GE
Security

ZP3 Fire Control Panel
User Guide

ZP3 FIRE ALARM SYSTEM

LOCAL ZONES

ZITON FIRE SYSTEM
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GE imagination at work

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List of abbreviations and acronyms

Abbreviation	Definition
DC	Direct Current
GND	Ground
GUI	Graphic User Interface
LCD	Liquid Crystal Display
LED	Light Emitting Diode
mA	milliampere
PC	Personal Computer
RMC	Remote Manned Centre
RX	Receive
SW	Switch
TX	Transmit
V	Volts

Associated publications and references

The documents, or parts thereof, that are referenced from this manual are listed below:

Document title	Document number
	BS5839-1 2002
ZP3 Fire Control Panel Installation, Commissioning and Maintenance manual	503-1160ZE-I-10
ZP3 System maintenance logbook	503-1842ZE-0-02

Preface

This manual is intended for the user of the ZP3 Fire Control Panel. It provides the information required to effectively operate the ZP3 Fire Control Panel in all operating modes. It has been prepared in accordance with ZP3 operating software version 3.10.

Conventions used in this manual

The following conventions are used in this manual:

Bold	Menu items and buttons
Italic	Emphasis of an instruction or point, special terms.
	File names, path names, windows, panes, tabs, fields, variables and other GUI elements.
	Cross referenced headings

Safety terms

The following terms and/or symbols may appear in this manual:

	CAUTION:	Cautions identify conditions or practices that may result in damage to the equipment or other property.

	WARNING:	WARNINGS IDENTIFY CONDITIONS OR PRACTICES THAT COULD RESULT IN EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY.

Chapter 1: Introduction

System overview

The ZP3 is a complete intelligent fire detection system designed to protect life and property. Each system is an individual design, based upon modular ZP components. It detects the presence of a fire or smoke, raises alarms, and accurately indicates the location of the fire. Depending on the features built into the system, it can also:

- Raise local and remote alarms.
- Call the fire brigade.
- Activate building systems (including automatic fire extinguishing systems).

This is done to prevent the spread of smoke, gases, and fire, and display the alarm situation graphically on a computer.

The ZP3 Fire Control Panel is the main component of a ZP3 System. Figure 1 shows a typical ZP3 fire detection system schematic. Various devices can connect to the ZP3 Fire Control Panel, these include:

- Fire detectors
- Smoke detectors
- Manual call points
- Alarm sounders
- Local and remote indicating panels
- Graphics display computers
- LED mimic panels
- Other devices

Figure 1: Typical ZP3 system schematic
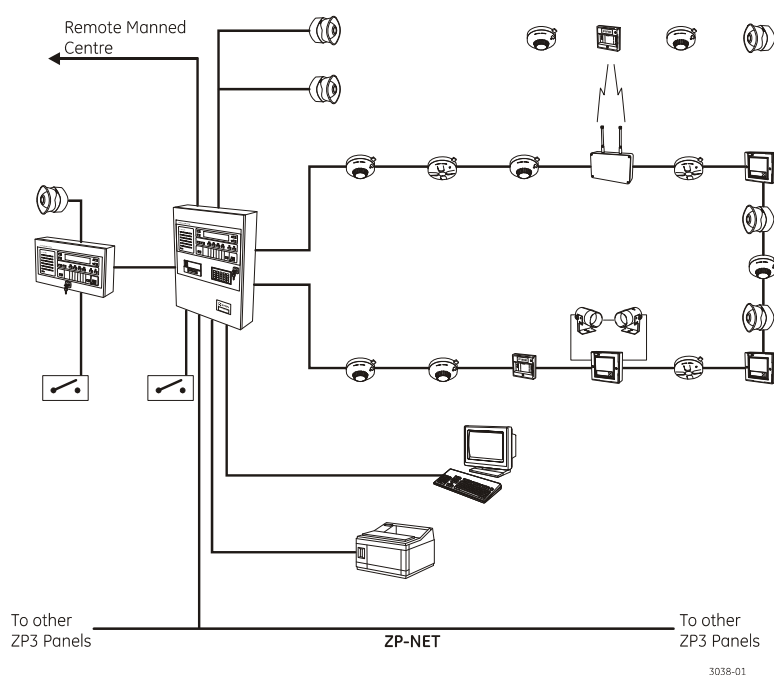
Basic system features

The ZP3 system incorporates a wide range of features and capabilities as follows:

- The ZP3 incorporates the proven ZP system of automatic contamination adjustment for each sensor. This recalibrates each sensor as it becomes contaminated, and provides a constant sensitivity even when sensors are dirty.
- Each sensor is individually adjustable for sensitivity, including different sensitivities for day and night operation.
- Selectable alarm verification allows the time integration of each sensor to be set. Analogue sensors provide pre-alarm, alarm, service, and diagnostic alarms.
- The panel continuously checks every sensor for contamination, with automatic alarm.
- The system supports both fire and non-fire monitoring functions, e.g. door open, fault alarms, etc.
- The ZP-loop provides for addressable loop-powered sounders, reducing wiring.
- Each panel supports up to 50 zones, optionally 128. Built-in zone LED's display up to 50 zones, and extender panels provide LED display up to 128 zones.
- Each panel has the capability for 896 programmable inputs and outputs, which can be located with the panel, or remotely via serial connection.
- Flash memory retains all programming and data, even if the panel is powered-down.

Operation

The panel incorporates a simple and effective operator interface with 160-character LCD display. Together with zone LED's and function LED's, these indications give a clear and unambiguous indication of all alarms and reports. All control functions are menu driven, and three access levels are protected by codes. A "help" button provides quick access to operating instructions.

Sensors and devices

A full range of single and combination analogue addressable sensors, including wired and radio sensors, is supported. Manual call-points meet UK preferences, and respond in less than 3 seconds. A range of input and output interface units allows the connection of third-party equipment to the addressable ZP-loop.

The following features are contained in panel software SW71910 version 3.07 and higher:

1. Less than three second sounder responses from a mapped call point: The panel now has a less than three second response time in response to a call point operation. This is in compliance with BS5839-1:2002 specification.

   For guaranteed <3 second sounder response from a mapped call point input the user must adhere to the following when using panel software SW71910, version 3.07 and higher:

   - The panel must be fitted with line driver software SW72001, version 3.01 and higher. The call point must be a version three type (ZP785-3).
   - The sounder and the call point must be on the same panel. The detection zone and alarm zone thus needs to be serviced by the same panel.
   - For the output mapping the sounder output device must be defined as a sounder type with the call point being the input trigger.
   - For a ZP755 line sounder used as a behind detector sounder the output address must be tagged as a SAB (sounder alarm base).

2. Type 54 emulated devices improve functionality: A type 54 emulated device can be mapped to disable any other line device. This is reported on the panel as an event and updated in the Event archive.

The ZP3 panel, when fitted with the software specified in the specification supports the following sensors and devices:

- A45E-2 Single interface module
- A51E-1 High voltage relay module
- A60E-2 Line isolator module
- A50E-2 Line relay module
- A70E-2 Conventional interface module
- ZP710 Ionization smoke sensor
- ZP732 Combination smoke/thermal sensor
- ZP730 Optical smoke sensor
- ZP720-2 Thermal sensor (Grade 2)
- ZP720-3 Thermal sensor (Class A1)
- ZP785-2 Manual "breakglass" callpoint (indoor)
- ZP785-3 Manual "breakglass" callpoint (indoor – 3 second response)
- ZP787 Manual "breakglass" callpoint (outdoor)
- ZP740 Interface unit, multifunction (fire/non-fire/security)
- ZP745 Interface unit
- ZP750 Loop relay
- ZP755 Loop sounder
- ZP755W Weatherproof horn sounder
- ZP755H Horn sounder
- ZP755V-2 Addressable standalone beacon
- ZP755BV-3 Addressable sensor base sounder/beacon
- ZP756 Loop sounder with base
- ZP753 Loop remote LED
- ZP470 Loop radio communication module
- ZR430-1 Wireless (radio) optical smoke sensor **
- ZR420-1 Wireless (radio) thermal smoke sensor **
- ZR432-2 Wireless (radio) combination sensor **
- ZR485 Wireless (radio) callpoint
- ZR440 Wireless (radio) interface I/O unit
- ZP710ex Intrinsically-safe smoke sensor
- ZP720ex Intrinsically-safe thermal sensor
- ZP786ex Intrinsically-safe callpoint
- ZP740ex Intrinsically-safe interface unit
- ZP35-ECU Extinguishing control units
- ZS200 High sensitivity aspirating smoke detectors
- ZX832 Multisensor fire detector (optional)

** Used with the ZP471A and ZP472A Radio interface units only (see *Accessories and peripherals* on page 4.

Later software may support additional or different devices. If in doubt, check with your local supplier.

