

4100ES Fire Indicator Panel

InfoAlarm Operator's Manual



Operator's Manual

LT0568 Iss 1.0

4100ES Fire Indicator Panel Operator's Guide

Fire detectors in the building are grouped into zones (searchable areas).

Zones can be Isolated by pressing the zone's isolate pushbutton on the panel – this prevents an alarm from activating the panel outputs.

When a non-isolated detector detects an alarm, the fire panel displays the alarm information, calls the fire brigade, activates the Warning or Evacuation System (EWS), and initiates any other programmed functions.

The fire panel display consists of two sections – the operator interface (upper section) and the Zone Isolate pushbutton switches & indicators (lower section).

The operator interface indicates common Alarm, Fault & Isolation Status on LEDs, and point (detector) status on the LCD.

When an Alarm, Fault or Isolation occurs, the buzzer will operate until the corresponding acknowledge (Ack) key is pressed.

Silence the External Bell or Strobe: Press the <EXT BELL ISOLATE> key.

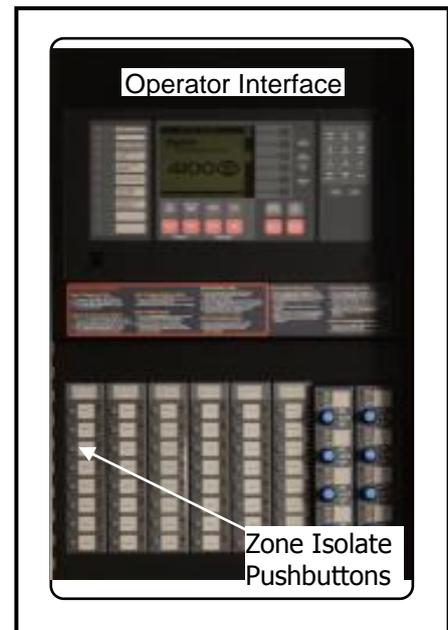
Silence the Evacuation System: Press the <WARN SYS ISOLATE> key. This will turn off warning sounders powered by the Fire Panel.

Isolate a Zone: Press the appropriate Zone Isolate pushbutton and the Isolated LED for that zone will turn on.

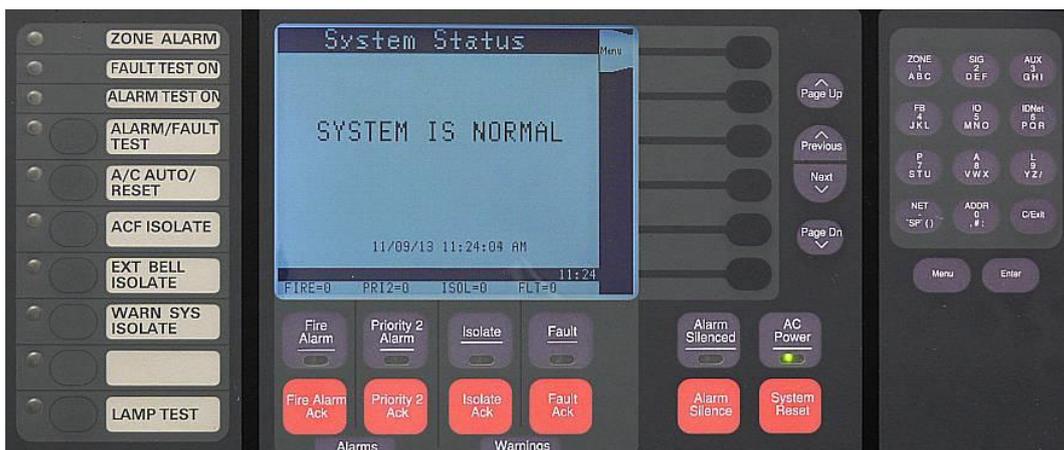
Acknowledge an Isolation: Press the <ISOLATE ACK> key.

Acknowledge an Alarm: Press the <FIRE ALARM ACK> key.

Acknowledge a Fault: Press the <FAULT ACK> key.



The panel is reset by pressing <SYSTEM RESET>. If an alarm won't reset, the point may still be activated. Press <FIRE ALARM ACK> when the point alarm is displayed, then press <DISABLE>, <ENTER>. Press <FAULT ACK> (to acknowledge the fault caused by disabling a point), then press <SYSTEM RESET> again. The disabled detector must be re-enabled when the condition is cleared.



Manufacturer's Details

Approvals Australian Standard AS 4428.1, Control and Indicating Equipment. ActivFire Listing No. afp1682

Manufacturer The 4100ES is manufactured for : Tyco Fire Protection Products
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Simplex fire alarm technology is protected by the following U.S. Patent Numbers:
TrueAlarm analog smoke detection: 5,155,468; 5,173,683 and 5,543,777. IDNet and
MAPNET II addressable communications; 4,796,025. TrueAlert addressable notification;
6,313,744 and 6,426,697. SmartSync horn/strobe control; 6,281,789.

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Document Document Number : LT0568
Issue : Issue 1.0, 1 October 2013

**Firmware
Revision** 1.03.05

Amendments

Product/Site

4100ES Panel Supplied by:	
Installation Location	
Contract/Job Number	
As installed, FIP System Drawing Number	
Panel Installation Date	
Panel Commissioned Date	
Weekly Battery Test Day & Time	
Maintenance Company	
Telephone	
Service Contract	

Cautions & Warnings

Some of the operation of the 4100ES, as described in this manual, is dependent on custom configuration as performed by the field engineer. If the configuration is not as per the recommended template, then the operation may differ and compliance to AS 4428.1 may be invalid.

The 4100ES has a facility to allow levels of passcode protection. The standard programming template has operation of all the functions as described in this manual set to not require entry of a passcode.



ZONE ISOLATIONS - The zone isolate status is not stored in non-volatile memory, so if the panel is powered down and back up, or restarted in any way, all zones will be de-isolated.



CLASS A PRODUCT – In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Chapter 1 Overview

Introduction

This chapter provides an overview of the 4100ES operator interface and describes the normal appearance of the operator interface.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Typical Panel Layout	1-2
Basic System Description	1-3
Control Keys	1-5
Normal Appearance of Operator Interface	1-6

Typical Panel Layout

Overview

The 4100ES is supplied with an InfoAlarm graphic Operator Interface plus one or more Expansion Bays in a suitably sized cabinet. Refer to Figure 1-1.

The Zone Isolate modules are fitted into the Expansion bays from left to right. The first zone is at the top of the leftmost module.

Depending on the size of the system and other functions required, Zone Isolate modules may be fitted to the entire bay and additional Expansion Bays may have Zone Isolate modules fitted. Small systems have only one Expansion Bay, and any required other modules are installed to the right of the Zone Isolate modules.

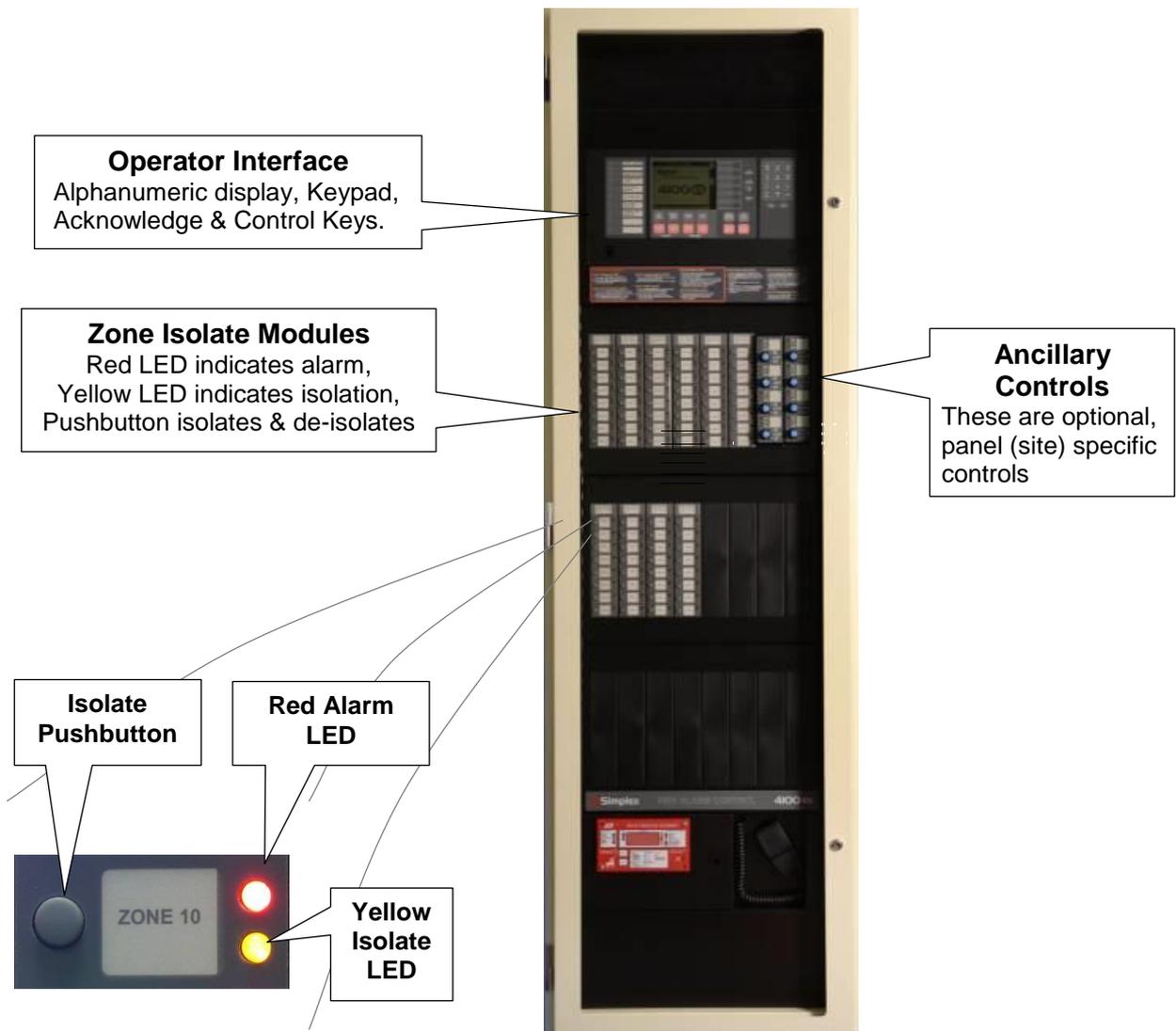


Figure 1-1. Zone detail

Figure 1-1. Typical Panel Layout

Basic System Description

Overview

The Simplex 4100ES Fire Indicator Panel (FIP) has three general functions.

- It monitors fire alarm *initiating points* (smoke detectors, heat detectors, etc.).
- It activates fire alarm *notification devices* (voice evacuation, bells, strobe lights, brigade call) when an initiating point activates.
- It monitors and controls ancillary building equipment (fan controls, relays, etc.).

Note: The term “point” is used extensively throughout this manual. It is a generic term used to refer to an individual component of the system, such as a single smoke detector, a single break-glass manual call point, etc.

The InfoAlarm operator interface, shown in Figure 1-2 and described in Table 1-1, allows a system operator to control and monitor the site-specific components connected to the 4100ES.

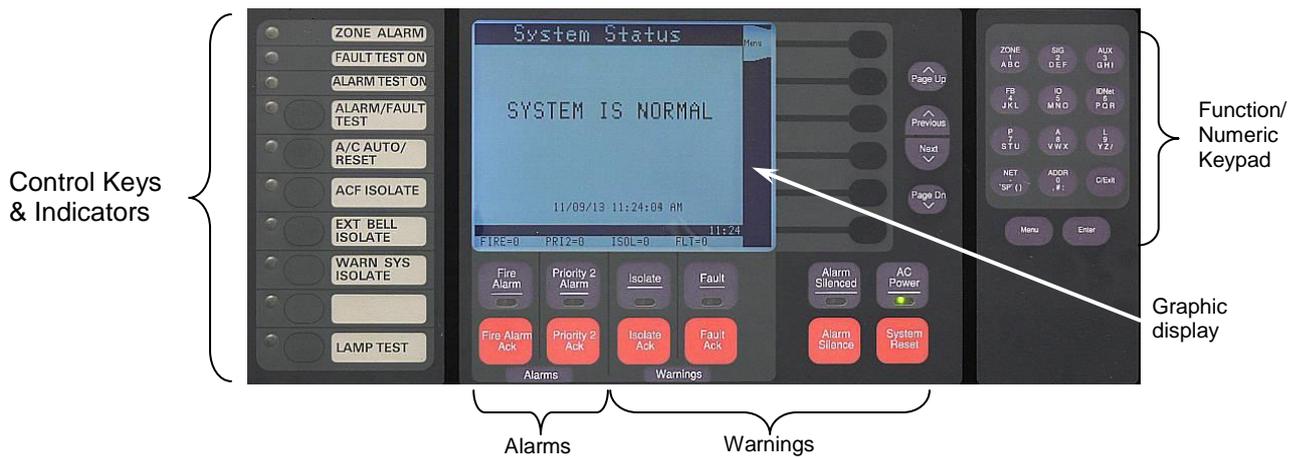


Figure 1-2. Operator Interface

Table 1-1. Components of the Operator Interface

LED/Key	Description	Refer To
Control Keys and Indicators		
Zone Alarm indicator	This flashes when there is a new Zone Alarm. It goes steady when all zones in alarm are acknowledged.	
Control Keys	Functions include: Alarm Test, Fault Test, Ext Bell Isolate, Warning System Isolate, ACF Isolate and Lamp Test.	Chapter 1
Alarms – show the presence of alarms in the system		
Fire Alarm LED and Fire Alarm Ack Key	The Fire Alarm LED flashes to indicate the presence of an unacknowledged alarm condition. The Fire Alarm Ack key allows you to acknowledge that you have observed the presence of an alarm.	Chapter 2
Priority 2 Alarm LED and Priority 2 Ack Key	Sometimes used for non-brigade-calling alarms such as supply air detectors.	N/A

Continued on next page

Basic System Description, Continued

Overview
(continued)

Table 1-1. Components of the Operator Interface (continued)

LED/Key	Description	Refer To
Warnings - Isolation and Fault indicate when abnormal, non-fire conditions occur.		
Isolate LED and Isolate Ack Key	When any zone is isolated, this LED turns on and the buzzer sounds until Isolate Ack is pressed.	Chapter 3
Fault LED and Fault Ack Key	When any fault occurs this LED turns on and the buzzer sounds until Fault Ack is pressed.	Chapter 3
Alarm Silenced LED Alarm Silence Key	Not normally used in Australia	N/A
AC Power LED	Indicates the presence of AC power at the panel.	N/A
System Reset Key	Pressing this key directs the panel to reset all attached devices and clear all acknowledged alarm and fault conditions.	Chapter 2
Function/Numeric Keypad - Used to call up points for display and control.		
Menu / Next / Previous / Page Up / Page Dn	Press the Menu key to display the menu options on the LCD. Next & Previous allow stepping through options/events, Page Up and Page Dn allow larger steps through options.	Chapter 5 on
Graphic Display	Displays text describing abnormal conditions for devices attached to the panel (e.g., smoke detector in main lobby is in alarm). Also displays system prompts, menus and messages.	

Important Note: The degree to which you are allowed to control the system depends on the passcode assigned to you. See Chapter 7 for details on this.

Standard Fire Fighter operations do not require a passcode.

Control Keys & Indicators

Overview

The control keys and indicator LEDs are located on the far left of the operator interface as shown in Figure 1-3. Each control key is pressed to perform the labelled function, and the associated LED turns on to show the function is active. Pressing the key again de-selects the function and turns off the LED.

Control Keys & Indicator Functions

- **ZONE ALARM** - The red indicator is on when there is an active alarm in any zone.
- **FAULT TEST ON** – This indicator lights when zone fault tests have been enabled by pressing the ALARM/FAULT TEST key. When this indicator is on, and a zone isolate key is pressed, a fault test is performed on that zone.
- **ALARM TEST ON** – This indicator lights when zone alarm tests have been enabled by pressing the ALARM/FAULT TEST key. When this indicator is on, and a zone isolate key is pressed, an alarm test is performed on that zone. Any programmed outputs will operate (including the Brigade signal). If the zone was already isolated then the test will not de-isolate it, i.e., the programmed outputs will not operate.

