Simplex®

4120 NETWORK FIRE INDICATOR PANEL

2500 NETWORK DISPLAY UNIT (NDU)

OPERATOR MANUAL (LT0290)

Document No.: 4100-M004 June 1997 Issue 1.0

GLOSSARY OF STANDARD TERMS

The following abbreviations are used throughout this manual:

ACF: Ancillary control facility.

"Ackd": Display abbreviation for acknowledged condition.

AVF: Alarm Verification Facility.

ALM: Display abbreviation for alarm condition.

AS1668: Australian Standard AS1668 specifying the use of mechanical ventilation and air-conditioning in buildings.

FIP: Fire Indicator Panel.

"Isol": Display abbreviation for Isolated condition.

LCD: Liquid Crystal Display.

LED: Light Emitting Diode.

MANUFACTURERS DETAILS

APPROVALS: AUSTRALIAN STANDARD AS1603.4
SSL CERTIFICATE OF COMPLIANCE NUMBER 127

The 4100 Fire Indicator Panel is manufactured by:

Simplex International Time Equipment Pty Ltd
140 Old Pittwater Road
Brookvale N.S.W 2100 Australia

Phone: (02)-9466-2333

Notice: The contents of this document is subject to change without notice.

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PANEL DETAILS

panel sticker

4100 Panel supplied by	
Installation location	
Contract/Job Number	
As installed FIP System drawing number	
Panel Installation date	
Panel Commissioned date	
Maintenance Company	
Telephone	
Service Contact	

COMPATIBLE ACTUATING DEVICES

The following detectors have been approved as compatible devices for use with the 4100 FIP.

SIMPLEX RANGE:

1) Analog Addressable Sensors

4098-9701	High / Very High sensitivity Photoelectric smoke
4098-9716	Ionisation smoke
4098-9731	Type A / Type B Heat
4098-9781	Addressable LED Indicating base
4098-9782	Addressable LED Indicating base with Sounder
4098-9783	Addressable LED Indicating base with Relay driver

2) Conventional Detectors

4098-9413	Heat detector Type A
4098-9414	Heat detector Type B
4098-9415	Heat detector Type C
4098-9416	Heat detector Type D
2098-9201	Photoelectric smoke detector
2098-9576	Ionisation smoke detector
2098-9211	Universal base.

HOCHIKI RANGE: Conventional Detectors

DCA-B-60R MK V	Type A heat detector
DFE-60B	Type B heat detector
DCA-B-90R MK 1	Type C heat detector
DFE-90D	Type D heat detector
DFG-60BLKJ	Type B heat detector
SPA-AB	Beam type smoke detector
SIH-AM	Ionisation smoke detector
SLK-A	Photoelectric smoke detector
SLG-AM MK 1	Photoelectric smoke detector
HF-24A MK 1	Ultraviolet smoke detector
YBC-R/3A	Plain - non indicating base
YBF-RL/4AH4	LED Indicating base

OLSEN RANGE: Conventional Detectors

B111B	Beam type smoke detector
C24B	Ionisation smoke detector
C29B	Ionisation smoke detector
FW81B	Heat detector cable
P24B	Photoelectric smoke detector
P29B	Photoelectric smoke detector
R24B	Dual spectrum infrared flame detector
T54B	Probe type heat detector type E
T56B	Heat detector types A,B,C,D with Z55B base
T56B	Heat detector types A,B,C,D with Z54B base
V41B/V42B	Ultraviolet flame detector

APOLLO: Conventional Detectors

Heat detector	Type A
Heat detector	Type B
Heat detector	Type C
Heat detector	Type D
Series 20	Photoelectric smoke detector
Series 30	Ionisation smoke detector

PANELECT/PANASONIC: Conventional Detectors

PFS-A	Heat detector Type A
PFS-B	Heat detector Type B
PFS-C	Heat detector Type C
PFS-D	Heat detector Type D
PFS-P	Photoelectric smoke detector
PFS-I	Ionisation smoke detector

COMPATIBLE BATTERIES

The following series of batteries are compatible with the 4100 FIP:

(1) Power-Sonic PS12 series

(2) Sonnenschien A200 series

(3) Sonnenschien A300 series

(4) Yuasa NP series

SPECIFICATION

GENERAL

System Capacity	1,000 points of addressable input / output devices or conventional zones.
Cabinet Size(mm)	Dependent on system configuration
Cabinet Material	1.5mm Mild grade steel
Cabinet Finish	Powder coated
Cabinet Colour	Magnolia Ripple
Mounting	Wall mount
Mains Input	240V AC, +6%,-10%, 50Hz
Internal Power Supply	24V DC @ 6.5A
Standby Battery	24V sealed lead acid up 110Ah
Battery Charger	27.6V DC (nominal) @ 3.5A,
PSU Supervision	Charger high/low, Battery low/fail
Temperature	-5 C to 45 C
Humidity	10% to 90% RH non-condensing.

EXPANSION MODULES

Maximum Number 119 modules

4100 - 5002 **Conventional zone module**
Eight zone circuits per module
Supports standard 20V detectors plus normally open contact devices

4100 - 3003 **Eight CPU controlled auxiliary relays per module**
SPDT contacts rated for 3 amps @ 24VDC or 30VAC

4100 - 0113 **RS-232 / 2120 Communications Module**
Provides two RS-232-C outputs for remote printers and/or CRT
Five RS-232-C ports maximum per 4100 system
Can be configured for communication with a host 2120 system
Can be configured as a Computer Port for communications to a remote system i.e. BMS or BAS Systems

EXPANSION MODULES - Continued

4100-6011	**4120 Network Interface Module** RS485 Communications Optional Fiber Optics Media Card
4100 - 0110	**MAPNET® TRUEALARM™ Addressable Loop Module** Up to 127 MAPNET Addressable devices or TrueAlarm Analog Sensors Up to 10 MAPNET Loop Cards per 4100 system Supports MAPNET Short Circuit Line Isolator Modules
4100 - 0304	**Remote Unit Interface Module** Provides a supervised serial communications channel to remotely located distributed Miniplex® Transponders and LCD Annunciators Up to 32 distributed Miniplex® Transponders and/or LCD Annunciators per 4100 system
4100 - 3024	**24 Relay Input / Output Relay Motherboard** 24 CPU controlled relays Each of the 24 relays can be individually configured as either an input or an output SPST contacts rated for 0.5 amps @ 24VDC or 30VAC
4100 - 0301	**64/64 LED / SWITCH Controller** Interfaces up to 64 LEDs and 64 switches to the master controller for front panel annunciation

INDICATORS and DISPLAY

Zone Status	2 line by 80 character backlight Liquid Crystal Display with adjustable contrast control
LED Status Indicators	Common Alarm, Fault and Isolate Bell Isolated, ACF Isolated, Mains Power ON
Audible Buzzer	Alarm And Fault Indications Keypress feedback

KEYPAD CONTROLS

Operator Keypad	ACKNOWLEDGE, SYSTEM RESET, ISOLATE,
Service Technician Keypad	20 keys including:- Alarm Test, Fault Test, Isolate, Battery Test and Lamp test

SOFTWARE FEATURES

* WALK TEST System Test
* 4 Operator Access Levels
* 600 Event Historical Logging
* Zone selectable Alarm Verification
* Individual Circuit Disconnect / Isolate
* Nonvolatile Flash EPROM for field editable program changes

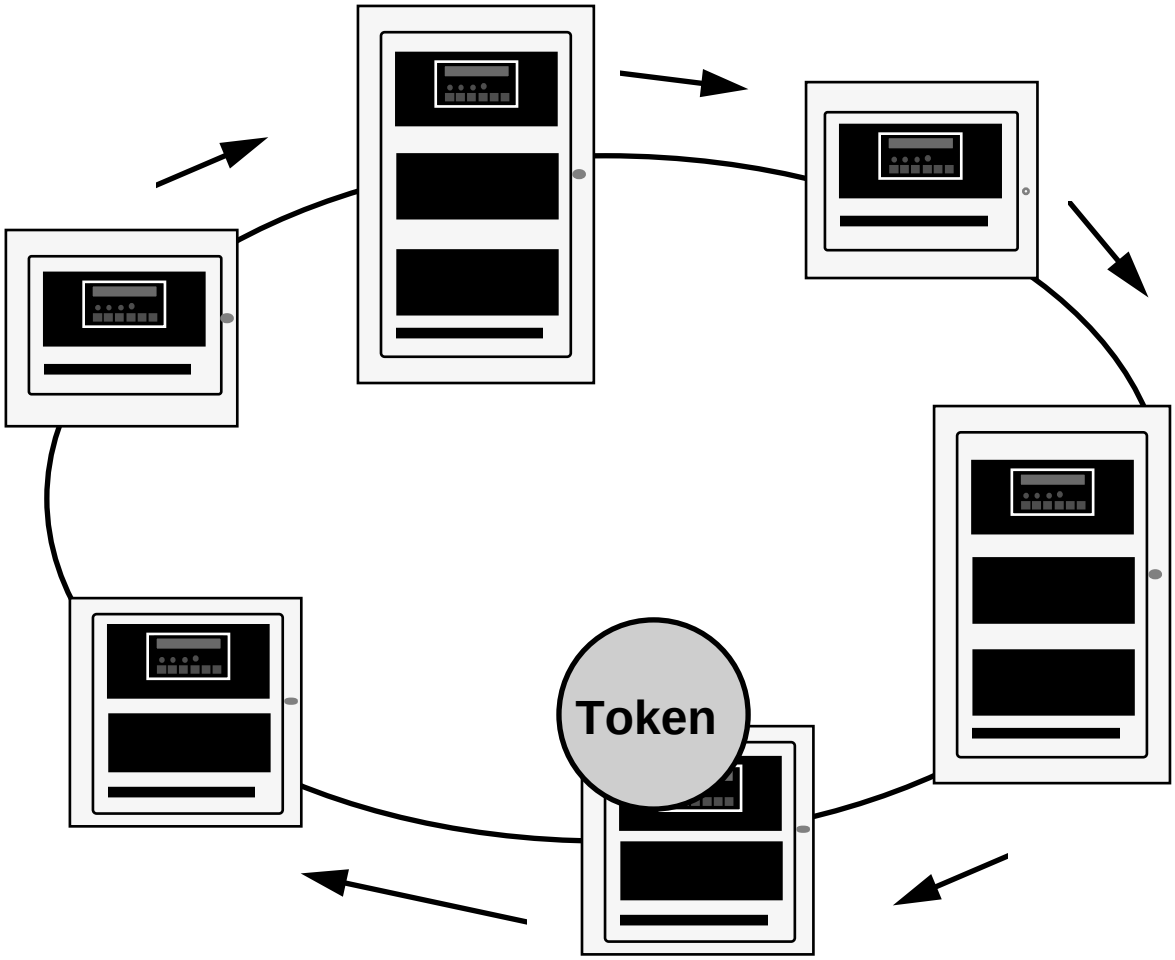


Figure 1
4120 Fire Alarm Network

SECTION 1 - SYSTEM OVERVIEW

1.1 INTRODUCTION TO NETWORKING

The Simplex 4120 Network is a system of individual Fire Alarm Control Panels communicating on a loop as a Peer-to-Peer network (refer Figure 1). This means that every network panel has an equal chance of putting a message out on the network. Each panel with direct communications into the 4120 Network is defined as a “Node”. Each node can maintain the status and control of its own dedicated circuit points while monitoring and controlling activity at other locations.

The communications scheme used by the network is based on Token Ring Communications Protocol. In Token Ring communications, an electronic data “flag” or “token” is passed from one node to the next. The node that holds the token is the only one permitted to talk on the network. A node that has no messages or requests for the network simply passes the token onto the next node. Thus, every node has an equal chance of putting a message out on the network when needed.

A 4120 Network Node can be any of the following:

- 4120 Fire Alarm Control Panel
- 4120 Voice Fire Alarm Control Panel
- 4120-8010 Miniplex Control Panel
- 4120-8511 Universal Transponder (UT)
- 4120 Status Command Centre
- 4120-8821 2500 NDU with Command Centre

An existing 4100 Fire Alarm Control Panel or Universal Transponder can also be included in the network by installing a 4120-0140 RS-485 Network Interface Card into a panel slot in the existing unit and configuring the panel to accept the card.

Network information in sequentially transmitted from one node to another. At each node, the network message is captured and either retransmitted as received, or modified before retransmission to provide the network with a status update. The ability of the message to circulate through the network defines network status and allows the nodes to respond accordingly.

If a node goes off-line, its network interface module will bypass that connection until the node is back on-line. If the wires between nodes short, open or have any other form of communication problem, the network will isolate that section of wiring. A node that cannot retransmit a message to the next node will transmit back to the previous node to maintain communications and to notify the network of the node status.

In the event of multiple wiring problems, the remaining nodes will effectively “regroup” and establish new, smaller “sub-networks” that will maintain communications among the active nodes.

1.2 SYSTEM INTRODUCTION

A 4120 Fire Alarm Network System may comprise of the following Network Fire Alarm panels, depending upon total network point capacity:

- 4120 Fire Alarm Panel for system with up to 1,000 network points
- 4120 Network Display Unit (NDU) with Status Command Centre, for systems with up to 2,500 network points.

1.2.1 4120 Fire Indication Panel

The Simplex 4120 is a microprocessor based Fire Alarm Control Panel which uses the latest in life safety technology and is certified to Australian Standard AS1603.4. The 4120 Fire Indicator Panel has the capacity to monitor and control up 1,000 devices . These devices can either be conventional zones of detectors or analogue addressable devices. In the event of AC mains loss, standby batteries provide a backup 24VDC supply.

The 4120 FIP uses a micro-controller with a Flash EPROM, allowing the use of laptop computer to download custom program changes directly into the 4120 for easier on-site job changes . Battery-backed RAM has been added to maintain important historical data, even during a complete power-down of the system.

The 4120 also uses a *switching* power supply to provide up to 7 Amps of power at 24 VDC for load devices and system operation, plus up to 3 Amps for battery charging responsibilities. In addition, this power supply can communicate directly with the Master Controller via internal serial communications, reporting such data as system voltage and current usage and battery charging information.

The 4120 FIP has been designed to be a custom, factory configured system and when delivered to the job site, becomes a totally field editable and configurable system in response to unforeseen job changes.