Maintenance features

A range of maintenance features simplifies and improves system maintenance. These include status reports, contamination and near-service reports, operational statistics, and a "zone walk-test" and "sounder-test". The system can manually disable zones or individual points for maintenance purposes.

Remote diagnostics

Remote diagnostics is available as an option, enabling some or all (depending on software version) maintenance functions to be carried out from a remote location.

Automatic diagnostics

Automatic diagnostics continuously monitor the system for correct operation, features include:

- Automatic checking of wiring and points
- Corrupt data detection
- Disconnection of faulty or corrupt zones
- Automatic testing of sensor operation
- Verification of sensor/zone location

Sensors are automatically subjected to a self-test at regular intervals, and vital elements of the system, such as the software configuration data and running data are verified every hour.

Accessories and peripherals

In addition to the ZP-loop devices, a range of accessories and peripheral devices is available to provide all the elements of a complete system. The ZP3 panel, when fitted with the software specified in the specification supports the following accessories and peripherals:

- ZP3-RDU   Remote display unit (mini)
- ZP3-RDU   Remote display unit (full-function)
- ZP3-RAC   Remote I/O accessory cabinet
- ZP3-RL8   Addressable relay board, 8-way
- ZP3-MA8   Addressable sounder driver board (monitored), 8-way
- ZP3-MIP8   Addressable input board, 8-way
- ZP3-OP24   Addressable transistor output board, 24-way
- ZP3-SCB-D   Control bus driver board
- ZP3-SCB-R   Control bus receiver board
- ZP3-NET1   Network driver board, single
- ZP3-SB232   Serial communications board, RS232
- ZP3FBR-2-B1   Fireman's interface panel (Swedish)
- ZP3FBR-2-R1   Fireman's repeater panel
- ZP3AB-NLM2   Network loop monitor
- ZP471A   Radio loop module (receive only)
- ZP472A   Radio loop module (transmit and receive)
- ZP3AB-MD3   Modem kit

Later software may support additional or different devices. If in doubt, check with your local supplier.

Day/night capability

Day/Night control provides separate programmes for day and night modes. Different sensor sensitivity, alarm selection, alarm evaluation delays, and fire brigade response can be configured.

Configuration

An input/output programming facility allows any "cause-and-effect" requirement to be configured. Each panel can have up to 896 physical outputs software linked to as many as 2000 inputs in any arrangement. All functions are 100% field programmable. This programming can be done directly using the ZP3 panel, or via a software configuration package, i.e. Planner. Flash memory retains all programming and data, even if the panel is powered-down.

Communication and integration

Multiple communication capability allows the panel to connect to printers, colour graphic computers, building management systems, remote mimics and text displays, radio pagers, and other systems. Simple integration into third-party systems is possible.

Peer-to-peer networking

The ZP3 peer-to-peer network enables up to 255 standalone systems (verified up to 100 panels per system) to be integrated to provide system-wide alarm reporting, co-ordinated evacuation, cause-and-effect functionality, and control, for large systems and multi-building sites. The maximum number of panels supported by each software version is listed in Table 1.

Table 1: Maximum panels supported

Panel software	Maxiumum panels
Version 1	32
Version 2	64
Version 3	255

Principle of operation

Sensing devices, e.g. heat and smoke detectors, manual call points, etc. are grouped into zones, and programmed with text-labels to indicate their location.

The control panel continually checks every fire and smoke sensor, callpoint, and other devices, attached to the ZP-loop, every 2 seconds. The precision data collected is analyzed to indicate the amount of smoke, heat and combustion products in the proximity of devices. The active scanning process by the ZP3 panel constantly updates this information. This provides an accurate picture of the area being monitored by the sensors, enabling the software to make intelligent decisions about the presence or not of fire, smoke, or invisible products-of-combustion.

After making a decision that a fire exists, the ZP3 system initiates an alarm at the control panel, displays the exact location by means of illuminated LED's and LCD text-display, and illuminates the LED on the initiating sensors or call points. Depending upon how the particular system has been configured, it can also issue pre-programmed commands to operate area sounders, call the fire brigade, activate building controls such as air-conditioning shutdown, and other actions. In addition it commands remote display panels to display the location and status of alarms, and to carry out programmed control functions. A very large system consists of several panels communicating with each other. These panels can be programmed to display alarms from other panels/areas, and to automatically carry out commands issued by other panels.

The complete system is actively monitored on a continuous basis. Self-maintenance and diagnostics are built-in, and all sensors and devices, as well as field wiring, are continuously checked for correct operation. Any faults found are automatically reported.

Although each system is unique, the basic principles of operation apply, and this manual describes the ZP3 operating principles. To fully understand your particular system, obtain a copy of the system specification and become familiar with how the system is designed to react in the event of a fire alarm.

ZP3 Fire control panel

In addition to operating all the sensors, sounders, and other devices in the system, the control panel provides the interface for the operator by means of its front panel fascia. Figure 2 shows a typical ZP3 Fire Control Panel.

Figure 2: ZP3 Fire control panel
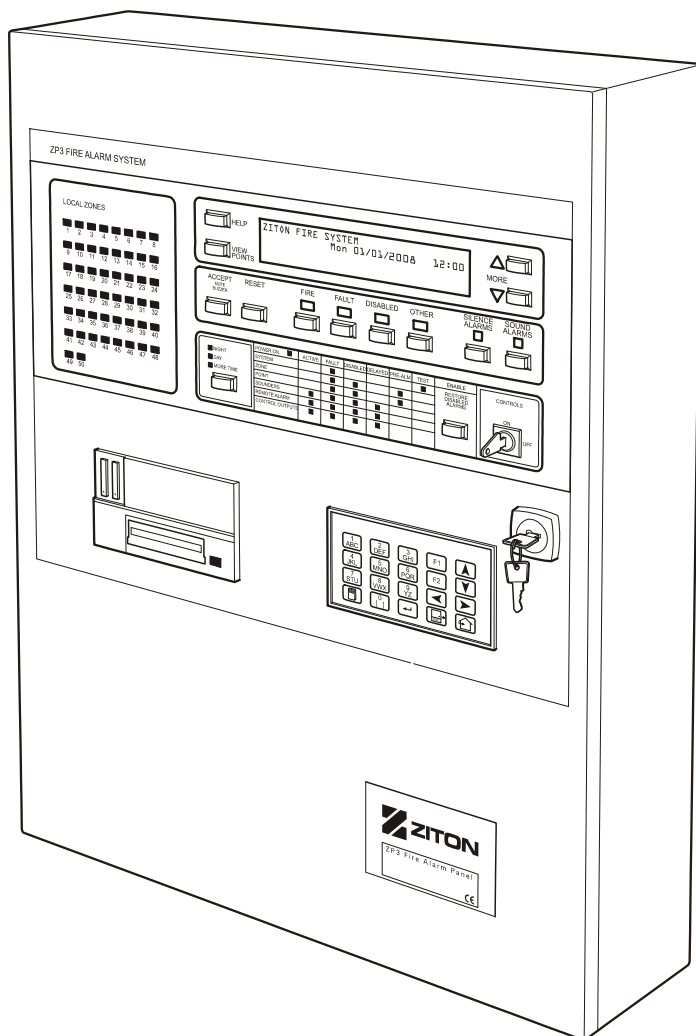
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Panel fascia

The ZP3 system is operated by means of the controls and indicators on the ZP3 Panel Fascia as shown in Figure 3. In some systems, the operator controls the system from a Remote Display Unit and not from the panel fascia. This is identical to the control panel, but is usually located in some other area, such as a control room. Effectively the Remote Display Unit is a "repeater", which operates in the same manner as the fire panel.