CAUTION: OPERATION OF THE ALARM/FAULT TEST KEY MAY CAUSE ALARM SIGNALS TO SOUND OR FAULT CONDITIONS IN THE SYSTEM.

- **ALARM/FAULT TEST** –This key cycles between Alarm Test, Fault Test, and Normal for zone test modes.

The following keys can be pressed at any time. The key feedback (beep on buzzer) and the LED turning on/off may be the only acknowledgment of the action.

- **A/C AUTO/RESET** – The indicator lights when the air conditioning system is automatically controlled by the 4100ES. Pressing the key after all alarms have been cleared will reset the air conditioning system to normal operation.
- **ACF ISOLATE** – When this indicator is on the ancillary controls: door holders, security trips, etc., are prevented from operating.
- **EXT BELL ISOLATE** - When this indicator is on the fire alarm bell or strobe lamp is prevented from operating.
- **WARN SYS ISOLATE** - When this indicator is on the Warning System is prevented from operating.
- **LAMP TEST** – pressing this tests all the indicators on the front of the 4100ES panel.



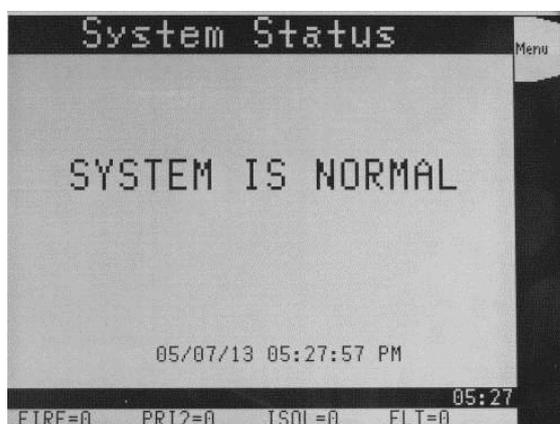
Figure 1-3. Control Keys and Indicators

Normal Appearance of Operator Interface

Description

The 4100ES operator interface panel shows the following under normal conditions:

- Green AC Power LED is ON, indicating the panel is receiving AC Power.
- All other LEDs are off.
- The alphanumeric display reports that the system is normal and shows the current time and date, as shown below:



Note: If the appearance of the operator interface is not as shown above, refer to the information in Chapters 2 and 3 for instructions on managing the alarm, fault, or isolate condition.

Chapter 2

Managing Alarm Conditions

Introduction

An *alarm condition* occurs when an actuating device (such as a manual call point, smoke detector, etc.) activates. The 4100ES indicates the presence of the alarm condition through messages it displays on the alphanumeric display, by illuminating the ALARM indicator LEDs, and by activating the building's EWS and external bell.

This chapter describes using the operator interface keys to investigate and manage alarm conditions.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Acknowledging Alarms	2-2
Isolating (Silencing) the Warning System or External Bell	2-4
Isolating ACF Outputs	2-5
Resetting Alarms	2-6
Resetting Air Conditioning Control	2-7
Displaying Event Time	2-8

Acknowledging Alarms

What the System Does When an Alarm Occurs

When the first alarm condition is detected by the 4100ES, the panel does the following to indicate the presence of the alarm:

- Red Fire Alarm and common Zone Alarm LED indicators flash.
- Red Zone Alarm LED flashes on the display module to show the affected zone.
- Sounder (buzzer) pulses.
- Emergency Warning System (EWS) and External bell activate.
- Alphanumeric display on the operator interface shows the location and type (smoke, call point, etc.) of the first point in the alarm condition, and also the most recent alarm, if there are several. An example display is shown in Figure 2-1.
- Any programmed outputs, including the Brigade connection, operate.

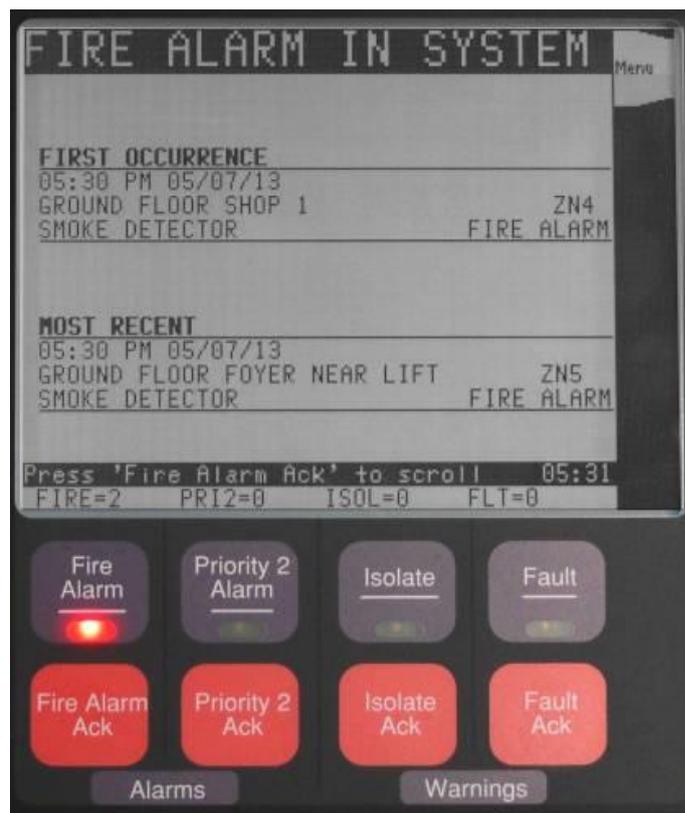


Figure 2-1. Alphanumeric Display Showing Example Alarm

Overview – Acknowledging Alarms

The first step in managing an alarm condition is to *acknowledge* the alarm. Acknowledging an alarm does two important things:

- It records the time and date at which you observed the presence of the alarm and stores that information in the system's historical log.
- If multiple alarms are present, the system displays specific data for the next alarm when you press the <FIRE ALARM ACK> key.

Acknowledging Alarms, Continued

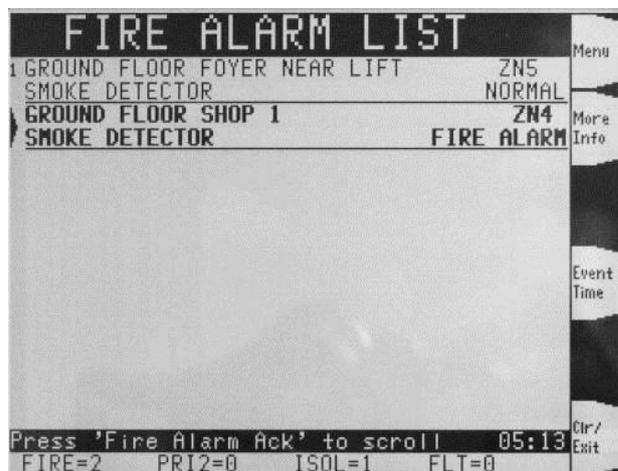
Procedure

Use the following procedure to acknowledge alarm(s):

1. Unlock and open the enclosure door.
2. Press the <FIRE ALARM ACK> key. Pressing the ACK key causes the following to occur:
 - Buzzer silences.
 - Fire Alarm indicator changes from flashing to steady ON.
 - Alarm acknowledgement message on the graphic display.



3. After the new alarm is acknowledged, the list of all current alarms is displayed, with the first alarm at the top of the list.



Use the <Up>, <Down>, <Page Up> or <Page Dn> keys to move the highlight to the event of interest to select it for more information.

The <More Info> soft key will display more information about the selected device in alarm.

The <Event Time> soft key will display the time that the highlighted event occurred.

Isolating (Silencing) the Warning System or External Bell

Overview

When an alarm condition occurs, the building's warning system activates to warn the building's occupants about the alarm condition. In addition, the external bell sounds to indicate the location of the 4100ES to the fire brigade. During maintenance or testing, these outputs can be prevented from activating by isolating them before an alarm occurs. In a real alarm situation, they should be left operating until brigade personnel choose to turn them off.

Isolating the EWS

While the alarm exists and the zone is not isolated, pressing the <WARN SYS ISOLATE> key (control key) toggles the state of the warning system output.

The following occurs when the <WARN SYS ISOLATE> key is first pressed:

- Warning System Isolate indicator turns steady ON.
- The Emergency Warning System (EWS) turns OFF. If the EWS is a separate system (e.g. EWIS), then you may have to manually reset the EWIS panel.

If another alarm occurs, the 4100ES will not activate the EWS again until the warning system is de-isolated. Do this by pressing the <WARN SYS ISOLATE> key again so that the Warning System Isolate indicator turns OFF.

When the alarms in the panel have been reset, leave the EWS de-isolated.

Isolating the External Bell

While the alarm exists and the zone is not isolated, pressing the <EXT BELL ISOLATE> key toggles the state of the external bell output.

When the bell is sounding due to an alarm condition, pressing the <EXT BELL ISOLATE> key once does the following:

- EXT BELL ISOLATE indicator turns steady ON.
- The External Bell turns OFF.

If another alarm occurs, the 4100ES will not activate the external bell again until it is de-isolated. Do this by pressing the <EXT BELL ISOLATE> key again so that the EXT BELL ISOLATE indicator turns OFF.

When the alarms in the panel have been reset, leave the external bell de-isolated.

Isolating the Zone

Note that pressing the Isolate key for every zone that is in alarm will turn on each corresponding zone isolate LED and turn off all outputs activated by the zone being in alarm, such as the warning system and external bell.

Note also that with a point or zone in alarm, e.g., from an Alarm Test, these Isolate keys can be used during testing to briefly allow an output to turn on and check that it works.

Isolating ACF Outputs

Overview

The Ancillary Control Facility (ACF) consists of relay outputs which can be used to control equipment which is not part of the 4100ES fire alarm system, such as shutting down air conditioning or returning lifts to a certain floor.

During maintenance or testing, these outputs can be isolated, to prevent unwanted annoyance to the building occupants.

Operation

Press the <ACF ISOLATE> key once. The <ACF ISOLATE> indicator will light, and the Isolate indicator above the <Isolate Ack> key will flash. The LCD will display a message:

ACF ISOLATE
PRESS <ACK> key to acknowledge

Press the <Isolate Ack> key to acknowledge that the ACF is isolated.

Note that isolation takes effect immediately from pressing the <ACF ISOLATE> key, not from when the <Isolate Ack> key is pressed.

Restoration

Press the <ACF ISOLATE> key once. The ACF ISOLATE indicator goes out.

Note: If there are any alarm conditions still active, the ACF outputs will operate as programmed, e.g., shut down equipment.

Resetting Alarms

Overview

The Alarm state and some Fault conditions latch within the panel so they can be acknowledged and viewed. When the latched states are no longer required they can be reset.

The condition that caused each point to go into alarm must be cleared before the system can reset to the normal state, e.g., smoke cleared from smoke detectors, glass replaced in manual call point.

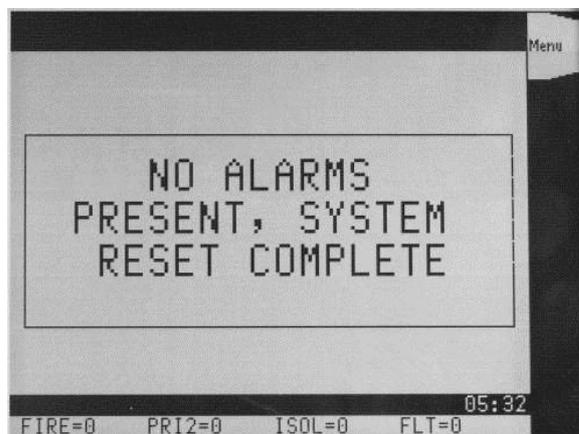
Reset Procedure

Press the <SYSTEM RESET> key. What happens next depends on whether all alarm conditions are clear or not, as follows:

- **If any Alarm Condition is Not Clear**, the system attempts to reset the points in alarm for 25 seconds. During this interval, it displays a message that reads, “System Reset in Progress”.



When the reset is successful and complete, this message is displayed:



If any point alarm fails to clear, e.g., smoke is still present, the system displays a message that reads “Alarms Present – System Reset Aborted”.

Note: If an alarm cannot be cleared, you must clear (fix) the condition that is causing the alarm or disable the point from the panel. Refer to “Disabling a Point” in Chapter 4 for information on doing this.

- **If all Alarm Conditions are Clear**, the system does a hardware reset, which generally takes almost no time.

Resetting Air Conditioning Controls

Overview

The 4100ES may be used to control building air conditioning systems during a fire alarm.

During the management of the alarm, it is often desirable to be able to delay restoring the air conditioning system to normal operation, e.g., to clear smoke even after the alarm conditions have been cleared.

The A/C RESET control allows this delayed restoration.

Indication

When a zone alarm occurs, among the other alarm indications, the A/C AUTO indicator lights to show that the 4100ES has taken control of the air conditioning system. This operation remains in effect even after all alarms have been cleared and the 4100ES system has been reset and is back to normal.

Resetting

Before the A/C AUTO operation can be reset, all alarms must be acknowledged, and the alarms must be reset to normal via the <SYSTEM RESET> key.

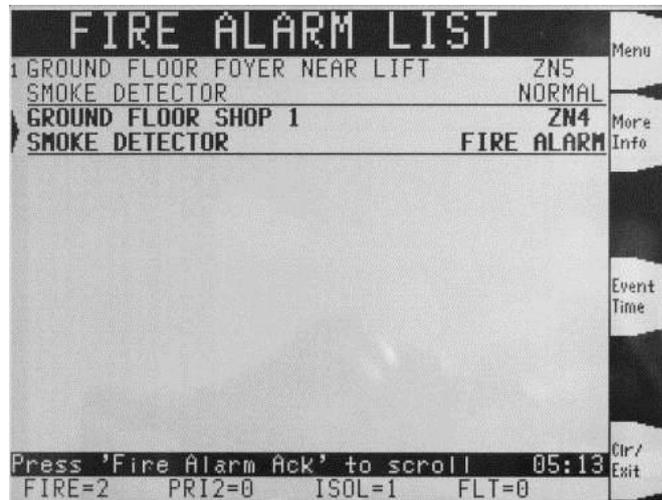
Once the system reset is complete, and there are no alarms present, the <A/C AUTO RESET> key can be pressed to restore the air conditioning system to normal operation. The A/C AUTO indicator will turn OFF.

Displaying Event Time

Procedure

When viewing the lists of Alarms or Faults or Isolates, the time of any event can be shown by highlighting the event and pressing the Event Time soft key.

Press <Fire Alarm Ack>, or <Isolate Ack> or <Fault Ack> to display the desired list. Use <Previous>, <Next>, <Page Up> or <Page Dn> keys to scroll the highlight to the event of interest, and press the <Event Time> soft key.



The time and date that the event happened will be displayed.

Chapter 3

Managing Fault and Isolate Conditions

Introduction

Fault conditions are used to indicate something wrong, e.g., the presence of a field wiring problem (circuit break, short or ground), somewhere between the 4100ES and one of its points. Faults are also used to indicate a problem with the option cards, power supplies, network card, etc., in the 4100ES.

Note that disabling a point introduces a fault condition into the system.

Isolate conditions exist when one or more zones have been manually isolated by an operator, e.g., to prevent a false alarm when maintenance work (building repairs, welding, etc.) is being done in an area.

