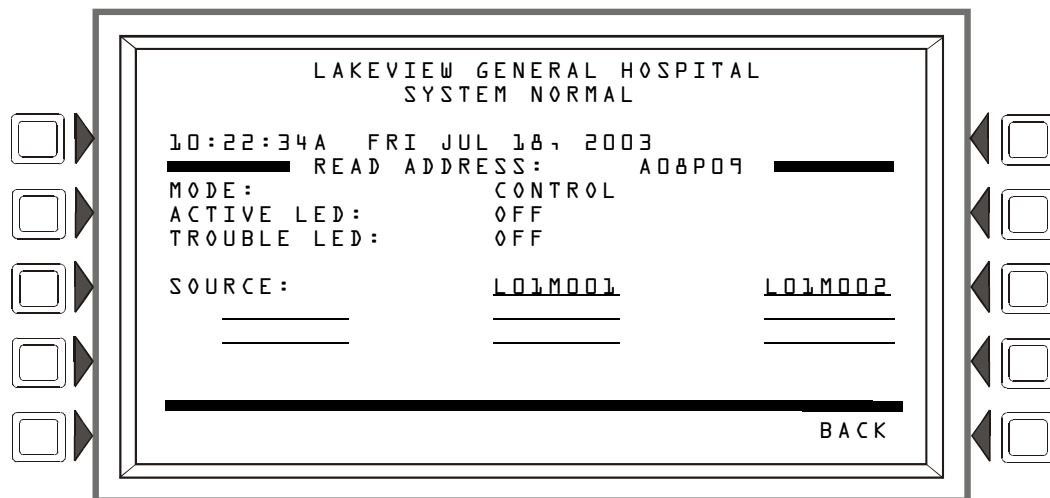


Figure 3.13 Annunciator Screen - Read Status

Display

Lines 1- 4 - This could display any current event message, or, as in this example, the System Normal message

Line 5 - Screen title and the address of the point being read.

Line 6 - Displays the annunciator mode.

Line 7 - Displays the state of the active LED.

Line 8 - Displays the state of the trouble LED.

Line 10 - Displays the annunciator source(s).

Section 4 Viewing and Printing History Information

The control panel maintains a history file of alarm, trouble, supervisory, and security events, each with a time/date stamp. An alarm history is maintained in a buffer that can include up to 1000 events. All events, including alarms, are included in a 4000-event buffer. History events may be viewed onscreen, and a printed list may be generated.

To choose a history display screen:

Press the **HISTORY SELECT** soft key at the Main Menu. A menu screen titled History Select will appear. (Refer to Figure 1.9.)

Press the soft key for the type of event history desired to view all of those types of events that are in the history buffer,

OR

Press the **TIME/DATE INTERVAL** or **POINT RANGE** soft key to choose limiting parameters for what will display onscreen.

The following sections illustrate and explain the history displays.

4.1 Events History

Pressing a soft key on the History Select screen will display the history for whatever event type chosen. If the **ALL EVENTS** soft key is pressed, any events in the history file will display, no matter what the type.

The screen below is an example of what displays when the **ALL EVENTS** soft key is pressed. The displayed fields are the same for each event type.

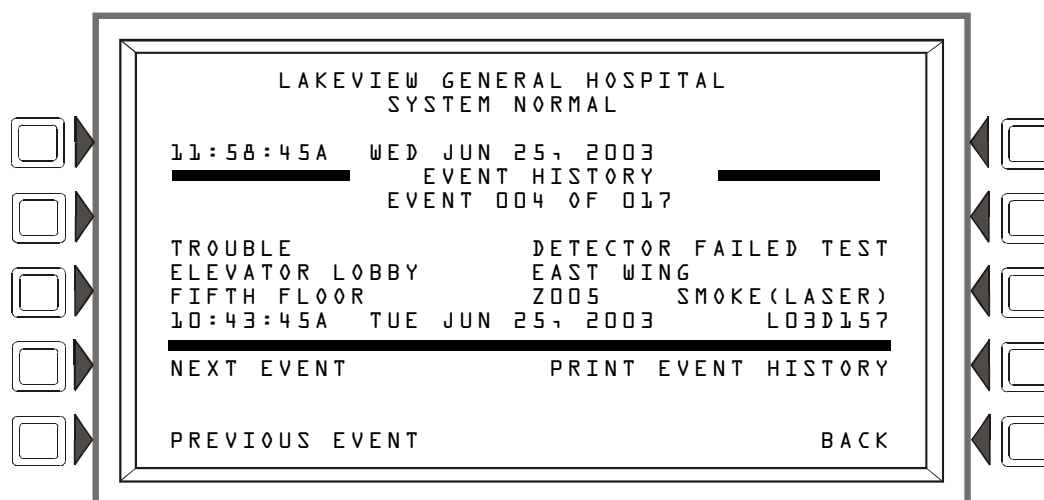


Figure 4.1 Event History Screen

Display

Lines 1-4: Displays any current event message, or, as in this example, the System Normal message

Line 5: Screen title. It will vary depending on the history type chosen for viewing. For example, it will display **ALARM HISTORY** if the **ALARMS ONLY** soft key is pressed at the History Select screen.

Line 6: Queue location of event that is described in lines 8-11: In the above example, the detector trouble is the fourth of 17 events in the history file.

Lines 8 through 11 give more information about the event. Refer to “Event Reporting Format” on page 12 for an explanation of these fields.

Soft Keys

NEXT EVENT - Press to view next event (In the above example, event 005 of 017).

PREVIOUS EVENT - Press to view previous event (In the above example, event 003 of 017).

PRINT "xxx" HISTORY - Press to print the history for the event(s) chosen. (In the above example, all 17 events). The report will look like this:

```
*****EVENT HISTORY*****
TROUBLE
TM4 NO ANSWER                      08:52:05P SAT JUN 14, 2003

ACK TROUBLE
TM4 NO ANSWER                      08:53:35P SAT JUN 14, 2003

CLEAR TROUBLE
TM4 NO ANSWER                      08:54:05P SAT JUN 14, 2003

*****
```

4.2 Time and Date Range Selection for All Events

Pressing the Time/Date Interval soft key on the History Select screen displays the Time & Date Range Select screen. This screen allows for selection of a time period that defines the range of events to be viewed and/or printed.

