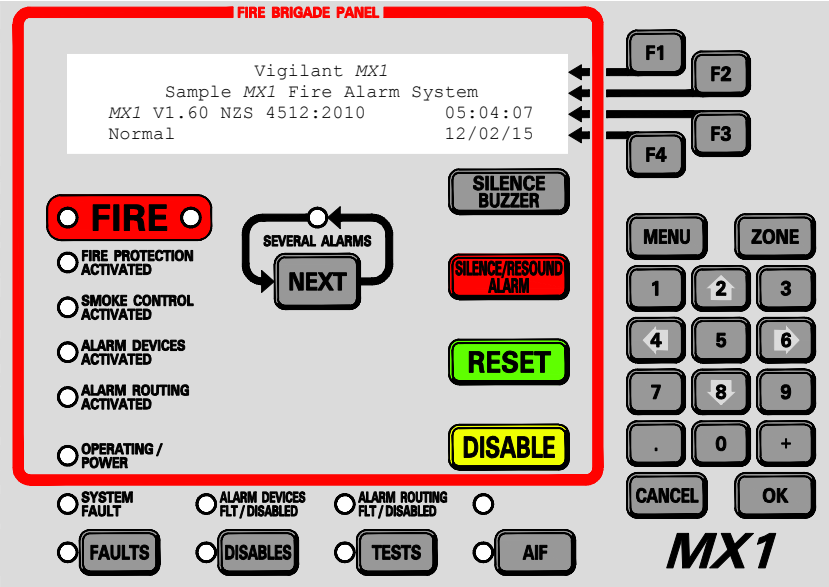
Vigilant *MX1*

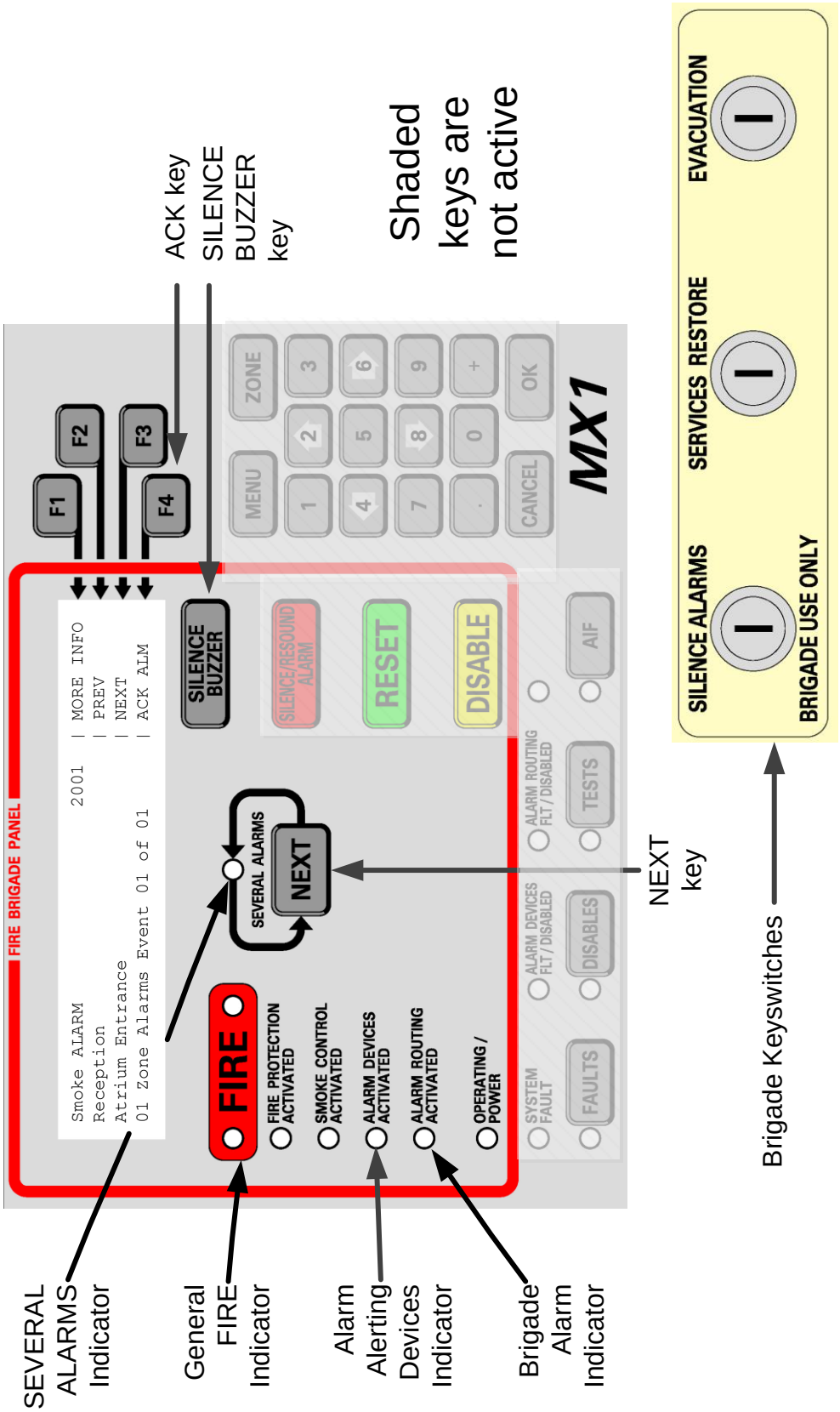
Fire Alarm System

Operator Manual



LT0344
Issue 2.4

Fire Fighter's Interface – New Zealand Operation – Quick Reference



Fire Fighter's Interface, showing active keys and interfaces.

Alphanumeric Display – shows alarm detail: alarm type, zone/ point number, zone location and point location.
It also shows which alarm is being displayed and what the total number of alarms is.

General FIRE Indicator – is lit if there is any unisolated alarm, whether brigade calling or not.

SEVERAL ALARMS Indicator – lit when there are 2 or more alarms present. Press **NEXT** to view additional alarms.

Alarm Devices Indicator (red) – is lit when the alarm alerting devices (sounders, evacuation system, etc.) are activated.