Figure 3: ZP3 Fire control panel fascia panel layout

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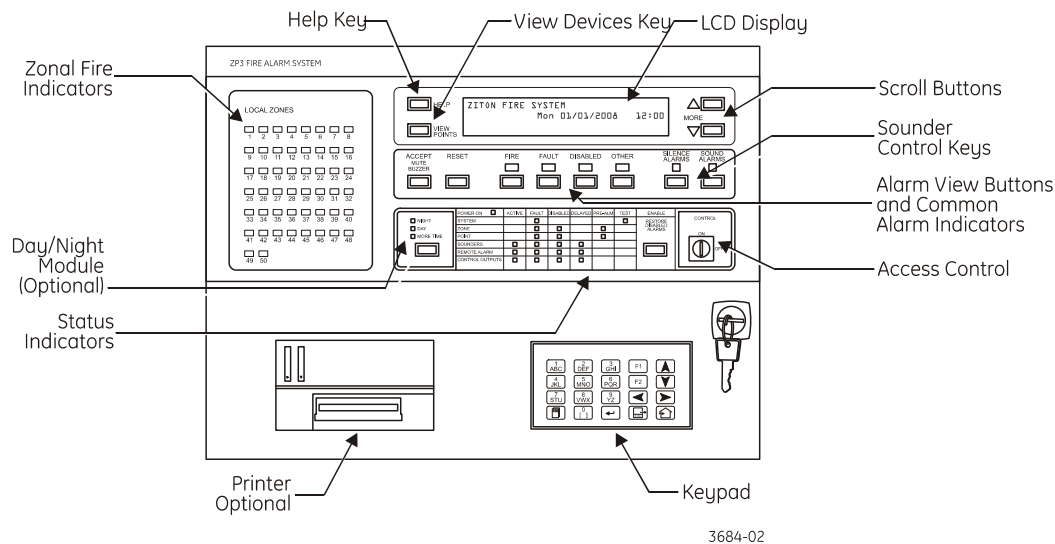
Alarm view buttons and common alarm indicators

Alarm view buttons

See Figure 4. There are four "Alarm View" buttons located below the LCD Display, directly below the four "Common Alarm" indicators, they are:

- Fire
- Fault
- Disabled
- Other

The relevant common alarm indicator illuminates when an alarm is received, and the zonal details are simultaneously displayed on the LCD Display.

Figure 4: Alarm view buttons and common alarm indicators

3685-01
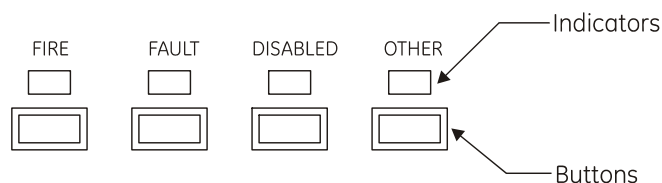
Where more than one type of alarm is present simultaneously, then the highest priority alarm displays automatically. The priority order is Fire, Fault, Disabled, Other. To view other categories of alarm, press the relevant button as described below. After viewing lower-priority alarms using the View Alarm buttons, the system times-out and automatically returns to the current highest priority alarm.

View "Fire" alarms button

A fire alarm is the highest priority and is automatically displayed, by zone, on the LCD Display. The top line indicates Fire Alarm, and the word "Fire" is displayed on the bottom line directly above the common Fire indicator. If you have been viewing other types of alarm (see below), and wish to return to the fire alarm screen, press the **Fire** button.

View "Fault" alarms button

Press the **Fault** button to view any fault alarms in the system (the common Fault indicator is illuminated). The top line indicates Fault Alarm, and the word "Fault" is displayed on the bottom line directly above the common Fault indicator. The alarm is displayed by zone.

View "Disabled" button

Press the **Disabled** button to view disabled zones (the common Disabled indicator is illuminated). The top line indicates Disabled, and the word "Disabled" is displayed on the bottom line directly above the common Disabled indicator. The details are displayed.

View "Other" button

Press the **Other** button to view any other alarms in the system (the common Other indicator is illuminated). The top line indicates Other, and the word "Other" is displayed on the bottom line directly above the common Other indicator. The alarm is displayed by zone or by category.

Common alarm indicators

See Figure 4. There are four common alarm indicators on the panel, they are:

- Fire
- Fault
- Disabled
- Other

These are used to indicate the presence of an alarm in four categories. The most important of these is the Fire alarm indicator. The others draw attention to alarms of lesser importance.

Common "Fire" indicator

This indicator illuminates when any fire alarm is received by, or is currently present, in the system. The indicator flashes for a new alarm, and becomes steady after an alarm has been accepted. New alarms must be responded to immediately. Other indicators identify the location of the alarm, and are described later in this document. This indicator is normally off.

Common "Fault" indicator

This indicator illuminates when any fault alarm is received by, or is currently present, in the system. Other indicators identify the location and type of fault. Fault alarms have different levels of severity; some may take the complete system out of operation, some may take only a small part of the system out of operation, while others may simply report a condition that needs attention. Refer to *Types of fault* on page 18 for more details. This indicator is normally off.

Common "Disabled" indicator

This indicator illuminates when any part of the system (for example, a zone, a fire sensor, a sounder, or a connection to the fire brigade) is deliberately disabled. This might be done for a number of reasons, for example, to allow part of a building to be renovated, for maintenance, or to allow people to smoke in a meeting room. Other indicators identify the location of the disabled devices; these will be described later in this manual. This indicator is normally off.

Common "Other" indicator

This indicator illuminates to identify the presence of any alarm that does not fall into one of the above groups. For example, this could be an alarm that a fire door is unlocked, or that air-conditioning is shutdown, or a pre-alarm, etc. Other indicators identify the nature of the alarm, and are described later in this manual. This indicator is normally off.

Zonal fire indicators

See Figure 5. In addition to the common alarm indicators, by default alarms are indicated by means of zonal fire indicators, and by means of text messages on the LCD Display, which also shows other information. Alternatively the LED can be programmed as required (see *I/O Mapping* in the Installation, Commissioning and Maintenance Manual, document number 503-1160ZE-I).

Zonal fire indicators are red, and are located on the left of the fascia. When an alarm is received from a sensor, the ZONE indicator illuminates to identify which zone has initiated the alarm. This immediately identifies where the fire is. The zone indicator flashes for a new alarm, and becomes steady after an alarm has been accepted. It is possible to view at a glance, the number of zones, which are in an alarm condition, and to identify which are new alarms, and which have been previously accepted. Zone indicators are normally off.

Figure 5: Zonal fire indicators
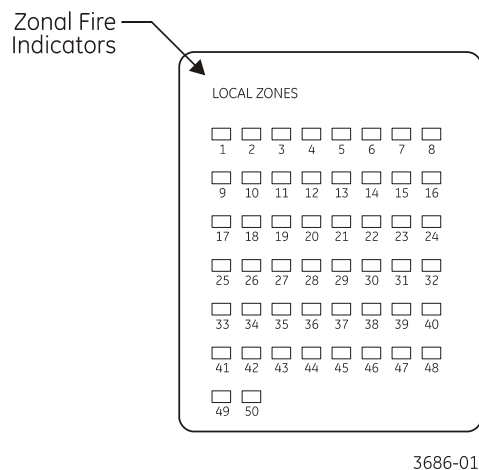
LCD display

The LCD Display automatically indicates an alarm with a text message, which identifies the zone in which the alarm occurred. The LCD Display can show two alarms simultaneously. When more than two alarms are present at the same time, they can be scrolled using the up/down scroll keys. An indicator illuminates to indicate that more alarms exist than are visible on the screen. The LCD Display can also be used for other functions, which are described later in this manual.