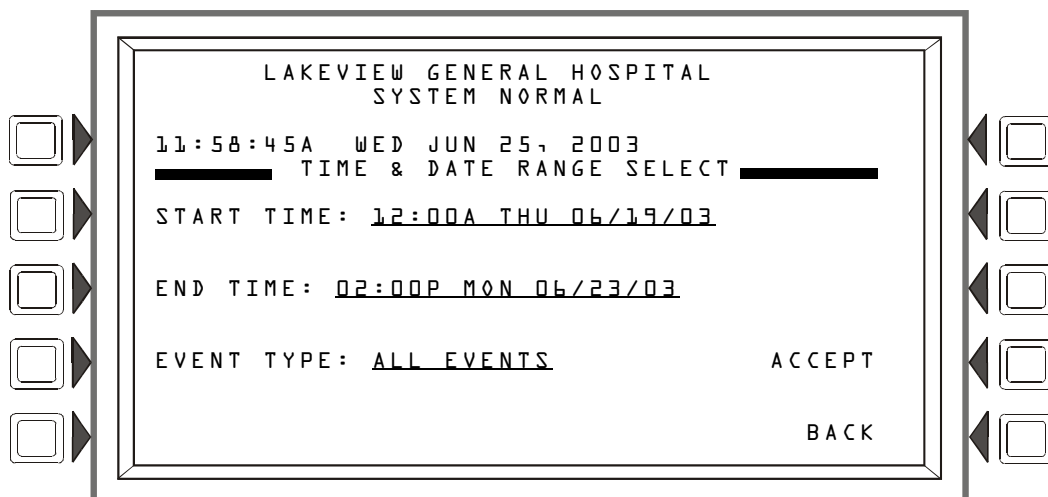


Figure 4.2 Time & Date Range Select Screen

Display

See description in "Events History" on page 48 for lines 1-5.

Soft Keys

START TIME : - Use the keypad to enter a start time for event viewing in the following format:

HH:MMA/P DDD MM/DD/YY

END TIME : - Use the keypad to enter an end time for event viewing.

EVENT TYPE : - Press this soft key to scroll through the following: ALL EVENTS, ALARMS ONLY, TROUBLES ONLY, SUPERVISORY ONLY, SECURITY ONLY, OTHER ONLY. Stop scrolling at the desired event type.

ACCEPT : - When entries are made, press this soft key to proceed to the All Events in Interval Screen.

All Events in Interval Screen

This screen is the same as the Event History screen, except for its title. Refer to Figure 4.1 on page 48.

4.3 Point Range Select for All Events in Range

Pressing the Point Range soft key on the Local History Select screen displays the Point Range Select screen. This screen allows for selection of a beginning and an end point that defines the range of events to be viewed and/or printed.

Range is selected in the following order:

1. Loop 1 Detectors
2. Loop 2 Detectors, etc...
3. Loop 10 Detectors
4. Loop 1 Modules
5. Loop 2 Modules, etc...

This FACP can have up to 10 loops, which would all follow the above order for range selection.

20. Loop 10 Modules

21. Panel Circuits

The range selected below includes all supervisory event types for every point: the selection begins with the first detector on loop one and ends with the last panel circuit.

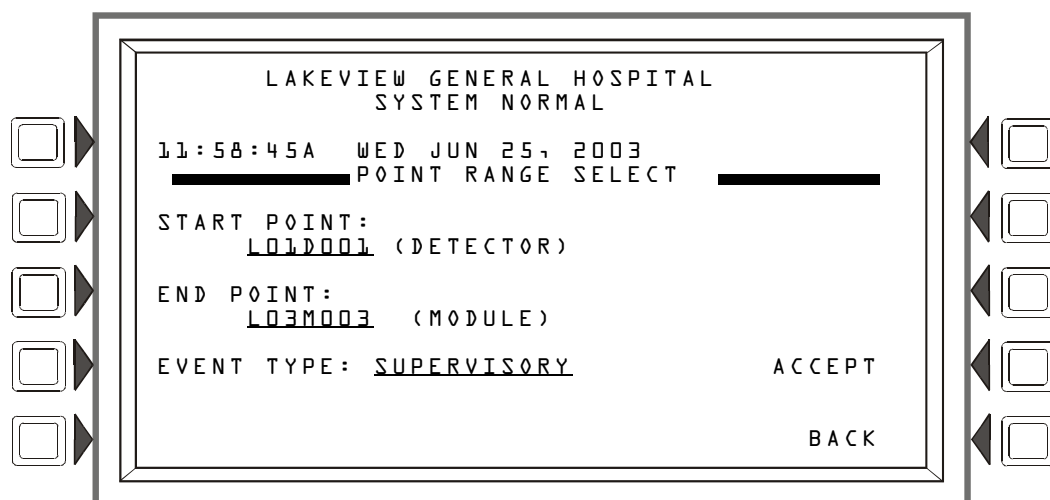


Figure 4.3 Point Range Select Screen

Display

See description in "Events History" on page 48 for lines 1-5.

Soft Keys

START POINT: - Press this key to scroll through the list of various device types: the format will change for each device. Stop at the desired format/device type, then use the keypad to enter a start point for event viewing.

END POINT: - Press this key to scroll through the list of various device types: the format will change for each device. Stop at the desired format/device type, then use the keypad to enter an end point for event viewing.

EVENT TYPE: - Press this soft key to scroll through the following: ALL EVENTS, ALARMS ONLY, TROUBLES ONLY, SUPERVISORY ONLY, SECURITY ONLY, OTHER ONLY. Stop scrolling at the desired event type.

ACCEPT: - When entries are made, press this soft key to proceed to the All Events in Range Screen.

All Events in Range Screen

This screen is the same as the Event History screen, except for its title. Refer to Figure 4.1 on page 48.

Section 5 Printing Reports

A variety of reports can be generated and printed from the NFS-3030. Reports listing all event, alarm, trouble, supervisory, or security history can be generated from the history screens in Section 4, "Viewing and Printing History Information". The following section describes how to print programming, Walk Test, and active point information.



Note: Report formats are shown below as printed by an 80-column printer. When these reports are printed on a Keltron, which is a 40-column printer, the formats are the same except they are displayed on two lines instead of one.

5.1 Printer Functions Screen

The following screen displays when the **Printer Functions** soft key is pressed at the Main Menu. This key will appear only if a printer has been selected through programming.