Alarm Routing Indicator (red) – is lit when a Fire signal is being transmitted to the brigade signalling device.

NEXT Key – steps the alarm display forward to the following alarm. The **F3** key has the same effect.

ACK Key – Function Key **F4** marks an alarm as acknowledged in the alphanumeric display. Acknowledgement of an alarm may make the corresponding flashing zone alarm indicator go steady and may acknowledge the alarm at a remote display.

PREV Key – Function Key **F2** steps the alarm display backwards to the previous alarm.

MORE INFO Key – Function Key **F1** displays additional alarm information. This includes the alarm type, zone action text, the current level of the device causing the alarm, and the time at which the alarm occurred.

SILENCE BUZZER Key – is used to silence the internal buzzer in the panel if it is on.

SILENCE ALARMS Keyswitch – operating this switch deactivates the alarm alerting devices (the Alarm Devices indicator goes out). The FAULTS indicator will light and the fault buzzer may sound (continuously).

When this switch is restored to normal, all current alarms will be automatically disabled/isolated (the **DISABLES** indicator will light) and the alarm detail display will be replaced by the general fault display.

EVACUATION Keyswitch – operating this switch activates the alarm alerting devices.

SERVICES RESTORE Keyswitch – operating this switch restores selected building services to normal operation after a fire alarm (dependent on system configuration).

Other keys - While the door is shut and the key turned fully clockwise, all other keys on the keypad cannot be used.

Fire Fighter's Interface – New Zealand Operation – Quick Reference

Welcome

The VIGILANT *MX1* is an innovative analogue addressable fire indicator panel incorporating the latest technology. It complies with New Zealand Standards including NZS 4512:2010 and incorporates an integral Fire Brigade Panel to the Australian standard AS 4428.3. It also complies with Australian Standard AS 7240-2:2004. Its support for *MX* TECHNOLOGY, fuzzy-logic detection algorithms and powerful control functions make it suitable for a wide range of fire protection applications for small to large size systems.

If your *MX1* Requires Service

Contact your service provider.

Maintenance Contractor (1) Job Reference # _____ Telephone	Name: Address: Office: Mobile:
Maintenance Contractor (2) Job Reference # _____ Telephone	Name: Address: Office: Mobile:
Maintenance Contractor (3) Job Reference # _____ Telephone	Name: Address: Office: Mobile:

Installation Data – to be completed by installer

Installation Location	Name: Date:
MX1 Serial Number	
Panel Installed by	Name: Date:
Telephone	Office: Mobile:

Manufacturer's Details

Manufacturer

The *MX1* is manufactured for:
Johnson Controls
17 Mary Muller Drive
Hillsborough, Christchurch 8022
NEW ZEALAND
Phone: +64 3 3895096
Fax: +64 3 3895938

Copyright and Trademark Information

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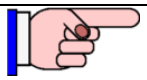
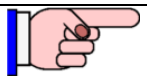
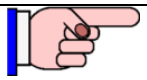
Amendments

Re-branded manual to Johnson Controls. Revised for V1.70 firmware and to include AS 1668 fan controls, new FBP keypad and *MX* devices.

Acknowledgements

(*MX1* firmware incorporates software from external sources. This acknowledgement applies to this external software.)

Warning Symbols Used in this Manual		Danger! Failure to comply may lead to serious injury and/or property damage.
		Caution – failure to comply may result in incorrect, unpredictable or unstable operation.
		Indicates useful or important information.

Cautions & Warnings		This is a 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.
		Some of the operation of the *MX1* as described in this manual is dependent on the site-specific configuration performed by the installer. If the configuration is non-standard, then operation may differ from this manual and compliance to local Standards may be invalidated.
		The *MX1* has facilities to protect against unauthorised use of operator controls by means of Access Levels. The configuration of your system may result in Access Levels that differ in some respects from this manual.
		Except where otherwise stated, this manual refers to *MX1* Controller firmware version 1.70. Information provided in this manual may remain valid for subsequent versions of Controller firmware. However if a different version of firmware is installed, a more appropriate version of this manual may be required.

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Chapter 1
Introduction

Introduction

This chapter provides an overview of the VIGILANT *MX1* system function and describes the normal appearance of the operator interface.

It also describes the concept of Access Levels for access to commands, and the conventions used in this manual to refer to parts of the display when describing these commands.

In this Chapter

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

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How to Use this Manual

Intended Use

This manual covers the operations and displays available on the *MX1*'s front panel. This manual is intended for use by building owners and managers, fire brigade staff, and front line service staff. It assumes that the reader has a basic knowledge of automatic fire alarm systems.

It does **not** cover:

- system design, or installation and operational requirements specified in local standards or building codes.
- more detailed service functions that require access to the inside of the cabinet, or use of more advanced diagnostic functions for fault finding or performance analysis.

These and other topics are covered in the "*MX1* System Design Manual", part number LT0361 and the "*MX1* Service Manual", part number LT0366.

Organisation of Chapters

The topics in this manual are generally arranged in decreasing order of urgency. Firefighter use of the Fire Brigade Panel (f.b.p.) is shown inside the front page, with a detailed section on dealing with alarms in Chapter 2.

This is followed by less urgent actions, dealing with Faults and Disables, Point and Zone Status Recalls, Testing, and System Status Recall, followed by a description of error messages and system points.

Servicing and Maintenance

To obtain continued high-reliability operation from the *MX1* it is necessary to have it regularly tested and maintained by trained and qualified service-company personnel.

NZS 4512:2010 details the requirements for the testing and maintenance of fire alarm systems. The *MX1* Service Manual (LT0366) contains a guide to the procedures for testing the *MX1*.

If changes are required to the site-specific configuration of the *MX1* (for example, if new detectors are required because of building alterations) then this work must be carried out by a suitably trained and qualified fire-alarm service person and the "as-installed" information updated including a record of the new site-specific configuration version. All system changes must be fully tested and commissioning sheets completed. The new site-specific configuration should be compared against the previous version to ensure that there have been no unintentional changes.

A description of nuisance alarms and actions that can be carried out to help reduce the incidence of them is given in "Nuisace Alarms" on page 1-18.