Navigation buttons

See Figure 6. The following control buttons are used to navigate through the system during an alarm of any type.

Figure 6: Navigation buttons
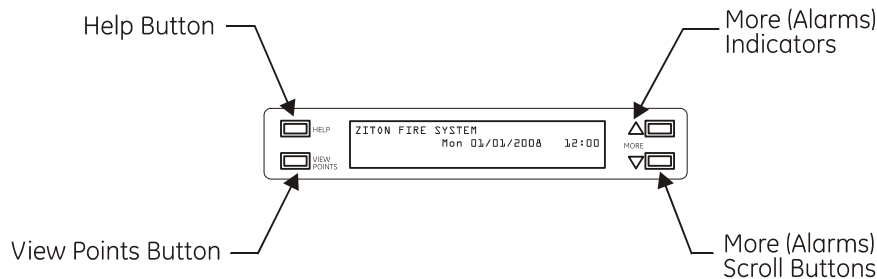
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"More" Alarms buttons

Press the **More** Alarms buttons to manually scroll through a list of alarms on the LCD Display. When more alarms are received (by zone) than can be displayed on the LCD Display, then the **More** alarms indicator illuminates to indicate that extra alarms are waiting to be viewed.

Press the up-button next to the up arrow (Δ) to scroll upwards through the list, and the down button next to the down arrow (∇) scrolls downwards through the list.

"View Points" button

Press the **View Points** button to access the Device screen, which shows the alarms by device (point), together with their address, location, device type, nature of alarm and device message (programmable).

"Help" button

Press the **Help** button displays on-screen operating instructions for the ZP3 Panel. Scroll through these instructions using the up/down **More** keys.

Main operating controls

See Figure 7. Five controls are used to operate the system as follows:

Figure 7: Main operating controls

Reset Button — Accept Mute Buzzer — Optional Day/Night Module — Silence Alarms Button — Sound Alarms Button — Restore Disabled Alarms Button
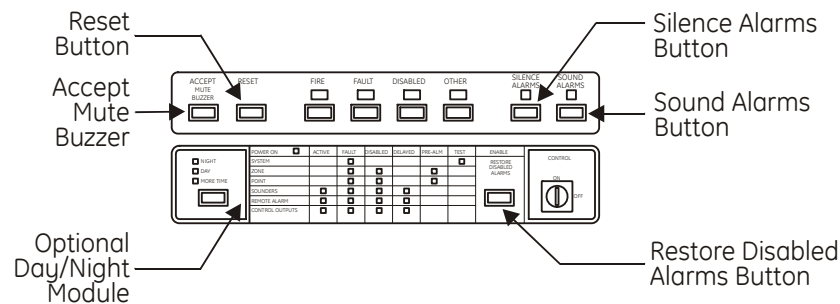
3690-01

Accept button

Press the **Accept** button after receipt of an alarm. This causes the illuminated indicators to go steady, and silences the panel buzzer.

Reset button

Press the **Reset** button to clear all alarms from the system and restore the panel to a normal "no-alarm" condition.

All displayed alarms are removed, and all illuminated indicators are switched off. Sounders (unless programmed dynamic) are switched off, and the remote manned centre alarm is restored to a "no-alarm" condition. If any sensors, call points, or other devices still sense fire, smoke or a fault, then the panel returns to an alarm condition.

Silence alarms button

Press the **Silence Alarms** button to silence (switch-off) the sounders.

An alarm condition activates certain sounders throughout the building. Which sounders are activated depends on the configuration of your system. After pressing the **Silence Alarms** button, the **Sounders Silenced** indicator above the button illuminates.

Sound alarms button

Press the **Sound Alarms** button to activate all the sounders in the building.

This can be done, for example, to sound a general alert or to restore sounders that were silenced.

Restore disabled alarms button

Press the **Restore Disabled Alarms** button to restore disabled sounders.

Maintenance staff can disable certain alarm sounders for routine maintenance. If a fire alarm occurred while these devices were disabled, the sounders wouldn't work. Pressing the **Restore Disabled Alarms** button also cancels (overrides) any programmed delays, and creates an immediate alarm. Pressing this button doesn't create an alarm, but simply restores alarm devices to allow them to operate correctly during an alarm.

Status indicators

See Figure 8. The status indicators provide a comprehensive overview of the current status of the complete fire detection system.

Figure 8: Status indicators

3691-01
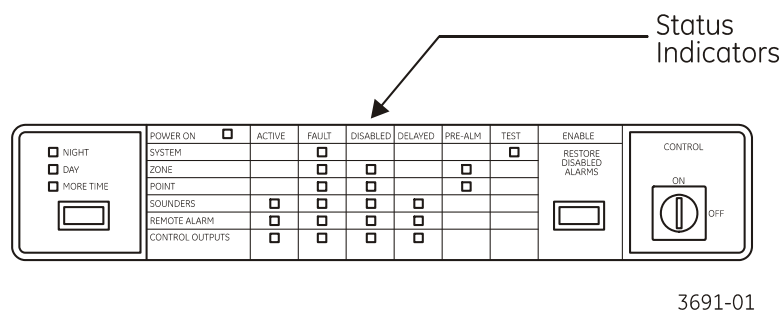
On this indicator the system is categorized, on the left side, into different elements, as shown in Table 2.

Table 2: System categorization

Name	Description
System	The panel, including the CPU.
Zone	A grouping of sensors, or other line devices.
Point	A single line device, such as a sensor, callpoint, or sounder, etc.
Sounders	Alarm devices, including electronic sirens, bells, etc.
Remote alarm	Alarm to a Remote Manned Centre (RMC), such as a Fire Brigade.
Control outputs	Output devices internally mapped as "Control Outputs" used to control building systems such as extinguishing control systems, air conditioning systems, etc.

The status indicators have been categorized by column as shown in Figure 8, and the following conditions are indicated (see Table 3).

Table 3: Status indicator conditions

Indicator	Remarks
Power on	Indicates that the ZP3 panel has power, either from the mains or from the standby battery.
Active	Indicates that a sounder, remote alarm, or extinguishing system has been activated.
Fault	Indicates that a fault condition has been detected on a device or output. A "System-Fault" indicates that a major fault exists in the panel.
Disabled	Indicates that a device or output has been deliberately disabled.
Delayed	Indicates that the activation of a sounder, remote alarm, or control output has occurred, but that the actual operation of the output is in a delayed state.
Pre-alarm	Indicates that a zone or sensor is in a pre-alarm condition. **
Test	Indicates that the panel is in a test mode, which can be initiated either manually or automatically, or that the Commissioning key is On.

** If the system is setup for coincidence detection (two active detectors to raise an alarm) then this LED indicates if one of these detectors is active. A fire alarm is triggered if a second detector confirms the condition.

Display of alarms

Overview

See Figure 9. Alarms are displayed on the panel fascia, and the fascia of remote display panels, audibly by means of a built-in panel buzzer, and visually by means of illuminated LED indicators and descriptive text on the LCD Display.