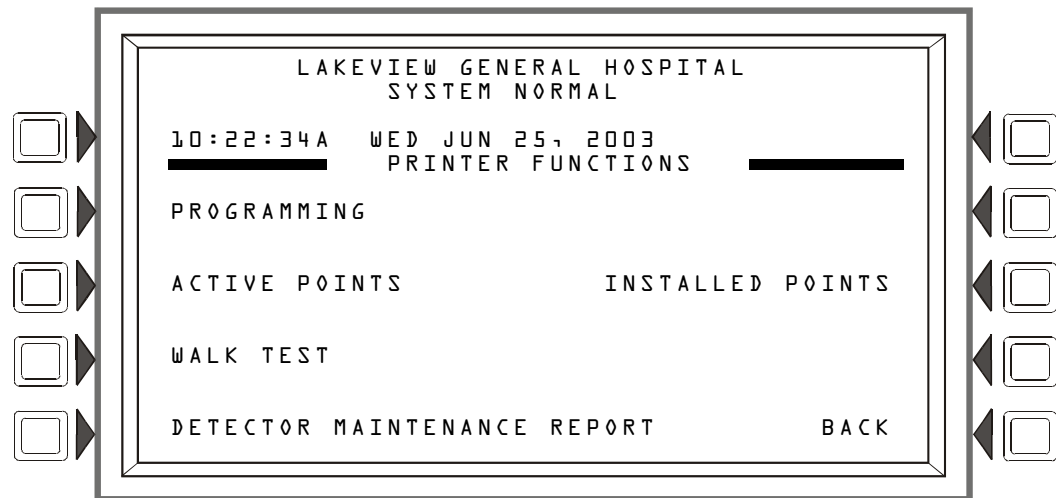


Figure 5.1 Printer Functions Screen

Soft Keys

PROGRAMMING: Press this soft key to display the Print Programming Menu screen.

ACTIVE POINTS: Press this soft key to display the Active Points Menu screen.

WALK TEST: Press this soft key to print point activations for the last Walk Test performed. The report looks like this:

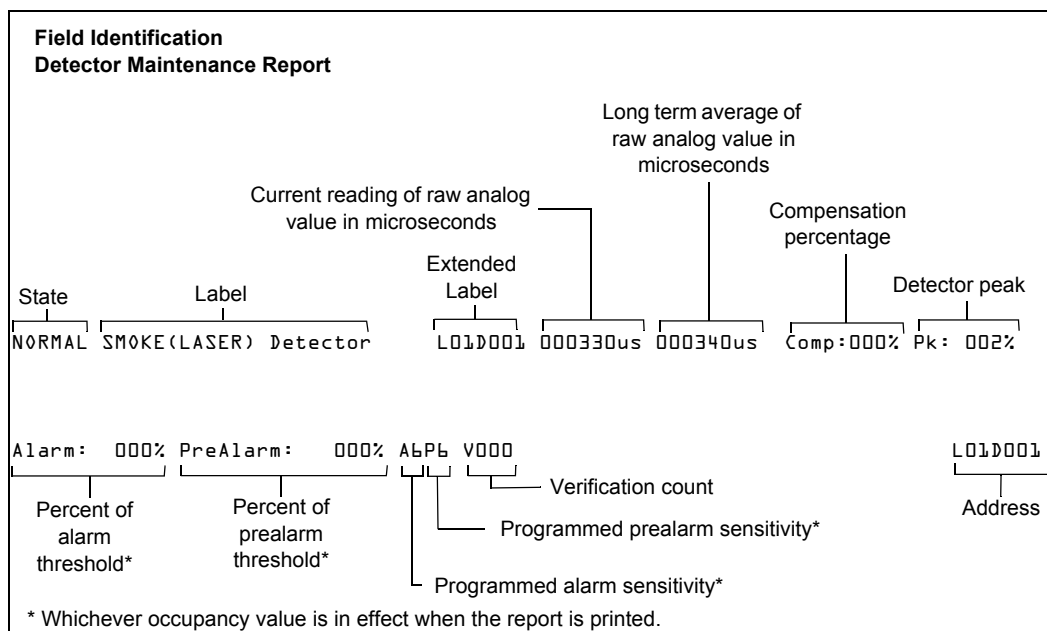
```
*****WALK TEST RESULTS*****
TEST NO ANSWER          DETECTOR 73
                        02:54:04P WED JUN 11,2003    L01D073
TEST FIRE ALARM          ROOM 101                    1ST FLOOR
                        02:54:31P WED JUN 11,2003    L01D003
TEST FIRE ALARM          ROOM 221                    2ND FLOOR
                        02:54:59P WED JUN 11,2003    L01M004
TEST ACTIVE              LAB                          3RD FLOOR
                        02:55:09P WED JUN 11,2003    L01M005
                        CONTROL
```

DETECT MAINTENANCE REPORT: Press this soft key to print a list from the printer connected to the control panel that contains the detector maintenance status for each installed addressable

detector. The report looks like this:

```
*****DETECTOR MAINTENANCE*****
NORMAL SMOKE(LASER) Detector    L01D001 000330us 000340us  Comp:000% Pk: 002%
Alarm: 000% PreAlarm: 000% A6P6 V000                                L01D001

NORMAL SMOKE ACCLIM Detector    L01D002 000030us 000000us  Comp:000% Pk: 000%
Alarm: 000% PreAlarm: 000% A8P8 V000                                L01D002
```



INSTALLED POINTS: Press this soft key to display the Installed Points Menu screen.

5.2 Print Programming Menu Screen

This screen displays when the PROGRAMMING soft key is pressed on the PRINTER FUNCTIONS screen. Refer to Figure 5.1 on page 51).