This chapter describes using the operator interface keys to investigate the details of the fault condition, and to view isolate conditions.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Acknowledging Fault or Isolate Conditions	3-2
Viewing Fault or Isolate Conditions	3-4

Acknowledging Fault or Isolate Conditions

How the 4100ES Indicates the Presence of a Fault or Isolate condition

When a Fault or Isolate condition is present in the 4100ES, the operator interface does the following:

- The yellow “FAULT” or “ISOLATE” indicators flash.
- The sounder (buzzer) sounds steady.
- The display on the interface panel indicates the first Fault or Isolate condition, as shown below, and the most recent condition as well, if there are several:

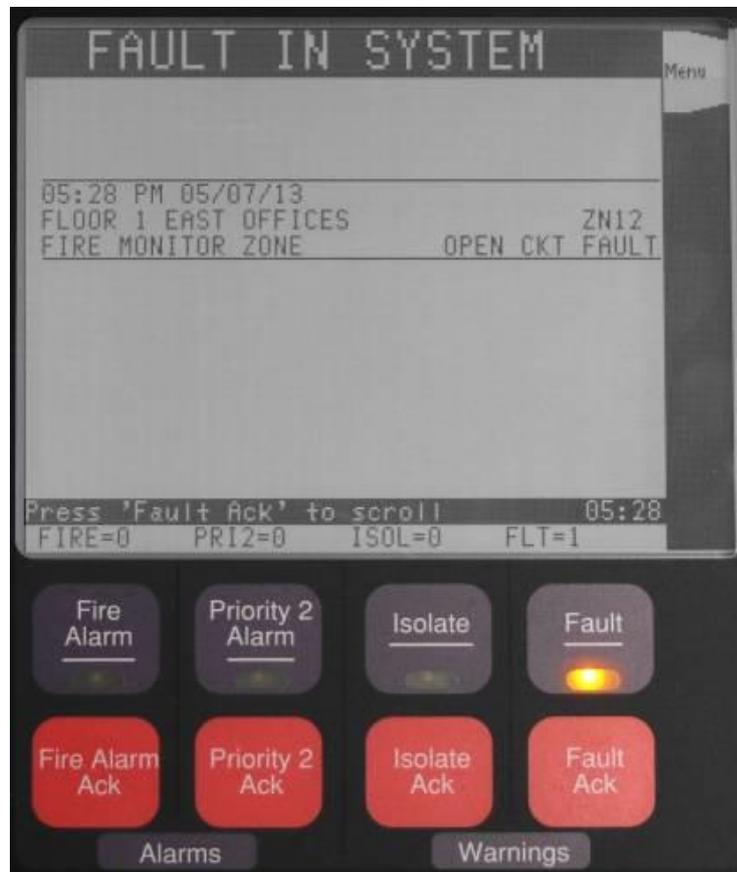


Figure 3-1. Operator Interface Showing Fault Condition

What Acknowledge Does

The first step in managing a fault or isolate condition is to *acknowledge* the condition. Acknowledging a fault or isolate condition does two important things:

- It records the time and date at which you observed the presence of the condition and stores that information in the system’s historical log.
- When you press the <FAULT ACK> or <ISOLATE ACK> key, the system displays specific data on the location of the condition. (In the case of Isolate it gives confirmation on the LCD that you have isolated the correct zone).

Continued on next page

Acknowledging Fault or Isolate Conditions, Continued

Panel Operating Procedure – Fault Condition

1. Unlock and open the panel door. The yellow Fault or Isolate indicator (LED) will be flashing and the sounder (buzzer) sounding.
2. Press the <FAULT ACK> or <ISOLATE ACK> key as appropriate. An acknowledgement message is displayed (this example for Isolate):

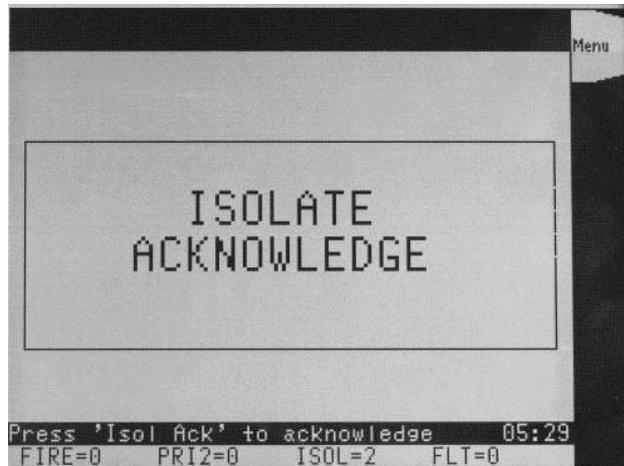


Figure 3-2. Operator Interface Showing Isolate Acknowledgement

After the acknowledgement, the list of Faults or Isolates is displayed, with the earliest Fault or Isolate at the top of the list.

Resetting Fault Conditions

Most faults *automatically clear* from the system when the problem causing the fault (wiring, device, etc.) has been fixed.

Some faults, such as open circuit faults on IDNet communications lines, latch until they are reset manually or cleared by pressing the <SYSTEM RESET> key once the fault condition has been fixed.

Viewing Fault or Isolate Conditions

Overview

You can view the list of acknowledged Fault or Isolate conditions at any time:

1. Press the <FAULT ACK> or <ISOLATE ACK> key to display the Fault or Isolate list. The first Fault or Isolate condition in the list appears at the top of the display.

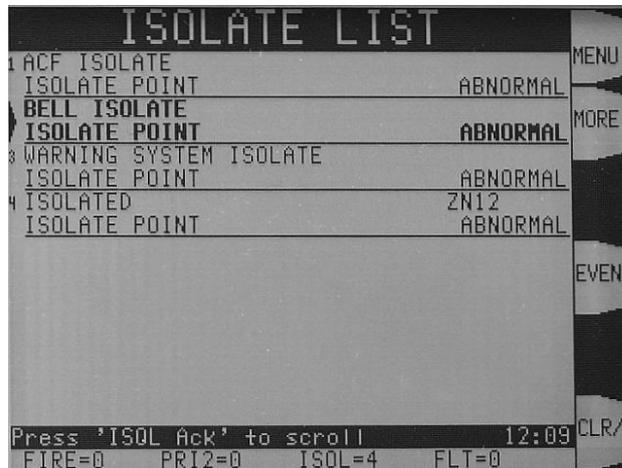


Figure 3-3. Isolate List after Acknowledgement

2. You can use the <NEXT> or <PREVIOUS> keys to scroll the highlight through the list, or <PAGE DN> or <PAGE UP> keys to take larger steps.
3. While viewing the list, pressing the <More Info> soft key will display more information about the highlighted device that has the fault or the isolate condition.

After 60 seconds, the system will revert to displaying the first and last Fault conditions, or first and last Isolate condition if there no faults.

Chapter 4

Selecting Points for Status or Control

Introduction

Many of the operations that can be accomplished from the operator interface first require you to select the point on which you want to perform the operation. Points can be selected in one of two ways:

- From the Alarm, Fault, or Isolate List. Points that are reporting an alarm, fault or isolate condition can be selected from the alarm, fault or isolate list by pressing the <ALARM ACK>, <FAULT ACK> or <ISOLATE ACK> keys as appropriate, to display the corresponding list, and then scrolling to the particular point.
 - Using the Function/Numeric keys to directly select the point.
-

Selecting Points with the Function/Numeric Keypad

Overview

The Function/Numeric Keypad, shown in Figure 4-1 below, allows you to quickly select points. For example, pressing the **AUX** key (key also labelled **3**) selects the auxiliary relay point category. After selecting a category, the points of that type are displayed on the screen. You can type the number of the desired point directly, or scroll through the list to find it.

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 can select either a local point or a network point. A local point is one that is physically connected to the panel in front of you, and a network point is one that is located on a different panel but has been programmed so that it can be selected and controlled from the panel you are at.

There may be several ways of selecting a point. Generally, the most convenient way is to use the point name, e.g., **AUX 3** for a relay or **M2-3** for an IDNet device.

Some system points can be selected only by their direct address, but there is not normally any need to work with these points. The point name method is recommended.

The format for entering a point name requires a hyphen between levels. For example, a module with address 12 on IDNet loop 4 may have two sub-points. The address of sub-point 2 on that device is IDNet 4-12-2.

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. See Table 4-1 for other examples.

Selecting Points directly

Refer to Table 4-1 for information on using the Function/Numeric keypad to select points on this panel.



Figure 4-1. Function/Numeric Keypad

Continued on next page

Selecting Points with the Function/Numeric Keypad, Continued

Selecting Points directly (continued)

This example shows IDNet point M1-20 being selected.

Press the <IDNet> key (the 6 key). The display shows the first IDNet point in the panel and puts “M” in the black entry bar near the bottom of the display:

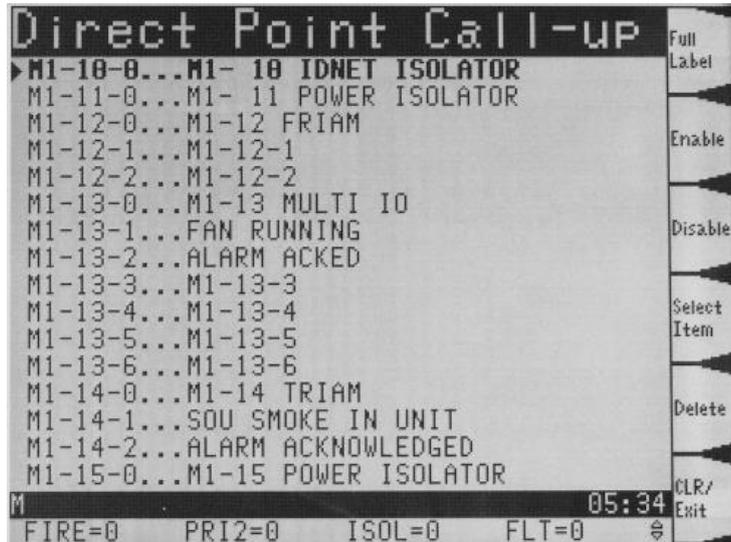


Figure 4-2. List of matching points having selected “IDNet” point type

Enter the IDNet channel number, a dash, and the device address (“1-20” in this example). The displays scrolls as the address is entered, to the show first matching point.

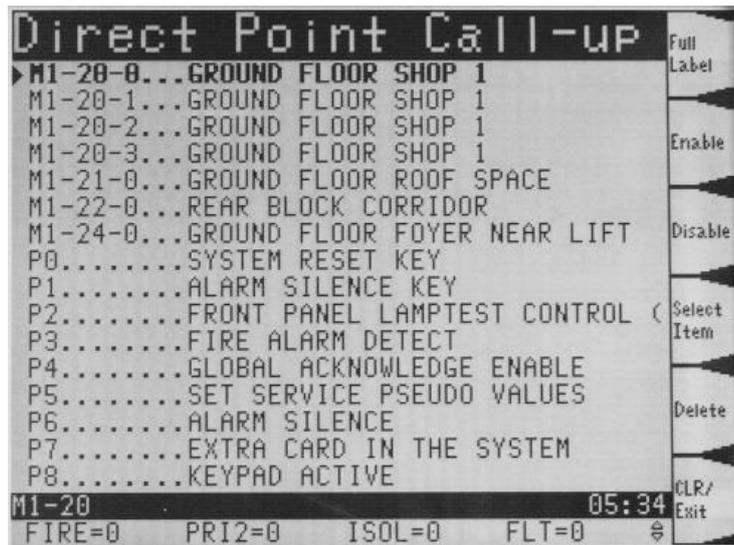


Figure 4-3. Nearest matching point as the point name is being entered

1. Use the <Up>, <Dn>, <Page Up> or <Page Dn> keys on the keypad to scroll the highlight to the exact point you want.
2. Press the <Select Item> soft key to select it.

Table 4-1. Selecting Point Types Function/Numeric Keypad

Press this Key First on Keypad	Screen shows	Data to Enter
ZONE – allows you to select a Monitor Zone point.	Points list with the first monitor zone highlighted. “ZN” in the entry bar	<zone number> on the numeric keypad, or scroll through the list of points.
SIG – allows you to select a Signal point.	Points list with the first Signal output highlighted. “SIG” in the entry bar	<signal number> on the numeric keypad, or scroll through the list of points.
AUX – allows you to select an Auxiliary Relay	Points list with the first auxiliary relay point highlighted. “AUX” in the entry bar	<auxiliary relay number> on the numeric keypad, or scroll through the list of points.
FB – allows you to select a feedback point.	Points list with the first feedback point highlighted. “FB” in the entry bar	<feedback input number> on the numeric keypad, or scroll through the list of points.
IDNet – allows you to select an IDNet, Mapnet or VESDA point.	Points list with the first IDNet or MapNet point highlighted (probably M1-1). “M” in the entry bar (for MapNet)	<channel><-><device address> The channel numbers in a panel start from 1, and are in the same order as the IDNet or MapNet card addresses. Note: The subpoint can also be entered via the numeric keypad, but it is probably just as easy to use the scroll keys to do the final selection.
P / A / L – allows you to select a digital (P), analog (A), or List (L) pseudo point.	Points list with the first digital or analogue or list pseudo point highlighted. “P” or “A” or “L” in the entry bar.	<pseudo point number> The display updates as you enter digits, showing the nearest match to the address entered so far. This is very useful for selecting zone lists to view the status of the contents. L261 corresponds to Zone 1, L262 to Zone 2, etc.
NET – allows you to select a network point.	Points list with the first point of any type highlighted. There is nothing displayed in the entry bar.	<network node number> then <ENTER> Once the node number has been entered, use the point type keys on the keypad to select the particular point on that node, or scroll through the points. For example, to select zone 3 on node 2, you would press <NET> <2> <ENTER> for node 2, then <ZN> <3> for zone 3.
ADDR – internal system point address. You can select <u>any</u> item in the local panel by this method, but it is often not the most convenient method. Some internal system items can be selected only this way.	Points list with the first point of any type highlighted. There is nothing displayed in the entry bar.	Specify the address using the format c-p-s, where c is the card, p is the point, and s is the subpoint. You must insert the dash between the components of the address. Use the <-> key to do this. For example, to select address 1-0-19 (SPS Battery Voltage), press <ADDR> <1> <-> <0> <-> <19> Note: System points are given a card address of 0. The first physical card address is 1.

Chapter 5

Testing and Controlling Points

Introduction

This chapter describes using the panel's action keys (ALARM TEST, On, Off, etc.) to test and control zones and points.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Alarm and Fault Test for Zones	5-2
Isolating and De-isolating Zones	5-3
Disabling and Enabling Points	5-4
Turning a Point ON or OFF	5-6

Alarm and Fault Test for Zones

Alarm Test

Alarm Test forces a zone into the alarm state. Once the zone is in alarm, you can check to see if the system reacts in the way that it has been programmed, i.e., do signals sound in the correct manner? do relays function correctly? etc.

Note: When you force a zone into alarm, if the zone is not isolated, then any outputs that are programmed to activate on alarm will activate: Brigade signalling, Warning System, etc.

Follow these steps to perform an alarm test on a zone:

1. Press the <ALARM/FAULT TEST> key. The ALARM TEST LED will turn on.



Figure 5-1. Ready for Zone Alarm Test

2. While the ALARM TEST LED is on, press the appropriate Zone Isolate key (see the next section). This zone will go into alarm: the corresponding red Zone Alarm LED will turn on, along with the Fire Alarm display on the main screen.

Fault Test

The fault test allows you to simulate a fault condition on a zone. This allows you to test the manner in which the FIP reacts to the fault, e.g., verify the operation of the brigade interface.

Note: When you force a zone into fault if the zone is not isolated then any outputs that are programmed to activate on fault will activate, including Brigade signalling.

Follow these steps to perform a fault test on a zone:

1. Press the <ALARM/FAULT TEST> key until “FAULT TEST READY” is displayed. The FAULT TEST LED will turn on.



Figure 5-2. Ready for Zone Fault Test

2. While the FAULT TEST LED is on, press the appropriate Zone Isolate key on the zone display panel (see the next section).

Note: The Alarm or Fault Test function will be cancelled if the Alarm/Fault Test key is pressed again, or after 1 minute of no testing.

Isolating and De-isolating Zones

Overview

This section describes isolating and de-isolating zones. Isolating a zone does not prevent any of the points within the zone from going into the alarm state, but does prevent the activation of any outputs that are programmed to operate when the zone is in alarm.

Pressing a zone's ISOLATE key toggles its Isolate status. If the zone is not isolated, pressing the key isolates the zone. Likewise, if the zone is isolated, pressing the key de-isolates the zone.

Note: If the ALARM TEST LED or the FAULT TEST LED is on, then pressing the ZONE ISOLATE key will not isolate/de-isolate the zone, but activate the alarm or fault test.