To provide maximum efficiency in performing primary fire alarm functions, the 4120 Operator Interface Panel makes visible only the indication and interaction keys required in an emergency situation .

Alarm, Isolation and Fault conditions are indicated at the operator's panel by dedicated LEDs and a Piezo sounder. Each of these system conditions has a dedicated acknowledge button.

A 2 line, 80 character alphanumeric LCD display is used to annunciate a 40 character custom label message per device or circuit, the device point type (smoke detector, manual call point, etc.), the current status of the device or circuit (alarm, fault etc.) as well as operator prompts for acknowledging status changes or inputting commands.

The alphanumeric display will show various prompts and labels which are used to guide the user through a sequenced operation for each abnormal condition.

The 4120 can be programmed to perform a "global acknowledge" where a single key press of the appropriate acknowledge button will silence the piezo for all points in that condition. The 4120 can also be programmed for individual acknowledgment of each point in an abnormal condition as well as its restoration.

After an alarm condition, the system can be restored to normal operating mode by depressing the " System Reset" button. To serve as a "fault reminder" when a fault condition remains in the system and audible fault signal has been silenced, the piezo will resound at a specified time interval to alert the user that the fault condition remains and needs rectification.

The operator's interface door provides easy access to additional operator controls and LED indicators. The depth of the operator's interaction is determined by four Security Access levels.

Level 1 is the lowest level and allows the operator to perform routine actions. Level 4 on the other hand is the highest level and only provides for the most sensitive operations by an authorised service technician. Each of these access levels is governed by a passcode chosen at order entry or as edited by a Simplex service technician.

The "FUNCTION KEYS", "DISPLAY/ACTION" keypad, and the "ENTRY" keypad are the operator interface sections which provide, in a self -directing manner, operations non-essential in a fire emergency situation.

These operations include items such "ISOLATE" or "DE-ISOLATE" a circuit, turn a control point "ON" or "OFF", and menu items such as "SET TIME AND DATE", "DISPLAY HISTORICAL LOGS", etc. Programmable "CONTROL" keys and their associated LEDs can be programmed to perform a variety of functions and can be individually passcode protected. These "CONTROL" keys are typically used for alarm and fault test, ACF Isolate, Brigade test and battery test functions.

1.2.2 2500 Network Display Unit

The Simplex 2500 Network Display Unit (NDU) is a network annunciator and manual system/point controller for a 4120 Network. The NDU provides alphanumeric annunciation for up to 2,500 network points and/or point lists and can be programmed to function as the network master controller for Silence, Acknowledge and System Reset.

Standard features include an alphanumeric display exactly like the 4100 Fire Alarm Control Panel and more memory to achieve 2,500 point capacity.

The increased memory size provides 600 alarm and 600 fault event history logs, twice the size of any other 4120 or 4100 model. The 2500 NDU can drive up to 31 serial LCD Annunciators on one optional Remote Unit interface (RUI) card. In addition, the NDU can have up to five RS-232 ports for printers and CRT/Keyboards.

1.2.3 2500 NDU with Status Command Centre

The 2500 NDU with Status Command Centre combines the 2500 NDU with a custom selection of modular LED and/or LED and control switch assemblies that provide a dedicated monitor and control interface. Voice modules are available with this model to configure this panel into a Voice Command Centre.

The NDU with Status command Centre is actually two nodes in one cabinet assembly. The NDU occupies the top bay of the unit and the Command Centre occupies the rest.

1.3 SYSTEM OPERATING DESCRIPTION

NOTE: This document covers the operating procedures for a typical 4120 FIP Applications will vary due to custom programming and local code requirements.

An alphanumeric display on the 4120 FIP Operator Interface Panel (Figure 2) indicates the condition of the system. The alphanumeric display shows the various labels and prompts which guide the user through a sequenced operation for each abnormal condition.

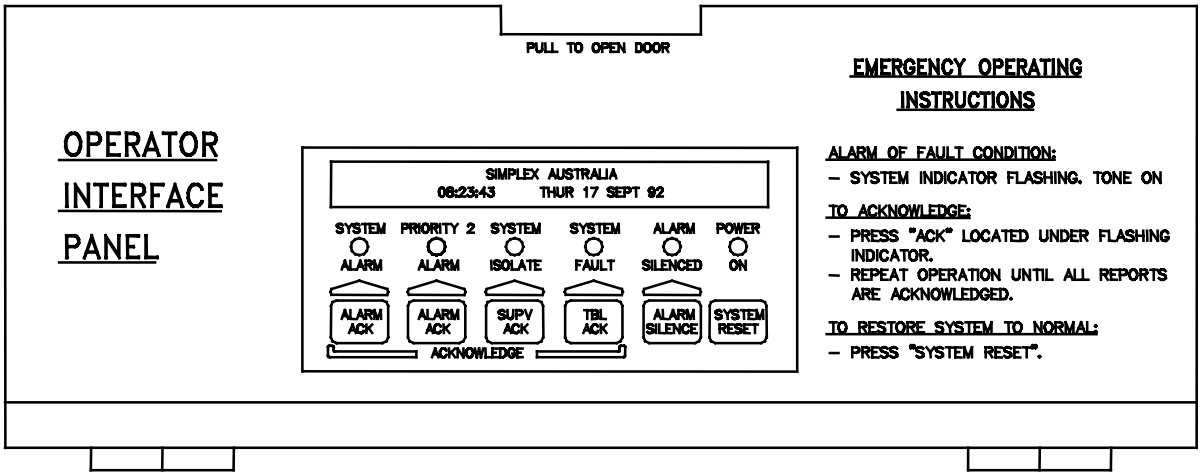


Figure 2
4100 Operator Interface Panel
(Panel Access Door Closed)

Audible and visual indication are provided to indicate abnormal conditions, when they exist throughout the network.

The 4120 FIP Operator Interface Panel, hereinafter called the interface panel, shows the following under normal conditions:

- Green "POWER ON" LED ON (indicating that AC power is applied).
- All other interface panel indications OFF.
- Alphanumeric display states that the SYSTEM IS NORMAL followed by the time and date as shown below.

SIMPLEX AUSTRALIA SYSTEM IS NORMAL **08:23:43 MON 25 JAN 95**

Abnormal conditions are indicated on the interface panel by flashing the alarm, isolate, or fault LED and sounding the tone-alert. The alphanumeric display provides information as to the point status (alarm, isolated, and fault), type of alarm (smoke detector, pull station, etc.), number of abnormal conditions in the system, and a custom label. Alarm, isolate and fault conditions each have their respective acknowledge key. Pressing the appropriate acknowledge key will silence the tone-alert. However, the LED indicating the abnormal condition remains illuminated until all initiating devices are restored to normal.

If your system is configured with a CRT or printer option, point status is also displayed on these devices. The CRT option controls various system functions. It can also acknowledge system status changes, silence alarm signals, and perform system reset procedures.

When a monitor zone or device senses an Alarm condition (heat, smoke, manual call point), this is relayed to the 4120 FIP and displayed on the Interface Panel by the **SYSTEM ALARM LED** flashing, tone-alert sounding, and **zone alarm LED turning on.** In addition, depending on the nature of the alarm condition, the fire trip relays will be activated, brigade call relay will turn ON and various programmed events will occur.

When the 4120 FIP senses a malfunction within the system (loss of power, hardware failure, zone fault, etc.) a FAULT condition is annunciated. The tone-alert turns on steady, the FAULT LED will flash .

All abnormal conditions must be acknowledged by pressing the **<ACK>** key under the appropriate flashing LED.

The system has "re-sound" capability. If, after silencing the tone-alert, the system detects another abnormal condition, the zone with the abnormal condition will be indicated on the panel's alphanumeric display, the appropriate indicator will again flash and the tone-alert will sound.

To provide maximum efficiency in performing **primary fire alarm functions,** the front panel access door covers all keys except those required for indication and interaction for emergency situations.

1.3.1 Operator Log In/Log Out Procedures

Various functions may be passcode protected to prevent access by unauthorised personnel. Passcodes are provided to the user during system installation. To change or receive additional information concerning your passcodes, contact your local Simplex Branch Office.

1.3.1.1 Access Level Log-In Procedure

To Log on, perform the following procedure.

1. Obtain the appropriate passcode information.

2. Open the interface panel access door.

3. Press the **<MENU> key** on the DISPLAY/ACTION keypad on the right side of the interface panel. The following is displayed.

```
Press <NEXT> or <PREVIOUS> to scroll
Change Access Level?
```

4. Press the **<ENTER> key** on the DISPLAY/ACTION keypad the following is displayed.

```
F1=Login   F2=Logout
CURRENT ACCESS LEVEL = 1
```

5. Press the **<F1>** key (above the alphanumeric display). The display shows the following.

```
Enter a Passcode followed by <ENTER>
```

6. Enter the passcode. Press the <ENTER> key on the Entry keypad. For security reasons, an "X" is displayed for each digit of your passcode, as shown below.

```
Enter a Passcode followed by <ENTER>
XXX
```

If the passcode is correct, the following is shown.

```
Enter a Passcode followed by <ENTER>
ACCESS GRANTED
```

After a brief pause, the display shows the granted access level, such as level 3 access message shown below.

F1=Login F2=Logout **CURRENT ACCESS LEVEL = 3**

7. Press <CLR> key on the ENTRY keypad twice. The display shows system status, as shown below.

SIMPLEX AUSTRALIA SYSTEM IS NORMAL **08:23:43 MON 25 JAN 95**

1.3.1.2 Access Level Log Out Procedure

IMPORTANT

FAILURE TO LOG OUT ALLOWS UNAUTHORISED PERSONNEL ACCESS TO THE VARIOUS PASSCODE PROTECTED FUNCTIONS. IF NO KEYPAD ACTIVITY IS DETECTED FOR TEN MINUTES, THE SYSTEM WILL RETURN TO LEVEL 1 ACCESS.

To Log out, perform the following procedure.

1. Press the <MENU>key on the DISPLAY/ACTION keypad.

2. Press the <NEXT> key until the menu prompt "CHANGE ACCESS LEVEL?" appears on the alphanumeric display.

3. Press <ENTER> on the ENTRY keypad.

4. Press the <F2> key (above the alphanumeric display) to Log Out.

5. Press the <CLR> key on the ENTRY keypad to escape from the Main Menu.

1.3.2 HANDLING ABNORMAL CONDITIONS

If an abnormal condition occurs, at least one of the LEDs (alarm, isolate or fault) will start flashing, and the tone-alert will sound. The panel will display the total number of abnormal conditions present in the system. At a glance, the user knows how serious the situation might be by reading the number of abnormal conditions displayed, such as the single alarm shown below.

*****ALARM*** Press ACK to review.** **ALARMS = 1 ISOLATED = 0 FAULT = 0**

The 4120 FIP also creates a "List" when abnormal conditions exist. The list contains the number of abnormal conditions present in the system. The user pushes the <**ACK**> keys to view the abnormal condition list, reviews each condition, silences the alarms, views the alarm list, restores affected devices, and resets the panel, if required.

When an abnormal condition has been detected by the system, the appropriate LED will be flashing and the tone-alert will be beeping for alarm conditions. The tone-alert will be on steady for isolate and fault conditions.

Pressing the appropriate **<ACK>** key (under flashing LED) will display the first acknowledged condition in the appropriate list. The <ACK> function may be passcode protected. If the user has insufficient privilege to acknowledge the condition, a message will indicate the problem, but allow the user to view the points without acknowledging them. If the user has sufficient privilege to acknowledge the condition, a message is displayed informing the user that the condition has been acknowledged. (See sections on Operator Access Levels and Log On Procedures).

The system is configured with Global Change Acknowledge such that one press of an <ACK> key will **globally** acknowledge every abnormal point in the system. If all the points were acknowledged in this manner, an appropriate message is then displayed . When the fault condition clears, the abnormal condition will automatically clear. Alarm conditions must be acknowledged.

The acknowledge function imposes a delay of at least one second between point acknowledgments. This minimum delay is to prevent the user from pressing the <ACK> key without viewing the information displayed on the alphanumeric display.

After all points have been acknowledged, the LEDs will be on steady and the tone-alert will be silenced. The total number of alarm, isolate, and fault conditions will be shown on the alphanumeric display along with a prompt to press the <ACK> key for point review. Subsequent pressing of an <ACK> key will scroll through the selected list in chronological order.

After 30 seconds of keypad inactivity, the total number of abnormal conditions will again be shown on the alphanumeric display. Pressing the <ACK> key will select a list for review. The first point to be displayed will either be the first acknowledged point in the list, or the first point in the list if all are acknowledged.

Alarm, isolated and fault lists are displayed in chronological order. A message will indicate when the end of a list has been reached. The list message will contain the total number of abnormal conditions, such as the single alarm shown below.

*****ALARM*****	**Press ACK to review.**	
ALARMS = 1	**ISOLATED = 0**	**FAULT = 0**

1.3.2.1 The <DISPLAY TIME> Key

The <DISPLAY TIME> key is used to view the time of day when the abnormal condition occurred. By viewing the time for each abnormal condition occurrence, fire brigade personnel can determine the path and possible cause for each abnormal condition.

Note that the <DISPLAY TIME> key only displays time for existing abnormal conditions.

The red <DISPLAY TIME> key works for any point currently in an alarm, isolate or fault condition. The time/date information is obtained from the historical log and is shown on the alphanumeric display. In situations where multiple conditions are present, you can simply push one key to review the time that each abnormal condition occurred. An example of an alarm condition is shown below.

TOWER BUILDING 3RD FLOOR **SMOKE DETECTOR ALARM**

If the <DISPLAY TIME> key is pressed and held down, the display shows the alarm information, as shown below. This information is only displayed while the <DISPLAY TIME> key is held down.

TOWER BUILDING 3RD FLOOR **ALARM AT 19:56:32 MON 25 JAN 95**

When the <DISPLAY TIME> key is released, the display will revert back to its original label and status.

To display alarm information, perform the following steps.

1. Ensure that the point to be checked is shown on the alphanumeric display by pressing the appropriate <ACK> key.

2. Press and hold in the <DISPLAY TIME> key. Information concerning the abnormal condition (alarm, isolate or fault) is displayed.