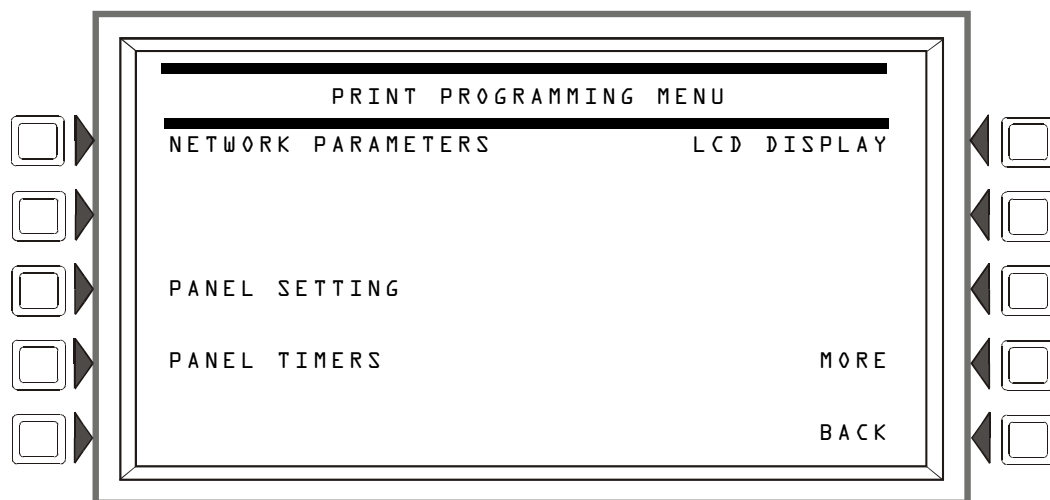


Figure 5.2 Print Programming Screen

Soft Keys

NETWORK PARAMETERS: Press to print node number, node label, Channel A and B threshold, network style. The report looks like this:

```
*****NETWORK PARAMETERS*****
NODE: N124                      STYLE 7                      NO
NODE LABEL: LAKEVILLE GENERAL HOSPITAL
CH A. THRESHOLD: HIGH          CH B. THRESHOLD: HIGH
*****
```

PANEL SETTINGS: Press to print broadcast time, event ordering, and block acknowledge. The report looks like this:

```
*****SETTINGS*****
BROADCAST TIME: NO          BLOCK ACKNOWLEDGE: YES
EVENT ORDERING: USA
*****
```

PANEL TIMERS: Press to print timer values for Auto Silence, Silence Inhibit, AC Fail Delay time and whether it has been enabled, Proprietary Reminder, and Remote Reminder timers. The report looks like this:

```
*****TIMERS*****
AUTO SILENCE: 00:00          SILENCE INHIBIT: 00:00
AC FAIL DELAY: 06:00          AC FAIL DELAY: ENABLED
PROPRIETARY REMINDER: ENABLED  REMOTE REMINDER: ENABLED
*****
```

LCD DISPLAY: Press to print information about backlight handling during fire alarm and backlight intensity. The report looks like this:

```
*****LCD DISPLAY*****
LCD INTENSITY: 060          BACKLIGHT: ON
*****EVENTS*****
```

5.3 Print Programming Menu Screen (2)

The second PRINT PROGRAMMING MENU screen displays when MORE is pressed at the first PRINT PROGRAMMING MENU screen:

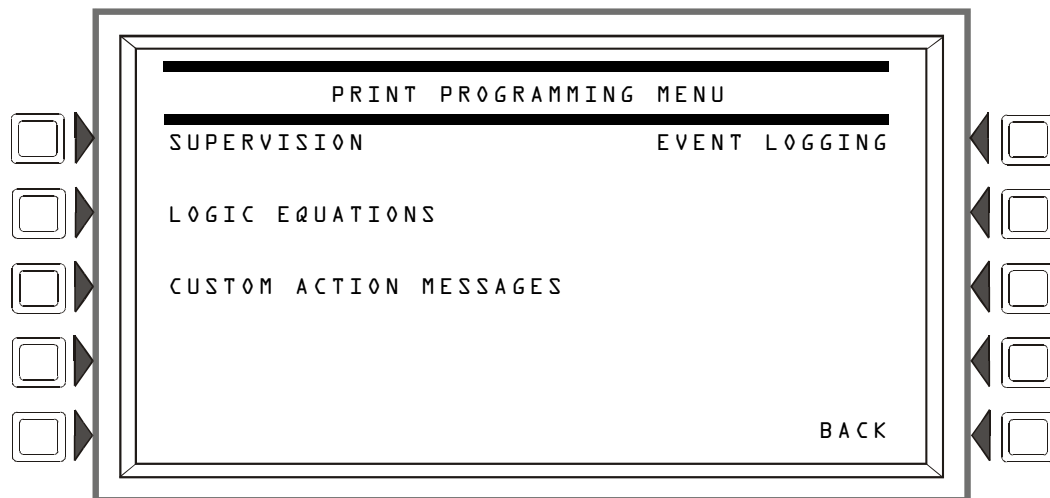


Figure 5.3 Print Programming Screen

Soft Keys

SUPERVISION: Press to print information on power supply and printer monitoring. The report looks like this:

```
*****SUPERVISION*****
MAIN POWER SUPPLY ADDRESS:  LO1M001
PRINTER:                    80-column
TAMPER INPUT:               NO
AUXILIARY TROUBLE:         NO
*****
```

LOGIC EQUATIONS: Press to print all logic equations (1-1000). The report looks like this:

```
*****EQUATIONS*****
ZL001
AND(Z02,Z05,L2D121)
ZL002
DEL(10:30:00,11:30:00,L1M140)
*****
```

CUSTOM ACTION MESSAGES: Press to print all custom action messages (1-100). The report looks like this:

```
*****CUSTOM ACTION MESSAGE*****
CAM 1
GO TO ALARM SITE AND INVESTIGATE
APPROACH THE ALARM LOCATION WITH CAUTION
BRING CELL PHONE AND REPORT WHEN ON SITE
CAM 2
CALL MANAGER WITH REPORT
*****
```

EVENT LOGGING: Press to print non-fire and output activations if these events have been chosen for logging during panel programming. The report looks like this:

```
*****EVENT LOGGING*****
NON-FIRE ACTIVATIONS:NO          OUTPUT ACTIVATIONS: NO
*****
```

5.4 Active Points Report Screen

This screen displays when the **ACTIVE POINTS** soft key is pressed on the **PRINTER FUNCTIONS** screen (refer to Figure 5.1 on page 51).