Isolating a Zone

A zone is isolated by pressing the appropriate Isolate key on the Zone Display Module. Zone Displays are located below the operator interface. Each Zone Display Module has eight zones:

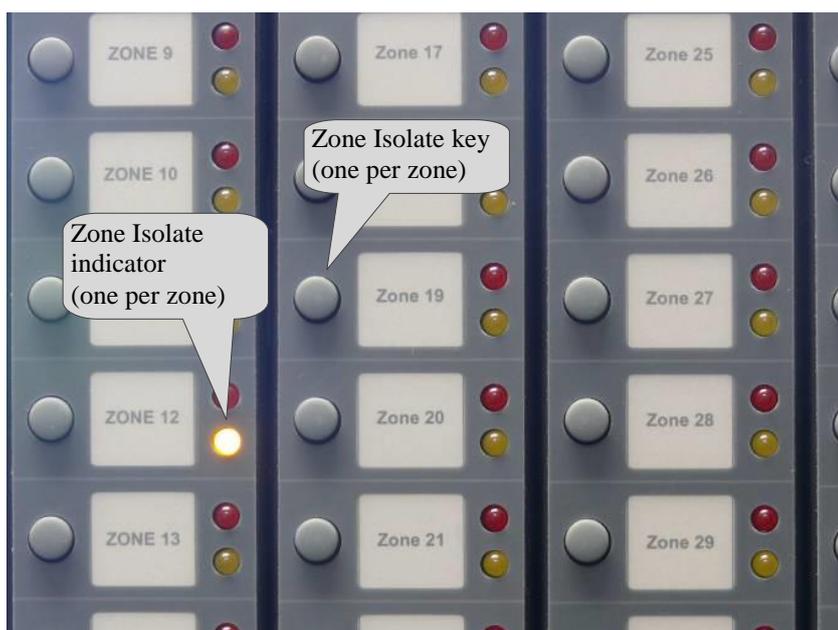


Figure 5-3. Zone Isolate controls and Indicators

1. Press the Zone Isolate key so that the Zone Isolate LED turns on.
2. Press the <ISOLATE ACK> key to acknowledge the isolate operation.

De-Isolating a Zone

Zones are de-isolated by pressing the appropriate Zone Isolate key on the Zone Display Module:

1. Press the ISOLATE key so that the Zone Isolate LED turns off. Acknowledgement is not required.

Warning: If the zone's Alarm LED is on, do not de-isolate the zone unless you are sure that you want to create an alarm.

Disabling and Enabling Points

Overview

Situations such as a malfunctioning detector causing false alarms, or an activated detector that prevents the system from being reset, can be temporarily overcome by disabling that particular point.

Disabling a point allows the system to be reset while repairs are being made. It takes the point “offline”. Disabling a point prevents the point from entering an Alarm or Fault condition while it is disabled.

Disabling a Point

To disable a point:

1. If necessary, log in at a suitable service level (see Chapter 7).
2. Select the point that you want to disable. Refer to Chapter 4 for information on selecting points.

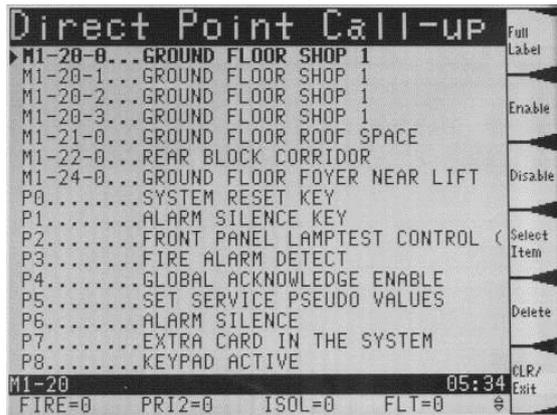


Figure 5-4. Selecting a point to disable

2. Press the <DISABLE> soft key. The point is disabled immediately.

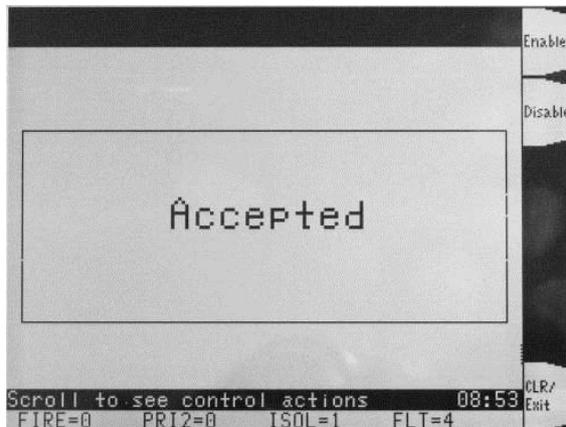


Figure 5-5. Point Disabled confirmation message

The system generates a Fault condition and message, indicating that the point is disabled.

Note: To disable a point that is in Alarm or Fault, press the <Fire Alarm Ack> or <Fault Ack> as appropriate key to display the Alarm or Fault list, scroll to the desired point, then press the <More Info> soft key and then the <DISABLE> soft key.

Enabling a Point

To enable a point:

1. Select the disabled point that you want to enable, e.g., by selecting the point directly, or by scrolling through the Fault list to find it.
2. Press the <ENABLE> soft key.

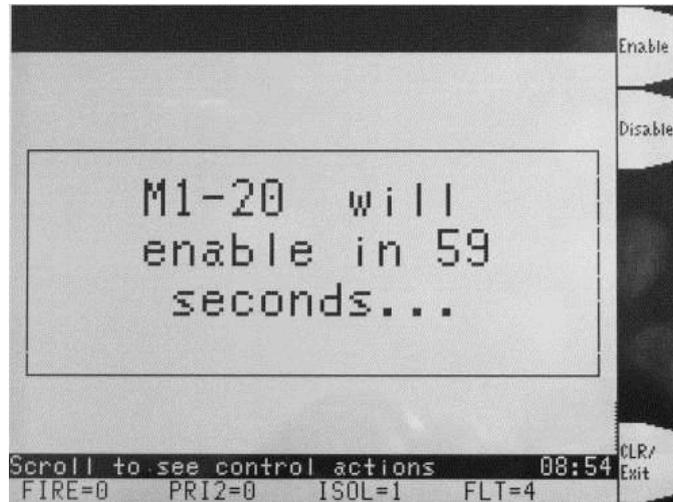


Figure 5-6. Count down message during enabling a point

Note: The system displays a message indicating that the point will be enabled in 60 seconds, and counts down. If the state of the device is such that an alarm condition will occur when the point is enabled, the system warns you that this will happen. You can abort the enable operation before the countdown timer expires by pressing the <DISABLE> soft key.

You can make the enable happen immediately by pressing the <ENTER> key during the count down.

Turning a Point ON or OFF

Overview

It may be necessary during testing and maintenance of the system to force outputs on or off, e.g., alarm devices and relays.

Turning an output point off is effectively isolating that output. Once turned off, the output will not turn on, even if an alarm condition that is programmed to turn it on occurs. After the maintenance it is necessary to return the output to automatic control.

Turning an output point on forces the output to activate, even if there is no condition present that is programmed to turn it on. Some control points, e.g., Sonalert (buzzer) Inhibit, see below are normally off, and may be turned on to perform a function. These must later be restored to “off”, not “auto”.

Turning a Point ON

1. Select the output point that you want to turn on. Refer to Chapter 4 for information on selecting points.

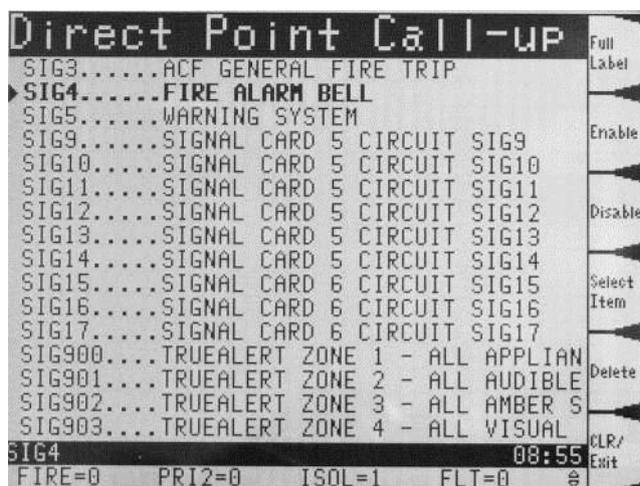


Figure 5-7. Selecting a point to turn on or off

2. Press the <Select Item> soft key. This will show detailed information about the selected point, plus appropriate soft keys to control that point.

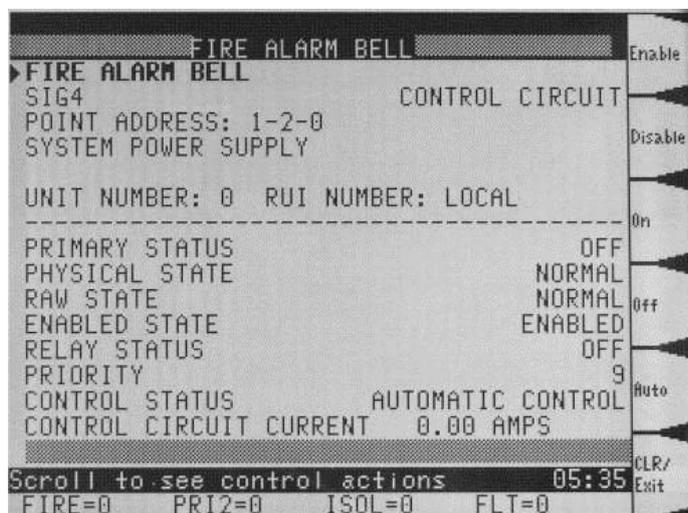
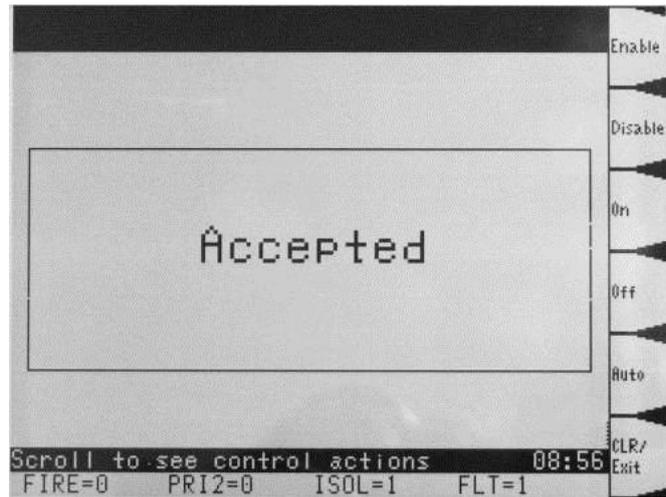


Figure 5-8. Available soft key actions for a selected point

3. Press the <ON> soft key. A confirmation message will be displayed:



Turning an output point on or off generates a “Manual Override Fault,” which is used to remind you that a point has been forced into the On or Off state. You have to acknowledge the fault by pressing the <FAULT ACK> key.

Turning a Point OFF

1. Select the output point as described in the previous section.
2. Press the <OFF> soft key.

Turning an output point on or off generates a “Manual Override Fault,” which is used to remind you that a point has been forced into the On or Off state. You have to acknowledge the fault by pressing the <FAULT ACK> key.

Returning a Point to Automatic Operation

When you are ready to return the point to automatic operation, i.e., the system, not the operator, controls the point, you need to select the point as described above, then press the <AUTO> soft key.

Note: this action will not directly update the point’s status to the automatic value. The point status will change only when the system decides that an update is required. To force this update, do a warm restart of the system (see Chapter 9).

Sounder (Buzzer)

A loud buzzer is used in the Australian 4100ES to meet the requirements of AS 4428 (70dB at 1m with the door closed).

If doing testing or maintenance on the system with an operator at the panel, the buzzer may be inhibited by turning point P198 on.

Note that the point must be turned off when the panel is to have its door closed.

Chapter 6

Displaying and Modifying Detailed Point Attributes

Introduction

This chapter describes displaying and modifying the detailed attributes of a point.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Detailed Point Attributes	6-2

Detailed Point Attributes

Select a Point

Points can be selected in two ways: through the Alarm, Fault, or Isolate list, or with the Function/Numeric keypad. Refer to Chapter 4 for how to select a point.

See the Attributes

When the point is selected, the display shows a list of the point’s attributes. Different types of points will show a different list of attributes.

Summary of Display-Only Attributes

Table 6-1 summarizes the attributes displayed for a selected point.

Table 6-1. Point Attributes that can’t be changed

Category	Attribute	Description
General	Point address and Monitor Zone number	Displays the point address and zone number of the selected Point. If the point’s status is monitored frequently, record this address for use as a shortcut when subsequently selecting the point. Refer to Chapter 4 for information on selecting a point by address.
	Card Type and Point type	Displays the point type, which defines the specific function of the point, and the card type (for example, Class B Multi-Purpose Monitor Card).
	Present Status (Normal, Alarm, Fault)	The present status of the point – Normal, Alarm, or Fault -- appears on the lower right of the display after you select a point.
	Class A Fault (Status of Class "A" Cards)	Displays whether the Class A card is experiencing a fault somewhere in the wiring between the card and its devices.
	Verification Tallies for AVF devices.	If the selected point is programmed for alarm verification, displays the number of times the device has started, but not completed an alarm verification cycle.
	Coding Status for Coded Zones.	Not used in Australia.
	Feedback Point Status	Shows the status – ON or OFF – for a feedback point.
	Counts for Lists	Indicates the number of points in a list.
TrueAlarm Sensors Only (smoke, heat, VESDA or 4-20mA)	Present sensitivity selected	Displays the current sensitivity of the device.
	Average value	Displays the average value recorded by the sensor.
	Alarm value	Displays the value required to trigger an alarm.
	Current value (per cent of alarm)	Displays the current (real time) value.
	Peak value (per cent of alarm)	Displays the maximum value reported by the device as a percentage of the alarm threshold. Note that this is the maximum value reported since the last time this counter was cleared.

Continued on next page

Detailed Point Attributes, Continued

Summary of Display-Only Attributes

Some attributes can be changed via this display, if you are logged in at an appropriate access level. The softkeys at the side of the display show the available options.

Table 6-2 shows the attributes that can be modified using the operator interface.

Table 6-2. Point Attributes that can be changed

Attribute	Description
Card LED	Allows the state (ON or OFF) of the card LED to be toggled.
Device LED	Allows the state (ON or OFF) of an IDNet device LED (typically a smoke detector) to be toggled ON or OFF. This can be very useful when two devices have been set to the same point address.
Control Priority Change	Allows the control priority, which is a priority level used with Custom Control to be incremented or decremented. This option is available for all control points – relays, notification appliances, TrueAlarm devices with relays and sounders, and all digital pseudo points. The priority is a value from 0-15.
Relay status for Control or Signal Points	Displays the relay status for a control or signal point. Status reports as “Relay Status is ON” or “Relay Status is OFF”. The point can be forced into the On or Off state, or put back into Auto for system control.
Disable Status	Allows the point has to be manually disabled or enabled.
Analog Pseudo Point Value and Status	Allows you to manually store a value for an analog pseudo point. The type of value stored depends on the point type of the pseudo point (i.e., if the point type is a counter, a counter value is stored; likewise, if the point type is timer, a timer value is stored).
Alarm Verification Tallies for Monitor Points (Clear)	Allows you to manually clear alarm verification tallies. This is useful when attempting to determine how frequently the system is going through the verification cycles. Dirty devices are probable contributors to frequent verification cycles.
Ground Fault Isolation Relay	Allows you to manually turn on and off the GFI relay on a card (if it has one).
TrueAlarm Peak Analog Values	Allows you to clear the peak value of a TrueAlarm sensor.
Sensitivity (Alarm Threshold)	Allows you to set the value at which the device goes into alarm. The value can be any of the following. <ul style="list-style-type: none"> • Sensitivity of smoke detectors • Threshold of analog ZAMs • Temperature of heat detectors • Threshold of VESDA devices.