System Operation

Overview

The VIGILANT *MX1* is control and indicating equipment (c.i.e.) that forms the central part of a fire detection and alarm system using *MX* analogue addressable detectors.

It complies with the requirements of NZS 4512:2010 “Fire Detection and Alarm Systems in Buildings”, AS 7240.2-2004 “Fire Detection and Alarm Systems” and AS 4428.3-2010 “Fire Brigade Panel”.

Up to 250 *MX* devices (detectors and addressable input/ output modules) may be connected to the in-built detection loop. Some devices support multiple inputs and outputs which can be monitored and controlled separately. Additional loops of up to 250 *MX* devices may be added to the *MX1* by fitting *MX* Loop Cards. The *MX* DIGITAL communication protocol used on the detection loops provides high reliability and fault tolerance. The *MX1* uses software algorithms to evaluate the analogue values returned from the detectors.

MX FASTLOGIC is a fuzzy logic based algorithm applied to photoelectric smoke detectors. It is designed to discriminate between the smoke and temperature patterns of real fires and the typical causes of nuisance alarms. It supports three risk levels; High, Medium and Low.

SMARTSENSE is a field-proven, reliable detection algorithm, reducing nuisance alarms, compensating for ambient conditions, with a wide range of programmable sensitivity settings.

Both algorithms provide:

- Detector pre-alarm sensing for early warning of a potential alarm.
- Compensation for soiling and changes in ambient conditions.
- Logging of “detector dirty alert” when compensation limits are about to be exceeded, to allow service to be scheduled.

Physical

The *MX1* is supplied in a compact metal cabinet with an integrated Fire Brigade Panel and operator keypad and display. Space is provided for Zone Status indicators in rear and front service formats.

One Remote Fire Brigade Panel (RFBP) may be connected to the *MX1* panel to provide a remote operator interface or fire brigade attendance point. This operates independently of the *MX1* panel’s user interface, but on the same internal data – zone and point status, buzzer on/off, silence/mute, etc. Note, the Remote FBP can be configured so that its keyboard cannot be used in alarm conditions (for example, when it is installed for non-fire brigade use and it is necessary to avoid the Remote FBP user interfering with the fire brigade’s alarm display).

Depending on the Remote FBP model zone LED displays may be included.

Easy Operation

Operation is straightforward using the *MX1*'s keypad and four line LCD. The display provides clear and uncluttered indication of the alarm location, including the zone and point numbers, and text description of the zone and point in alarm.

The display allows easy scrolling through the time and date-stamped 99 alarm event buffer.

Current alarms, faults and disabled zones and points can also be separately recalled and displayed. An internal history log stores the previous 900 events, and these can also be recalled to the display.

Basic System Function

Overview

The *MX1* has five general functions:

- It monitors fire detectors (smoke detectors, carbon monoxide detectors, flame detectors, heat detectors, manual call points, etc.). Note that some detectors may be multi-sensor, i.e., they contain multiple sensors – for example a heat sensor, a smoke sensor and a carbon monoxide sensor. The sensor values are processed according to the programmed algorithm and determine whether a fire condition exists.
- It activates alarm devices (evacuation systems, sounders, strobes) and alarm routing equipment (alarm signalling equipment) when a fire alarm condition is detected.
- It displays zone location descriptions and that of an affected device, and optionally activates zone status indicators.
- It monitors and controls ancillary building equipment (fan controls, relays, door holders, etc.)
- It supervises devices, transmission paths (circuits), and internal functions of the *MX1* to indicate a fault condition should there be a problem.

The *MX1* operator interface allows an operator to monitor and control the site-specific components connected to the *MX1*.

Most manual controls and menu functions require Access Level 2 unless otherwise noted. Access level 2 is entered by the use of a 003 pattern key in the cabinet door lock. Those menu functions that could have an adverse effect if inappropriately used require Access Level 3. See Page 1-11 for a description of Access levels.

Multiple *MX1* fire panels, along with other devices, may be connected together to form a network. For details please refer to Chapter 9 Networking.