3. Press the appropriate <ACK> key to display the next condition change.

4. Repeat steps 2 and 3 above, as required.

NOTE: This key will not work for points directly entered into the system via the keypad (e.g. zone numbers, etc.)

SECTION 2 - ALARM CONDITIONS

When an alarm condition is detected by the 4120 FIP, it is indicated by the following:

- Red "ALARM" LED is flashing.
- Tone-alert is pulsing.
- LEDs on the local annunciator may illuminate.
- Alphanumeric display will show an alarm condition.

*****ALARM*** Press ACK to review.**
ALARMS = 1 ISOLATED = 0 FAULT = 0

The display has one red LED which is used to indicate an alarm condition. When an alarm occurs, the red LED flashes, the tone-alert pulses, and an alarm message is displayed on the alphanumeric display. The red LED will glow steady and the tone-alert is silenced upon activation of the <ALARM ACK> key. When the alarm condition clears, the red LED will turn off and the alarm will be removed from the alarm list. Once alarm conditions have been cleared, Alarm events can be reviewed by examining the historical alarm log.

2.1 GLOBAL ACKNOWLEDGE OPERATION DURING ALARM CONDITIONS

(Red Alarm Light Flashing And Tone Alert Pulsing)

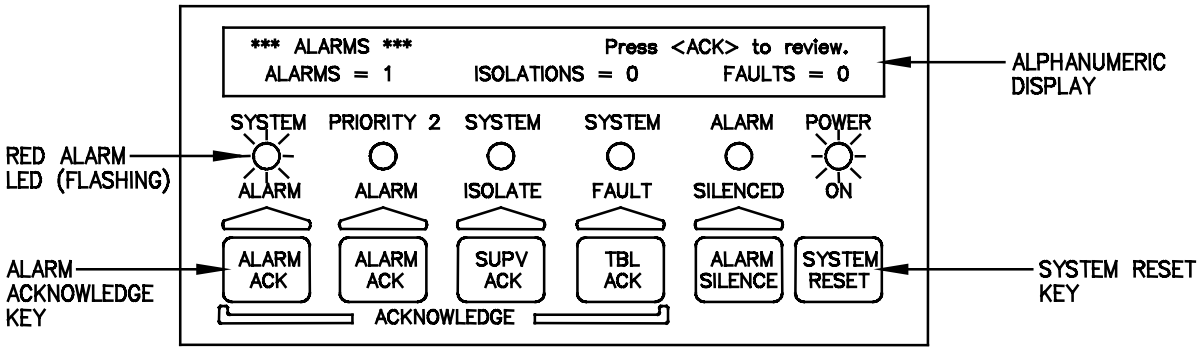


Figure 3
Operator Interface Panel Showing Alarm Condition

A **GLOBAL ACKNOWLEDGE** of a System Alarm Condition is accomplished in the following manner.

1. **Unlock and open the panel door**. The Fire Alarm Bell will now stop sounding due to the panel door being opened. Read the alphanumeric display. It shows the number of alarm conditions.

*****ALARM*** Press <ACK> to review.**
ALARMS = 1 ISOLATED = 0 FAULT = 0

2. **Press the <ALARM ACK> key.** Read the alphanumeric display. The tone-alert is silenced and the display will show pertinent report information, such as shown below.

1ST FLOOR EAST WING ROOM 2	**AZF1**
SMOKE DETECTOR	**ALARM**

The SYSTEM ALARM LED changes from flashing to steady ON, and all alarm conditions are acknowledged.

Pressing the <ALARM ACK> key scrolls through all the alarms in chronological order.

HOW TO SILENCE THE ALARM SIGNALS

Press the <ALARM SILENCE> key and read the display. The alphanumeric display will show signal status.

ALARM SILENCE IN PROGRESS . . .

HOW TO RESET THE SYSTEM

When the alarm condition has been cleared, restore or replace all affected devices (MCP's, smoke detectors, etc.) in accordance with the instructions provided with each device.

Press the <SYSTEM RESET> key. After a delay, the system will return to normal and the display should show the following:

SIMPLEX AUSTRALIA SYSTEM IS NORMAL
8:23:43 MON 25 JAN 95

2.2 INDIVIDUAL ACKNOWLEDGE DURING ALARM CONDITIONS

An **INDIVIDUAL ACKNOWLEDGE** of a System Alarm Condition is accomplished in the following manner.

1. **Unlock and open the panel door**. The Fire Alarm Bell will now stop sounding due to the panel door being opened. Read the alphanumeric display. It shows the number of alarm conditions.

*****ALARM*** Press <ACK> to review.**
ALARMS = 1 ISOLATED = 0 FAULT = 0

2. **Press the <ALARM ACK> key.** Read and follow the instructions on the alphanumeric display. Pertinent report information is given as shown below.

1ST FLOOR EAST WING ROOM 2
Press ACK key to acknowledge ALARM
SMOKE DETECTOR ALARM

ALTERNATING LINES

Press the <ALARM ACK> key again. Read the report data. Repeat this procedure to review all reports which are displayed in chronological order. The SYSTEM ALARM LED changes from flashing to steady ON, and all alarm conditions are acknowledged.

HOW TO SILENCE THE ALARM SIGNALS

Press the <ALARM SILENCE> key and read the display. The alphanumeric display will show signal status.

ALARM SILENCE IN PROGRESS . . .

HOW TO RESET THE SYSTEM

When the alarm condition has been cleared, restore or replace all affected devices (MCP's, smoke detectors, etc.) in accordance with the instructions provided with each device.

1. Press the <SYSTEM RESET> key. After a delay, the SYSTEM ALARM LED will begin to flash and the tone-alert will begin its pulsing sound.

2. Press the <ALARM ACK> key twice. After a delay, system will return to normal and the display should show the following:

SIMPLEX AUSTRALIA SYSTEM IS NORMAL
8:23:43 MON 25 JAN 95

2.3 ESSENTIAL ALARM CONDITION KEYS

The essential keys for alarm conditions are the **<ALARM ACK>, <ALARM SILENCE>** and the **<SYSTEM RESET>** keys. The remaining keys are concealed by the access door and are associated with **advanced functions** of the system. (See Advanced Functions Section 6.)

2.3.1 Alarm Ack (Acknowledge)

The <ALARM ACK> key is located directly under the SYSTEM ALARM LED. Pressing the <A**LARM ACK>** key (twice for Individual Acknowledge or once for Global Acknowledge) will cause the LED to change from flashing to a steady ON condition and silence the tone-alert.

Pressing the <ALARM ACK> key will:

- Select the next unacknowledged alarm point in the list for display (Individual Acknowledge).
- Acknowledge the displayed point or acknowledge all points on the list (Global Acknowledge).
- Scroll the points chronologically after all points have been acknowledged.

2.3.2 System Reset

The **<SYSTEM RESET>** key is used to return the system to its normal state after an alarm condition has been cleared. When the <SYSTEM RESET> key is pushed, it will cause the latched circuits to clear automatically. All circuits include initiating devices, relays, indicating appliances, and all LEDs and indicators which are programmed to reset with the reset key. The message, **"SYSTEM RESET IN PROGRESS"**, will be displayed when the <SYSTEM RESET> key is pressed.

With the Individual Acknowledge systems, when the alarm condition has reset, the SYSTEM ALARM LED flashes and the system requires that the <ALARM ACK> key be pressed. The message "SYSTEM IS NORMAL" followed by time and date should be displayed. This process will take about 45 seconds.

If a zone stays in alarm during the reset period, the message, "SYSTEM RESET IN PROGRESS", will be followed by the message:

ALARM PRESENT, SYSTEM RESET ABORTED

When "SYSTEM RESET ABORTED" is displayed, the system will remain in an alarm state. The display will indicate the total number of alarms present in the system along with a prompt to use the <ALARM ACK> key to review the points. These points do not require acknowledgment. The tone-alert and the alarm LED will be on.

If the system does not reset, no fire exists, and the display still shows an alarm, read the alphanumeric display to determine the type of device and the zone number in alarm. Follow local procedures to investigate the area of the building with the alarm. Look for devices still in alarm (manual call points, smoke detectors, etc.). Most devices latch until they are reset, either by the system or manually.

2.4 HOW TO ISOLATE / DE-ISOLATE A ZONE

If a device will not reset, the user may elect to perform the ISOLATE procedures listed below.

IMPORTANT

IT IS IMPORTANT TO REMEMBER THAT ONCE A POINT IS ISOLATED, IT WILL NOT PROVIDE FIRE PROTECTION. REPAIR/REPLACE THE DEVICE AS SOON AS POSSIBLE. ONCE REPAIRED, THE POINT SHOULD BE ENABLED AS SOON AS POSSIBLE.

If a device does not reset, the user may isolate the device/point causing the abnormal condition. This point must first be identified. This can be accomplished by reading the alphanumeric display while pressing the <ALARM ACK> key. The point can then be isolated by using the individual zone ISOLATE toggle switches as described below :

Press down the ISOLATE toggle switch next to the zone or point to be isolated - refer Figure 4, e.g. (AZF1 1st Floor East Wing Room 23).

Once the toggle switch has been depressed, the yellow ISOLATE LED adjacent to the toggle switch will light ,indicating that the point or zone is now isolated.

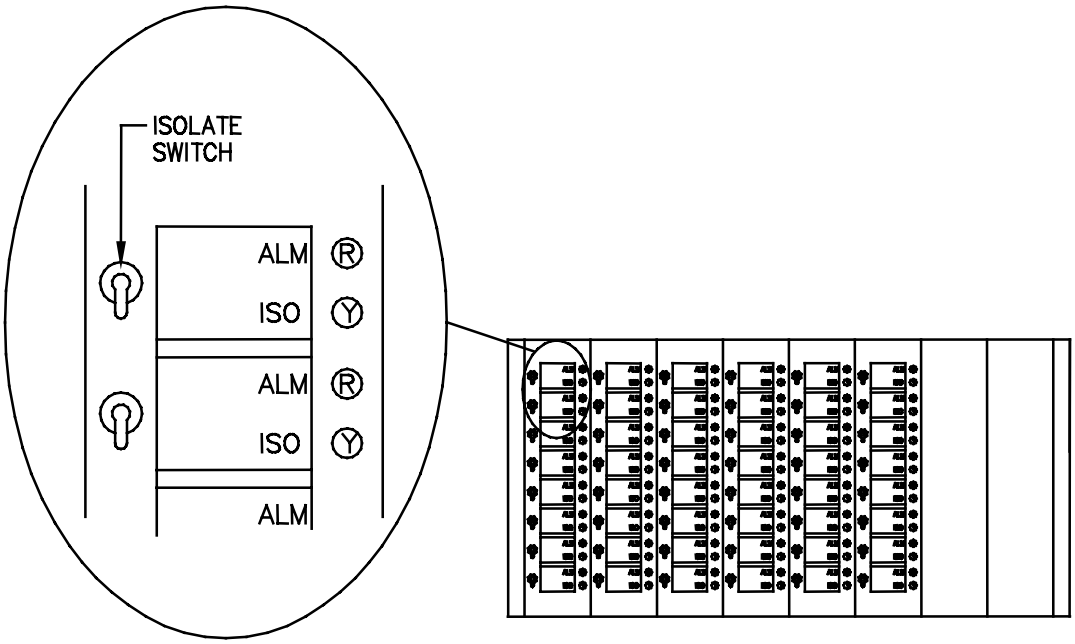
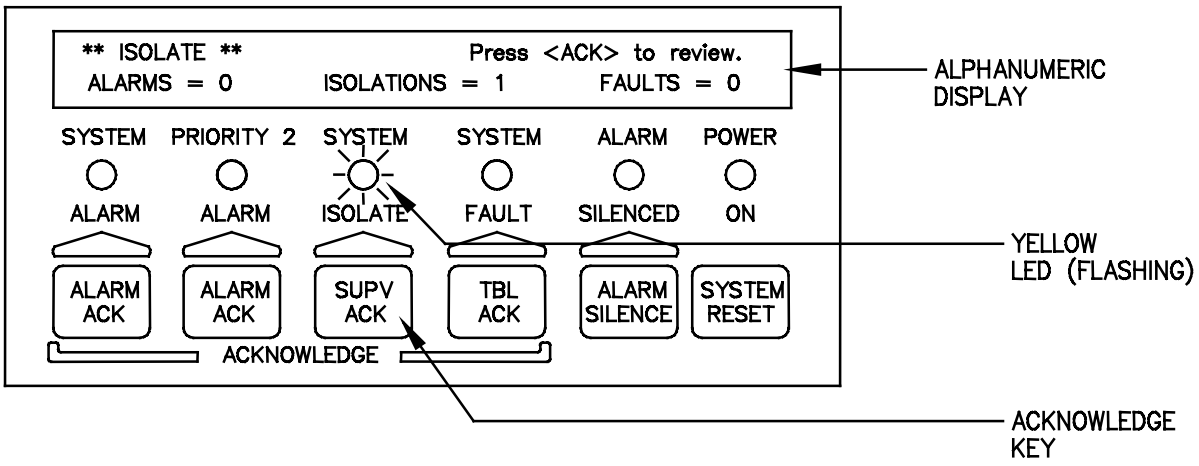


Figure 4 - ISOLATE Toggle Switches

The display will indicate a ISOLATED condition, until the isolated point has been de-isolated.



When a zone is isolated via the zone isolate switches , the condition is indicated on the main 4100 FIP as follows:

- Yellow "SYSTEM ISOLATE" LED is flashing.
- Tone-alert is on steady.
- Alphanumeric display shows the following:

****ISOLATIONS****		**Press ACK to review.**
ALARMS = 0	**ISOLATED = 1**	**FAULT = 0**

1. The panel has a yellow isolate LED which will light whenever an isolation is present in the system. When a zone is isolated, the LED will flash, the tone-alert sounds steady, and a fault message will be displayed on the alphanumeric display. The isolate LED will glow steady and the tone-alert silences when the <ISOLATE ACK> key is pressed.

2. To de-isolate the point or zone, either depress or lift the toggle switch (refer Figure 4) , the yellow LED will turn off and the point or zone will be de-isolated.

3. Once all faults have been removed from the system, the display will read SYSTEM NORMAL.

4. Repeat steps 1 and 2 to isolate the required zones.

Note: Any time a zone is isolated, the event is recorded in the fault log.