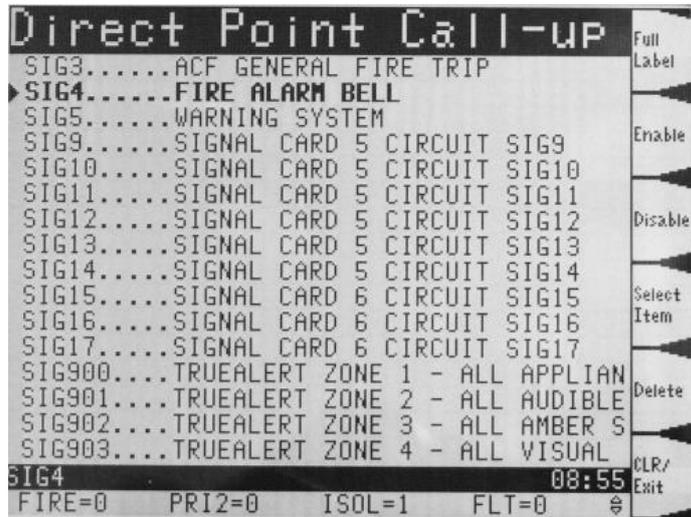
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Detailed Point Attributes, Continued

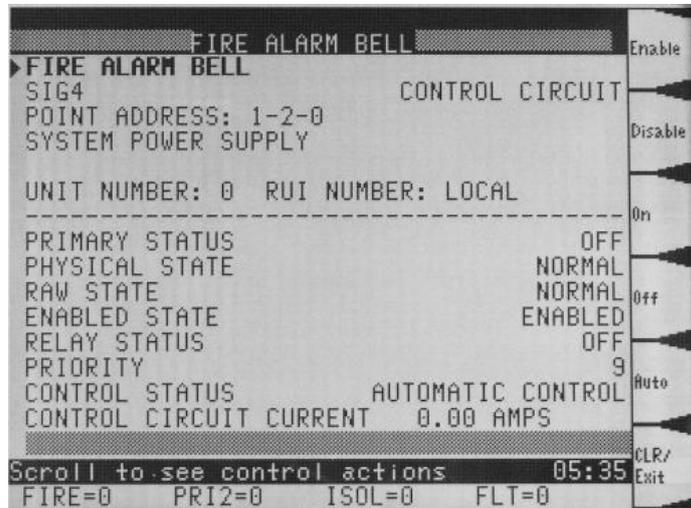
Example of Display-Only Attributes

The following example shows the attributes for signal point SIG4.

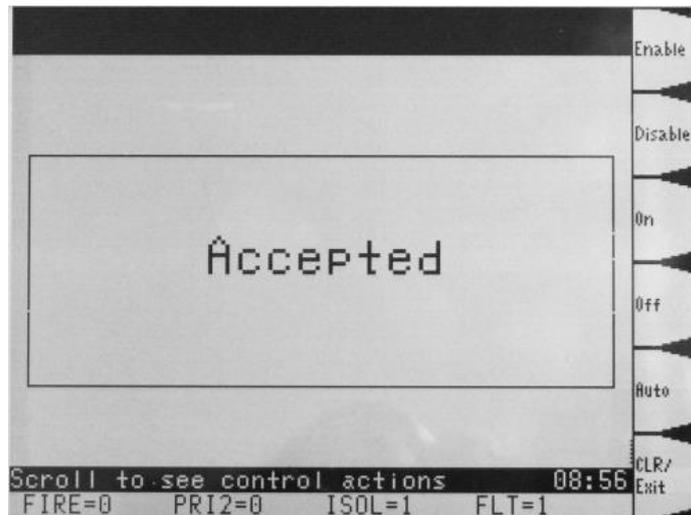
1. The SIG4 point is selected from the points list as described in Chapter 5.



2. When the <Select Item> soft key is pressed, the attribute information is displayed:



3. Pressing the <Disable> soft key will disable this point, with an "Accepted" message.



Chapter 7

Setting Access Levels and Logging In

Introduction

This chapter describes logging in and out at different access levels.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Logging In and Out of the System	7-2

Logging In and Out of the System

Introduction

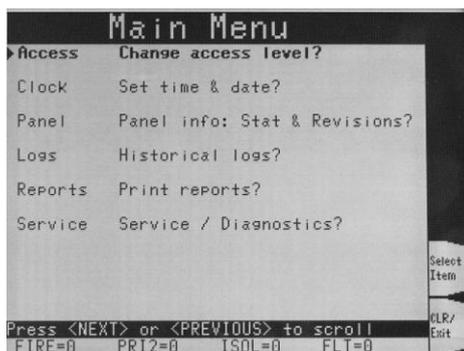
The 4100ES uses four access levels, referred to by the numbers 1 through 4, to control what operators can do with the system. The system typically operates at access level 1, which allows an operator to accomplish basic tasks without logging in to the system.

Other functions, for example certain control functions, may be passcode protected to prevent access by unauthorized personnel.

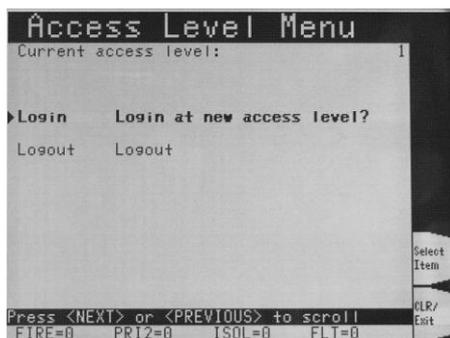
Log In Procedure

Follow these steps to log in to the system at access level 2, 3, or 4:

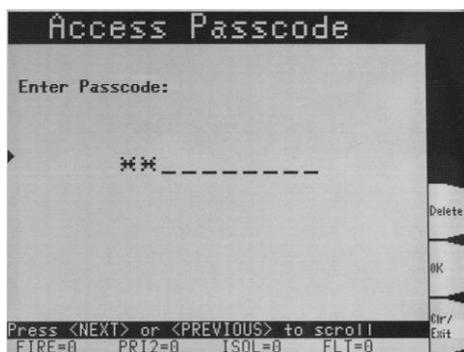
1. Obtain the passcode for the access level at which you want to operate.
2. Press the <MENU> key. Highlight the Access option, and press <ENTER> or <Select Item>.



3. Select Login option, and press <ENTER> or <Select Item>.



4. Enter the passcode for the access level. The passcode can be up to 10 digits in length. Press the <ENTER> key on the numeric keypad when you have finished entering the code. A * is displayed for each digit of your passcode, as shown here:

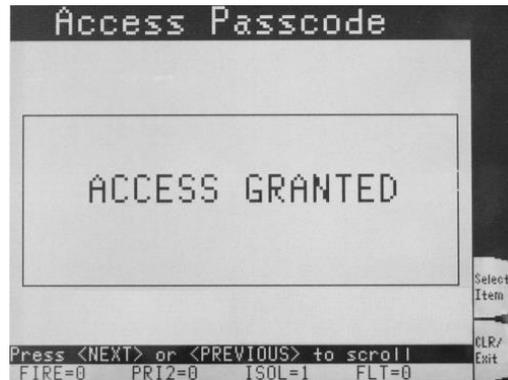


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Logging In and Out of the System, Continued

Log In Procedure (continued)

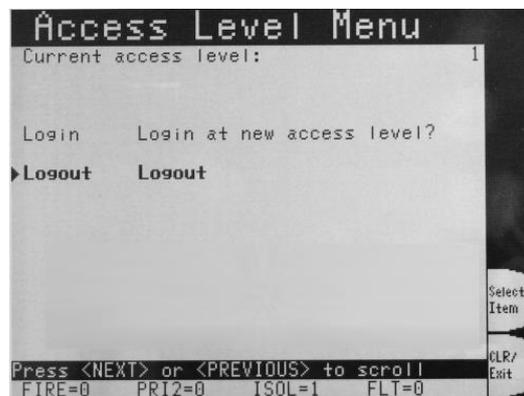
5. If the passcode entered in Step 4 is correct, the following message is shown:



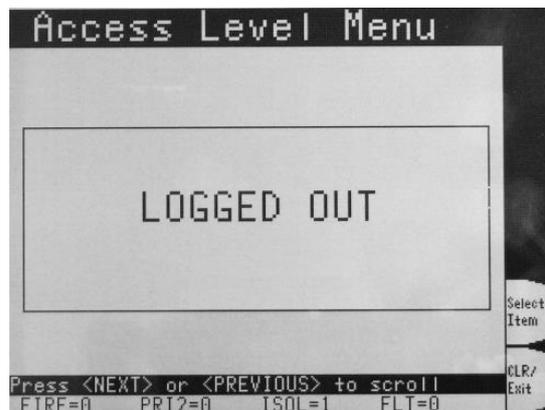
Log Out Procedure

Failure to log out may allow unauthorized personnel access to the various protected functions. If no keypad activity is detected for ten minutes, the system automatically returns to Level 1 access.

1. Press the <MENU> key. Highlight the Access option and press <ENTER> or <SELECT ITEM>.



2. Highlight the Logout option and press <ENTER> or <Select Item> key. The following message is displayed:



Note: Logging in at access level 4 creates a fault that requires a Warm Restart of the system to clear (see Chapter 9). This ensures that the system is returned to its normal operating mode following service.

Chapter 8

Viewing and Clearing Historical Logs

Introduction

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.

The historical logs contain a time stamp of the events generated by abnormal conditions in the system. The information displayed with these logs is historical data only and will not contain any current point status. Separate lists are maintained for alarms and for isolates/faults. This chapter describes displaying and clearing these historical logs.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

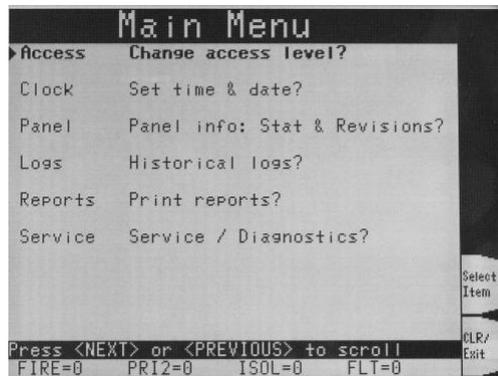
Topic	See Page #
Viewing and Clearing the Historical Alarm and Fault Logs	8-2

Viewing and Clearing the Historical Alarm and Fault Logs

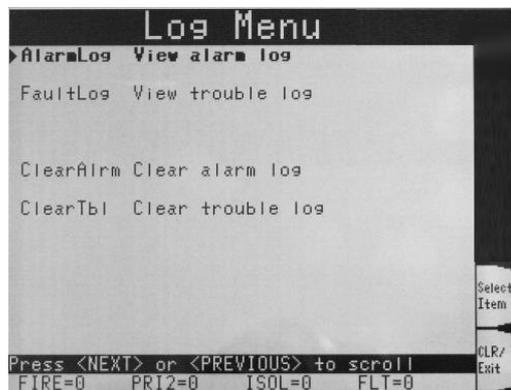
Viewing Logs

The Historical Alarm and Fault Logs can be viewed from the 4100ES operator interface:

1. Press the <MENU> key. Move the highlight to the Logs option, and press <ENTER> or <Select Item>.



2. Move the highlight to the type of log you wish to see. Press <ENTER> or <Select Item>.



Note that the options to clear the logs are visible and available only if you are logged in at an appropriate access level (see Chapter 7).

3. The event log is displayed:



4. Use the <NEXT> or <PREVIOUS> or <PAGE UP> or <PAGE DN> keys to scroll through the list of logged events, until the desired event is shown on the display.

Note: Pressing the <PREVIOUS> key first causes the most recent event to be displayed.

5. When finished, press the <C/EXIT> key twice to return to the main menu.
-

Clearing the Logs

1. Log in at a appropriate level.
 2. Bring up the Log Menu as shown in the previous section.
 3. Using the <NEXT> key, move the highlight to “Clear alarm log” or “Clear fault log”, as appropriate.
 4. Press <Select Item> or <ENTER>.
An “Are you sure?” confirmation screen is displayed.
Press <Select Item> or <ENTER> to confirm, or <Clr/Exit> softkey to cancel.
-

Chapter 9

Service-Related Operations

Introduction

This chapter describes service-related status and control procedures.

In this Chapter

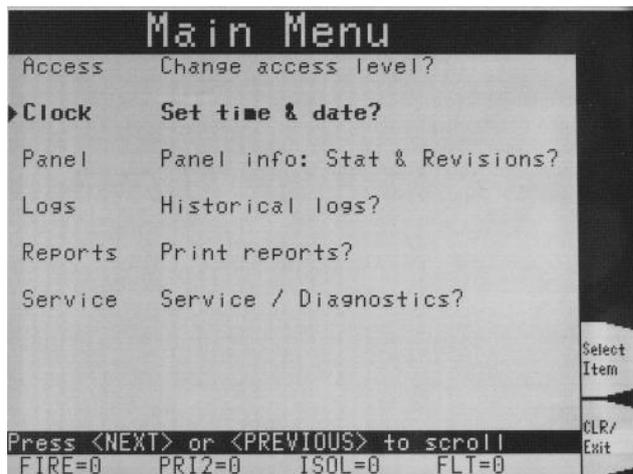
Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Setting Time and Date	9-2
Displaying Software Revision	9-3
Viewing Card Status Information	9-5
Displaying Network Node Information	9-7
Lamp Test	9-9
Warm Restart of the System	9-10
Displaying IDNet & Mapnet Device Status	9-11

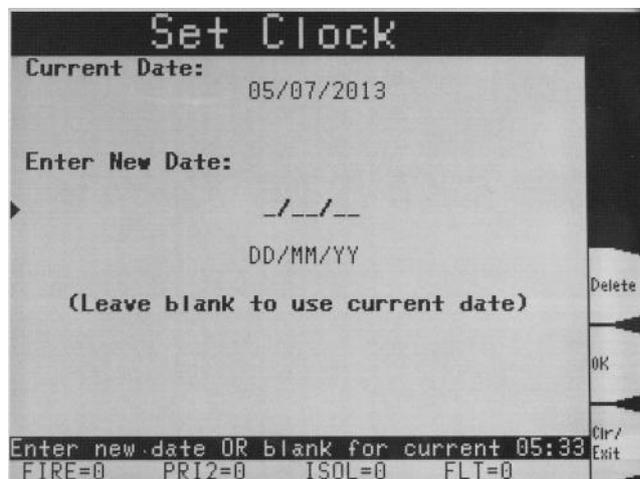
Setting Time and Date

Procedure

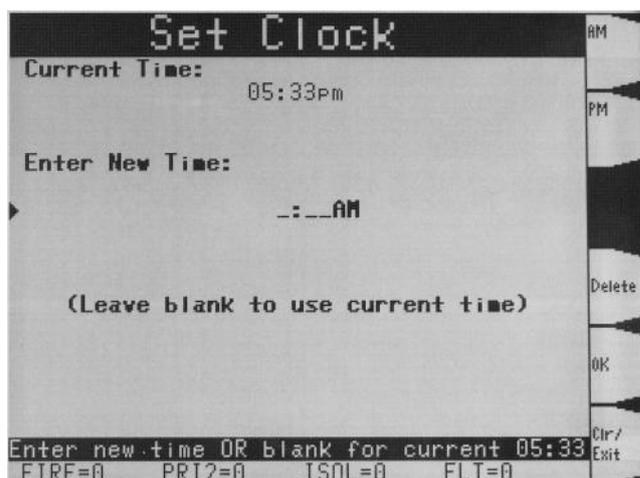
1. Press the <MENU> key. Scroll the highlight to **Clock Set time and date?**, and press <Select item> or <ENTER>.



2. Enter the new date in the Set Clock display. Use the <Delete> softkey to correct mistakes. Press <OK> when the new date is entered. If the date is already correct, just press <OK> to accept it.



3. Enter the new time in the Set Clock display. Use the <Delete> softkey to correct mistakes. Press <OK> when the new time is entered. If the time is already correct, just press <OK> to accept it.