Operator Interface

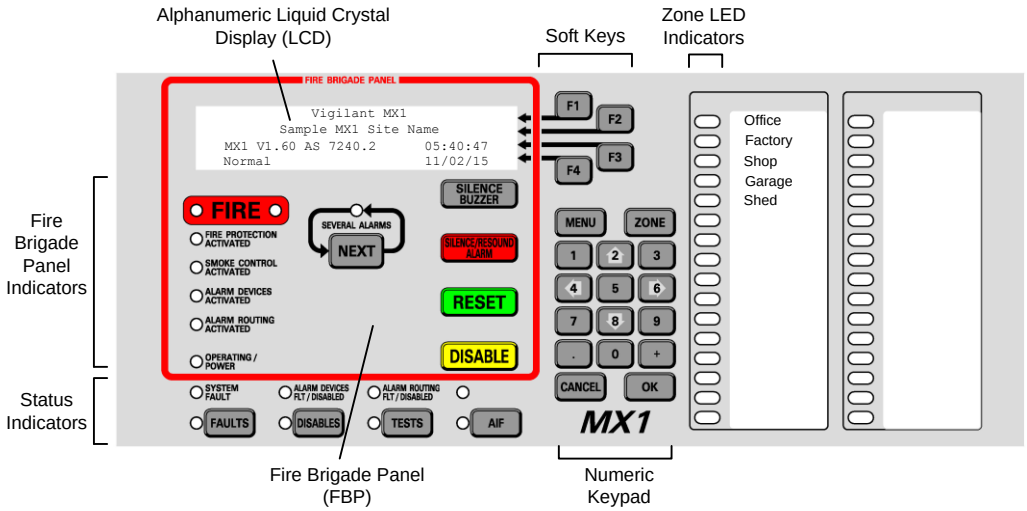


Fig 1-1 – Operator Interface

Table 1-1. Components of the Operator Interface	
Component	**Description**
Alphanumeric Liquid Crystal Display (LCD)	Displays details about alarms, faults, and other service-related system information, as well as menus of command options and messages. The information normally displayed in the LCD, without operator intervention, is called the “base display”.
Fire Brigade Panel (f.b.p.)	Controls and indicators within the red border are for use by fire brigade personnel during alarm attendance. See the quick reference guide at the front of the manual, or page 2-2 for more detail.
Soft Keys	These keys have different functions, depending on the current display. Each key’s function at any time is shown by the text displayed at the right side of the LCD.
Status Indicators	LED indicators showing the presence of faults, disabled items, tests in progress and power status. The associated keys provide a direct way to display this information.
Numeric Keypad	Numeric keys, plus commonly used keys: **OK** and **CANCEL**, to confirm or cancel commands, **MENU** to display the current possible actions on the item displayed, and **ZONE** to provide direct access to zone functions. Press **CANCEL** once to move back one display, or press and hold to return to the base display.
Common LEDs	The top row of the zone LEDs shows the Common Fire (red), Defect (Fault – yellow) and Normal (green) LEDs.
Zone LED Indicators (optional)	These show the state of individual zones or groups of zones. • A flashing red indicator is an alarm, • A steady red indicator shows operated, or if the zone is disabled a disabled alarm or operate state, • a flashing yellow indicator is a fault, • a steady yellow indicator shows a disabled zone. These indicators may also be configured to convey non-alarm statuses.

Normal Appearance of Operator Interface

Green OPERATING/POWER indicator is on – indicating that the *MX1* is receiving mains power, and is operating.

- Common Normal LED (green) is on.
- All other LEDs are off.
- The LCD reports that the system is normal and shows the current time and date, as shown in Figure 1.1.

If the general state of the operator interface is not as shown in Figure 1.1, refer to the information in Chapters 2 and 3 for instructions on managing the alarm, fault, test or disable condition.

Description of Operator Interface

F.B.P. Visual Indicators

4-LINE ALPHANUMERIC DISPLAY
This backlit LCD is used for providing detailed Alarm, Fault and Disabled condition information and various service mode information and menus.

FIRE
The FIRE indicator is comprised of two LEDs. These light red to indicate the presence of an alarm. Information about the current alarms will normally be displayed on the LCD.

SEVERAL ALARMS
This indicator lights red to indicate that more alarms are present than are currently shown on the display. Press the associated **NEXT** key to scroll the bottom 2 lines of the LCD to more alarms.

FIRE PROTECTION ACTIVATED
This indicator lights red to indicate that fire protection systems associated with this *MX1* system have activated. Note that if fire protection systems are not installed, this indicator will not light.

SMOKE CONTROL ACTIVATED
This indicator lights red to indicate that smoke control systems associated with this *MX1* system have activated. Note that if fire smoke controls are not installed, this indicator will not light.

ALARM DEVICES ACTIVATED
This indicator lights red to indicate that the alarm devices (occupant warning), for example sounders, sirens, strobes etc., have been activated. Note that the alarm devices will not be turned on if they are disabled.

ALARM ROUTING ACTIVATED
This indicator lights red to indicate that an alarm condition is being transmitted by alarm routing equipment to a fire alarm receiving centre (monitoring service provider or directly to a fire brigade). Note that the alarm routing will not be turned on if it has been disabled (not usually permitted).

OPERATING/POWER (GREEN LED)
This indicator has three states;
- On (mains power is on)
- Flashing (mains power is off or disconnected, panel is running from battery power)
- Off (panel is not receiving any power and is not operating).

Status Indicators

SYSTEM FAULT
Lights yellow to indicate an internal hardware or software fault.

ALARM DEVICES FLT/DISABLED
- Lights yellow to indicate that the alarm devices have been disabled.
- Flashes yellow to indicate that there is a fault with one or more alarm devices or transmission paths (circuits).
- Very slow flash off indicates alarm devices are silenced remotely.

Note that if a device in fault has been disabled this will override the fault indication and the indicator will be on steady.

ALARM ROUTING FLT/DISABLED
- Lights yellow to indicate that the alarm routing has been disabled (this is not usually permitted on most installations).
- Flashes yellow to indicate a fault with the alarm routing equipment or connection (if available).
- Slow flashes yellow to indicate remote silence.

Note that if an alarm routing fault has been disabled this will override the fault indication and the indicator will be on steady.

FAULTS
The general FAULTS indicator lights yellow to indicate the presence of faults in the system. Press the associated key to recall these.
A new fault may be accompanied by the sounding of the fault buzzer unless this has been muted or disabled.

DISABLES
The general DISABLES indicator lights yellow to indicate the presence of disabled items in the system. Press the associated key to recall these.

TESTS
The general TESTS indicator lights yellow to indicate the presence of active tests within the system, for example a zone alarm test. Press the associated key to recall these.

AIF - Not generally used in NZ panels.

COMMON LEDs
Three LEDs at the top of the zone LEDs show the overall status – Fire (red), Defect (Fault – yellow) and Normal (green).

BUZZER
The internal buzzer pulses to indicate an alarm (if enabled – not generally for NZ panels), and sounds continuously to indicate the presence of a fault (for non-brigade connected NZ panels). It is silenced by using the **SILENCE BUZZER** key.

Fire Brigade Panel Manual Controls

NEXT
Allows the display to be stepped to the next Alarm event. It is also used in the menus to step to the next fault, disable, etc. during a recall.

SILENCE BUZZER

Pressing the **SILENCE BUZZER** key will silence the *MX1*'s internal buzzer. This function can be accessed from Level 1 and higher. If another event that activates the buzzer occurs the buzzer will sound again. The fault buzzer may also be silenced if an optional external Silence Buzzer input is activated.

SILENCE/RESOUND ALARMS

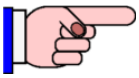
Provides a convenient means to disable and enable the alarm devices. Refer to "Disable Menu Options" (page 3-6).

RESET

This function can be accessed from Level 2 and higher.

Allows the operator to reset zones and points. The zone alarm and/or fault states are reset only if the field conditions causing the alarm or fault are cleared. With Level 3 access, this key allows the whole system to be rebooted.

DISABLE



This function can be accessed from Level 2 and higher.

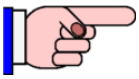
Allows an operator to disable individual zones, points, alarm devices, etc.