If an Alarm condition occurs on an isolated zone, the Alarm will still be annunciated on the operator panel, however the brigade relay will not activate nor will any programmed sequence occur.

2.5 HOW TO ISOLATE / DE-ISOLATE INDIVIDUAL DEVICES

As an alternative to isolating a zone of devices, the user may isolate individual devices in a zone.

2.5.1 Disabling Individual Points/Devices

If a device does not reset, you may disconnect the device/point causing the alarm condition. However this point must first be identified as follows:

1. Press the **<ALARM ACK> key** and read the alphanumeric display on the interface panel.

2. Open the Operator Panel "Access Door" to expose the additional keys which are available for advanced functions. Then disable the identified alarm point with the **<DISABLE> key**. If the <DISABLE> key is passcode protected, perform the Log On procedure before performing the Isolate procedure. (Refer Section 3.1 Operator Log IN/OUT procedure).

The <DISABLE> key press removes power to any displayed monitor point. Thus disabling a point causes a fault condition to be displayed.

To isolate a point, perform the following procedure:

1. Open the Operator Interface Panel access door.

2. Press the **<ALARM ACK> key** until the point to be isolated is shown on the alphanumeric display, as shown below

M1-1 1ST FLOOR EAST WING ROOM 2	**AZF1**
SMOKE DETECTOR	**ALARM**

3. Press the **<DISABLE> key**. The display shows the following message:

Press <ENTER> to ISOLATE
M1-1

4. Press the **<ENTER> key**. The display shows the action taken.

ACTION TAKEN

Note: The system indicates a Fault condition each time a point is isolated. Press the <FAULT ACK> key as required. To clear the alarm condition, follow the System Reset Procedures.

5. Repeat steps 2 through 4 above to isolate additional points.

2.5.2 Enabling Individual Points/Devices

If a device was isolated for any reason and has been restored, you can enable the point. This point must first be identified to the system. The isolated point causes a system fault condition which is continually shown on the display. This can be viewed by pressing the Fault <ACK> key and reading the display. The point can be enabled by using the <ENABLE> KEY. IF THE <enable> KEY IS PASSCODE PROTECTED, PERFORM "Log On Procedures" then continue.

To enable a isolated point, perform the following steps:

1. Press the **<FAULT ACK> key** until the point to be enabled is shown on the alphanumeric display, as shown below

M1-1 1st Floor East Wing Room 2 AZF1 **SMOKE DETECTOR ISOLATE FAULT**

2. Press the **<ENABLE> key.** The display shows the following message:

Press <ENTER> to ENABLE **M1-1**

Note: Read the warning below before performing the following step

3. Press the **<ENTER> key**. The display shows the following message.

Please stand by... **M1-1 will ENABLE in 60 seconds**

WARNING

If the zone is still in alarm, a WARNING is displayed which tells you that the system will sound an alarm if the timer (60 seconds) times out. TO ABORT THE ENABLE, PRESS THE <ISOLATE> KEY. If an alarm condition exists, the following is shown on the display.

****WARNING** Press <ISOLATE> to abort** **M1-1 will ALARM in 60 seconds**

IF THE ABOVE WARNING IS SHOWN ON THE DISPLAY, PRESS THE <ISOLATE> OR AN <ACK> KEY. FAILURE TO ABORT THE ENABLE WILL CAUSE AN ALARM CONDITION, CALL THE FIRE BRIGADE AND PUT THE BUILDING INTO FIRE MODE.

If the enable process is successful, the following message is shown on the display:

ENABLE COMPLETED

4. Repeat steps 1 through 3 above to ENABLE the required points.

SECTION 3 - FAULT CONDITIONS

When a fault condition is detected by the 4120 FIP, the condition is indicated on the main 4120 Interface Panel as follows:

- Yellow "SYSTEM FAULT" LED is flashing.
- Tone-alert is on steady.
- Alphanumeric display shows the following:

****FAULT ****	**Press ACK to review.**	
ALARMS = 0	**ISOLATED = 0**	**FAULT = 1**

The panel has a yellow fault LED which will light whenever a fault is present in the system. When a fault occurs, the LED will flash, the tone-alert sounds steady, and a fault message will be displayed on the alphanumeric display. The fault LED will glow steady and the tone-alert silences when the <FAULT ACK> key is pressed.

When Global Acknowledge is used and the fault clears, the system automatically clears without user intervention. After approximately 30 seconds, the system should display "SYSTEM IS NORMAL" followed by time and date.

SIMPLEX AUSTRALIA	**SYSTEM IS NORMAL**
08:23:43	**FRI 11 MAR 95**

When Individual Acknowledge is used, the tone-alert "re-sounds" when the fault clears. The <FAULT ACK> key must be pressed **twice** (once to change from Alarm Summary to actual point, and once to acknowledge the condition). After a delay, the alphanumeric display should indicate a normal system.

3.1 GLOBAL ACKNOWLEDGE OPERATION DURING FAULT CONDITIONS

(Yellow LED Is Flashing And Tone-Alert Is On Steady)

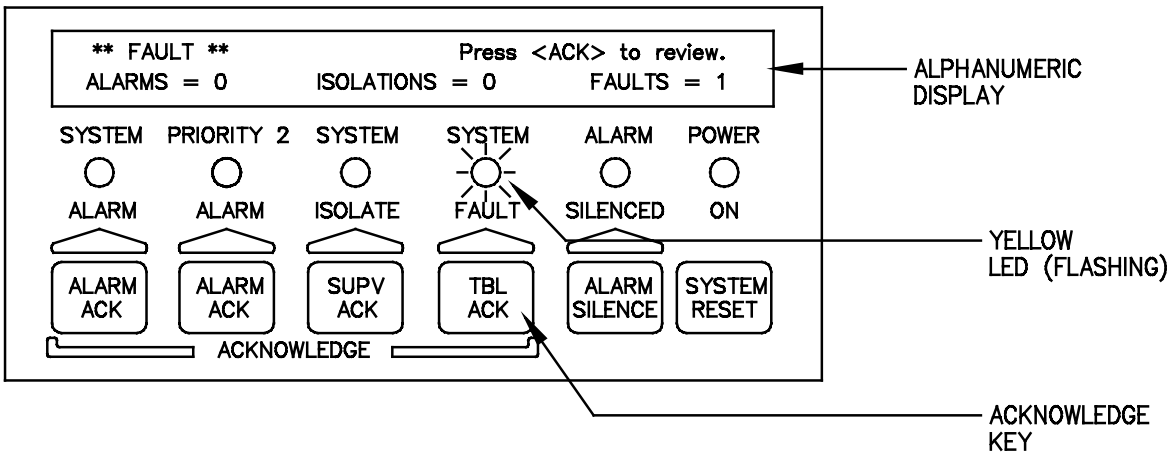


Figure 5
Operator Interface Showing Fault Conditions

A **GLOBAL ACKNOWLEDGE** of a fault condition is accomplished in the following manner.

1. Unlock and open the panel door. The alphanumeric display will show the fault condition.

**** FAULT ****	**Press <ACK> to review points**
ALARMS = 0	**ISOLATED = 0 FAULT = 1**

2. Press the **<FAULT ACK> key** under the flashing yellow LED. The alphanumeric display will show area and type of fault. The tone alert will silence and the yellow LED will glow steady.

FIRST FLOOR EAST WING	**AZF1**
FIRE MONITOR ZONE	**OPEN CIRCUIT FAULT**

3. Read the alphanumeric display, then investigate the problem to determine its cause.

   - Restore or replace the defective device in accordance with device instructions.
   - The fault will automatically clear when the problem has been corrected.
   - After a delay, the alphanumeric display should show:

SIMPLEX AUSTRALIA	**SYSTEM IS NORMAL**
8:23:43 MON 25 JAN 95	

3.2 INDIVIDUAL ACKNOWLEDGE OPERATION DURING FAULT CONDITIONS

An **INDIVIDUAL ACKNOWLEDGE** of a fault condition is accomplished in the following manner.

1. Unlock and open the panel door. The alphanumeric display will show the fault condition.

**** FAULT ****	**Press <ACK> to review points**
ALARMS = 0	**ISOLATED = 0 FAULT = 1**

2. Press the **<FAULT ACK>** key under the flashing yellow LED. Repeat this step and read the reports. The alphanumeric display will show area and type of fault. The tone alert will silence and the yellow LED will glow steady.

1ST FLOOR EAST WING ROOM 2
Press ACK key to acknowledge ← **ALTERNATING LINES**
FIRE MONITOR ZONE OPEN CIRCUIT FAULT ←

3. Read the alphanumeric display, then investigate the problem to determine its cause. Restore or replace the defective device in accordance with device instructions.

Note: When the fault clears, the fault LED flashes and the tone-alert sounds steady.

4. Press the <FAULT ACK> key under flashing yellow LED. The alphanumeric display shows the system status.

5. Press the <FAULT ACK> key under flashing yellow LED again. After a delay, the alphanumeric display should show:

SIMPLEX AUSTRALIA SYSTEM IS NORMAL **8:23:43 MON 25 JAN 95**

3.4 ESSENTIAL FAULT CONDITION KEYS

The essential keys for fault conditions are **<FAULT ACK>**, and the **<SYSTEM RESET>** keys. The remaining keys are concealed by the access door and are associated with **advanced functions** of the system. (See Advanced Functions Section 6). Use of these keys require advanced user skills.

3.4.1 Fault Acknowledge Key

The **<FAULT ACK>** key is used to scroll through the various displays on the alphanumeric display. It also controls the Fault LEDs and the tone-alert. The <FAULT ACK> key is located directly under the fault LED. Pressing the <FAULT ACK> key (twice for Individual Acknowledge or once for Global Acknowledge) will cause the LED to change from flashing to on steady and silence the tone-alert. When the <FAULT ACK> key is pressed, it will:

- Select the next unacknowledged fault point and display it on the alphanumeric display (Individual Acknowledge).
- Acknowledge the displayed point or acknowledge all points on the list (Global Acknowledge).
- Silence signals programmed to follow the Fault Acknowledge key.
- Scroll the points chronologically after all points have been acknowledged.

There are two types of acknowledges for the 4120 FIP: Global Acknowledge and Individual Acknowledge. Each acknowledge type operates with the Fault Condition in the following manner.

- When **Global Acknowledge** is used on the 4120 system, a single key press will acknowledge all fault changes in the system. If status change information is required, the user may review this data (after a delay) by pressing the <ACK> key and reading the total number of fault changes on the alphanumeric display.

- When **Individual Acknowledge** is used and a fault condition has been acknowledged with the <ACK> key, and further unacknowledged fault conditions remain in the system, the tone-alert continues to sound and the next status change is shown on the alphanumeric display.

NOTE: Normally, points may not require acknowledgment and do not latch. If the system does not clear, read the display, then check for devices still in fault (manual call points, smoke detectors etc.).

3.4.2 System Reset to Clear Faults

Some faults latch until they are reset manually or can be cleared by pressing the <**SYSTEM RESET> ke**y once the fault condition has been rectified. This applies to Open Circuit faults on MAPNET and RUI communications lines.

If a monitor point or device intermittently toggles faults or will not reset, the user may elect to ISOLATE the faulty zone or isolate the faulty device. (Refer Section 2.4 for isolate procedures).

3.5 FAULT INDICATIONS FOR TrueAlarm™ SENSORS

The devices that are used for TrueAlarm™ operation are considered sensors instead of detectors, because these devices do not determine alarm conditions. The TrueAlarm™ smoke sensor is a measuring device that sends data regarding smoke density to the 4100 control panel. The TrueAlarm™ heat sensor operates in a similar fashion, but sends temperature data instead of smoke density data. The 4100 uses this data to determine whether a fault has occurred. This basic operational difference is the key to TrueAlarm™ operation.

The TrueAlarm™ sensor has two automatic fault conditions:

- ➤ Dirty, and
- ➤ Excessively Dirty

3.5.1 Dirty Fault Indication

A sensor specific "dirty" fault condition is reported any time the average value on an individual sensor reaches a set threshold. At this point in time, the 4120 FIP is still compensating for environmental factors and holding the set sensitivity level. The sensor should be scheduled for cleaning.

LEVEL 2 - ROOM 74 **SMOKE DETECTOR DIRTY**

The 4120 FIP includes a pre-programmed software point that can be turned on to generate an "almost dirty" indication. This point is useful when maintenance is being scheduled for dirty detectors as it provides a means to see if other sensors are approaching a dirty indicator level.

LEVEL 2 - ROOM 74 **SMOKE DETECTOR ALMOST DIRTY**

3.5.2 Excessively Dirty Fault Indication

An "excessively dirty" fault indication is reported anytime an individual sensor's average value reaches a slightly higher threshold level. At this point the 4120 FIP can no longer compensate for dirt and dust contamination and the sensitivity level may begin to drift. Because false alarms are possible with this condition, sensors must be cleaned as soon as possible. Although an "excessively dirty" fault condition is reported, the sensor will continue in operation and will report an alarm condition if one is detected.

LEVEL 2 - ROOM 74 **SMOKE DETECTOR EXCESSIVELY DIRTY**

3.5.3 Self Test Abnormal Fault Indication

In addition to the automatic dirty fault and excessively dirty indicators, the 4120 FIP automatically tests all TrueAlarm™ sensors once every minute. This test raises the value of each sensor to a value that simulates an alarm. If a value that is not in the alarm range is reported back to the panel a "self test abnormal" fault will be displayed for that specific sensor. Since the sensor is not working properly, it must be replaced immediately.

LEVEL 2 - ROOM 74 **SMOKE DETECTOR SELF TEST ABNORMAL**

SECTION 4 - RS-232 INTERFACE

Up to five RS-232 ports are available in the 4120 FIP. The RS-232 interface option supports both printers and video terminals to annunciate alarm, isolate and fault conditions.

4.1 RS-232 PORT ACCESS LEVELS

The 4120 FIP interface panel, and each RS-232 Interface Port configured for a video terminal, are programmed to allow certain operations at each access level. You must be "logged in" at the required access level or higher to perform the various system operations. Up to 20 operators are allowed to log in at the various passcode access levels. The number of operators, passcode access levels, and the allowed operations are programmed into the system dependent on the customer requirements.