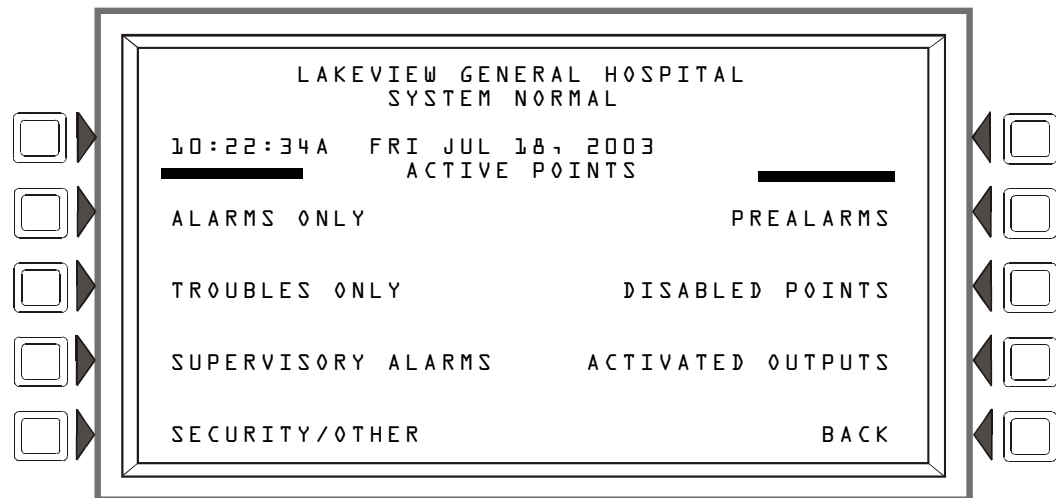


Figure 5.4 Print Active Points Screen

Soft Keys

This screen provides a menu for printing a list of *active* points for whatever type of list is chosen. The soft key will display on the screen only if there is at least one event in the queue.

Note: For a printed list of *history* information, refer to the history screens in Section 4, "Viewing and Printing History Information".

5.5 Installed Points Report Screen

This screen displays when the **INSTALLED POINTS** soft key is pressed on the **PRINTER FUNCTIONS** screen (refer to Figure 5.1 on page 51)

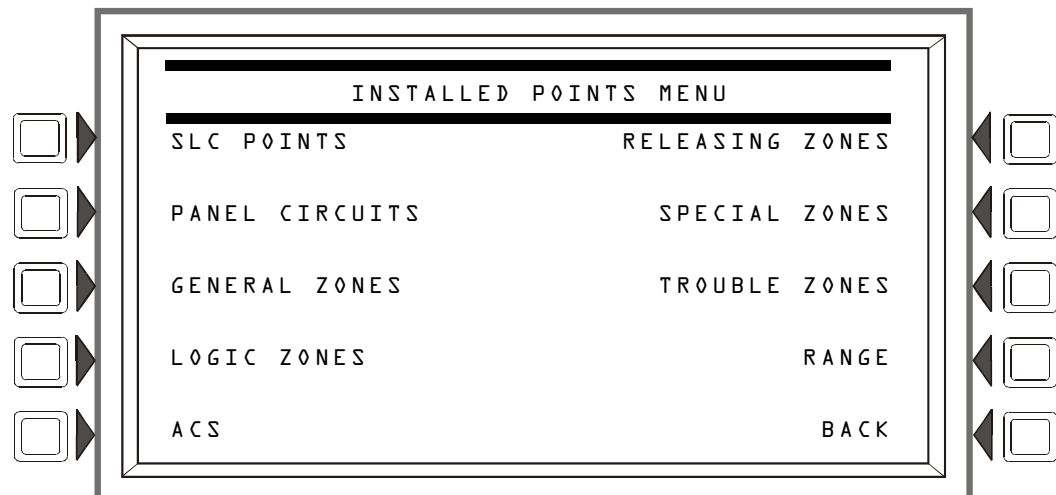


Figure 5.5 Print Programming Screen

Soft Keys

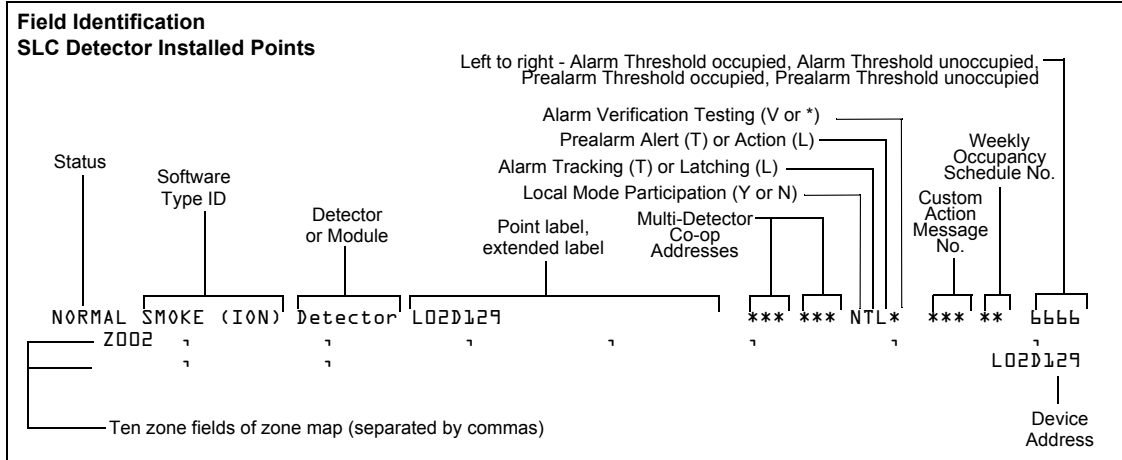
SLC POINTS: Press to print information on installed SLC points. When the soft key is pressed, a field appears to allow choice of a single SLC or ALL. Toggle until the desired choice appears in

the field, then press ACCEPT. The report looks like this.