For further information refer to the following sections; "Disabling Zones in Alarm" (page 2-5) and "Disabling and Enabling Points or Zones" (page 6-6).

Operator Controls

F1- F4
These keys are assigned functions as required according to the menu being displayed on the LCD.

FAULTS



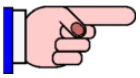
This function can be accessed from Level 2 and higher.

It allows the operator to view zones and points in fault, and to reset or disable them.

The yellow **FAULTS** LED will illuminate when one or more faults are present. Refer to “Viewing Faults” (page 3-2) for more information.

DISABLES

This function can be accessed from Level 2 and higher. It allows the operator to view zones, points or alarm devices that are in the Disabled state, and to enable them.

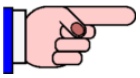


This is not to be confused with the fire brigade panel **DISABLE** key.

The yellow DISABLES LED will turn on when one or more disabled zones or points are present.

Refer to “Viewing Disables” (page 3-4) for more information.

TESTS



This function can be accessed from Level 2 and higher.

Pressing the **TESTS** key allows the operator to search for active tests or initiate a test. When initiating a test the display will show menu options for testing zones, points, alarm devices, etc.

The TESTS LED will illuminate when one or more tests are in progress.

For more information about tests refer to “Testing Zones” (page 6-12), “Testing Points” (page 6-16) and “Power Supply Status and Battery Testing” (page 8-3).

MENU

Press this key to access functional options from various displays. The options shown in any given display may vary according to the current Access Level.

ZONE

This key provides a convenient method to enter a zone or point function. Refer to “Displaying Zone or Point Command Menu” (page 6-2) for more information.

NUMERIC KEYPAD

For zone and point number, decimal point and other numeric value entries.

CANCEL

When used in menus requiring user confirmation this key permits an operator-initiated action to be cancelled without being processed. Press and hold this key to return the LCD to the base display.

OK

This key is used to confirm operator initiated actions when prompted via the LCD.

Keyswitches

An NZ *MX1* control panel has three keyswitches:

SILENCE ALARMS

This keyswitch requires a Bulgin key to operate. When this keyswitch is operated:

- all alarm devices are silenced,
- new alarms will not re-sound the alarm devices,
- the **COMMON DEFECT** and **FAULTS** indicators will be lit,
- the key cannot be removed.

When the Silence Alarms keyswitch is restored to normal, all zones currently in alarm will be automatically disabled. Refer to Section 6 for instructions for resetting and enabling these zones.

SERVICES RESTORE

This keyswitch provides a means to restore selected building services in a way controlled by the system configuration. For example it may enable lift operation that has been disabled by the *MX1* during an alarm.

EVACUATION

This keyswitch activates the alarm devices. It overrides the Silence Alarms keyswitch.

Operator Commands

In nearly all cases, the operator commands described in this manual consist of a series of keypresses on the keyboard on the front of the *MX1* panel.

Some of the keys have fixed labels and meanings, for example, the key labelled “NEXT” immediately below the alphanumeric LCD. This key will be referred to as the **NEXT** key. Similarly, other keys with fixed labels will be referred to as **RESET**, **MENU**, **OK**, etc.

The four keys to the right of the LCD have meanings that change depending on what is being displayed. The current meaning of each key is displayed at the right hand end of the LCD, alongside each key.

For example, a common meaning for **F2** and **F3** is to step through a list, when they are labelled “**PREV**” and “**NEXT**”. This will be referred to in the command descriptions as **PREV**←**F2** and **NEXT**←**F3**.

The degree to which you can view and control the *MX1* depends on the current operator Access Level (see Operator Access Levels, Section 1).

CANCEL Option

Unless indicated otherwise, pressing the **CANCEL** key (or **F**-key option if applicable) will return the LCD to the previous display.

Manual Examples

This manual describes the keyboard of the *MX1* for recalling faults, disables, and generally operating the panel. All examples and menu instructions given assume that no alarm is present, as displaying the alarms will take priority.

Operator Access Levels

Description

The *MX1* operator interface uses the concept of Access Levels to manage access to front panel commands that display or affect the state of the system. These Access Levels are based on the descriptions found in ISO 7240-2. The NZ Brigade Key Switches are unaffected by the Access Level and are available at all times.

There are four Access Levels: 0, 1, 2 and 3.

Access Level 0

When the system is fully secured and no alarms are present, and the *MX1* is configured for the keypad to be completely disabled. There is some viewing ability but no control.

This is the default NZ configuration.

Access Level 1

This is the level when the system is fully secured, i.e., cabinet door closed and locked and there is an alarm, or (for local mode panels) the fault buzzer is active.

In NZ operation at this level, you can:

- View the Alarms list
- Silence the *MX1* buzzer
- Acknowledge alarms (if this function is enabled).

You cannot affect the operation of the system at this level.

Access Level 2

Access to this level requires a physical 003 key to enable the user interface. For Slimline cabinets insert the key in the door lock and turn it 45^{o} anti-clockwise to enable this level, or for 15U cabinets unlock and open the door. The *MX1* will automatically return to Access Level 0 or 1 when the door lock is returned to its fully locked position.

At Access Level 2, you can:

- Access all system status displays.
- View alarm conditions.
- Silence the buzzer.
- Disable the alarm devices.

- Reset, Disable and Test zones.
- View low level system status displays.
- Disable and test points.
- Carry out battery, display and PSU tests.
- Change the address of loop devices.
- Perform all other functions not otherwise restricted to Level 3.
- Turn Infrared mode on/off for each *MX* loop.

Access Level 3

Access to this level requires access to level 2 and a user code and PIN. Refer to Chapter 7 for instructions on how to log on to Access Level 3.

In the absence of manual input, Access Level 3 users will be logged out after approximately 10 minutes and the display returned to the base display. The *MX1* will return to Access Level 2.

At Access Level 3, you can:

- Use all the level 2 commands.
- Re-start the system.
- Switch between the two installed configuration data files.
- Place the system into Commission Mode.
- Disable the Buzzer.

Display Timeout

Certain user prompt displays will return to the previous display after approximately 15 seconds if the user makes no further entry. Access Level is unaffected by this.