If a port is not configured to annunciate a class of events, such as isolate conditions, you will not be able to acknowledge those points with the video terminal keyboard, even though the video terminal is connected to that port, regardless of the passcode level entered. Table 1 lists the default protection levels for the RS-232 interface. These levels are programmed to meet customer requirements.

Table 1
RS-232 Interface Default Protection Levels

EVENT	DEFAULT
Alarm Silence	**1**
System Reset	**1**
Alarm Acknowledge	**1**
Fault Acknowledge	**1**
Isolate Acknowledge	**1**
Clear Historical Logs	
Alarm	**3**
Fault	**3**

NOTE: Access level from the RS-232 video terminal/keyboard port is separate from the interface panel access level.

4.2 THE VIDEO TERMINAL

The video terminal, or CRT (for the Cathode Ray Tube video display), provides annunciation and system control from the CRT display keyboard. This allows you to use the CRT to control most of the functionality of the system. The CRT allows you to perform the following procedures from its keyboard.

- Log In
- Log Out
- Acknowledge Condition Changes
- Perform System Reset Procedures
- View and Print Historical Logs
- view Current Abnormal Conditions
- Perform Alarm Silence Procedures
- Print TrueAlarm™ Reports

4.2.1 CRT Function Key Definitions

The Function Keys on the CRT keyboard are used to control the various system operations. Table 2 defines the various keys and their uses.

Table 2
Function Key Definitions *

FUNCTION KEY	DEFINITION
F2	Print Screen (Printer Required)
F3	Set-Up
F18	Main Menu
F19	Historical Log Menu
PF1	Acknowledge Key
PF2	Alarm Silence
PF3	System Reset Key
PF4	Log In/Log Out Key
CTRL W	Refreshes Current Screen

4.2.2 Set-Up Procedure

The CRT must be set up[correctly in order to receive and transmit data. An operator may enter the set-up mode to verify proper configuration. However, set-up procedures are performed by Simplex personnel and should not normally be performed by operators. (See publication FA4-11-224 for CRT set-up parameters.)

4.3 CRT SCREEN DISPLAYS

A variety of CRT screen displays are used to support system operations. Header information is displayed on the first three lines of the screen. The first line shows the time on the left, custom banner in the centre, and the operator on the right side of the screen. The second line shows the date on the left and the current access level on the right. The third line shows the overall system status. Prompt/Message information is shown on all screens. The bottom line displays prompts, help messages, and error messages.

These screens tell you what to do and when to do it. CRT screen displays are shown in Figures 6 through 10.

4.3.1 CRT Main Menu Screen

The CRT Main Menu Screen (Figure 6) is the first screen to appear after power is applied to the system. From the Main Menu Screen, you can display various system information screens. Items 1 through 6 are the available choices within this menu. View any item by either moving the cursor to the selection or by typing the item number and then pressing the <Enter> Key.

Figure 6 shows the cursor positioned on Item 1. To select Item 4 (Alarm Historical Log), move the cursor to Item 4 with the cursor control keys, or type the number <4> key and press the <Enter> key.

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TIME: 10:05:24 PM                4120 F/A SYSTEM                 USER: 1
DATE: MON 7 DEC 95          PORT 1 - SECURITY OFFICE           ACCESS: 1
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                SYSTEM IS NORMAL
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                        4100 FIRE ALARM OPERATOR INTERFACE
                                   MAIN MENU

1. Alarms - Display any Current Alarms
2. Isolates - Display any Current Isolates
3. Faults - Display any Current Faults
4. Alarm Historical Log
5. Fault Historical Lob
6. System Functions and Reports

Select Option or PF1 to Acknowledge > 1
```

Figure 6
CRT Main Menu Screen

4.3.2 Acknowledge Screen

The entire system is configured as either a Global Acknowledge system or as an Individual Acknowledge system. If the system is configured as a Global Acknowledge system, two presses of the <PF1> key will acknowledge all abnormal conditions that can be annunciated by the port. When the system is configured as an Individual Acknowledge system, the Acknowledge key, <PF1>, must be pressed to acknowledge each condition change.

All conditions which can be displayed at the CRT can be acknowledged at the CRT, provided that the user has logged in at a sufficient access level. A tone on the CRT sounds to indicate unacknowledged conditions. (The tone can be silenced with the <PF1> key.) When an abnormal condition occurs, the user must select the appropriate acknowledge screen. The Header information on the screen indicates the number of abnormal conditions which can be annunciated by the CRT, and not necessarily the total number of abnormal conditions in the system. To acknowledge an abnormal condition, press the <PF1> key while in the acknowledge screen. The displayed condition will stop flashing, but will still indicate the abnormal condition. When all abnormal conditions have been acknowledged, the user can return to the Main Menu by pressing the <F18> key.

As with the operator information, alarms have priority over isolates and fault conditions. Multiple conditions are displayed in chronological order. Should multiple unacknowledged conditions occur, no unacknowledged event is allowed to scroll off the screen. If more unacknowledged conditions exist in the system than can fit on the screen, the :oldest" unacknowledged point is displayed first. After that condition is acknowledged, it scrolls off the top of the screen and is replaced by the next oldest condition.

The acknowledge screens are dynamic, and information is updated once per second. Follow the prompts at the bottom of the screen (shown in Figure 7) to silence signals (<PF2> key), or to reset the system (<PF3> key). When the system has reset, press the <PF1> key to acknowledge the condition change.

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TIME: 10:18:15 PM                4120 F/A SYSTEM                 USER: 1
DATE: MON 7 DEC 95          PORT 1 - SECURITY OFFICE           ACCESS: 1
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                      ALARMS=1     ISOLATES=0       FAULTS=0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
10:09:27 pm   MON 7 DEC 95             SECOND FLOOR, EAST WING, ROOM 14
                                       MANUAL CALL POINT      ALARM

PF1=ACK, PF2=Silence, PF3=System Reset, PF4=Login, F18=Main Menu
```

Figure 7
CRT Acknowledge Screen

4.3.3 Log In Screen

It may be necessary to increase your CRT/Keyboard access level in order to acknowledge an abnormal condition. With the Main Menu displayed on the CRT screen, press the <PF4> key. A prompt will appear on the screen to “Enter your passcode”. (See Figure 8.)

Up to 19 passcodes are available to support user requirements. The passcode, in conjunction with the access level entered, determines if the operator can perform the required system functions.

Enter your passcode, and press the <Enter> key. The user number will appear in the Header information at the top right hand corner of the screen. The operator access level is also displayed. Your passcode is now shown on the screen for security reasons. Instead, the screen shows “XXX”.

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TIME: 10:06:31 PM                4120 F/A SYSTEM                 USER: 1
DATE: MON 7 DEC 95           PORT 1 - SECURITY OFFICE          ACCESS: 1
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                SYSTEM IS NORMAL
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                        4100 FIRE ALARM OPERATOR INTERFACE
                                  MAIN MENU

1. Alarms - Display any Current Alarms
2. Isolates - Display any Current Isolates
3. Faults - Display any Current Faults
4. Alarm Historical Log
5. Fault Historical Lob
6. System Functions and Reports

Enter your passcode or ENTER to log out> XXX
```

Figure 8
CRT Log In Screen

4.3.4 Historical Log Screen

The Historical Logs are formatted differently from the CRT Acknowledge Screens. As on the operator interface panel, the Historical Logs are displayed with any entry number, followed by a time tag and the actual event.

The Historical Log shows all events in the system log, not just those events annunciated on the CRT. These screens are not dynamic. They display only historical data.

The view the Historical Log Screens, you must select the type of historical log from the CRT Main Menu Screen (Figure 8). These options are the Alarm Historical Log and the Fault Historical Log. Select the desired function either buy placing the screen cursor on the function name, or by pressing either the <4> key or the <5> key. Then, press the <Enter> key. A typical ALARM Historical Log is shown in Figure 9.

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TIME: 10:18:15 PM                4120 F/A SYSTEM                 USER: 1
DATE: MON 7 DEC 95          PORT 1 - SECURITY OFFICE           ACCESS: 1
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                     ALARMS=4     ISOLATES=0       FAULTS=0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ENTRY 1  10:09:27 pm   MON  7 DEC 95   SECOND FLOOR, EAST WING, ROOM 14
              MANUAL CALL POINT                                  ALARM
ENTRY 2  10:11:15 pm   MON  7 DEC 95   SECOND FLOOR, EAST WING, ROOM 12
              MONITOR ZONE                                       ALARM
ENTRY 3  10:12:23 pm   MON  7 DEC 95   SECOND FLOOR, EAST WING,    HALL
              MONITOR ZONE                                       ALARM
ENTRY 4  10:13:45 pm   MON  7 DEC 95   SECOND FLOOR, EAST WING, ROOM 15
              MONITOR ZONE                                       ALARM

F18=Main Menu, F19=Log Menu
```

Figure 9
CRT Alarm Historical Log Screen

4.3.5 Status Screen

When Menu Option 1, 2 or 3 is selected, the screen displays current abnormal screen conditions. The data displayed is updated once every second. The time and date information indicates when the point status changed from normal to abnormal condition.

The screen format is the same as the format for the Acknowledge Screens. Flashing entries indicate unacknowledged entries. Figure 10 shows the CRT Status Screen displaying the Current Fault List.

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TIME: 11:15:11 PM                4120 F/A SYSTEM                 USER: 1
DATE: MON 7 DEC 95          PORT 1 - SECURITY OFFICE           ACCESS: 1
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                     ALARMS=0     ISOLATES=0       FAULTS=4
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
10:19:29 pm   MON  7 DEC 95       SECOND FLOOR, EAST WING, ROOM 14
                                  SIGNAL CIRCUIT     OPEN CIRCUIT FAULT
10:21:06 pm   MON  7 DEC 95       MASTER BATTERY BACKUP
                                  BATTERY STATUS IS                FAULT
10:27:09 pm   MON  7 DEC 95       SYSTEM/TIME INVALID OR NOT SET
                                  FAULT                    POINT ABNORMAL
10:51:00 pm   MON  7 DEC 95       SECOND FLOOR, EAST WING, ROOM 15
                                  FIRE MONITOR ZONE        ISOLATE FAULT

PF1=ACK, PF2=Silence, PF3=System Reset, PF4=Login, F18=Main Menu
```

Figure 10
CRT Status Screen

4.4 THE SYSTEM PRINTER

The system uses a printer to provide a hard copy of the system's current status. The system supports both DC and AC printers.

A DC printer printline is 40 characters long. A typical DC printer printout is shown in Figure 11.

```
10:09:27 pm  MON 7 DEC 95
2ND FLOOR EAST WING, ROOM 14
MANUAL CALL POINT      ALARM
10:10:36 pm  MON 7 DEC 95
ALARM ACKNOWLEDGED AT MAIN PANEL
10:15:12 pm  MON 7 DEC 95
ALARM SILENCE IN PROGRESS
10:16:09 pm  MON 7 DEC 95
SIGNALS SILENCED AT MAIN PANEL
10:17:10 pm  MON 7 DEC 95
SYSTEM RESET IN PROGRESS AT MAIN PANEL
10:19:12 pm  MON 7 DEC 95
SYSTEM RESET IN PROGRESS
10:19:33 pm  MON 7 DEC 95
2ND FLOOR EAST WING, ROOM 14
MANUAL CALL POINT     NORMAL
10:19:45 pm  MON 7 DEC 95
2ND FLOOR EAST WING, ROOM 14
NO ALARMS PRESENT, SYSTEM RESET COMPLETE
```

Figure 11
40 Character Line Width Printout

The AC printer prints only in black, with line widths of 80 characters. A typical AC printer is shown in Figure 12.