Figure 9: ZP3 Fire panel controls and indicators

3684-02
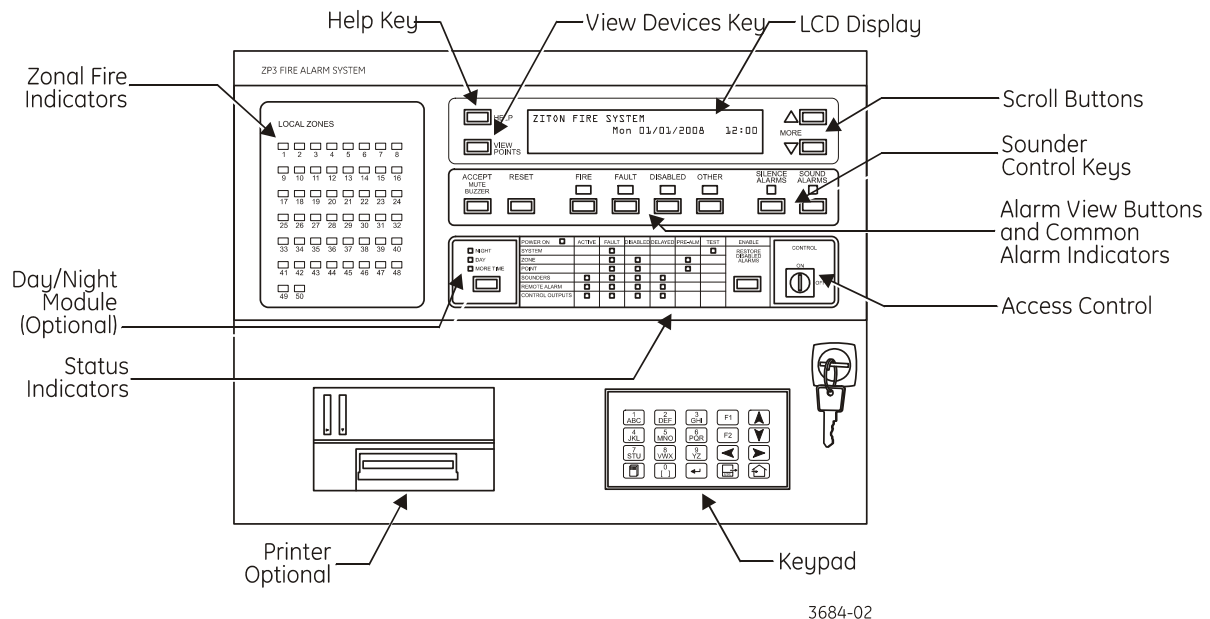
Fire alarms

Fire alarms are shown by means of the common FIRE LED's, the zone LED's, and the LCD Display. The operation of functions arising from the fire alarm, such as sounders, control outputs, remote manned centre alarms, etc, are shown by means of status indicators.

Fault alarms

Fault alarms are shown by means of the common FAULT LED's and the LCD Display. The operation of functions arising from the fault alarm, such as control outputs, remote manned centre alarms, etc, are shown by means of illuminated status indicators.

Disabled alarms

Events such as zones, sensors, or sounders being disabled are shown by means of the common DISABLED LED's, and the LCD Display. The LCD Display can be cleared with the reset button, but as long as the devices remain disabled, the common disabled indicator remains lit. Illuminated status indicators indicate details of the disabled devices.

Other alarms

Alarms that don't fall into any of the above three categories (for example, "pre-alarms") are shown by means of the common OTHER LED and the LCD Display. Applicable details of the alarms are shown by means of illuminated status indicators.

LCD Display

Overview

ZP3 panels use a carefully structured reporting system for alarms, faults, and other events. Information is displayed on a 160-character LCD Display as shown in Figure 10. The display has two alarm screens; the *Zone Screen*, which shows alarms by zone, and the *Point Screen*, which shows alarms by device. The zone screen displays automatically, and the point screen is accessed manually. All events are prioritized and the system provides simple operation.

Figure 10: LCD Display - overview
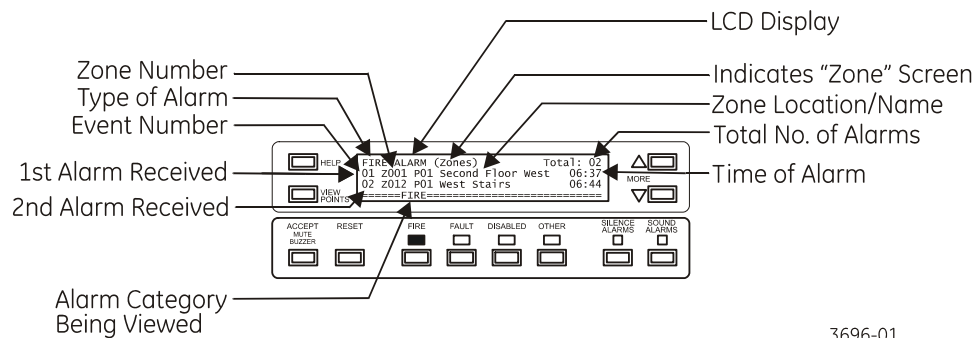
Alarms by zone

Alarms are first displayed by zone, with a zone message identifying the location. Two zones are always visible, the 2nd line shows the first alarm received, and the 3rd line shows the last alarm received.
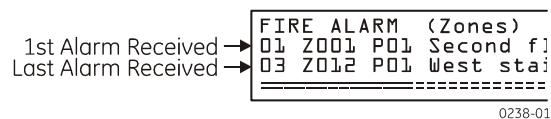
Scrolling alarms

If the system has more than two zones in alarm, then the **More** LED illuminates, and you can scroll through alarms with using the scroll buttons. After scrolling, the system reverts to the first and last alarms on-screen, after a timeout (zone mode).
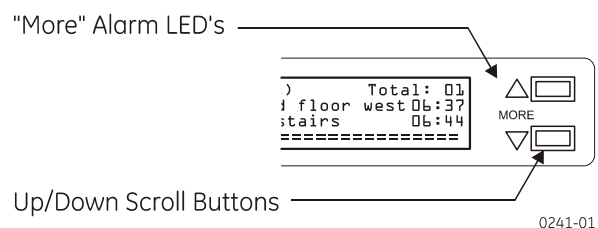
Alarms by device

Press **View Points** to see current alarms by device. The device screen displays the exact address of the device, and a message with its exact location.
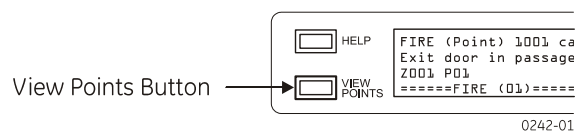
Zone screen

The following paragraphs describe how to read the LCD display when it indicates an alarm. The *Zone Screen* shown in Figure 11 indicates automatically when an alarm is received.

Figure 11: Typical zone screen
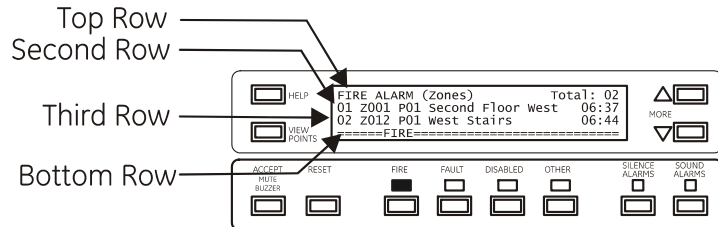
3697-01

Top row: alarm information

- The left side of the row indicates the type of alarm that exists, for example "FIRE", "FAULT", "DISABLED", or "OTHER".
- The word *Zones* indicates that you are viewing the zone screen.
- The right side of the row shows the total number of current zone alarms (events), for example "02"

Second row: details of first alarm

- The event number is shown on the left side of this row.
- The remainder of the row gives the description of the zone.
- The time of the alarm, for example 06:37 is shown at the end of the row (optional).

Note: The second row by default displays the first alarm received, when it indicates "event 1". When manually scrolling, the alarm shown on row 2 changes to the next or previous event.

Third row: details of other alarms

- The event number is shown on the left side of this row.
- The remainder of the row gives the description of the zone, for example the location.
- The time of the alarm, for example 06:44 is shown at the end of the row (optional).

Note: The third row displays the last alarm received.

Bottom row: confirms type of alarm shown

The type of alarm, for example "FIRE", is shown in line with the associated alarm view button and common alarm indicator.

Point screen

The following paragraphs describe how to how to read the LCD Display when it is switched to the *Point Screen*. This screen (see Figure 12), is manually accessed by pressing the **View Points** button in order to see the device that caused the alarm.