Smoke Control/AS 1668 Fan Panel

The *MX1* may be fitted with optional AS 1668 fire fan controls to allow management of air conditioning equipment, dampers, fresh air entry and smoke exhaust, etc., during a fire.

The operation of this will be site-specific, but in general the Fire Mode Reset button will need to be pressed after the *MX1* is reset from alarm to clear the latching fire mode on the fan controls.

Terminology Used in this Manual

***MX* Devices**

Addressable detectors, input modules and output modules connected to the *MX* loop.

Points

A point is a representation of a component of a fire alarm. This component could be the heat sensor of a combined smoke and heat detector, or it may be a relay that controls alarm devices such as sounders, or it may be some internal part of the control equipment.

The point that represents this component has a state, which can be one or more of:

- **Normal** – the component is operational and no other condition is present.
- **Pre-Alarm** – the component is a detector that has reached a condition suggesting an impending alarm.
- **Alarm** – the component is a detector and has activated (see Chapter 2). Generally, this calls the fire brigade.
- **ActInput (Active Input)** – the component is an input device that is being driven out of its normal condition, but is not in alarm or fault.
- **Operate** – the component is an output device (relay, transistor etc.) and is activated (turned on).
- **Dirty** – A detector is in a state that requires maintenance/attention.
- **Fault** – the component is in a condition that may adversely affect its ability to function correctly and requires service.
- **Device Fail** – communication with this *MX* device has been lost (for example, because the detector or wiring is faulty, or because the detector has been removed from the loop). This will prevent the device from performing its intended function.
- **Type Mismatch** – the wrong type of *MX* device is installed/programmed at this address.
- **Disabled** – the point has been disabled by the operator to prevent it from operating, or affecting system operation.
- **TestOp (Test Operate)** – the component is under test and has been put into an operate state.
- **Auto-Reset –** the component is undergoing an Auto-Reset test.
- **AlarmTest –** the component is undergoing an alarm test.
- **AlTstFail (Alarm Test Fail) –** the component has previously undergone an alarm test and has failed. This state clears after a successful alarm test.

As well as having a state, some points can also have values. For a smoke detector, one point could have a value to represent the smoke level. For a heat detector, one of its points could have a value to represent the current temperature. For an internal system point for battery status, one value might represent the battery voltage.

MX1 uses points to represent most of its internal and external components. The system configuration controls the way these points interact to provide the required system operation. Point information can be accessed from the *MX1* front panel.

SID

Used when networking *MX1* panels. The SID is a unique number in the range 1-254 (address) allocated to each panel or device on the network.

Point Numbers

A point number has the form ***Eq.Dev.Sub*** which consists of three parts:

- ***Eq*** is the equipment number, which indicates which equipment part of the system is involved.
- ***Dev*** is the physical device number within the particular equipment part, which will usually relate to a specific part of the system such as a detector or power supply.
- ***Sub*** is the sub-point number, which indicates which part of the

particular device is required. Some devices do not have more than one sub-point, which means that their only valid sub-point number is 0.

For example, point **241.25.2** refers to the Battery Connection point which registers the status of the battery connection. The parts of this point number are as follows:

241 is the equipment number of the controller in the *MX1*,
25 is the Power Supply device number,
2 is the sub-point for the Battery Connection.

This is displayed and entered as **2 4 1 . 2 5 . 2**

Point numbers for devices on the *MX* addressable loops can be readily constructed if you know their addresses. Entering a point number of **1.*A*** will show the state of sub-point 0, by default, of device A on the first in-built loop.

The inbuilt *MX* loop on the controller board is equipment number 1 and the optional loops start at equipment number 2.

Use **NEXT←F3** to step through any other sub-points of the device, for example, the photo and heat parts of a multi-sensor detector.

For *MX* loop devices, sub-point 0 represents the physical device, and is responsible for logging to the history and printer the Device Fail and Type Mismatch events. Note that when these events occur, all points for the device will enter the fault state, but only sub-point 0 will log these events. Disabling sub-point 0 will prevent the logging and signalling of fault by only sub-point 0, but will not prevent the fault being indicated on the other points.

For accessing a point on another *MX1* panel in a networked system, the SID of the other panel is multiplied by 1000 and added to the equipment number. For example, to access point 1.23.0 on an *MX1* panel with a SID of 12 you would use a point number of 12001.23.0.

When disabling an *MX* device that is in Device Fail or Type Mismatch, it will be necessary to disable all sub-points of the device to remove the fault indication.

To access a point on another *MX4428* panel in a networked system, the SID of the other panel is multiplied by 1000 and added to the responder number. Because *MX4428* doesn't have sub-points, the sub-point number is left off. For example, to access point 64.5 on MX4428 SID 13 you enter 13064.5.

Device Number

The device is represented by a number **Eq.Dev** and is used to perform operator actions on all sub-points of that device, without performing commands individually or requiring an operator to successfully enter the point range. For example, entering a point number 1.1 at the Disable

Point command will disable all sub-points that can be disabled on device address 1 on the in-built addressable loop. Some devices have only one sub-point, thus commands to the device or its sub-point 0 have the same effect.

Note that the *MX1* treats entry of a device number as a range entry covering all points on the specified device, thus menus will behave as if a range had been entered and will not display point names.

Equipment Numbers

Equipment numbers are:

- 1 – *MX* loop 1
- 2 onwards for additional *MX* loops (if fitted)
- 241 – *MX* Controller board points
- 242 – pseudo points – these are virtual points whose state can be controlled by logic equations. These are usually used to produce special operations in some installations.
- 243 – LCD/keyboard points
- 244 – RZDU/RDU points/equipment. If no RDUs have been enabled in the site-specific configuration, these points cannot be viewed.
- 245 – points for additional *MX* loop cards (if fitted).
- 246 – Remote Fire Brigade Panel (FBP) points (if fitted).
- 247 – Network Status Points. Refer Chapter 9.
- 248 – Distributed Switch System(DSS) for AS 1668 fan controls. Points for each control are not provided.