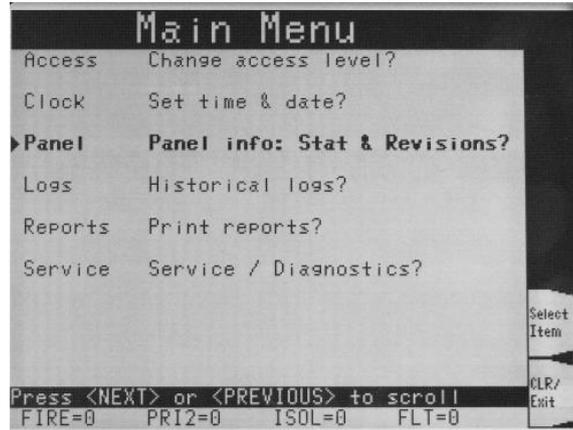


Displaying Software Revision

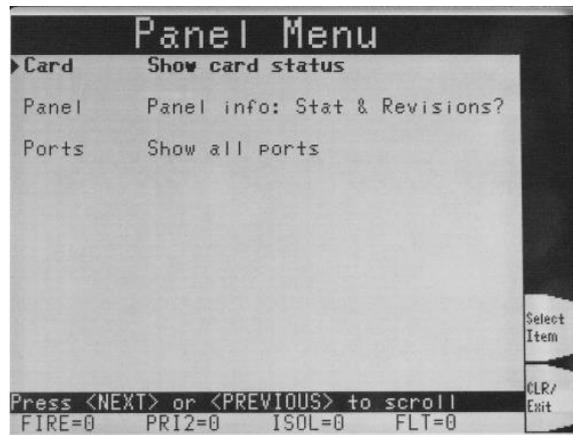
Procedure

Follow these steps to display software revision information:

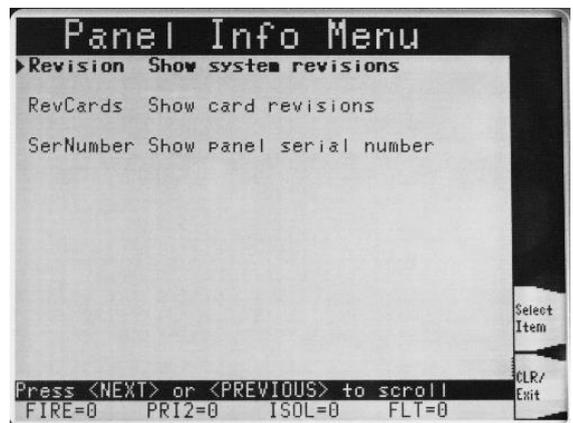
1. Press the MENU key to show the Main Menu.



2. Scroll the highlight down to "Panel Info: Stat and Revisions?". Press <Select Item> soft key or <ENTER> to show the Panel Menu:



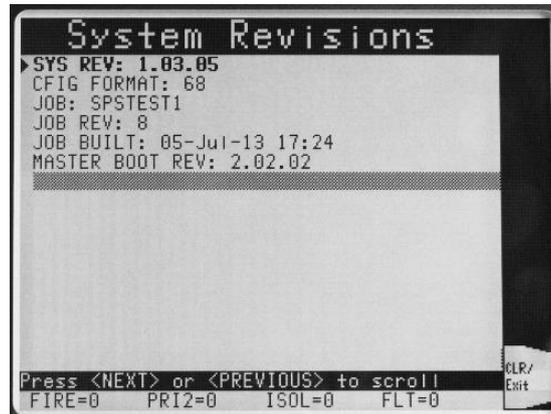
3. Scroll the highlight down to "Panel Info: Stat and Revisions?". Press <Select Item> soft key or <ENTER>, to show the Panel Info Menu:



Displaying Software Revision, Continued

Procedure (Cont'd)

4. Highlight the “Revision Show System Revisions” and press <Select Item> soft key or <ENTER> to show the System Revisions:



5. Interpret this information as follows:
 - **SYS REV:** Specifies the revision of the executive software (operating firmware of the FIP) loaded in the panel.
 - **CFG FORMAT:** Defines the compatibility of the executive and the programmer.
 - **JOB:** Specifies the name of the job loaded in the panel.
 - **JOB REV:** Specifies the revision of the job.
 - **JOB BUILT:** Specifies the date on which the job was built in the programmer.
 - **MASTER BOOT:** Specifies the revision of the master bootloader.
-

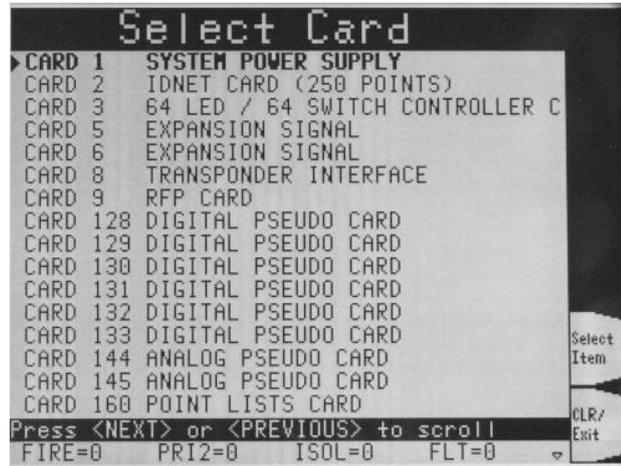
Viewing Card Status Information

Overview

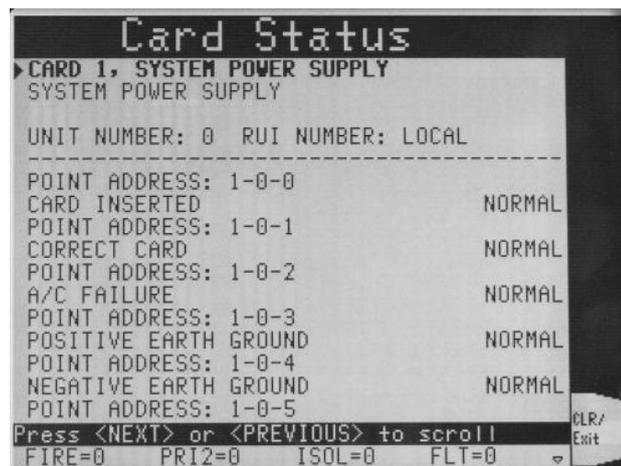
Every card, including the Master Controller and all option cards, has a series of Card Status Points associated with it. For the SPS (System Power Supply) these points include System Voltage, System Current, and Battery Voltage.

Procedure

1. Press the <MENU> key and navigate to the Panel Info Menu as described in the previous section.
2. Scroll the menu highlight to “Show Card Status” and press <Select Item> softkey or <ENTER> to show the Select Card menu:



3. Use the Previous, Next, Page Up, Page Dn keys to scroll to the desired card. Press <Select Item> softkey to show the Card Status for this card.

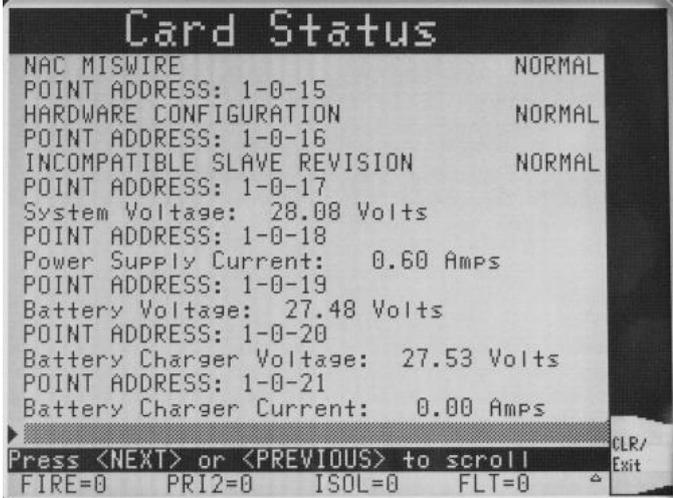


Viewing Card Status Information, Continued

Power Supply/Charger Voltage and Current Readings

Some cards require several screens to display all the status information. This is particularly the case for the SPS, where the second screen shows the system and battery voltages and currents.

If necessary, scroll down to see hidden information.



```
Card Status
NAC MISWIRE NORMAL
POINT ADDRESS: 1-0-15
HARDWARE CONFIGURATION NORMAL
POINT ADDRESS: 1-0-16
INCOMPATIBLE SLAVE REVISION NORMAL
POINT ADDRESS: 1-0-17
System Voltage: 28.08 Volts
POINT ADDRESS: 1-0-18
Power Supply Current: 0.60 Amps
POINT ADDRESS: 1-0-19
Battery Voltage: 27.48 Volts
POINT ADDRESS: 1-0-20
Battery Charger Voltage: 27.53 Volts
POINT ADDRESS: 1-0-21
Battery Charger Current: 0.00 Amps
Press <NEXT> or <PREVIOUS> to scroll CLR/Exit
FIRE=0 PRI2=0 ISOL=0 FLT=0
```

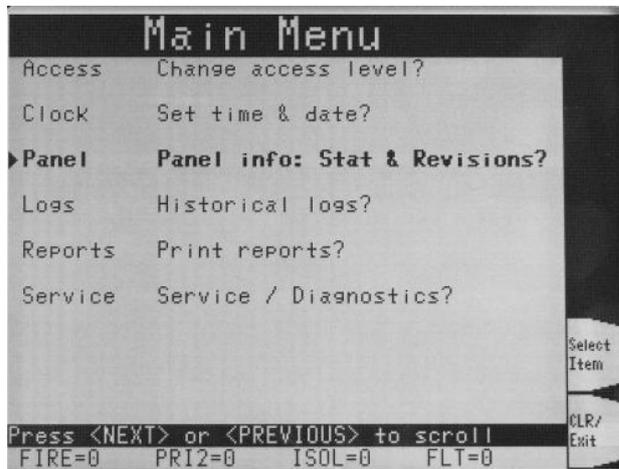
Displaying Network Node Information

Overview

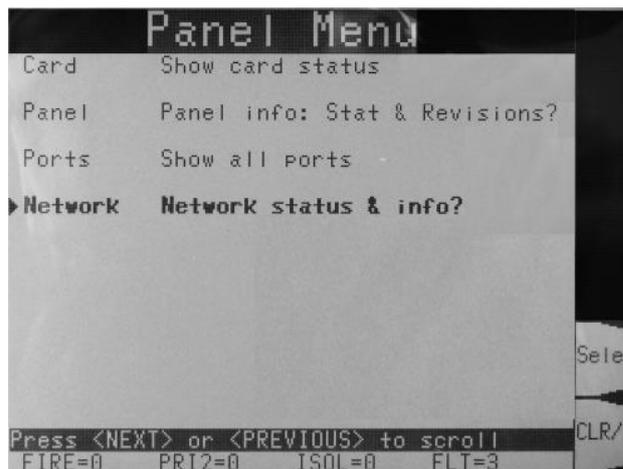
Networked systems consist of multiple panels linked via a 4120 network. Each panel has a programmer-defined node number, used to identify the panel on the network. The following section describes how to determine a panel's node number. The node number is required when selecting a network point. See "Selecting Points" in Chapter 4 for more information on doing this.

Procedure

1. Press the MENU key to display the Main Menu. Scroll the highlight to "Panel info: Stat and Revisions?", and press <Select Item> soft key or <ENTER>.

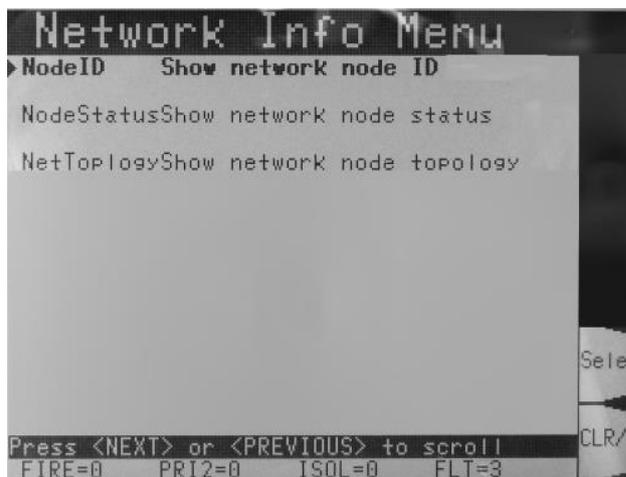


2. In the Panel Menu, scroll the highlight to "Network Status and info", and press <Select Item> soft key or <ENTER>.



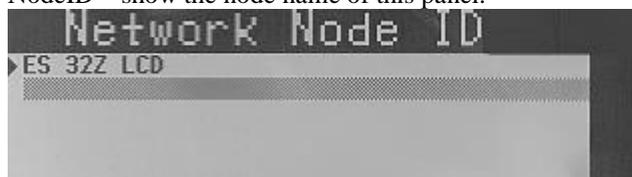
Displaying Network Node Information, Continued

3. In the Network Info Menu, there are three options:

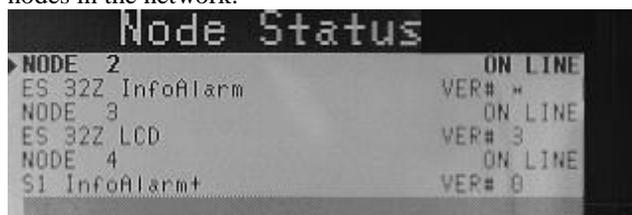


Highlight the desired option and press <Select Item> soft key or <ENTER>.

- NodeID – show the node name of this panel.



- Node Status – shows the network configuration version and the on-line status of all nodes in the network.



- Network Topology – shows the order of all the nodes in the network, from “left” to “right” starting with the master node. The node number for the local panel will be displayed in parentheses.



Lamp Test

Procedure

The “LAMP TEST” push-button on the operator interface is used for identifying local lamp (LED) failures within the system. LEDs on the 4100ES operator interface and Switch/LED Display Modules illuminate.

Perform the following procedure to check correct LED or LCD operation:

1. Press the “LAMP TEST” push-button. All LEDs should illuminate (LEDs should stay illuminated for as long as the push-button is depressed). Holding the push-button in for more than 3 seconds will test the buzzer.
 2. Perform an individual lamp test on all remote LCD annunciators using the key switch on the remote annunciator.
 3. If you find defective lamps/LEDs, contact your local Simplex agent.
-

Warm Restart of the System

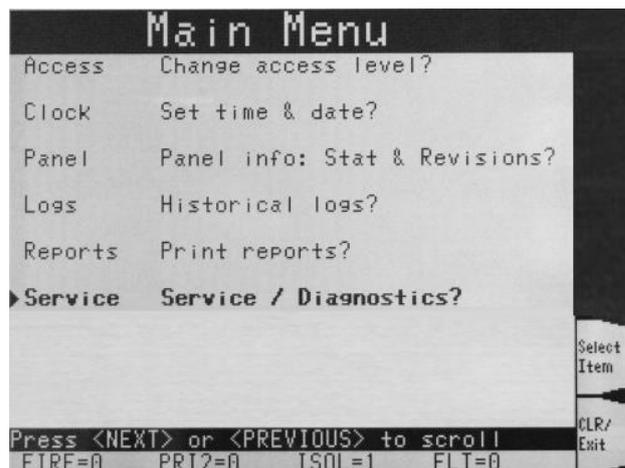
Overview

A Warm Restart is used to reset some higher level operations of the 4100ES, such as resetting system points to their default values, and clearing service-related fault conditions.

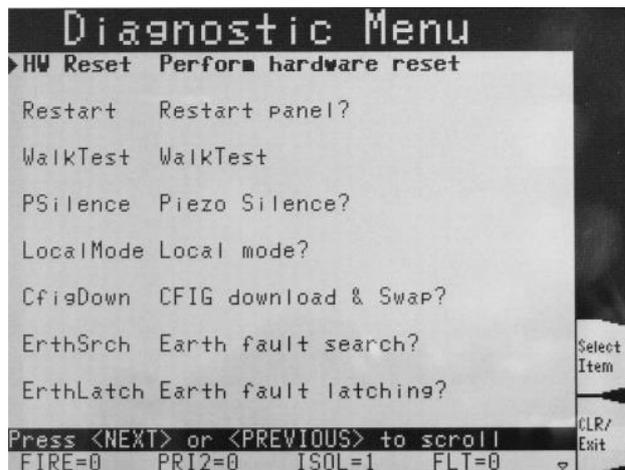
The Warm Restart function is not required for normal operation of the 4100ES panel, and the option to restart is visible and available only if you are logged in at an appropriate access level (see Chapter 7).

Procedure

1. Press the MENU key to display the Main Menu. Scroll the highlight to “Service / Diagnostics?”, and press <Select Item> soft key or <ENTER>.



2. In the Diagnostics Menu, scroll the highlight to “Restart Panel?”, and press <Select Item> soft key or <ENTER>.



3. In the Reset Menu, highlight the “Warm Restart” option, and press <Select Item> soft key or <ENTER>. Press <OK> or <ENTER> to confirm the panel restart. The panel will be off-line briefly during the restart.

Displaying IDNet & Mapnet Device Status

Introduction

The IDNet options allow the use of addressable devices and TrueAlarm sensors with the 4100ES FIP. Addressable devices communicate the exact location of an alarm to the system operator interface panel, improving recognition of the condition and subsequent response. It also pinpoints the precise location of fault conditions via the device custom label. Throughout this section, operations described for IDNet are also applicable for Mapnet.