```
10:09:27 pm  MON 7 DEC 95    2ND FLOOR EAST WING, ROOM 14
                             MANUAL CALL POINT      ALARM
10:10:36 pm  MON 7 DEC 95    ALARM ACKNOWLEDGED AT CRT
10:15:12 pm  MON 7 DEC 95    ALARM SILENCE IN PROGRESS
10:16:09 pm  MON 7 DEC 95    SIGNALS SILENCED AT CRT
10:17:10 pm  MON 7 DEC 95    SYSTEM RESET IN PROGRESS AT CRT
10:18:12 pm  MON 7 DEC 95    SYSTEM RESET IN PROGRESS
10:19:33 pm  MON 7 DEC 95    2ND FLOOR EAST WING, ROOM 14
                             MANUAL CALL POINT     NORMAL
10:19:45 pm  MON 7 DEC 95    2ND FLOOR EAST WING, ROOM 14
                             NO ALARMS PRESENT, SYSTEM RESET COMPLETE
```

Figure 12
80 Character Line Width Printout

SECTION 5 - MAPNET II®

The MAPNET II® option allows the use of addressable devices and TrueAlarm™ sensors with the system. Addressable devices communicate the exact location of an alarm to the 4120 FIP operator interface panel, improving recognition of the condition and the subsequent response. It also pinpoints the precise location of fault conditions via the custom label description.

A TrueAlarm™ sensor measures smoke density or heat intensity, but has not self-contained alarm set point. The alarm set point is programmed into the network node. Thus, the decision is made by the network node, rather than by the sensor.

5.1 MAPNET II® ALPHANUMERIC DISPLAYS

When a MAPNET II device changes to an abnormal state, or the operator enters a MAPNET II® device address, the 4120 FIP alphanumeric display shows the current status of the MAPNET II® device. After entering a MAPNET II® device address, press the <FUNCTION> key on the operator interface panel to display additional device information.

For the TrueAlarm™ sensor, device information reported back to the 4120 FIP operator interface panel also includes data about the condition of the sensor itself. For example, the sensor might report that it is dirty or excessively dirty.

5.2 MAPNET II® POINT ADDRESSING

Each MAPNET II® device must have a point address in order to communicate with the 4120 FIP. These point addresses, along with their custom labels, are located in the Programmer's Report. The Programmer's Report shows the address for each device, separated by hyphens. Hyphens must be used when entering a MAPNET II® address into the system. An example of a MAPNET II® device address is "3:M1-5". The "3:" portion of the address identifies the owning node. The "M1" portion of the address identifies the MAPNET II® channel, channel 1. The "5" portion of the address identifies the device number, number 5. MAPNET II® channel numbers range from 1 through 9, and 0, with MAPNET II® channel 0 actually being channel 10.

5.2.1 How to Display a MAPNET II® System Point

See Section 5, "How to Display MAPNET II® Point Status" for MAPNET II® operations. This procedure also shows how to use the Programmer's Report to find MAPNET II® addresses.

5.2.2 What To Do If a MAPNET II® Point Will Not Reset

If a MAPNET II® device will not reset, you may decide to isolate the point with the <DISABLE> key. When the isolate procedure is performed, a System Fault occurs to remind you that the point is isolated. The isolate procedure is the same for all system points. (See Section 2, "How to Isolate/De-Isolate a Zone".) Maintenance personnel must be called immediately to repair the malfunction.

After the MAPNET II® point is repaired, you can de-isolate the point again. (Section 2, "How to Isolate/De-Isolate a Zone">) This procedure is the same for all system points.

SECTION 6 - ADVANCED FUNCTIONS

When more involved functionality/control is required, simply open the "Access Door" to expose the additional keys which are used for **advanced functions**. Figure 13 below shows the panel with the access door open and the advanced function keys.

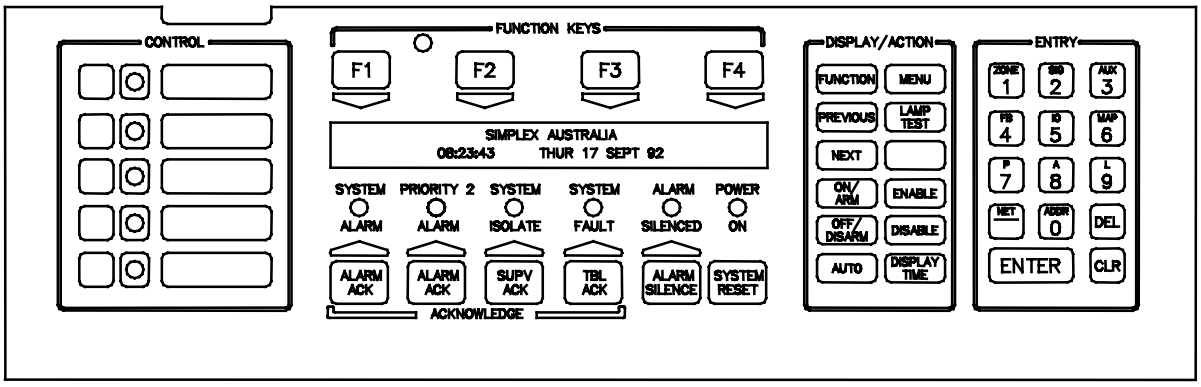


Figure 13
Operator Interface Panel Controls and Indicators

6.1 CONTROL KEYS

Five **"CONTROL"** keys with their individual LED's are located on the far left of the panel Normally, these keys and LEDs will be concealed by the access door. A custom label is used to identify the desired function. Typical functions for these keys will be used for the following functions:

- ➤ Brigade Test
- ➤ Battery Test
- ➤ Alarm Test
- ➤ Fault Test
- ➤ ACF Isolate

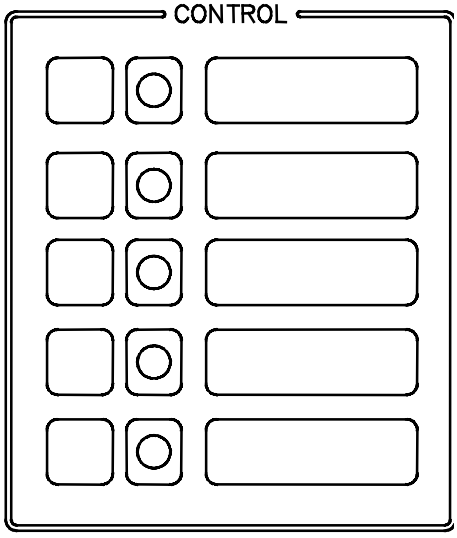


Figure 14
Control Keys

CAUTION

OPERATION OF THESE KEYS MAY CAUSE ALARM SIGNALS TO SOUND OR FAULT CONDITIONS TO BE GENERATED BY THE SYSTEM.

These keys can be pressed anytime, and the key feedback (beep) may be the only acknowledgment of the action. Typically, the LED will track the function and illuminate each time its respective key is pressed.

6.2 FUNCTION KEYS

Four function keys (<F1>, <F2>, <F3>, and <F4>) are located directly above the alphanumeric display (refer Figure 15). Within the Main Function Menu options, these key definitions will change as required to perform specific actions for selected Main Function Menu options. Some menu options may not require any key operation, while others will require all four. The definitions of each physically activated key will be shown on the top line of the alphanumeric display as an aid to the user. A function key does not require any other key to be pressed to activate its function. Pressing a key immediately performs its defined task. Pressing a key which has no defined action for the current function has no effect, however, the tone-alert will acknowledge the key press with a "beep".

These four keys are associated with advanced functions of the system within the Main Function Menu options, and within point displays. The <F1>, <F2>, <F3>, and <F4> keys have extended actions defined during point displays used in conjunction with the <FUNCTION> key.

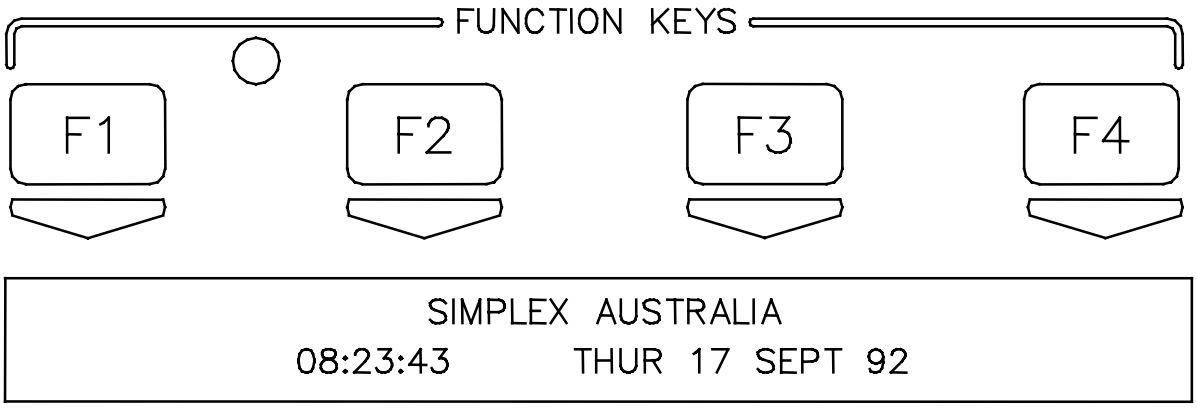


Figure 15
Four Functions Keys F1 - F4

6.3 HOW TO SET TIME AND DATE

The following is an example of how to use the function keys to set the time and date.

A. Press the **<MENU> key**. The following will be shown on the alphanumeric display.

Press <NEXT> or <PREVIOUS> to scroll **Change Access Level**

B. Press the **<NEXT>** key. The following is displayed:

Press <NEXT> or <PREVIOUS> to scroll **Set Time and Date**

C. Press the **<ENTER>** key. The current time and date information is displayed along with instructions:

Press <FUNC> to change time and date **0:09:23 FRI 01 JAN 88**

D. Press the **<FUNC>** key. The cursor, current time and date along with function key definitions are displayed:

F1=Left F2=Right F3=Inc F4= Dec **0:09:23 FRI 01 JAN 88**

NOTE: The cursor is positioned under the hour. Function key **F1** will move the cursor **left.** Function key **F2** will move the cursor **right**. Function key **F3** will **increase** the data above the cursor . Function key **F4** will **decrease** the data above the cursor. Set the time 1 minute ahead of source time.

E. Use the required function key to position the cursor under the data to be changed (hour, minutes, seconds, date of month, month, and year). Day of week is set by the system. Time entered does not start until the <ENTER> key is pressed.

F. Use Function key **F3** or **F4** to increase or decrease data, as required.

When time and date are correct, press the **<ENTER>** key. The display will show the updated time and date. The time entered will not start until the <ENTER> key is pressed.

Press <FUNC> to change time and date **22:04:46 SUN 01 MAY 95**

6.4 HOW TO ESCAPE FROM MENU

A. Press the **<CLR> key**. The following will be displayed:

Press <NEXT> or <PREVIOUS> to scroll **Select a List of Points**

B. Press the **<CLR> key** again. The following will be shown:

SIMPLEX AUSTRALIA SYSTEM IS NORMAL **22:05:10 SUN 01 MAY 95**

6.5 POINT CONTROL WITH THE FUNCTION KEY

Many of the functions performed from the front panel will control point-specific data. The user of the panel can control points using the **<FUNC> key.**

The <FUNC> key enables the user to view additional status information concerning the point currently displayed on the alphanumeric display. The point selected on the alphanumeric display can be manually entered through the ENTRY keypad, or may be the point displayed because of an abnormal condition. Definitions for a function key or several function keys may be shown in the alphanumeric display. Extended controlling actions are also available with the following:

A. Clear Verification Tallies
B. Clear Alarm Tallies.
C. Set Control Priorities.
D. Display Analog Timer/Counter Values.
E. Flash the Fault LED on the daughter card.

To select an extended controlling action, the user must first select a point, press the <FUNC> key, then press the <ENTER> key. One of the extended actions (see list above) will then appear on the top line of the alphanumeric display as shown below:

MONITOR POINT 1, ZONE 1 AZF1 **FIRE MONITOR ZONE 1 NORMAL**

AFTER <FUNC> KEY PRESS

F1= Clear Verification Tally **FIRE MONITOR ZONE UNVERIFIED=6**

The user will then press the <FUNC> key to view the status of the selected point. The tone-alert will beep and a different status is shown on the alphanumeric display each time the <FUNC> key is pressed. In some cases, the user can then take action to change point data. This technique may be used for each of the extended controlling actions.

The extended controlling action shown above is for monitor zones.

6.6 DISPLAY/ACTION KEYS

The **"DISPLAY/ACTION"** keypad provides eleven keys which allow users with appropriate access level, the ability to perform controlling functions on the system zones, MAPNET devices, signals, and auxiliary control relays. Six keys are associated with **Display** while five keys are **Action** keys.

Action key presses require a confirmation <ENTER> key to be pressed before performing the action on the point identifier displayed. These "DISPLAY/ACTION" keys are concealed by the access door.

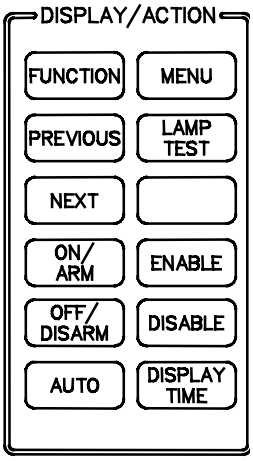


Figure 16
Display / Action Keys

The following keys are DISPLAY keys:

- ➤ FUNCTION
- ➤ MENU
- ➤ PREVIOUS
- ➤ NEXT
- ➤ LAMP TEST
- ➤ DISPLAY TIME

The purpose of each DISPLAY key is described in the following paragraphs

6.6.1 Function Key Operation

The <FUNCTION> key is used to obtain more information concerning the point in the display. These points can be brought up on the main menu as previously explained. <FUNCTION> key presses will scroll through all the status information. This data will be displayed on the bottom line. The top line will contain the 40 character label of definitions for <F1>, <F2>, <F3> and <F4> keys.

A point will normally be displayed with its forty character custom label on the top line. If no custom label exists for the point, the top line will display the point identifier.

The bottom line will contain the device type and its present status. Point types are assigned when the system is configured, and are determined by their card type and the physical devices on its zones.

The following are available for display on the alphanumeric display.

A. Point address and Zone number.
B. Card type and Point type.
C. Present Status (Normal, Alarm, Fault).
D. Disconnect/Isolate Status.
E. McCulloh Fault (Status of Class "A" Cards).
F. Relay status for Control or Signal Points.
G. Verification Tallies for Verification Zones.
H. Coding Status for Coded Zones.
I. Control Priority for Relays.
J. Feedback Point Status for Relays.

In addition to the items above, the following items are for TrueAlarm sensors only:

- Present sensitivity selected
- Average value
- Alarm value
- Current value (per cent of alarm)
- Peak value (per cent of Alarm)

6.6.2 MENU Key

The <MENU> key will call up the Main Function Menu Option List and display the first option on the list.

The Main Function Menu provides operations which are separate from those used for fire alarm conditions. These non-critical functions are selected with the <MENU> key.
The <NEXT> and <PREVIOUS> keys are used to scroll through the menu options. The <ENTER> key selects the displayed option. The following are the Main Function Menus:

- Change Access Level?
- Set Time and Date?
- Display Historical Alarm Log?
- Display Historical Fault Log?
- Select a List of Points?
- Display Software Revision Level?
- Display Card Status?
- Print Report?
- Printer Options?
- Enable Walk Test?
- Display Network Node Identification?
- Network Diagnostic Functions?
- Display System CPU and Idle Time?
- Exit Menu List?

6.6.3 PREVIOUS Key

The **<PREVIOUS> key** is used in Main Function Menu options and in point list displays to scroll to the previous option, item, or point. This key works like the <ACK> keys for Alarm, Supervisory, and Fault conditions. Holding this key in will continuously scroll backward. If the first item in the list or menu has been shown, pushing the <PREVIOUS> key will cause the list to wrap around backwards to the end of the list.

6.6.4 NEXT Key

The **<NEXT> key** is used in Main Function Menu options and in point list displays to scroll to the next option, item, or point. This key also works like the <ACK> keys for Alarm, Supervisory, and Fault conditions. Holding this key in will continuously scroll forward. Whenever the last item in a list or menu has been shown, pressing the <NEXT> key will again cause the list to wrap around to the start of the list.

6.6.5 LAMP TEST Key

Pressing the **<LAMP TEST> key** will turn on the five Control Key LED's, Isolate LED, System Alarm LED, System Fault LED, and the LEDs on local LED/switch modules. All segments on the alphanumeric display will be turned on as a test pattern. After a three seconds sustained press, the Tone-alert will be turned on. When the <LAMP TEST> key has been released, all LEDs, alphanumeric display, and tone-alert will be restored to their previous states.

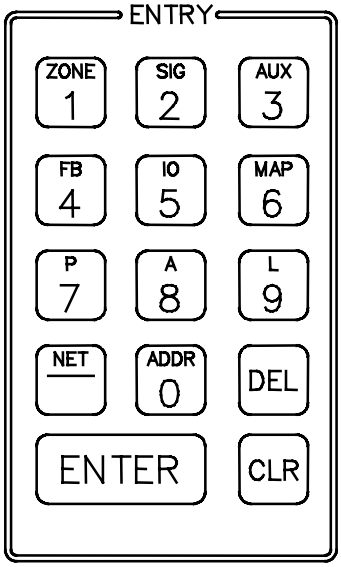
6.6.6 Action Keys

There are six action keys on the display/action keypad:

- ➤ Isolate (Isolating a point)
- ➤ Enable (De-Isolating a point)
- ➤ Off - Turning a point OFF
- ➤ On - Turning a point ON
- ➤ Auto - Return a point to Auto Control

6.6.7 Entry Keypad

The ENTRY keypad is located to the far right on the operator interface panel and is concealed by the access door. There are fourteen keys on this keypad as shown in Figure 17.



NUMERIC KEY PREFIX DESCRIPTION

1 = Monitor zone #
2 = Signal Zone #
3 = Auxiliary Zone #
4 = Feedback Zone #
5 = I/O Zone (Point) #
6 = MAPNET II®
7 = Digital Pseudo Point #
8 = Analogue Pseudo Point #
9 = List Pseudo Point #
0 = Numeric System Address #
– = Network Node and Point #

Figure 17
ENTRY Keypad

These keys are used to enter passcodes, identifiers, or numeric data for the system. Whenever the system expects numeric data input, the user is notified with a prompt. Numeric data input requires an **<ENTER> key** press to complete the keypad entry. Numeric keys also double as "prefix" keys. When entering a point, a prefix key must be used to identify how the entry is made. Pressing the zone key (key 1) indicates that the next numeric entry is a zone number. Pressing the address key (key 0) indicates that an address identifier is entered.

6.7 HOW TO ENTER A PREFIX

When interrogating the system about a specific network point, the first two entries from the ENTRY keypad must be prefix entries. The first prefix entry selects the network node number. The second prefix entry selects the monitor point, signal point, auxiliary point, feedback point, graphic input/output point, digital pseudo point, analogue pseudo point, list pseudo point, or point address format.

When you press the first prefix key (the <NET –> key), the system software requests the network node number, as shown below.

Please input the Network Node Number
NETWORK:

Enter the network node number and press the <ENTER> key, as shown below.

Please input the Network Node Number
NETWORK: 2

As soon as the <ENTER> key is pressed, the display changes and prompts you for the Zone or Address prefix, as shown below.

Please enter a ZONE or ADDRESS prefix
NETWORK: 2:

If the second prefix key pressed is the <ZONE 1> key, the display appears as shown below.

Please enter a ZONE or ADDRESS prefix
NETWORK: 2:ZN

Press the <ENTER> key. As soon as the <ENTER> key is pressed, the display changes and prompts you for the Zone number, as shown below.

Please input a ZONE number
NETWORK: 2:ZN

The zone number for the selected prefix can now be entered. The input must be terminated with an <ENTER> key press. If the identifier represents a valid point in the system, the point is displayed as shown in the example below (20 was entered for this example).

Please input a ZONE number
NETWORK: 2:ZN20

If the keypad input is invalid, the incorrect keypad entry is held in the display on the bottom line along with the error message on the top line as shown below.

ERROR. . . INVALID IDENTIFIER
NETWORK: 2:ZNXX

NOTE: XX equals the invalid identifier.

This data is briefly display. Then, the user is prompted to enter a ZONE or ADDRESS prefix as shown below:

Please enter a ZONE or ADDRESS prefix

A complete listing of system points is located within the Programmer's Report. Each system point has an associated Custom Label which identifies a specific location within the building. Pseudo points have Custom Labels which identify their purpose.

6.8 HOW TO DISPLAY MAPNET II® POINT STATUS

Shown below is an example of a Programmer's Report entry describing a MAPNET II® point.