Figure 12: Typical point screen

3698-01
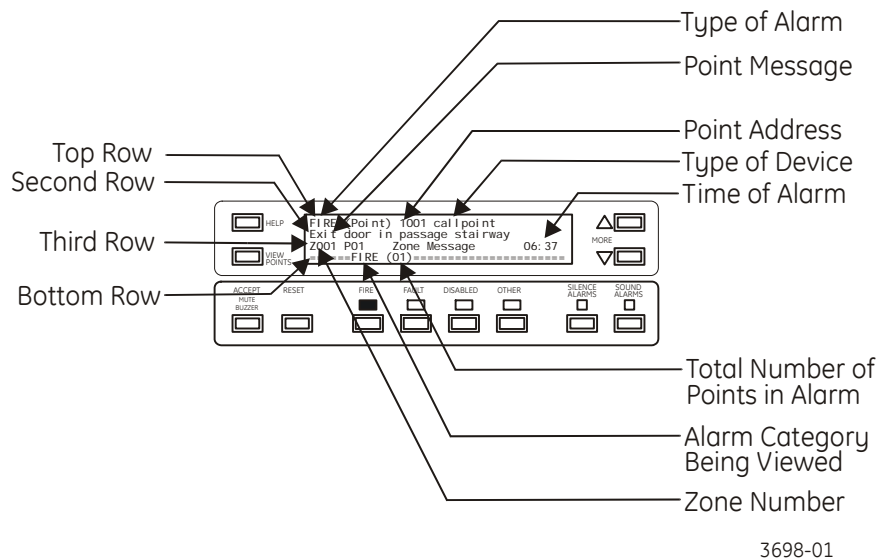
Top row: alarm and device information

- The type of alarm that exists, for example "FIRE", "FAULT", "DISABLED", or "OTHER" is displayed at the beginning of the row.
- The word *Point* indicates that you are viewing the point screen.
- The address of the device (or point) is given, for example "1001".
- The type of device is provided at the end of the row, for example "callpoint".

Second row: device location

The second row displays the exact location of the device (point), for example "Exit door in passage stairway".

Third row: zone details

- The zone number for this device is displayed at the beginning of the row, for example "Z001" + zone message for location.
- The time of the alarm (optional) is displayed at the end of the row.

Bottom row: confirms type of alarm shown

- The type of alarm, for example "FIRE", is shown in line with the associated alarm view button and "common" alarm indicator.
- The figure in brackets, for example "01" indicates the total number of points in alarm.

Display shut down, fault LED's on, buzzer sounding

The ZP3 panel is fitted with a Total Loss of Power Alarm feature. This feature is a pre-wired, independent circuit that turns on the Common Fault and System Fault LED's and sounds a buzzer in the event of total loss of power. This condition occurs when the mains power has been lost and the battery has been depleted to the extent that load shedding has occurred, prior to the entire panel being shut down.

Operator response

Fire alarms

A fire alarm displays on the panel as described in Table 4. The actions carried out upon receipt of a fire alarm depend upon the fire alarm procedures at the organization where the alarm occurred. The following are generic guidelines only.

Table 4: Fire alarms - annunciation and alarm

| Description	Remarks
Common "Fire" LED's	Illuminated
Zone LED	Illuminated, indicating which zone is in alarm (default - configurable)..
Text display	Zone screen showing details of zone in alarm.
Panel Buzzer	Sounding intermittently.
Building Sounders	Those configured to operate will sound.
Auxiliary Functions	The auxiliary functions configured to operate are active, such as calling the remote manned centre, shutting air-conditioning, etc.
Status Indicators	The functions configured to operate illuminate. The LED's indicate the activated functions, such as remote manned centre, sounders, etc.
Delayed Functions	Certain functions might be configured as a delayed operation. These could be sounders, remote centre alarms, or control functions. If a function has been triggered to operate after a delay, then the "delayed" LED on the status indicator illuminates.

Operator action

1. Press the **Accept** button to acknowledge the alarm. This silences the panel buzzer, and causes the flashing alarm indicators to go steady. Do not press the **Reset** or **Silence Alarms** buttons.
2. Identify the zone from which the alarm originated. Check the area (zone) to ascertain the extent of the problem. For example, telephone the zone fire marshal, check the points in the zone, or send someone to the area.
   During this time the sounders in the area will be sounding.
3. Press the **Silence Alarms** button to silence the building sounders. Only press the **Silence Alarms** button once you are sure the situation is under control, or that the people from the area have been evacuated.
   If the sounders were switched-off inadvertently, press the **Sound Alarms** button to switch the sounders on.
4. After the alarm, restore the device(s) that initiated it (for example, remove smoke, or replace the glass in a call point), and then press the **Reset** button. The system restores to normal.

Fault alarms

A fault alarm displays on the panel as described in Table 5. The actions carried out upon receipt of a fault alarm depend upon the procedures at the organization where the system is installed. The following are generic guidelines only.

Table 5: Fault alarms - annunciation and alarm

Description	Remarks
Common "Fault" LED's	Illuminated
Text display	Zone screen showing details of zone or category with the fault, and a general description of the fault.
Panel Buzzer	Sounding continuously.
Building Sounders	Not sounding. Fault alarms are treated as a general alarm.
Auxiliary Functions	The functions configured to operate are active, such as advising the remote manned centre, calling maintenance staff, etc.
Status Indicators	Illuminated to indicate the area of fault. In addition, the LED's indicate which functions have been activated, such as advising the remote manned centre, etc.
Delayed Functions	Certain functions programmed to operate as a result of the fault alarm might be configured as a delayed operation. These could be remote centre alarms, or control functions. If a function has been triggered to operate after a delay, then the "delayed" LED on the status indicator illuminates.

Types of fault

The panel continuously monitors both itself and all external wiring and devices for abnormal conditions. Faults fall into one of three categories (see Table 6):

Table 6: Fault alarms – types of fault

Category	Description
Serious Faults	A system fault, which takes the complete system out of operation, such as a processor failure, requires immediate action.
Part-system Faults	A fault, which takes a small part of the system out of action, needs to be repaired within the same day. Examples of part-system faults are; a damaged cable, or a mains failure where the batteries operate the system for the rest of the day.

Operator action

1. Press the **Accept** button to acknowledge the alarm. This silences the panel buzzer, and causes the flashing alarm indicators to go steady. **Do not press the Reset or Silence Alarms buttons.**
2. Call maintenance personnel to fix the fault. Record the action taken in the logbook.
3. Press the **Reset** button after the fault has been rectified. The system restores to normal.

Disabling devices, sounders, etc.

Zones, sensors, call points, sounders, control outputs, outputs and remote manned centre alarms can be manually disabled for maintenance or other purposes. When disabled, the condition reports on the ZP3 panel as described in Table 7. Disablement is normally carried out by maintenance personnel, and can only be done by personnel with a level 2 access (or higher). In certain cases, where a specific part of a system is regularly disabled at certain times (for example, a meeting room which allows smoking), the system is sometimes setup to allow the operator to carry out the disablement, usually with a key-switch.

Table 7: Disablement - annunciation and alarm

Description	Remarks
Common "Disabled" LED's	Illuminated
Text display	Zone screen showing details of zone.
Status Indicators (LEDs)	Illuminated to indicate the category of disablement.

Types of disablement

Disablement of the system fall into two main categories (see Table 8):

Table 8: Disabling devices, sounders - types of disablement

Category	Description
Devices	These are input devices such as zones, sensors, manual breakglass call points, etc. Provided the number of devices is sufficiently small, and the relevant staff are aware of the situation and keeping it under control, this situation is usually considered acceptable.
Sounders and RMC	Disabling of sounders or the remote manned centre alarms is considered very serious, and some authorities do not approve of this practice. If sounders are disabled for any reason, they must be re-enabled as soon as possible.

Operator action

Press the **Disabled** button to view disabled zones. The screen shows disabled or partly-disabled zones; scroll with the up/down **More** buttons to view all. Status LED indicators indicate the category of devices which are disabled.

If a fire alarm occurs while sounders are disabled, press the **Restore Disabled Alarms** button. This restores any disabled sounders.

Other alarms

Alarms, which are not categorized as fires, faults, or disablements are shown as OTHER alarms, and display on the panel as, described in Table 9. The actions carried out upon receipt of one of these alarms depend on two things; the nature of the alarm and the procedures at the organization where the system is installed. The following are generic guidelines only.