IDNet Display Information

When an IDNet device changes to an abnormal condition, or the operator enters an IDNet device address, the LCD display shows the current status of the IDNet device. After entering an IDNet device address, press the <MORE> soft key on the operator interface panel to display additional device information.

IDNet Point Addressing

Each IDNet device must have a point address in order to communicate with the 4100ES FIP. These point addresses along with their custom labels are located in the Programmers Report. The Programmers Report shows the address for each device, separated by hyphens. Hyphens must be used when entering an IDNet address into the system. An example of an IDNet device address is "M1-5". The "M1" portion of the address identifies the IDNet loop or channel, loop 1 or channel 1. The "5" portion of the address, identifies the device number, number 5.
Note: Multipoint IDNet devices use *sub-point addressing*. These sub-points are addressed as C-DD-S, where S is the sub-point. Example: A FRIAM device has a relay at sub-point 1 and an input at sub-point 2 which would be accessed as M1-5-1 and M1-5-2 respectively.

How to Display an IDNet System Point

See Chapter 4, "Selecting Points for Status or Control" for IDNet operations.

What To Do If an IDNet Point Will Not Reset

If an IDNet device will not reset, you may decide to disable the point. When the disable procedure is performed, a System Fault occurs to remind you that the point is disabled. The disable procedure is the same for all system points (see Section 5, "Disabling and Enabling Points "). Maintenance personnel must be called immediately to repair the malfunction.

After the IDNet point is repaired, you can enable the point again.

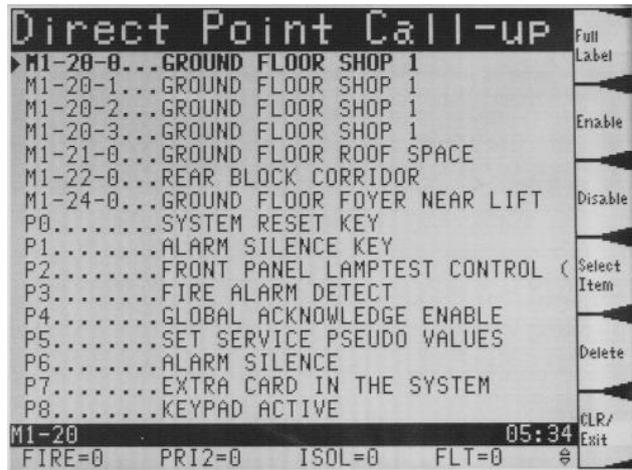
TrueAlarm Sensor Display Values

Using the 4100ES InfoAlarm display and the display/action keys, the control panel can display various status conditions for each TrueAlarm sensor, including the sensor's present selected sensitivity level as a percent of obscuration per foot (% OBS/ft). This selected sensitivity level is the value at which the FIP will cause an alarm condition. Seven sensitivity levels are available for the TrueAlarm photo-electric sensor. The most sensitive setting is 0.2% OBS/FT (0.5% OBS/m) with the least sensitive setting being 3.7% OBS/FT (12% OBS/m).

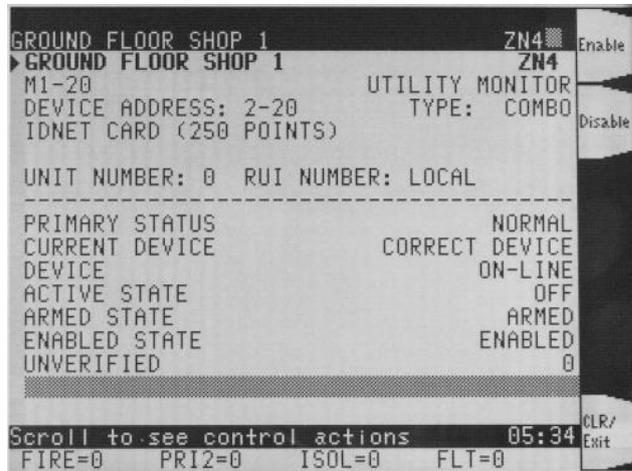
The following example shows the detailed information being retrieved for an IDNet detector.

Displaying IDNet & Mapnet Device Status, Continued

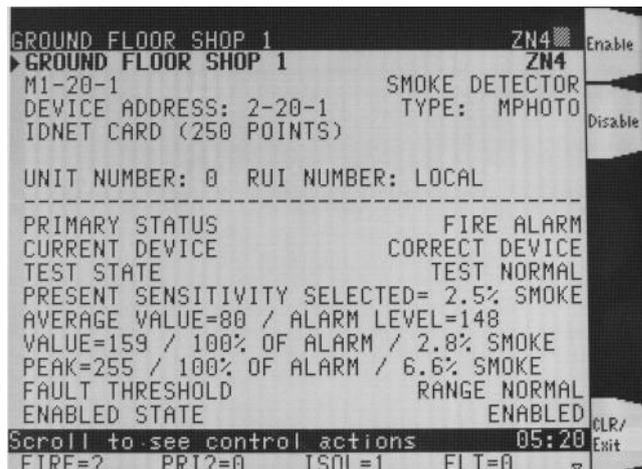
The point name is called up, using the procedure described in Chapter 4. Currently, the subpoint 0 is highlighted in the list of points.



Press <Select Item> softkey or <ENTER> for the 0 subpoint to show the basic information about this point.



Going back to the Direct Point Call-up display, and scrolling the highlight to subpoint 1 (the photoelectric sensor), and selecting this point will show the detail for subpoint 1 (the detection element in this example):



Continued on next page

Displaying IDNet & Mapnet Device Status, Continued

TrueAlarm Sensor Display Values (continued)

Note: Sensitivity displayed is in % obscuration per foot. Use Table 9-1 to convert to % obscuration per metre.

Table 9-1. Smoke Obscuration conversion chart.

%Obs/Ft	%Obs/m	%Obs/Ft	%Obs/m
0.2%	0.6%	2.0%	6.5%
0.5%	1.6%	2.5%	8.2%
1.0%	3.3%	3.0%	9.8%
1.5%	5.0%	3.7%	12.1%

The Average Value is the average of the last 2048 samples received from the sensor. The Alarm Level is the binary value that is used to determine alarm conditions. This value will change over time as the panel compensates for environmental conditions. The alarm value will be different for each of the seven sensitivity levels.

The Value is the most recent value received from the sensor. It is shown as the binary value, as % of alarm level (max 100%), and as a smoke level in %/ft.

The Peak is displayed as a binary value, a % of alarm and a % smoke obscuration per foot. Through the use of a system pseudo point all new peak values per sensor can be stored in the history fault log and printed on the optional 4100ES system printer. Printing of peak values is done at the time the peak value is received at the FIP. This peak value is helpful in determining if a sensor should be made more or less sensitive.

Chapter 10

Walk Test Procedures

Introduction

The following test features can be used when commissioning after the system is installed, and during periodic testing as required by code. Refer to Chapter 12, Maintenance Procedures for detail on these.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
Walk Test™	10-2
Walk Test™Procedures	10-4

Walk Test™

Overview

WalkTest allows the function of the system's initiating devices to be tested by a single person.

Detection devices (with the exception of manual call points) automatically acknowledge and automatically reset, allowing for one-man testing without the need for someone at the main control panel to acknowledge and reset the system each time an initiating device is activated.

4100ES has the ability to briefly activate sounders to confirm detection device operation. However, the tone generators or EWIS used as the warning system in Australian installations will not reliably work with these brief activations.

In general, a silent WalkTest should be used (no signals will sound) and logging of events should be selected. If an alarm condition is detected from a zone that is not in any presently active Walk Test group, the system will operate as a fire alarm panel and the active Walk Test groups are aborted.

Conducting a WalkTest requires you to perform the following steps.

1. Enable WalkTest Options from the Front Panel. These options include the following:
 - Which WalkTest Group is enabled.
 - Whether the group's warning signals turn on when a control point in the same group activates. Normally, this should be set to Silent.
 - Whether logging of Walk Test events is enabled or not. Normally, this should be set to On, to get time stamped event messages.
 - Refer to the "Setting WalkTest Options" later in this section for information on setting these options.
2. Manually activate the detection devices in each group and interpret the indicators. Activation can be done using a magnet or canned smoke.

Make sure to proceed in a logical manner, i.e., start with the lowest IDNet or MAPNET address and work toward the highest.

When testing the devices, use the alarm LED on the smoke detector, or a simple delay, to know when to continue to the next device. After test completion, check the Alarm log (see Chapter 11) to verify that all zones activated the correct number of times and in the correct order.

When you enable the Walk Test™ mode, a system fault will be reported to remind you that the Walk Test™ is enabled.

Whenever a Walk Test™ group is aborted, manually or automatically, the panel will sound the abort signal (three sets of two short pulses) to indicate that group is going back into service. If a control point in the list is already active (because of an abnormal condition), it is not used to signal the abort.

The group is placed into normal operation 60 seconds after the abort signal is heard. This delay protects against an unwanted alarm should an automatic abort occur while a device is being tested.

The system is default-programmed to allow the Walk Test™ to be performed without sounding audible signals. The Walk Test™ will not activate any point which is disabled. Therefore, you have the ability to manually exclude any point from the test. (See How to Disable a Point, Chapter 5)

You may enable the logging of Walk Test™ events, which allows each zone with an abnormal condition to be time tagged and added to the fault log. This is beneficial when a 100% silent Walk Test™, without visuals, is required.

Zone Coding Option

The system supports two types of audible signalling to indicate an alarm condition on a zone. By default, "zone coding" is used. This code matches the "ZONE" number associated with that point. The zone code is only used the first time a zone is reported. For subsequent alarms on the same zone, a single "0 CODE" (two short pulses) is used.

Zone coding is normally used with TrueAlert notification appliances which are not used in Australian installations. The information is included here for reference.

Examples of Zone Coding are shown below.

— — —					= Zone 3 (three long pulses)
— — —			— — —		= Zone 12 (one long, pause, two long pulses)
— — —	— — —	— — —			= Zone 20 (two long and two short pulses)
— — —	— — —	— — —	— — —		= Zone 102 (one long, two short, and two long pulses)

NOTE: Zero Code = 2 short pulses.

Zone coding may be individually turned On or Off for each of the eight Walk Test™ groups, Group 0 through Group 7, using the interface panel's display. When zone coding is Off, a "0" code is always used, even for the first alarm. This method of testing is more appropriate for maintenance testing, once all wiring is verified.

When a control point is pulsed by Walk Test™, it is done without affecting the priority of that point regardless of its present value. This guarantees that Walk Test™ does not interfere with any required SMPL (software) operations during a real alarm.

IDNet monitor devices sound the zone code, with the first digit being the channel number, followed by the device's address number. Example: M1-1 sounds a "1,1" code. M4-123 sounds a "4, 1, 2, 3" code. IDNet signal devices cannot annunciate codes.

Silent Walk Test

The control points to be activated (pulsed) during Walk Test™ are determined by the contents of the control lists which are configured when programmed. Several options are available when configuring a silent Walk Test™ control list. The first option is to NOT put any audible signals into the control list. The second option is to disable individual audible control points from the front panel, one at a time. The last option is to select Silent signalling from the Walk Test™ menu. If this last option is selected, none of the points in the control list will sound.

Walk Test™ is enabled through the interface panel's alphanumeric display, as described in the next section.

Note that Walk Test™ is passcode protected. The Walk Test™ option will not appear in a menu unless the operator has logged in at the proper access level (see Chapter 7).

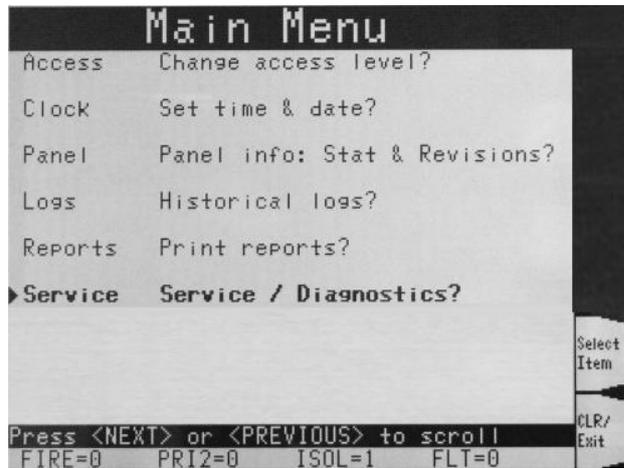
When the 4100ES system is placed in Walk Test™ mode, any zone in the active Walk Test™ group(s) can be tested in any order. If zone coding is enabled, there is an advantage in testing all devices within one zone before going on to the next zone.

You should simulate an alarm and fault condition for each device being tested. If you are using an audible or visual indication, wait for it to clear before you test the next device. Otherwise, wait for an appropriate amount of time (based on the system reset delay) before moving on to the next device. The LED on a smoke detector helps you in this area because it indicates when the alarm is sensed, and when the detector resets. If zone coding is enabled, verify that the code heard or seen is correct.

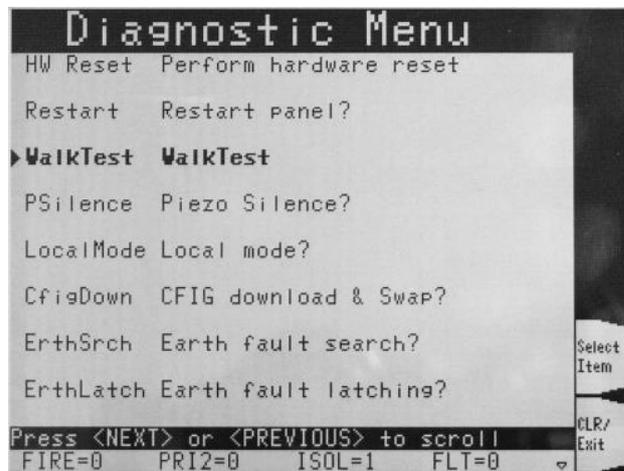
Walk Test™ Procedures

How to Enter Walk Test Mode

Log into the 4100ES panel at the necessary access level (Level 2 or higher). In the main menu screen on the InfoAlarm, scroll the highlight to the Service/Diagnostics option and press the <Select Item> softkey or <ENTER>:



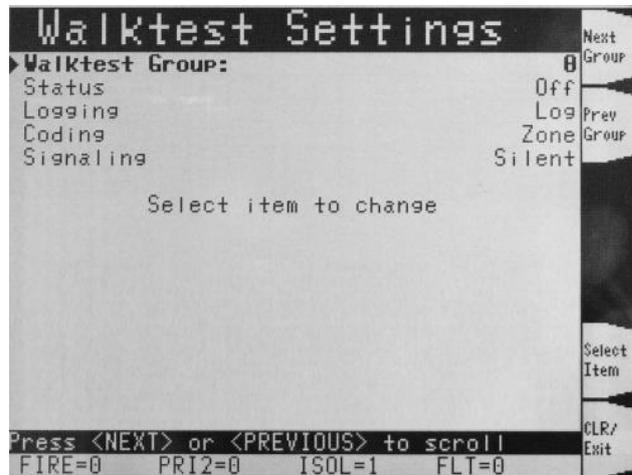
In the Diagnostics Menu, scroll the highlight to the Walktest option and press the <Select Item> soft key or <ENTER>:



Walk Test™ Procedures, Continued

How to Enter Walk Test Mode

The Walk Test™ Settings menu allows the settings for each group to be individually adjusted. Use the <Next Group> or <Prev Group> soft keys to step through the Walk Test groups 0 to 7. The list rolls around in either stepping direction. For each Walk Test group the current settings are displayed:



The settings are:

- Status – is this Walk Test group On or Off?
- Logging – will test alarms in the group be recorded in the system log or not? Generally, the Log option should be selected.
- Coding – if the sounders are enabled, will they do Zone coding or just a simple “0 CODE”. If the Signalling option is set to Silent, the Coding setting does not matter.
- Signalling – will the sounders for this group activate on a test alarm (be Audible) or stay Silent. Generally, the Silent option should be selected.

To change any setting on the currently displayed Walk Test group, use the Up or Down keys to scroll the highlight to the setting to change, and press <Select Item> or <ENTER>.



In the settings display, the highlight shows the current setting. Use Up or Down to move the highlight to the other setting, then <Select Item> soft key to change it.