```
2: M1-2        3RD FLOOR EAST WING   ROOM 13      ALARM      MBZAM
```

The "2:" portion of the address identifies the owning node. The "M1" identifies the MAPNET II® card or Channel; the "-2" identifies the device. The custom label is "3RD FLOOR EAST WING, ROOM 13". When entering MAPNET II® Zone Names, a hyphen must be used to separate the channel from the device.

To display the status of the above MAPNET II® point, perform the following.

1. Enter the network node number. (See "How to Enter a Prefix".)

2. Press the <MAP> key (key 6). The alphanumeric display prompts the operator for a MAPNET II® Point Address input as shown below.

Please input Channel-Device (C-DDD) **NETWORK: 2:M**

   NOTE: The display shows (C-DDD). "C" is the MAPNET II® channel (1 to 9, and 0); "DDD" is the device number (1 to 127).

3. Use the ENTRY keypad to enter the MAPNET II® Point Address, such as M1-2, then press the <ENTER> key. The alphanumeric display shows the MAPNET II® point status and its custom label as shown below.

3RD FLOOR EAST WING ROOM 13 **FIRE MONITOR ZONE NORMAL**

4. Press the <FUNCTION> key as required to display additional point status information.

   NOTE: Any system point may be viewed on the alphanumeric display using the above procedure. Press the required Prefix keys; then, use the Programmer's Report to identify the required point address. Enter the required point address. Press the <FUNCTION> key to display information about the point you entered.

An example of the Programmer's Report is shown in Figure 18.

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                        NETWORK INTERFACE REPORT
FLOORS 4 THRU 6                                                      PAGE 47
92A3002A node:2 rev:3                          11:05:21, TUE, 29-DEC-95
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Network Node            :       2
Network Filename        : 92A9001
Master Timekeeper       :      NO
Annunciate Missing Node :      NO

          Point   Device  Point
 Pt Typ   Name    Type    Type    Custom Label
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
  1 PUB   2:1     COMNTBL TROUBLE COMMON TROUBLE POINT FOR NODE: 2
  2 PUB   P210    DIGITAL UTILITY NETWORK DETECTOR RESET
  3 PUB   P211    DIGITAL UTILITY NETWORK SYSTEM RESET
  4 PUB   P212    DIGITAL UTILITY DETECTOR/SYSTEM RESET
  5 PUB   P217    DIGITAL UTILITY NETWORK SIGNAL SILENCE
  6 PUB   P132    DIGITAL TROUBLE ANALOG SENSOR ALMOST DIRTY LOG ENABLE
  7 PUB   P134    DIGITAL TROUBLE CLEAR ANALOG SENSOR PEAK VALUE
  8 PUB   P214    DIGITAL TROUBLE CLEAR VERIFICATION TALLIES
  9 PUB   P187    DIGITAL UTILITY VIG & AMPLIFIER TROUBLE DISABLE
513 PUB   ZN1     SMONB   HEAT    4TH FLOOR - HEATER BAY AREA
514 PUB   ZN2     SMONB   HEAT    4TH FLOOR - CAFETERIA/KITCHEN
515 PUB   ZN3     SMONB   SMOKE   4TH FLOOR - PIPEWAY AREA
516 PUB   ZN4     SMONB   HEAT    5TH FLOOR - TOP/TRANSTUBE ROOM
517 PUB   ZN5     SMONB   SMOKE   5TH FLOOR - MAKE-UP PUMP ROOM
518 PUB   ZN6     SMONB   FLAME   5TH FLOOR - ROOM 227 PASSAGE
519 PUB   ZN7     SMONB   HEAT    6TH FLOOR - WASTE GAS COMPRESSOR ROOM
520 PUB   ZN8     SMONB   SMOKE   6TH FLOOR - FUEL HANDLING AREA
521 PUB   L128    LIST    CONTROL SIGNALS - FLOORS 4 THRU 6
522 EXT   1:P212  DIGITAL UTILITY DETECTOR/SYSTEM RESET
523 EXT   1:P217  DIGITAL UTILITY NETWORK SIGNAL SILENCE
524 EXT   1:L128  LIST    MIXED   1ST FLOOR ALARM ZONES
525 EXT   1:L129  LIST    MIXED   2ND FLOOR ALARM ZONES
526 EXT   1:L130  LIST    MONITOR 3RD FLOOR ALARM ZONES
527 EXT   1:P45   DIGITAL UTILITY DRILL SWITCH INPUT
528 EXT   1:P256  DIGITAL UTILITY DOOR HOLDER BYPASS STATUS PSEUDO
```

Figure 18
Excerpt from Typical Programmer's Report

6.9 HOW TO DISPLAY THE SENSITIVITY OF A TrueAlarm™ SENSOR

Use the following procedure to determine the sensitivity of a TrueAlarm™ Sensor.

1. Using the Programmer's Report, locate the address of the desired sensor.

   NOTE: The sensor address is in the format "N:C-DDD", where "N:" is the number of the sensor's node, "C" is the MAPNET II® channel (1 through 9, and 0), and "DDD" is the sensor number (1 through 127).

2. Lower the operator interface panel cover to gain access to all of the keypads.

3. Press the first prefix key (the <NET –> key). The system software requests the network node number, as shown below.

   Please Input the Network Node Number
   NETWORK:

4. Enter the network node number. (For this example, the network node number is "2".)

   Please Input the Network Node Number
   NETWORK: 2

5. Press the <ENTER> key. As soon as the <ENTER> key is pressed, the display changes and prompts you for the Zone or Address prefix, as shown below.

   Please enter a ZONE or ADDRESS prefix
   NETWORK: 2:

6. Press the <MAP 6> key on the ENTRY keypad. The alphanumeric display now prompts you for the MAPNET II® channel and device number.

   Please input Channel-Device (C-DDD)
   NETWORK: 2:M

7. Using the ENTRY keypad, press the appropriate numeric key for the sensor's channel (1 through 9, and 0), the hyphen <NET –> key, and the appropriate number key(s) (1 through 127) for the sensor's device number. Then, press the <ENTER> key. The display now shows you the location (custom label) and status of the sensor.

   BLDG. 21-1 MECHANICAL ROOM
   SMOKE DETECTOR NORMAL

8. To verify the sensor's MAPNET II® point address, press the <FUNCTION> key on the DISPLAY/ACTION keypad. The display now looks like the example shown below.

POINT ADDRESS: 9-529 **NETWORK: 2:M1-15 FROM: 2:513**

- The network node number, channel and address displayed must match the address entered in Steps 5 and 6.

NOTES:

1. Pressing the <FUNCTION> key allows you to view status information on the sensor that was verified in Step 8. Pressing the <FUNCTION> key or the <NEXT> key on the DISPLAY/ACTION keypad repeatedly allows you to view 13 more status displays on this particular sensor; using the <PREVIOUS> key allows you to go back and look at a previously viewed display.

2. Status displays 9 through 12 are explained below. The displays reveal the following information: sensor's sensitivity as programmed at its node; average sensor value and sensor value needed to cause an alarm; current sensor value; and highest (peak) sensor value to date.

9. To display the sensitivity programmed for the sensor, press the <FUNCTION> key six more times.

NOTE: If you accidentally press the <FUNCTION> key more than six times, you can go back one display at a time using the <PREVIOUS> key on the DISPLAY/ACTION keypad.

- The display shows part of the custom label (location) along with the sensor's present sensitivity.

<F1> = Change <F2> = Default <ENTER> = Save **PRESENT SENSITIVITY SELECTED = 2.5%SMOKE**

10. Press the <FUNCTION> key again to display the sensor's average and alarm value.

- The display shows sensor location, average sensor value, and sensor value needed to cause an alarm condition.

BLDG. 21-1 MECHANICAL ROOM **AVERAGE VALUE = 90 / ALARM LEVEL = 158**

- This display shows an average value of 90 for the last 2048 values reported by the sensor. It also shows that a sensor value of 158 is needed to cause an alarm condition for the sensor.

11. Press the <FUNCTION> key again to display the sensor's current value.

    - The display shows sensor location and present sensor value.

    BLDG. 21-1 MECHANICAL ROOM
    VALUE = 90 / 0% OF ALARM / 0.0% SMOKE

    - This display shows the sensor is currently reporting a value of 90. It also shows that the value of 90 represents the following: 0% of the required increase needed to cause an alarm and 0.0% content of smoke in the air as seen by the sensor.

12. Press the <FUNCTION> key again to display the sensor's highest (peak) value to date.

    - The display shows that pressing F1 clears a peak value (given a proper operator access level).

    F1 = Clear PEAK value
    PEAK = 92 / 2% OF ALARM / 0.0% SMOKE

    - This display shows the sensor's highest value to date is 92. It also shows that the value of 92 represents the following: 2% of the increase needed to cause an alarm and 0.0% equivalent percentage of smoke for the 2% increase.

13. To exit the sensor's viewing mode, press the <CLR> key twice.

6.10 ADDITIONAL KEYS

6.10.1 Enter

The <ENTER> key is used to complete keypad entries. It is also used to select menu options and print list elements.

6.10.2 Clear

The <CLR> key press is used to exit from a Main Menu Function option or abort an incomplete keypad entry. In most cases, the current display will clear and will back up one level. Multiple <CLR> key presses will continue to back up until the top level is reached. The top level will display the "SYSTEM IS NORMAL" followed by time and date, or the total number of abnormal conditions.

6.10.3 Hyphen

The hyphen (–) portion of the <NET–> key is used to set the limits/boundaries for card address, point numbers, and sub-point numbers during keypad entries.

6.10.4 Delete

The <DEL> key acts as a delete key during keypad inputs. It inserts a blank space in the current location and backs up one position.

6.11 POINT SELECTION

6.11.1 Selecting Points Using Lists

Many of the functions performed from the operator interface panel display point specific data. Every system point is part of the “Select A List of Points” list in the main menu. All points can be displayed sequentially by address order using this list option. To facilitate the search for a particular point, lists may be selected by type groupings (monitors, signals, auxiliary, input/output, pseudo points, etc.). A list of points may be selected, then scrolled through by using the <NEXT> and <PREVIOUS> keys. Selecting a list of points will expedite the search for a specific point with a minimum of scrolling.