In the absence of any other information, a point can be found by entering the first point in the particular equipment part (for example, entering 241 will bring up the first point on the controller board), and stepping through the list of points with **NEXT**. The information displayed will assist in identifying the desired point. For example;

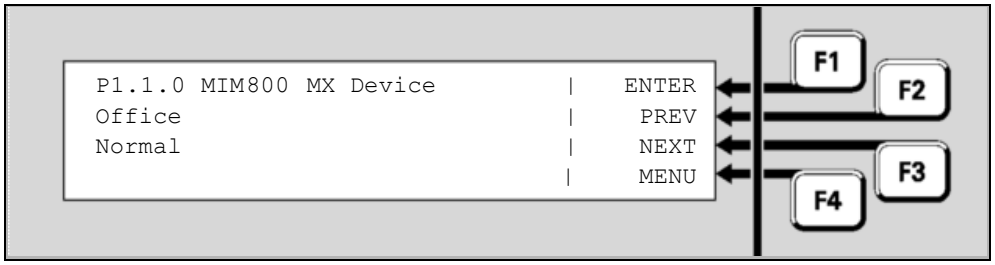


Fig 1-3 – Example of Point Display

Zones

A zone is a search area of a building or facility protected by the *MX1* fire alarm system. The limits of a zone are defined in NZS 4512. The zone description is used by fire-fighters to quickly locate and respond to alarms.

A zone represents one or more devices located within the zone area, and the *MX1* combines the states of the points representing these devices to produce a common zone status indication for use by fire-fighters and other emergency personnel.

A zone can have one or more of the following states:

- **Normal** – this is the usual zone state, when all field devices are operating normally, no tests are in progress and no other state is present.
- **Pre-alarm** – a detector mapped to the zone has gone into the pre-alarm state.
- **FirstAlrm** – for a Dual-hit zone. A device in the zone is in alarm, but the zone itself is not yet in alarm.
- **Alarm** – a device mapped to the zone has activated. Generally, this calls the fire brigade.
- **Resetting** – the zone is being reset.
- **Operate** – output points mapped to the zone will be operated.
- **Fault** – a device mapped to the zone is in the Fault state, or Device Fail or Type Mismatch.
- **Disabled** – the zone itself has been disabled by the operator to prevent it from affecting system operation. **Note** that disabling all points that map to the zone will automatically disable the zone as well. In this case, at least one point must be enabled to allow the zone to be enabled.
- **Test Operate** – all outputs mapped to the zone will be operated for testing purposes.
- **AutoReset** –the zone is in Auto-Reset test mode.
- **AlarmTst** – the zone is undergoing an alarm test.
- **AlTstFail** – there has been an alarm test run on the zone that failed. This state will clear after the next successful alarm test.
- **FltTest** – the zone is undergoing a fault test.

For accessing a zone on another *MX1* panel in a networked system, the SID of the other panel is multiplied by 1000 and added to the zone number. For example, to access zone 37 on an *MX1* panel with a SID of 9 you would use the zone number 9037.

ISO Terms Compared

In general, this manual uses terminology taken from AS 7240.1 and AS 7240.2. This table matches these with other common industry terminology.

ISO Term	Equivalent industry term
Alarm	Fire
Fault	Defect
Disable/Enable	Isolate/De-isolate
c.i.e	Fire Indicator Panel (FIP)
Alarm/Fault Routing	Signals to remote receiving centre

Note that when referring to the control of points and zones, “isolate” is the term traditionally used in New Zealand and Australia, while the ISO-standard term “disable” is becoming more widely used.

General Terminology

AVF	Alarm Verification Facility. A means by which the c.i.e. re-samples the smoke detector to confirm smoke is still present.
Acknowledge	An operator action to record the indicated zone alarm has been seen, for example, when handling AIF alarms.
Activated	This is the state of a point which is not in its "normal" or idle condition, nor in fault. Examples are: a detector in alarm, a relay or LED turned on, an input switch being closed.
Alarm Devices	The devices used to warn the occupants within the protected premises of an alarm. These include sounders, hooters, sirens, occupant warning systems with speech, and may also include visual indicating devices such as beacons or strobe lights.
Alarm List	The Alarm List is the list of current alarm conditions. When the Alarm List is shown (as in the Quick Reference at the front of this manual) the fire brigade panel controls function in accordance with the requirements of NZS 4512.
Alarm Routing	The transmission of an alarm condition to a remote monitoring centre to summon the fire brigade. The same transmission medium is often used to also transmit a fault condition (Fault Routing) to the monitoring centre to summon a service agent.
Auto-Reset	An in-situ detector test mode (sometimes called “Walk Test”), which allows detectors to be alarm tested in their installed positions. The zone is disabled and detector algorithms are bypassed to allow the detector to go into alarm quickly. The detector is automatically reset to allow the next detector in the zone to be tested.
Base Display	This is the display shown without operator intervention, or when the CANCEL key has been held or pressed a number of times to get back to the top display. The *MX1* may be showing normal, faults, disables. The Alarm List is a special base display (but is not classified as the Base Display in this manual).
CO	Carbon Monoxide – a colourless poisonous gas that moves by diffusion, emitted by smouldering fires.
Dirty [detector]	Smoke detectors can become contaminated due to a buildup of dust, dirt and other foreign particulates inside the sensing chamber. *MX1* monitors the detector reading as it increases due to dirt buildup, and compensates by shifting the alarm threshold to maintain a consistent sensitivity to smoke. It signals a dirty state for the detector when this reading indicates that the level of contamination is such that it can no longer be compensated for. From this point onward (until the detector is cleaned and replaced) it is more sensitive to smoke and thus more likely to produce a nuisance alarm.
FRC	Flat ribbon cables, usually internal to the c.i.e. cabinet.
Nuisance alarm	An alarm condition that occurs without the presence of a fire.
Off-normal (point)	The point is in a condition other than normal, for example fault, disabled, active, etc.
Off-normal (system)	A system condition where there is one or more points or zones that are not normal. That is, a point or zone has a status other than normal – for example, Fault, Alarm, Dirty, or Device Fail.
Residential Mode	A configuration where a smoke detector alarm does not activate the alarm devices and alarm routing. Only a warning local to the originating detector is given.