Walk Test™ Procedures, Continued

How to Exit Walk Test Mode

When the Walk Test™ has been satisfactorily completed, exit from the Walk Test™ mode by performing the following procedure:

- Enter the Walktest Settings menu display, as described above.
- Set all the Walk Test groups to Off.
- Log out of the 4100ES system.
- Inform the customer or site management when system testing is completed.

If Walk Test is not specifically turned off as above, the system will automatically abort Walk Test after 90 minutes of inactivity.

Chapter 11

Printing Reports

Introduction

This chapter describes printer options and how to print a report.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

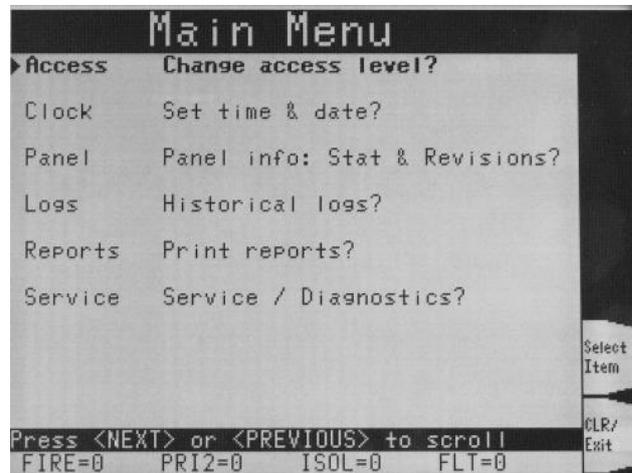
Topic	See Page #
Selecting Report	11-2
Printing a Report	11-3

Selecting Report

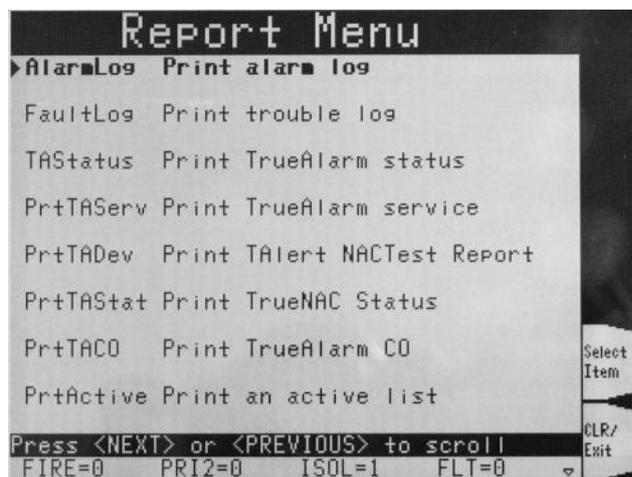
Available Options

The 4100ES includes two printer options: Select Report Printer and Terminate Current Report.

1. Press the MENU key to show the Main Menu. Follow these steps to select report printing options:



2. Scroll the highlight down to "Print Reports". Press <Select Item> soft key or <ENTER>, to show the Reports Menu:



3. Select the desired report – refer to the following section for a description of the reports.

Printing a Report

Overview

The system can generate any of the following reports.

Report	Description
Alarm Log	Report includes all information contained in the alarm history log – device custom label, time and date device entered alarm.
Fault Log	Report includes all information contained in the fault history log – device custom label, type of trouble, time and date device experienced trouble.
TrueAlarm Status	Reports the following information for each point. <ul style="list-style-type: none"> • Device Number • Custom Label • Current Sensitivity of the Point • Point Status: Normal, Fault, Alarm • Almost Dirty Status: Points which are almost dirty have an asterisk in this field to denote this.
TrueAlarm Service	Reports the following information for each point. <ul style="list-style-type: none"> • Device Number • Custom Label • Alarm Level (sensitivity level of the device) • Average Value – • Current Value -- • Percent of Alarm: Shows the current value for the sensor as a percentage of the alarm level. For example, if the value shown is 9%, it means that the sensor is currently at 9% of the value required to trigger an alarm. • Peak Value. Shows the highest value that the sensor has reached. Value is shown as a percentage of 100 percent (alarm). For example, if the value shown is 9%, it means that the peak value experienced by the sensor was 9% of the value required to trigger an alarm. • Current State: Possible values include Normal, Fault, Dirty, Excessively Dirty, and Almost Dirty.
TrueAlert NAC Test, True NAC Status	These reports are not relevant for Australian installations of 4100ES.
TrueAlarm CO	These detectors are not used in Australia.
Print an active list	Prints all control (output) points that are off normal. This can be useful during system testing.

Procedure.

The report prints on the panel’s report printer if this is defined in the configuration.

The report output can also be conveniently captured via the Ethernet connection to the service port on the 4100ES. Refer to LT0565 4100 Fault Finding Guide for details about this.

Chapter 12

Maintenance Procedures

Introduction

It is a requirement of AS 1851 - *Maintenance of Fire Protection Systems and Equipment*, that regular tests be carried out to ensure the system is fully functional.

Usually a maintenance company carries out the tests under a Service Agreement.

In this Chapter

Refer to the page number listed in this table for information on a specific topic.

Topic	See Page #
AS 1851 Testing – Guide for 4100ES – Specific Test Methods	12-1
Monthly Tests	12-2
6 Monthly Tests	12-2
Annual Tests	12-3
Annual Tests - Smoke Hazard Management Systems	12-4
Five Yearly Tests	12-5
Battery Load Discharge Testing (AS 1851:2012 Item 3.7)	12-6
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WARNING

It is very important that adequate precautions be taken when doing any testing on the fire alarm system. Outputs of a typical panel include calling the Brigade, activating the building evacuation system, shutting down air conditioning, and may include release of extinguishant within the building.

Brigade signalling must only be tested with prior arrangement and use of the “test key” or other protocol as is applicable to the area.

**AS 1851 Testing –
Guide for 4100ES –
Specific Test
Methods**

The 4100ES and its associated equipment must be tested at regular intervals. Test criteria, service intervals, and record keeping requirements are specified in the appropriate Standard, the latest being AS 1851:2012.

The following sections suggest how service persons may perform some of the required inspections and tests, where the method may not be immediately obvious or where special operations for particular features will be required. The references in the tables to “*AS 1851 Item Number*” refer to Tables 6.4.1.2 through 6.4.1.5 in AS 1851:2012. References to just *Section x.y* or *Chapter z* refer to sections in this Operator Manual.

In addition to this, 4100ES automatically performs regular self-tests to help ensure detectors are operational and able to generate alarms, and the battery is connected and has a certain level of capacity.

Note: this is not intended to be used as a complete list of AS 1851 maintenance requirements, nor as a complete test schedule.

Monthly Tests

Monthly Tests

Monthly Tests			
AS 1851 Item No.	Description	Action Required and Pass/Fail Criteria	Test Facility, Procedure, Notes
1.4	Fire Alarm	SIMULATE an alarm condition and confirm that all required common or general visual and audible indications operate and the external alarm is activated. Where the system is monitored ensure the alarm has activated the alarm signalling equipment. Where CIE is a sub-indicator panel, confirm that the alarm condition is indicated at the FIP.	Refer Chapter 5 Alarm and Fault Test for Zones. Failure of the alarm relay should be treated as a critical defect – refer AS 1851-2012, Section 1.5.6.
1.5	Occupant warning system	SIMULATE an alarm and confirm the alarm activates the occupant warning system including any visual warning devices (VWD).	Alarm Test as per Item 1.4 above. Failure should be treated as a critical defect – refer AS 1851, Section 1.5.6.
1.6	Isolate	INITIATE an isolate/disable condition at the fire indicator panel and confirm that all required common or general visual and audible indications operate. Where the system is monitored, ensure the Isolate is received by the monitoring service provider alarm signalling equipment. Where the panel is an SIP, confirm that the isolate/disable condition is indicated at the FIP as either a fault or isolate/disable..	Refer Chapter 5 Isolating and De-isolating Zones. Failure of the isolate relay should be treated as a non-critical defect – refer AS 1851-2012, Section 1.5.6.

6 Monthly Tests

6 Monthly Tests			
AS 1851 Item No.	Description	Action Required and Pass/Fail Criteria	Test Facility, Procedure, Notes
2.1	Monthly service	Complete all monthly service activities, as listed in Table 6.4.1.2.	

There are no additional special tests necessary at six month intervals.

Annual Tests

Annual Tests

Additional Tests to be Done Annually.			
AS 1851 Item No.	Description	Action Required and Pass/Fail Criteria	Test Facility, Procedure, Notes
3.3	Manual call points	TEST the operation of each manual call point	Use the Walk Test facility. See Chapter 10.
3.5	Panel switches and keypads	TEST the operation of each control.	See page 12-6.
3.6	Visual indicators	TEST the operation of each visual indicator and alphanumeric displays.	See Chapter 9.
3.7	Battery	MEASURE system quiescent and maximum alarm currents in accordance with Appendix F (of AS 1851). Calculate the required battery capacity and CHECK the nominal capacity of the installed batteries is not less than the calculated capacity. Verify that the measured currents are the same as recorded in the baseline data.	The 4100ES can display the system currents during quiescent and alarm conditions, to assist the calculation. The normal battery test facility in the 4100ES does not meet the requirements of this test. Refer to the notes following this table.
3.8	Fire Detectors	TEST detectors as specified in Appendix G (of AS 1851) and confirm correct alarm zone indication.	Use the Walk Test facility. See Chapter 10.
3.9	Audibility	TEST the occupant warning system and check the signals are distinctly audible in all areas of the building. NOTE: In order to reduce the disturbance to occupants an acceptable means of conducting this test is to provide an audio signal other than the warning signal at a reduced sound pressure level. Where the FIP is connected to a sound systems and intercom systems for emergency purposes (AS 1670.4) or EWIS (AS 2220.2) test in accordance with Table 6.4.3.2 (of AS 1851).	If a T-GEN 50 is used to generate the alert tone, you can either select the low level test tone or play background music via the background music input.
3.15	Service life	Inspect detectors, equipment or other items having a defined service life and report where the service life is exceeded or will be exceeded before the next scheduled service.	Unless accurate records have been kept of the installed detectors, their location and manufacture date, CO detectors will require manual inspection to determine their expiry date. Refer to manufacturer's data.
3.18	Interfaced system initiation	Simulate alarm(s) to verify that each interface transmission path initiates the corresponding interfaced system(s) in accordance with the approved design.	Referring to the baseline data check that a test alarm (see Chapter 5) on each appropriate zone activates the required output device.

Annual Tests, Continued

Annual Tests - Smoke Hazard Management Systems

CAUTION: TAKE PRECAUTIONS TO PREVENT UNACCEPTABLE VENTILATION SYSTEM CHANGES

Additional Tests to be Done Annually - Smoke Hazard Management Systems			
AS 1851 Item No.	Description	Action Required and Pass/Fail Criteria	Test Facility, Procedure, Notes
3.19	FFCP latching and reset	CHECK that after initiation by a signal from the FIP, the FFCP remains operating in the fire mode until reset by the reset switch on the FFCP.	Trigger the FFCP with a zone alarm test on the FIP (Chapter 5). Then reset the FIP and check the FFCP is still operating in fire mode. Press A/C Auto Reset control to clear.
3.20	Manual override controls	CHECK that manual override ON-AUTO-OFF control operates. NOTE: Manual override should function in normal mode and fire mode.	Check operation between the FFCP and the field equipment.
3.20	Manual override controls	CHECK that manual override ON-AUTO-OFF control operates. NOTE: Manual override should function in normal mode and fire mode.	
3.21	Airflow fault indicator	CHECK the operation of the airflow fault indicator	
3.22	Open-circuit fault indicator	CHECK the operation of the air-handling equipment interconnecting cable open-circuit fault indicator.	
3.23	Closed-circuit fault indicator	CHECK the operation of the air-handling equipment interconnecting cable closed-circuit fault indicator.	
3.24	Electrical	CHECK the operation of the electricity phase-fail fault indicator.	
3.25	Fan-running indicator	CHECK the operation of the fan-running indicator.	
3.26	Fan-stopped indicator	CHECK the operation of the fan-stopped indicator.	
3.27	Fan fault indicator	CHECK the operation of the fan-fault indicator.	

Five Year Tests

Five Yearly Tests

Additional Tests to be Done Five-Yearly			
AS 1851 Item No.	Description	Action Required and Pass/Fail Criteria	Test Facility, Procedure, Notes
4.2	Supervised circuits	TEST each input and output supervised circuit for any condition that prevents the transmission of the required signal and ensure a fault is registered at the FIP.	Apply o/c and s/c faults on the field wiring where appropriate and verify faults are generated at the FIP.
4.3	Fault	SIMULATE a circuit fault condition at the FIP and confirm that all required common or general visual and audible indications operate. Where such faults are monitored, ensure the fault has activated the alarm signalling equipment. Where the panel is an SIP confirm that the fault condition is indicated at the FIP.	See Chapter 5. Failure of the fault relay should be treated as a non-critical defect – refer AS 1851-2012, Section 1.5.6.
4.5	Power supply supervision	Where the system is monitored, REDUCE the CIE operating voltage to trigger a power supply supervision fault and CONFIRM that it is received by the monitoring service provider. Where the panel is an SIP or a distributed power supply, confirm that the power supply supervision fault condition is indicated at least as a fault at the FIP.	This test requires equipment external to the 4100ES. Refer to the notes following this table.
4.7	Interface and control test	CONDUCT a functional test with each system interface in accordance with the building's systems interface diagram and CHECK that each interfaced system responds to the signal in accordance with the approved design. See Appendix D.	Refer to the baseline data for details. See Appendix D of AS 1851-2012.
4.9	Monitoring connection	Where the system is monitored, TEST that the loss of each of the monitoring links is indicated at the monitored site.	For networked systems break/short each communication line between a sub FIP to the main FIP and check that a fault is indicated at each FIP. If the FIP is fitted with an ASE, consult the monitoring company regarding testing the fault monitoring of the ASE's communication links.
4.10	Alarm verification facility	TEST one detector of each type per circuit with alarm verification facility enabled to check that it functions in accordance with the approved design.	For Monitor Zones only. To test AVF put the detector into alarm using appropriate test apparatus (e.g., test smoke/gas or Solo in-situ tester) and check the following: i) The detector's indicator turns on ii) The indicator turns off for at least 5 seconds iii) The indicator turns on again within 60 seconds and the FIP goes into alarm.

Battery and Keypad Test Details

Battery Load Discharge Testing (AS 1851:2012 Item 3.7)

The 4100ES Fire Alarm Panel has no provision for load discharge testing of the battery at the levels required for yearly testing to AS 1851:2012.

A load discharge method separate from the panel must be arranged in order to meet this requirement. For example, apply an external test load to the battery and operate the 4100ES with mains power off for 30 minutes. Check the battery voltage at the end of the test.

PSU Supervision (AS 1851:2012 Item 4.5)

4100ES does not include built-in facilities to carry out this test. A suitably rated bench power supply connected to the battery terminals with main power turned off may be used instead.

Ensure the panel is normal – i.e., no faults and no system conditions are present that cause the Fault relay to be operated.

Reduce the bench power supply output voltage to below the minimum operating voltage and check the Fault relay operated.

If the PSU supervision signal is monitored, confirm that it is received at the monitoring service or at the main CIE. The status of the PSU and Battery can be observed in the Card Status recalls (refer Chapter 9). This will indicate Fault condition when the system voltage is below the minimum operating voltage.

Panel Switches and Keypads (AS 1851:2012 Item 3.5)

This involves operating each control on the front panel of the 4100ES. The following sequence will not affect the system, other than leave some entries in the Isolate log. Each key press should produce a chirp from the system buzzer.

Ensure the panel is normal before doing this – i.e., no faults and no system conditions are present that cause the Fault relay to be operated.

Control Keys:

Alarm/Fault Test – press three times, so that both the Alarm Test On and Fault Test On indicators are off when finished.

ACF Isolate, Ext Bell Isolate, Warn Sys Isolate – press each of these twice, to isolate then de-isolate the output.

Zone Isolate buttons – press each of these twice, so as to leave the zone isolate status unchanged.

Key pad – Enter, MENU, C/Exit, then the digit keys in any order.

The Alarm and Warning Ack keys and Silence and Reset keys can be pressed in any order.

The soft keys and scrolling keys to the right of the graphic display can be pressed in any order.

Press C/Exit several times when finished to cancel out of any menus.