The following lists are available for selection with the “Select a List of Points” option from the Main Function Menu:

- All Monitor Zones (Not available for 4120 FIP)
- All Signal Points (Not available for 4120 FIP)
- All Auxiliary Relay Points (Not available for 4120 FIP)
- All Auxiliary Feedback Points (Not available for 4120 FIP)
- All zones of 24-Point I/O Card (Not available for 4120 FIP)
- All Digital Pseudo Points
- All Analogue Pseudo Points
- All List Pseudo Points
- All Points by Address List
- All Network Points.

6.11.2 Selecting Points Using the Keyboard

Rather than scrolling through a list, you may use the keypad to select a point. If the input represents a valid point in the system, that point will be shown on the alphanumeric display. After a point has been displayed, you can scroll through all the points in the system from that point, or select another point directly by entering another identifier using the keypad.

You have the choice of entering a point number or an address number. The format for entering a point identifier address requires a hyphen. Only numbers and the hyphen keys are valid entries. The maximum number of digits allowed in an identifier input is eleven (11), including the hyphens, excluding the <ENTER> key.

6.11.3 Selecting Additional Lists

When an abnormal condition occurs, a record of the event is placed in one of two logs generated by the system, depending on the nature of the condition. These logs are:

- Historical Alarm Log
- Historical Fault Log

6.12 OPERATOR ACCESS LEVELS

There are four operator access levels available to support the system. They are levels 1 through 4. Level 1 is the lowest operator access level and does not require a passcode to be entered to access functions identified at this level. Level 2 through 4 require a passcode of the required level or higher to be entered prior to performing the passcode protected function. Controlling actions may be classified with access levels 2 through 4. Routine actions are assigned to low access levels while access level 4 is reserved for special, highly sensitive operations (normally reserved for Simplex personnel). Entering a level 4 passcode enables you to access all the functions of the system.

A valid passcode must contain a minimum of 3 digits and not more than 10 digits. The available digits are 0 through 9. Passcodes are specified during order entry; then, programmed during system configuration. When passcodes are not specified, the following default passcodes are assigned.

LEVEL	PASSCODE	RANK
1	NONE	LOWEST
2	222	SECOND
3	333	THIRD (Highest Operator Access Level)
4	XXX	HIGHEST (Normally used by Simplex Personnel)

The operator access level defaults to level 1 when power is first applied to the system, after 10 minutes of keypad inactivity, and when the user elects to log out. The <SYSTEM RESET> key press has no effect upon the access level.

The only way to increase the operator access level in the system is to select the “Change Access Level?” option in the Main Function Menu. Decreasing the level resets system access level to 1. Increasing the level requires a valid level 2, 3 or 4 passcode. The user is prompted to enter a passcode. The input is compared to all the valid system codes, and the system operator access level is set accordingly. If an invalid code is input, you will be notified with the message “ERROR. . . INVALID PASSCODE”, and will be allowed up to three chances to enter a valid code. After three unsuccessful tries, the message “ACCESS DENIED” will be displayed for a short time. The access level will not be altered, but you will no longer be in the “Change Access Level” menu option.

If a correct passcode is entered, the message “ACCESS GRANTED” is displayed. The new operator access level will be in effect until the keypad is inactive for 10 minutes or you manually reset the level through the “Change Access Level” option.

While entering a passcode with the keypad, the key presses are acknowledged by a “beep”. The digits entered are not displayed. The cursor moves along, filling the position with an X to indicate that a digit has been entered. The <DEL> key can be used to delete the last digit. The <ENTER> key press is required to enter the passcode into the system.

The Action Keys, ON, OFF, AUTO, ENABLE, DISABLE and the five Panel Control Keys may have operator access levels associated with them. If such a key is pressed with an insufficient access level, a message will inform you that the action was not taken and the key press is ignored. The user will have to select the Main Function Menu option to increase the access level before using the key. (See Log in Procedure for details.)

The Acknowledge Keys may also require passcodes to acknowledge abnormal conditions. If you press an <ACK> key with insufficient access, an error message will be displayed. The points will scroll with <ACK> key pressing to allow you to view the points on the list, but the points will not be acknowledged. (See Log in Procedure for details.)

6.13 POWER UP SEQUENCE

Whenever power is applied to the 4120 FIP panel, or when the 4120 FIP Master Controller microprocessor has been reset, the 4120 FIP self-tests its memory integrity and verifies card configurations. Next, the 4120 FIP displays the system startup in progress messages, followed by a fault condition. Battery fault conditions normally clear automatically.

The green POWER ON LED illuminates immediately after AC power is applied to the 4120 FIP. Make sure that the green LED is illuminated before connecting the battery power harness.

IMPORTANT

To power up the 4120 FIP, apply 240 VAC to the unit. Wait until the GREEN POWER ON LED has illuminate; then connect the battery power harness.

To power down the 4120 FIP, disconnect battery power harness; then, turn the 240 VAC power OFF.

SECTION 7 - SYSTEM TEST PROCEDURES

NOTE: These procedures should be followed when the system is installed and during periodic testing as required by code. Check local codes to determine how frequent your system should be tested. Always inform appropriate personnel that you will be testing the system (Fire Brigade, etc.).

7.1 LAMP TEST

The “LAMP TEST” push-button on the operator interface panel is used to determine local lamp failures within the system. Lamps on the 4120 FIP operator interface panel illuminate along with the five function and acknowledge LEDs. All segments on the LCD also change to squares. Perform the following procedures to determine lamp failures.

1. Press the “LAMP TEST” push-button. All LEDs should illuminate (lamps should stay illuminated as long as the push-button is depressed). Holding the push-button in for more than 3 seconds will test the tone-alert.

2. Perform an individual lamp test on all remote LCD annunciators using the key switch on the operator interface panel.

3. If you find defective lamps/LEDs, contact your local Simplex branch office.

7.1.1 Walk Test™

Walk Test™ must be conducted at each network node individually. Zones going into Walk Test™ alarm will not be visible to or annunciated at other network nodes. However, signals at other nodes may be affected if external signal points are included in the Walk Test™ output lists.

7.2 HOW TO TURN A POINT OFF

The <OFF> key press will turn a control point OFF and prevent the automatic operation by increasing its priority, thus causing it to remain OFF. This action will result in a system fault. The normal state of all control points is AUTO. The <OFF> key press has no effect on monitor points.

The point to be turned <OFF> must first be identified to the system. This is accomplished by entering the identity of the point to be turned OFF through the entry keypad; then, pressing the <OFF> key. If the <OFF> key is passcode protected, perform the system Log In Procedure.

To turn a point OFF, perform the following procedure.

1. Ensure the point to be turned OFF is shown on the alphanumeric display. A typical point (2:SIG3) is shown below.

4TH FLOOR - EAST WING - STROBES
VISUAL ON

2. Press the <OFF> key. A typical display is shown below.

Press <ENTER> to force OFF
SIGNAL CIRCUIT: 2:SIG3

3. Press the <ENTER> key. A typical display is shown below.

4TH FLOOR - EAST WING - STROBES
VISUAL OFF

4. Press the <FLT ACK> key.

5. Press the <CLR> key. The display shows the following message.

**** FAULT ** Press <ACK> to review.**
ALARMS=0 ISOLATES=0 FAULTS=1

7.3 HOW TO TURN A POINT ON

The <ON> key press will turn a control point ON and prevent the automatic operation by increasing its priority, causing it to remain ON. With the exception of pseudo points, this action will result in a system fault. The normal state of all control points is AUTO. The <ON> key press has no effect on monitor points.

The point to be turned <ON> must first be identified to the system. This is accomplished by selecting/entering the identity of the required point on the alphanumeric display, and pressing the <ON> key. If the <ON> key is passcode protected, perform the system Log In Procedure.

To turn a point ON, perform the following procedure.

1. Ensure the point to be turned ON is shown on the alphanumeric display. A typical point (2:SIG3) is shown below.

4TH FLOOR - EAST WING - STROBES
VISUAL OFF

2. Press the <ON> key. A typical display is shown below.

Press <ENTER> to force ON **SIGNAL CIRCUIT: 2:SIG3**

3. Press the <ENTER> key. A typical display is shown below.

4TH FLOOR - EAST WING - STROBES **VISUAL ON**

4. Press the <FLT ACK> key.

5. Press the <CLR> key. The display shows the following message.

**** FAULT ****		**Press <ACK> to review.**
ALARMS=0	**ISOLATES=0**	**FAULTS=1**

7.4 HOW TO RETURN A POINT TO AUTO

The <AUTO> key press leaves a point in its current state (ON or OFF), but lowers its priority so that the system program can control it. AUTO is the normal state for all control points. A fault exists if any control point is taken out of the AUTO state.

The point to be turned to AUTO must first be identified to the system. This is accomplished by selecting/entering the required point on the alphanumeric display, and pressing the <AUTO> key. If the <AUTO> key is passcode protected, perform the Log In Procedures.

To return a point to AUTO, perform the following procedure.

1. Ensure the point to be turned to AUTO is shown on the alphanumeric display. A typical point (2:SIG3) is shown below.

4TH FLOOR - EAST WING - STROBES **VISUAL OFF**

2. Press the <AUTO> key. A typical display is shown below.

Press <ENTER> for AUTOmatic control **SIGNAL CIRCUIT: 2:SIG3**

3. Press the <ENTER> key. A typical display is shown below.

4TH FLOOR - EAST WING - STROBES **VISUAL OFF**

4. Press the <FLT ACK> key.

5. Press the <CLR> key. The display shows the following message.

SIMPLEX AUSTRALIA SYSTEM IS NORMAL **9:27:40 MON 7 DEC 95**

7.5 WHAT TO DO IN CASE OF SYSTEM MALFUNCTION

CALL YOU LOCAL SIMPLEX BRANCH OFFICE, WHICH IS LISTED IN THE YELLOW PAGES, FOR ALL MALFUNCTIONS, OR IF YOU WOULD LIKE A QUALIFIED SIMPLEX TECHNICIAN TO ASSIST YOU WITH INSTALLATION, TESTING, AND TROUBLESHOOTING THE SYSTEM.

SECTION 8 - MAINTENANCE PROCEDURES

It is a requirement of AS1851 - Part 8, The Standards Association of Australia Code for Maintenance of Automatic Fire Alarm Systems, that tests be carried out to ensure the system is fully functional.

The weekly test described is usually carried out by the owner or tenant of the premises and the monthly and annual tests carried out by the installation company under a Service Agreement.

8.1 WEEKLY TESTS

Weekly tests should be conducted and should include the following:

(a) Carry out a fire alarm call by simulating an alarm on detector zones as follows;

1. Isolate bell, AC Shutdown and MDH controls.

2. Place the fire brigade transmitter selector switch in the isolate position.

3. Operate the "Alarm Test" switch. The system will automatically alarm test all detector zones and will indicate their correct operation by illuminating each zone LED and will then reset.

To check the alarm bell, or any other ancillary circuit operation return the relevant isolate switch to the normal position.

The correct operation of the bell should be checked each week.

(b) Operate the Fault Test Switch.

The system will automatically fault test all detector zones and will indicate a system fault during testing.

(c) Operate the "Battery Test" switch .

The FIP will load test all batteries for 1 minute and will then reset.

(d) On completion of the tests ensure that all switches are in the correct operating position and that the system has been returned to its normal status. Should a fault condition exist, or if a circuit indicator did not illuminate when tested immediately contact your Maintenance company to rectify the problem.

(e) Record the results of the tests in the logbook and check that all tests were logged by the system printer. If the printer logs any test as having failed, immediately contact your Maintenance company to rectify the problem.

8.2 MONTHLY TESTS

In addition to the weekly test specified previously, the following inspection and testing procedures should be carried out each month:

(a) Check all battery terminals and electrolyte levels, where appropriate. Maintain all batteries in a serviceable condition.

(b) Check condition of battery enclosure for corrosion and ensure the batteries are stored in a safe and secure condition.

(c) Check that all visual indicators operate correctly, including those on mimic or repeater panels.

(d) Check the operation of all aural and visual indicators external to the control and indicating equipment.

(e) Simulate fault conditions on all alarm zones to ensure that fault indicators, both aural and visual where applicable, are operating correctly from each alarm zone facility.

(f) Check that all control and indicating equipment is in a clean and operational condition, and effectively dust-sealed.

(g) Ensure that all fire indicator panels, sub-indicator panels, repeater panels, and mimic panels, are clearly visible and readily accessible (see AS1670).

(h) Ensure that all controls are returned to the normal condition.

(i) Record the results of all monthly maintenance procedures in the logbook, including all items requiring corrective action, adjustment, and the like.

(j) Check that items previously recorded as requiring attention have been attended to, or record the reason why corrective actions have not been completed.

8.3 ANNUAL TESTS

The annual tests shall consist of all the inspection and testing procedures specified in the previous clause and the following:

(a) Visually inspect all detectors and sampling points for any condition which is likely to adversely affect their operation, such as excessive deposition of dust or coating with paint.

(b) Remove at least one detector on each alarm zone circuit and confirm the fault signal is registered at the appropriate alarm zone facility.

(c) Check the operation of 20 percent of the installed heat detectors and 50 percent of the installed smoke detectors, and sampling points in each alarm zone. The procedure for testing shall be such that all detectors are checked not less than once every 5 years for heat detectors, and not less than once every 2 years for smoke detectors, and sampling points.

(d) Detectors and sampling points that fail to operate shall be clearly marked and reported in the logbook.

(e) Check the operation of an ancillary control facilities and ensure that each controlled device can be correctly initiated.

(f) Check operation of all manual call points.

(g) Check the power supply supervision alarm by disconnecting all power supplies to the fire indicator panel, including battery supplies.

(h) Visually inspect control and indicating equipment components for any evidence of deterioration.

(i) Check for any building alterations, changes in the environment, or utilisation of the protected area which would require modifications to the system.

(j) Ensure spare glasses for manual call points are available in the control panel and a tool for replacing such glasses.

(k) Record the results of all yearly maintenance procedures in the logbooks, including details of detectors and sampling points that do not pass the visual inspection or fail to operate satisfactorily, and notify the owner or his agent of any faults within the installation.

(l) Check that each sprinkler monitor point i.e. pumps running, main stop valve shut etc. operate correctly.

(m) Test all stair pressurisation fans for automatic and manual start-stop and correct status indicator at the Fire Indicating Panel.

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