Table 9: Other alarms - annunciation and alarm

Description	Remarks
Common "Other" LED's	Illuminated
Text display	Zone screen showing details of zone or category with the alarm, and a general description of alarm.
Panel Buzzer	Sounding continuously.
Building Sounders	Usually not sounding, depending upon your system configuration.
Auxiliary Functions	The functions configured to operate will be active, such as advising the remote manned centre, calling maintenance staff, etc.
Status Indicators	These illuminate to indicate the category of alarm. In addition, the LED's indicate which functions have been activated, such as advising the remote manned centre, etc.
Delayed Functions	Certain functions programmed to operate as a result of the alarm might be configured as a delayed operation. These could be remote centre alarms, or control functions. If a function has been triggered to operate after a delay, then the "delayed" LED on the status indicator illuminates.

Types of alarm

The following are the types of alarm, which are reported in the "Other" category (see Table 10):

Table 10: Other alarms - types of alarm

Category	Description
Pre-alarms	Pre-alarms & alert-alarms from smoke sensors & high-sensitivity detectors.
Security alarms	Alarms from security interface devices.
Non-fire alarms	Alarms from interface devices used for monitoring non-fire functions.
Service	Services, maintenance, and pre-service indications.

Operator action

1. Accept the alarm by pressing the **Accept** button. This silences the panel buzzer, and causes the flashing alarm indicators to go steady. **Do not press the Reset button**.

   The type of alarm determines the action to take. For example, a "Pre-Alarm" could indicate a small quantity of smoke, and might require prompt attention. Record the action taken in the logbook.

2. Press the **Reset** button **after** attending to the alarm and removing the source of the alarm. The system restores to normal.

Operator menu

Introduction

The panel has built in software functions for carrying routine operator functions and system checks. These functions are accessed via the operator menu, using the panel keypad. This section describes these functions, and how to use them.

When using a menu, the LCD screen displays the menu items in place of any alarms or events that would normally indicate on the screen.

The operator menu is used for the following functions:

- To set the time and date
- To identify which version of software is installed in the panel
- To test the fascia illuminated LED indicators and fascia keypad
- To view or print reports of the status of the system, or individual devices
- To view or print previous alarms

Menu access

Access to the menus is via the panel keypad (see Figure 13). Each key is described in Table 11.

Keypad

Figure 13: Keypad

3020-01
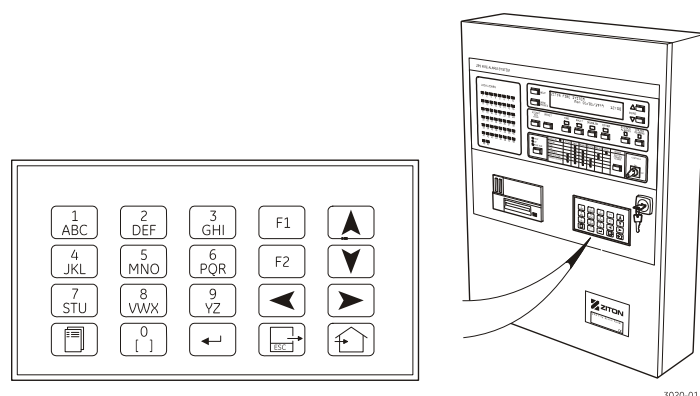
Table 11: Keypad description

Key/s	Name	Description
1 ABC	Numeric keys	Used to enter the number sequences
	MENU key	Gives access to the Menu Screen
	ENTER key	Used to confirm data entry and save data
ESC	ESCAPE key	Exits a function and returns to the previous level
	HOME key	Exits all menu's and returns to the system home screen or event screen (if an event is present)
F1 F2	FUNCTION keys	Used within certain menus
◄ ► ▼ ▲	NAVIGATION keys	Used to move up/down/left and right

Operation

The main menu is the entry point to all of the user operator accessible software functions. To access the main menu:

1. Press the MENU key (⬚) on the keypad. The display shows the following (see Figure 14):

Figure 14: Main menu

```
MAIN MENU
1. Operator
2. Maintenance
3. Setup menu
```

3021-01

2. Press <1. Operator> on the keypad to enter the *Operator Menu*. The following screen appears (see Figure 15).

Figure 15: Operator menu

```
OPERATOR
1. Time and date
2. Reports to display      4. Lamp test
3. Reports to printer      5. Keypad test
```

3997-01

The menu name is displayed on the top line, and the menu items are shown with numbers alongside. Menu items are selected by pressing the numeric key that matches the item number. Selecting a menu item may cause another menu to appear or may carry out a particular function. The operator may be prompted to enter the required information via the keypad.

Any menu can be cancelled and the previous menu presented by pressing the ESC key (⬚). The ESC key is used to cancel or abort the current activity and return to the previous activity.

Exit the menu system completely by pressing the HOME key (⬚). This returns the panel to its normal operation display or event screen. To prevent a system from being inadvertently left in a menu, a time-out is built into the menu system, i.e. from the last time a key was pressed. In menu selection, the time-out is approximately 45 seconds, and if a software function has been started and not completed, then it is 12 minutes.

Menu structure

The operator menu structure is displayed as a menu tree, and shown in Figure 16. Items that are grouped together are options that appear together on a menu, and items that are open-ended implement a software function.

Figure 16: Menu structure
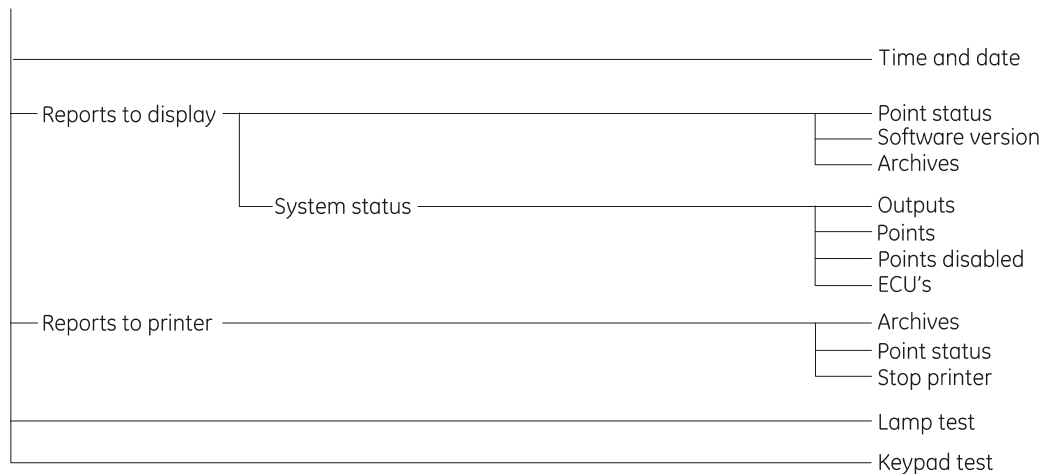
```
OPERATOR MENU
  │
  │──────────────────────────────────────────────────────── Time and date
  │
  ├─ Reports to display ─┐                                   Point status
  │                      │                          ┌─────── Software version
  │                      │                          └─────── Archives
  │                      │
  │                      └─ System status ──────────┬─────── Outputs
  │                                                 ├─────── Points
  │                                                 ├─────── Points disabled
  │                                                 └─────── ECU's
  │
  ├─ Reports to printer ─────────────────────────── ┬─────── Archives
  │                                                  ├─────── Point status
  │                                                  └─────── Stop printer
  │
  │──────────────────────────────────────────────────────── Lamp test
  │
  └──────────────────────────────────────────────────────── Keypad test

                                                               3998-01
```

Menu functions

The menu functions available in the operator menu are described below, together with the menu-path to access each menu, and an explanation of the purpose of each item.

Time and date

Menu path	Operator/Time and date
Purpose	This menu allows you to set the date and time displayed by the panel. Use the numeric keys to enter the date and time.
Date	The current date in the system is shown. Enter the new date in DDMMYYYY format using the numeric keys, use the up/down navigation keys to change the day name and press ENTER when complete.
Time	The current time in the system is shown. Enter the new time in 24-hour format (HHMM) and press ENTER.