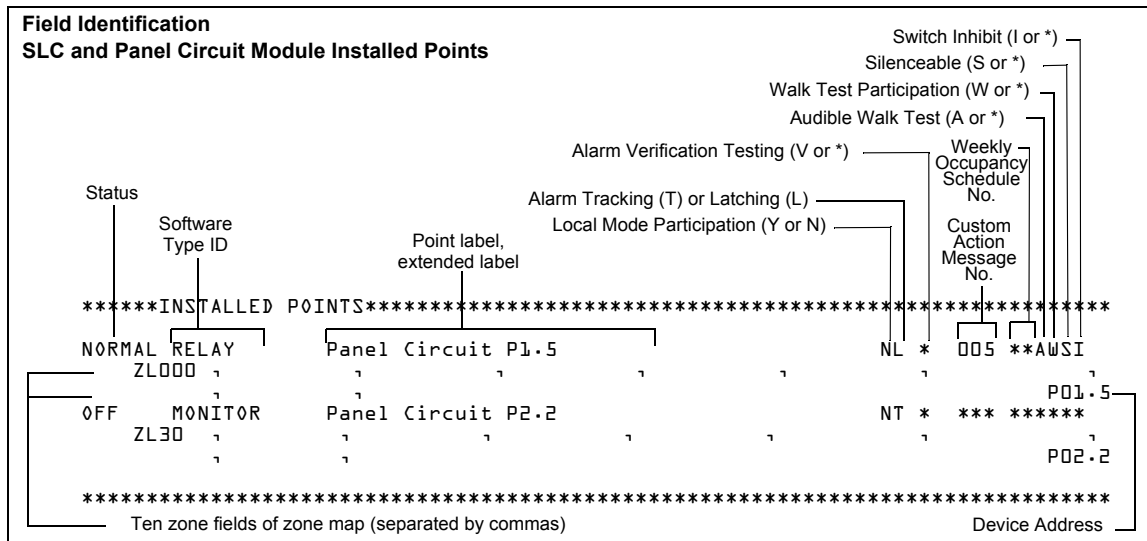
```
*****INSTALLED POINTS*****
NORMAL SMOKE (ION) Detector L02D129          *** ** NTL* *** ** 6666
Z002  ,      ,      ,      ,      ,      ,      ,      ,      ,      ,      ,
                                           L02D129

ON    RELAY      Module      L02M005          NL * *** **
ZL001 ,      ,      ,      ,      ,      ,      ,      ,      ,      ,
                                           L02M005

*****
```



Panel Circuits: Press to print a report of installed panel circuit points. The report resembles the installed SLC points with exceptions relative to panel circuits. Refer to the field identification below.



GENERAL ZONES: Press to print a report of installed general zones.

```
*****INSTALLED POINTS*****
ON    GENERAL ZONE General Alarm          Z000
ON    GENERAL ZONE Zone 001              Z001
OFF   GENERAL ZONE Zone 002              Z002

*****
```


LOGIC ZONES: Press to print a report of installed logic zones.

An asterisk in this position indicates this zone appears in a point's zone map.

```
*****INSTALLED POINTS*****
ON   LOGIC ZONE   AND(Z1,NOT(L2M6))
OFF  LOGIC ZONE   AND(Z110,NOT(Z75))

ZL0001*
ZL0011

*****
```

ACS: Press to print information on the device types for addresses 1-32. The report looks like this:

Point function column	Mapped point column	ACS point address column
*****INSTALLED POINTS*****		
BOARD 01: 64PT		
POINT 01: ACKNOWLEDGE		A01.01
POINT 02: SILENCE		A01.02
POINT 03: RESET		A01.03
POINT 04: CONTROL	L02M145	A01.04
POINT 05: CONTROL	L02M146	A01.05
POINT 06: CONTROL	L02M009	A01.06
POINT 07: CONTROL	L02M005	A01.07
POINT 08: CONTROL	L02M018	A01.08
POINT 09: MONITOR	ZL0001	A01.09

RELEASING ZONES: Press to print a report of installed releasing zones.

An asterisk in this position indicates this zone appears in a point's zone map.

```
*****INSTALLED POINTS*****
OFF  RELEASE ZONE
OFF  RELEASE ZONE

ZR0*
ZR1

*****
```

SPECIAL ZONES: Press to print a report of installed releasing zones.

An asterisk in this position indicates this zone appears in a point's zone map.

```
*****INSTALLED POINTS*****
OFF  SPECIAL ZONE

ZF0*

*****
```

TROUBLE ZONES: Press to print a report of installed trouble zones.

```
*****INSTALLED POINTS*****
OFF  TROUBLE ZONE 0R(T49,T50)

*****
```

RANGE: Press to bring up the following screen, which allows the programmer to choose a range of installed points to print.

Figure 5.6 Installed Points Menu - Range

Soft Keys

START POINT: Press to place the cursor in this field, and to toggle between the choices, which appear in print order: DETECTOR (loop1, detector 1 through loop 10, detector 159), MODULE (loop 1, module 1 through loop 10, module 159), PANEL CIRCUIT (Panel Circuit 1, module 1 through Panel Circuit 3, module 12), GENERAL ZONE, LOGIC ZONE, RELEASE ZONE, ACS PTS, SPECIAL ZONE, TROUBLE ZONE. Using the keypad, type in the start point address.

END POINT: Press to place cursor in this field, and to toggle between the choices as described above. Using the keypad, type in the end point address.

Appendix A Software Type ID Codes

Alphabetical List

The following chart lists NFS-3030 Type ID codes in alphabetical order. These codes are assigned during programming based on the types and functions of the devices they are assigned. The codes appear in point message formats.