Reports to display

Menu path	Operator/Reports to display
Purpose	This menu provides a selection of reports to view on the LCD. Report messages may be scrolled manually.
Point status	This option allows you to view the status report of any device attached to the panel Z-loops on the LCD. The report shows the type, sensitivity, zone and condition of the point.
Software version	This option displays the panel software number and version on the LCD. Press F1 to see the software version of the peripheral boards.
Archives	This option allows you to view previous alarms and events on the LCD screen. These events are stored as "archives" in the panel. The panel automatically stores the last 1000 events, together with the date and time of each. The menu allows the events to be selected by date, and viewed accordingly. Use the up/down scroll buttons to display the next/previous archived message or event.
System status	This option displays status information of outputs and points. Options are available to limit the report to disabled points, or Extinguishing Control Units (ECU's).

Reports to printer

Menu path	Operator/Reports to printer
Purpose	This menu provides a selection of reports to print.
Archives	This option allows you to print previous alarms and events, which are stored as "archives" in the panel. The panel automatically stores the last 484 panel events, together with the date and time of each event. These events may be selected by date. The printout includes all event types configured for the printer.
Point status	This option allows you to print the status of any device attached to the panel Z-loops. The printer can also be stopped from this menu.
Stop printer	This menu option allows you to end the current print operation.

Lamp test

Menu path	Operator/Lamp test
Purpose	This function illuminates all panel fascia LED's for a short period, including the display, allowing the operator to verify that they are functional.

Keypad test

Menu path	Operator/Keypad test
Purpose	This menu initiates a Keypad test. Once selected, the panel reports any key pressed on the panel via the LCD. The operator can use this function to check that the keypad is functional. Press any key twice to exit.

Operator maintenance

Overview

The owner of a fire detection system is responsible for ensuring that it is correctly maintained so that it is in a proper working condition at all times. This involves arranging for the system to be checked, tested and serviced as described in this manual.

The maintenance procedures described are Ziton recommendations. There may be additional requirements or regulations imposed by local authorities. Where this conflicts with the Ziton recommendations then the local authority regulation should be followed.

A fire alarm system must provide early and reliable warning of the outbreak of fire. To achieve this, the system remains on watch at all times, ready to activate the alarms in response to a signal from any of the sensors. Regular testing and maintenance must therefore be carried out to ensure the system is always operating correctly.

Note: The following guidelines were developed from the recommendations provided in BS5839-1: 2002. They are intended to assist the user in understanding their responsibilities regarding the continued safe and proper operation of their fire alarm system. They do not attempt to provide detailed site-specific test and maintenance routines. We recommend that the user reads and understands the full text provided in the relevant sections of BS5839-1: 2002.

User Responsibilities

A single person should be appointed to supervise all matters relating to the fire alarm system, that is:

1. Making sure the system is checked at least once every 24 hrs and that there are no faults on the system.
2. Making sure the system is correctly tested and maintained in line with the recommendations of BS5839.
3. Making sure that appropriate records are maintained by keeping the logbook up-to-date and available for inspection by the maintenance authority.
4. Making sure the relevant occupants are aware of their roles and responsibilities in connection with the fire alarm system, ensuring that:
   - Occupants are instructed in the proper use of the system including how to interpret the alarm indications.
   - Occupants are familiar with the appropriate user controls including the correct use of the disablement features and understand how to avoid the generation of false alarms.
5. Making sure that situations are avoided that are detrimental to the standard of protection provided by the system, for example:
   - Making sure that a clear space of at least 500 mm is preserved around and below all fire detectors.
   - Making sure that all manual call points remain unobstructed and conspicuous.
   - Making sure to communicate with those responsible for changes to, or maintenance of, the building to ensure that changes do not compromise the effectiveness of the system.
6. Updating record documents and operating instructions when building changes are made.
7. Making sure that the level of false alarms is minimised.

8. Ensuring that the following spare parts are held on the premises:
   - Six replacement glasses and test keys for manual call points (unless the system has less than twelve manual call points, in which case only two sets of glasses and keys are required).
   - One set of spare fuses.
   - Any other spare parts recommended by the servicing agent.

Note: BS 5839-1:2002 Section 7 provides recommendations as to how these responsibilities should be discharged.

Regular procedures

The recommended routine maintenance procedures can be divided into the following categories:

- Daily checks
- Weekly checks
- Quarterly services
- Annual services

The daily and weekly checks require no technical knowledge and can often be carried out by the panel operator, or in-house maintenance staff. It is important for the person carrying out the testing to be aware of which building functions or remote alarms will be activated by the system when an alarm occurs.

An authorized Ziton servicing company, usually under maintenance contract, should carry out the quarterly and annual services. These services are not the responsibility of the operator or in-house maintenance technician, and are not covered in this manual.

Repair of faults

The system operator and in-house maintenance personnel should have the telephone number of the outside company contracted for maintenance, so that they can call them if a major fault develops which is beyond the capability of the in-house people.
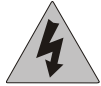
Record keeping

The operator should maintain a logbook (see document number 503-1842ZE-0-02) at the control panel. A record of all alarms, events, checks, tests, and repairs should be entered in this logbook.

Routine maintenance

Note: Occupants of the building and anyone receiving remote alarm signals, such as the fire department, must be informed before starting with the test/routine maintenance. They must also be informed when the test/routine maintenance is complete. No alarms should be activated before notification has taken place.

> ⚠ **CAUTION:**   **External systems connected to the fire system, such as fire extinguishing systems, air-conditioning systems, or lifts must be temporarily disabled or disconnected BEFORE testing or routine maintenance takes place.**

> ⚡ **WARNING:**   **ALL DISCONNECTED OR DISABLED SYSTEMS MUST BE RECONNECTED AND/OR ENABLED AT THE END OF TESTING.**

Daily checks

Do the following checks every day:

1. Check that the green Power-on indicator is illuminated. All other LED's should be off except the Common Disabled LED (depending on the system status, e.g. day mode) and the panel should be silent. The display should show the time and date only.
2. If the panel is indicating a fault alarm, contact the maintenance staff and arrange for the fault to be rectified.
3. Make sure the logbook (document number 503-1842ZE-0-02) is kept up-to-date. Check that all faults recorded in the logbook the previous day has been attended to.
4. Make sure that the correct time and date is displayed on the ZP3 panel. If not, then correct the time/date as described under *Menu structure* on page 22.

Weekly checks

Do the following checks every week:

Notes: Contact the alarm-receiving centre immediately before starting this test to inform them of the test thus preventing unnecessary response to an alarm.

Refer to the appropriate section of this manual for more information about ZP3 panel operation.

The following guidelines are based on the recommendations provided by BS5839-1 2002:

⚠️ **CAUTION:** **Before testing the operator must be aware both of the operation of all devices fitted to any auxiliary circuits and the consequences of their operation. For example a connection to call the fire brigade.**

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1. Make sure you have contacted the alarm-receiving centre informing them of this test.
2. Check that all LED's are operational by carrying out a lamp-test.

Notes: The zones should be varied each month to ensure that they are all tested over time. The manual call points and fire detectors should be tested on a rotating basis so that all devices are checked at least once during a three-month period.

To operate a manual call point use the Test Key provided. To operate a detector, use a smoke generator or heat source as appropriate for the type of detector.

3. Operate at least one device (fire sensor or call point) in each zone.
4. Make sure that the associated sounders operate.
5. Make sure that the alarm was received at the remote manned centre (if applicable).
6. Make sure that the device triggers the operation of any auxiliary equipment (if applicable)
7. Accept the alarm, and press the **Silence Alarms** button, make sure that the sounders silence.
8. Reset the system.
9. Make sure that the fire/alarm events are recorded correctly on the ZP3 panel printer (if installed).
10. Make sure the printer (if installed) has sufficient paper, that the print ribbon is not dry and that the paper feeds correctly.

Note: If any defects are discovered during the routine testing, they should be recorded in the logbook (see document number 503-1842ZE-0-02) and then the fault must be corrected.