Software Type ID Code	Device
ABORT SWITCH	Monitor that provides an abort function for a releasing zone through connection to a UL-listed abort station)
ACCESS MONTR	Monitor for building access
ACK SWITCH	Monitor used to silence panel sounder, and to give an acknowledge message on the panel display
AIR REF	FSL-751 detector used to monitor air quality entering a protected area
ALARMS PEND	Control module/panel circuit or NAC for output that will activate upon receipt of an alarm condition, and remain in the alarm state until all alarms have been acknowledged. Programmed for switch inhibit
ALLCALL PAGE	Monitor used for emulation of AMG-1 All-call switch, activating all speaker circuits
AREA MONITOR	Monitor for building access
AUDIBLE CKT	Control module/panel circuit relay used on audible circuit NAC
AUDIO SYSTEM	Monitor for audio equipment
BELL CIRCUIT	Control module used with NAC with bells
blank	Operates as CONTROL with no Type ID label
CONTROL	Control module used with NAC
CONTROL NAC	Control module/ Panel circuit relay or NAC
DRILL SWITCH	Monitor used for activation that emulates panel Drill switch, activating silenceable fire outputs
EQUIP MONTR	Monitor used for recording access to equipment
EVACUATE SWITCH	Monitor used for activation that emulates panel Drill switch, activating silenceable fire outputs
FIRE CONTROL	Monitors non-fire activations
FORM C RESET	Control module used to interrupt 24V power to four-wire conventional detectors for 30 seconds upon reset. Used in conjunction with a monitor module with a conventional detector Type ID
GEN ALARM	Control module, XPC-8 circuit, or XP5-C (NAC mode) configured as a Municipal Box Transmitter for NFPA 72 Auxiliary Fire Alarm Systems applications (MBT-1 required). This Type ID can also be used for general alarm activation. It is programmed as "switch inhibit".
GEN PEND	Control module, XPC-8 circuit, or XP5-C (NAC mode) that will activate upon receipt of an alarm and/or trouble condition, and remain in the ON state until all events have been acknowledged
GEN SUPERVIS	Control module, XPC-8, or XP5-C (NAC mode) activated under any supervisory condition (includes sprinkler type). It is programmed as "switch inhibit"
GEN TROUBLE	Control module, XPC-8, or XP5-C (NAC mode) activated under any System Trouble condition. It is programmed as "switch inhibit"
HEAT	Adjustable threshold heat detector
HEAT+	Adjustable threshold heat detector with a low temperature warning.
HEAT(FIXED)	Intelligent 135°F thermal sensor detector
HEAT(ROR)	15°F per minute rate-of-rise detector
HEAT DETECT	Monitor for conventional heat detector
HORN CIRCUIT	Control module/panel circuit relay module used with NAC with horns
INST RELEASE	Control module used with NAC. Always non-silenceable and switch-inhibited
ISOLATED NAC	Supervised NAC for notification appliance, used with audio isolators. Activates even if there is a short on its NAC circuit. Canada installations only.
ISOLATED SPK	Supervised NAC for speaker circuit, used with audio isolators. Activates even if there is a short on its audio circuit. Canada installations only.
LATCH SUPERV	Indicates latching supervisory condition
MAN RELEASE	Monitor module that provides manual release for a releasing zone through connection to a UL-listed pull station
MAN REL DELAY	Monitor module that provides manual release with a 10 second delay for a releasing zone through connection to a UL-listed pull station
MONITOR	Alarm-monitoring device
NON FIRE	Monitors non fire activations
NONRESET CTL	Output unaffected by "System Reset" command
PAS INHIBIT	Monitor used to inhibit Positive Alarm Sequence (PAS)

Software Type ID Code	Device
POWER MONITR	Monitor for main and auxiliary power supplies
PULL STATION	Manual fire-alarm activating device
REL AUDIBLE	Activates audio or visual devices steady when releasing starts
REL END BELL	Control module used to activate NAC audio or visual device when releasing circuits shut off
REL CKT ULC	Control module used to direct outputs to perform a release function as required by ULC
RELAY	Form-C relay control module
REL. FORM C	Form-C relay that directs outputs to perform a releasing function
RELEASE CKT	Directs outputs to perform a releasing function
RESET SWITCH	Monitor used to reset the control panel
RF MON MODUL	Wireless alarm-monitoring device
RF PULL STA	Wireless manual fire alarm-activating device
RFSMOKE(PHOTO)	Wireless smoke detector
RF SUPERVSR	Wireless supervisory-monitoring device
SECOND SHOT	Monitor module that provides a second manual release for a releasing zone through connection to a UL-listed pull station
SECURITY L	Monitor for activation of latching security alarm
SIL SWITCH	Monitor used as Signal Silence switch, turning off all activated silenceable outputs
SMOKE ACCLIM	Combination photoelectric/heat detector
SMOKE(ACCLIM+)	Combination photoelectric/heat detector with low temperature warning
SMOKE CONVEN	Conventional smoke detector attached to an FZM-1
SMOKE DETECT	Conventional smoke detector attached to an FZM-1
SMOKE(DUCTI)	Duct ionization smoke detector
SMOKE(DUCTP)	Duct photoelectric smoke detector
SMOKE(HARSH)	HARSH smoke detector
SMOKE(ION)	Ionization smoke detector
SMOKE(LASER)	Laser smoke detector
SMOKE(MULTI)	Multisensor smoke detector
SMOKE(PHOTO)	Photoelectric smoke detector
SPEAKER	Control module for speaker
SPRINKLR SYS	Monitor for a waterflow device
STROBE	Control module used with NAC with strobes
SUP L(DUCTI)	Duct ionization smoke detector, latching
SUP L(DUCTP)	Photoelectric smoke detector used as a duct detector to report supervisory condition rather than alarm, latching
SUP L(ION)	Ionization smoke detector, latching
SUP L(PHOTO)	Photoelectric smoke detector, latching
SUP T(DUCTI)*	Duct ionization smoke detector, tracking
SUP T(DUCTP)*	Photoelectric smoke detector used as a duct detector to report supervisory condition rather than alarm, tracking
SUP T(ION)*	Ionization smoke detector, tracking
SUP T(PHOTO)*	Photoelectric smoke detector, tracking
SYS MONITOR	Monitor for equipment security
TAMPER	Monitor for activation of tamper switch
TELE PAGE	Monitor used to emulate the page button on an FFT-7, allowing remote paging to a fire area
TELEPHONE	Control module for standard telephone circuit
TRACKING SUPERV	Monitor for waterflow tamper switches for alarm points
TROUBLE MON	Monitor for trouble inputs
WATERFLOW	Monitor for waterflow alarm switch
WATERFLOW S	Monitor for supervisory condition for activated waterflow switch
*Not suitable for Canadian applications.	

Appendix Table A-1 Software Type ID Codes, Alphabetical List

Appendix B Releasing Zones

Introduction

The control panel provides ten Releasing Zones (ZR00-ZR09). These are special zones that can be used for up to ten independent releasing operations. This section contains descriptions of each releasing function option and an example of how Releasing Zone options work.

For instructions on programming Releasing Functions, refer to this panel's programming manual.

Each Releasing Zone includes the following releasing options:

Option	Description
Cross Zone	<p>Cross Zones let you program the control panel to activate a Releasing Zone when two or more detectors are alarmed. Cross Zone selections are:</p> <p>Yes Two or more detectors are alarmed that are mapped to one of the ten Releasing Zones (ZR00-ZR09).</p> <p>Zone Two or more detectors are alarmed that are mapped to two different Software Zones and mapped to one of the ten Releasing Zones (R0-R9).</p> <p>Heat At least one smoke detector mapped to one of the ten Releasing Zones (ZR00-ZR09) is alarmed <i>and</i> at least one heat detector mapped to the same Releasing Zone as the smoke detector is alarmed.</p> <p>None Cross Zones are not used.</p>
Delay Timer	A 0–60 second programmable delay before activating a zone.
Abort Switch	An Abort Switch Type Code used to abort activation of a zone.
Manual Release	Allows immediate zone activation by overriding the abort function, cross-zone function, and delay timer.
Soak Timer	Automatically shuts off the releasing device after a preprogrammed period of time. Select 0001-9999 seconds for Soak Time or 0000 seconds for no Soak Time.

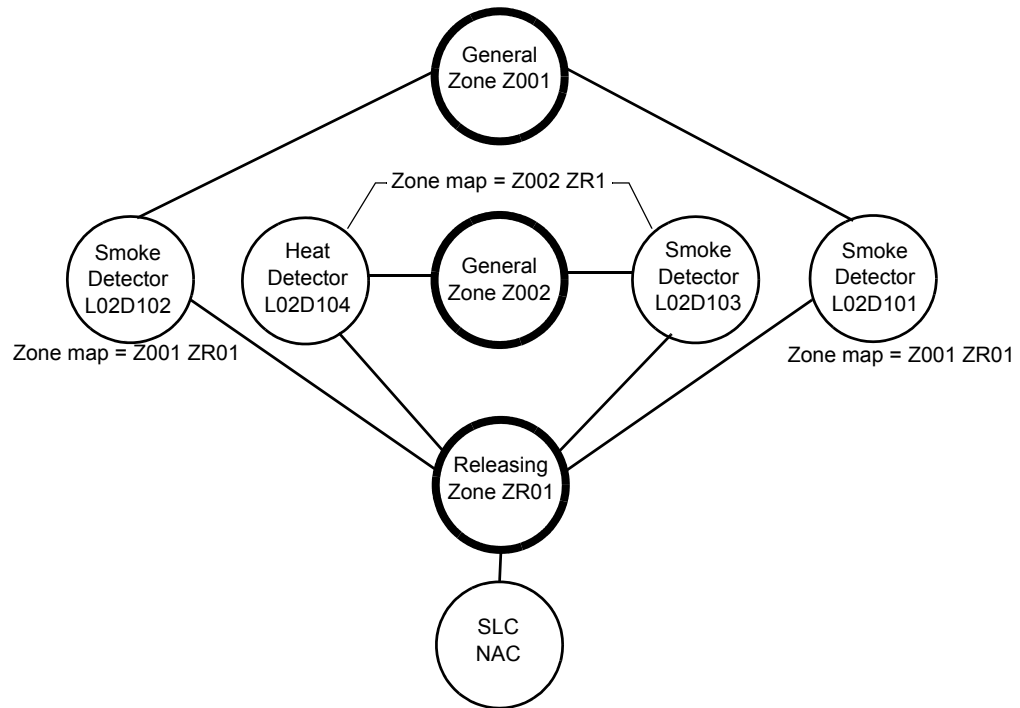
Appendix Table B-1 Releasing Options

The Read Status function allows the operator to view the current selections for a Releasing Zone. Refer to “Releasing Zone” on page 45 for more information.

How Releasing Zones Operate

The figure below contains an illustrated example of how Releasing Zones work, using cross zone selections with four detectors and an NAC mapped to Releasing Zone 1 (listed as ZR01 in the zone map). Appendix Table B-2 lists the cross zone selections and the conditions that activate the

Releasing Zone:



INPUTS	ZONE MAP
L02D101 Smoke Detector	Z001, ZR01
L02D102 Smoke Detector	Z001, ZR01
L02D103 Smoke Detector	Z002, ZR01
L02D104 Heat Detector	Z002, ZR01
OUTPUT	
SLC Module Releasing Circuit	ZR01

Appendix Figure B-1 Illustrated Example of Cross Zone Programming

Listing of each Cross Zone option and the conditions required to activate the Releasing Zone, according to the example shown in Appendix Figure B-1.

Cross Zone Selection (Cross=)	Condition(s) Required to Activate the Releasing zone
Cross=NONE	An alarm from any detector activates the releasing circuit.
Cross=YES	An alarm from any two detectors activates the releasing circuit.

Cross Zone Selection (Cross=)	Condition(s) Required to Activate the Releasing zone
Cross= ZONE	<p>An alarm from two detectors mapped to different Software Zones, but mapped to the same Releasing Zone.</p> <ul style="list-style-type: none"> • An alarm from L02D101 and L02D103 – detectors mapped to different zones, but both list ZR01 in their zone map. • An alarm from L02D102 and L02D104 – detectors mapped to different zones, but both list ZR01 in their zone map. • An alarm from L02D101 and L02D104 – detectors mapped to different zones, but both list ZR01 in their zone map. • An alarm from L02D102 and L02D103 – detectors mapped to different zones, but both list ZR01 in their zone map.
Cross= HEAT	Activation of heat detector L02D104 and one smoke detector (L02D101, L02D102, or L02D103).

Appendix Table B-2 Example of Cross Zone Selections

A

- Abort 61
- AC Fail Delay timer
 - Setting report 53
- AC Fail delay timer 36
- ACCEPT soft key 14
- Acknowledge
 - An Event 20
 - Block and point 21
- Acknowledge soft keys
 - disabled local control 10
- ACS Points Report 57
- Active Fire Control Point
 - Panel indication 35
- Active Non-fire Point
 - Panel indication 35
- Active Points Report 55
- Address formats 38
- Alarm Verification timer 36
- Alphanumeric keyboard, function of 10
- Annunciator
 - Address format 38
 - Read Status 46
- Arrow Keys, about 10
- Arrow keys, use of 14
- Auto Silence timer 36
 - Setting report 53

B

- BACK soft key 14
- Block Acknowledge 21
- Block acknowledge setting report 53
- Broadcast time setting report 53

C

- Canada Event Order 17
- Canadian Applications 30
- CAUTION
 - Information about the Caution notation 7
 - When a zone is disabled, any input or output devices mapped... 34
- Control Module
 - Read Status 41–42
- Co-operative Multi-Alarm Sensing display 17
- Cross Zone 61
- Cross Zone Programming illustration 62
- Custom Action Message 16
- Custom Action Messages report 54

D

- DCC, see Display and Control Center
- Delay Timer 61
- Detector
 - Action/Status display 16
 - Address format 38

- Co-operative Multi-alarm Sensing 17
- Heat Detector Read Status 40
- Peaks display 17
- Read Status 39–41
- values display 16

Detectors

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