Nuisance Alarms

Nuisance alarms (also called false alarms or unwanted alarms) are alarm conditions caused by events other than a fire. These can be generally categorised according to two causes:

- The detector has correctly sensed the phenomena it is designed to detect, but the reason for the phenomena being present is not a fire. Examples are: a heat detector being triggered by very hot air from an oven, hot outside air entering an air-conditioned foyer, smoke from an outside fire triggering a smoke detector in the building, or welding setting off a flame detector.

- The detector has sensed a phenomenon different to what it is designed to detect, but one that causes similar effects to the detector. For example: steam or insects setting off a photoelectric detector, dust from building works, a nail being driven through detector cabling, or radio interference affecting a detector.

The actions to reduce the occurrence of both causes are generally the same and involve:

- Removing the unwanted effect that is causing the detector to operate.

- Repositioning the detector so it is not influenced by the effect.

- Changing the settings of the detector so it is more resilient to the effect.

- Changing the detector type to one that is not sensitive to the effect, but is still suitable for the environment and the risk.

Some precautions building owners/occupiers can take to reduce the possibility of nuisance alarms include:

- If structural repairs or maintenance are to be performed in the building, ensure that any work that generates dust or smoke is only carried out after the relevant zones have been disabled. Smoke detectors should be fitted with temporary covers to prevent dirt from accumulating. Once the work is complete, remove the covers, reset any alarms detected while the zone was disabled, and then enable the zone.

- Ensure that kitchens, bathrooms, and shower rooms are fitted with exhaust fans, and that if provided with closing doors there is pressure relief to allow effective extraction when the doors are closed.

- Detectors should not be located where they can be exposed to dust, heat or other phenomena that can adversely affect them. If they are no longer in a suitable position or are not of a suitable type for the location, contact the service company to discuss relocation or changing the detector type.

- If the building has long-term occupants, contact a reputable service company to conduct training in how to minimise nuisance alarms.

Chapter 2
Managing Alarm Conditions

Alarm Condition

An alarm condition occurs when a fire detection device (such as a smoke detector or manual call point) activates.

MX1 indicates the presence of the alarm condition by illuminating the general FIRE indicator and zone indicators on the zone index, through messages on the LCD, and (generally) by activating the building's alarm devices and alarm routing output to the fire brigade.

This chapter describes how *MX1* displays alarms and how to use the keypad to investigate and manage alarm conditions.

The alarms can be viewed on the LCD at Access Level 1. To reset or disable alarms will require Access Level 2. See "Operator Access Levels", page 1-11, for more information.

Alarms from other sources, such as sprinkler systems, may be shown on *MX1*. Refer to "Alarms From Other Sources" on page 2-5 for details.

In some installations smoke detector alarms may be programmed for local annunciation only. This is called residential mode. Refer to page 2-6 for further information.

In this Chapter

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

Topic	See Page
Alarm Condition	2-1
Viewing Alarms	2-2
Resetting Zones in Alarm	2-4
Disabling Zones in Alarm	2-5
Alarms From Other Sources	2-5

Viewing Alarms

When the first alarm condition is detected by the *MX1*, it does the following to indicate the presence of the alarm:

What the ***MX1*** Does When an Alarm Occurs

- The red general Fire indicators light red and individual Zone Alarm indicators (if fitted) flash red.
- The Fire Brigade alarm routing output is activated, shown by the red **ALARM ROUTING ACTIVATED** indicator.
- The Alarm devices are activated, shown by the red **ALARM DEVICES ACTIVATED** indicator.
- The Common Fire LED will be on.
- Other outputs, e.g. smoke control, air-conditioning shutdown, door holder releases, etc., may be activated to control the fire situation.

Alarm Display

The LCD will show the detail of the first alarm.

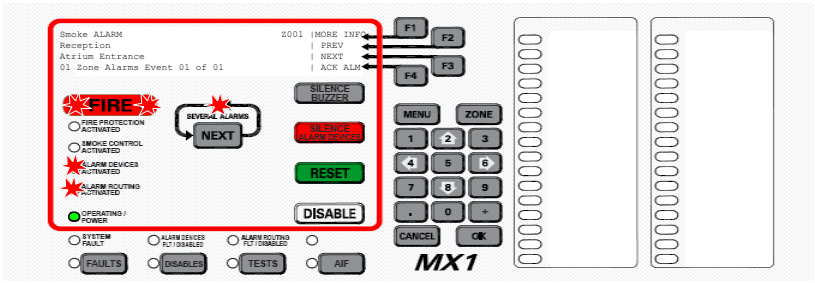


Fig 2-1 – Example of an Alarm Display

The first line of each alarm will show:
- the alarm type (e.g., smoke, heat).
- the zone number alternating with the point number.

The second line of each alarm will show the zone name.

The third line of each alarm will show the point name.

The fourth line of each alarm will show:
- the number of zones in alarm.
- Which alarm event is displayed out of the total alarm events present, as there may be multiple alarms per zone.

The **SEVERAL ALARMS** indicator will be lit if there are two or more alarms present. Pressing the **NEXT** key will scroll the display through any subsequent alarms (the alarm list).

In the Alarm Detail display, you can:
- Press **NEXT** or **NEXT←F3** to step to the next (later) alarm,
- Press **PREV←F2** to step to the previous (earlier) alarm,
- Press **ACK←F4** (if enabled) to mark the alarm as acknowledged. The acknowledgement time and date is recorded in the history log.

Silencing the Buzzer

To silence the internal alarm buzzer in the *MX1* cabinet, press the **SILENCE BUZZER** key. This can be done at Access Level 1.

Acknowledging Alarms

To acknowledge an alarm press **ACK**←**F4**. If more than one device is in alarm, press **NEXT**←**F3** or **PREV**←**F2**, as described above, to step to the next or previous alarm.

Acknowledging an alarm has the effect of indicating acknowledgement on the LCD, may make any associated flashing zone alarm indicator go on-steady and may also acknowledge the corresponding indication at a remote display.

Viewing Additional Alarm Information

This function requires Access Level 1.

Pressing **MORE INFO** ←**F1** will show the Alarm Additional Information display for the particular alarm. **NOTE** if the panel sending the alarm is not an *MX1* panel then the information shown depends on the configuration of the sending panel.

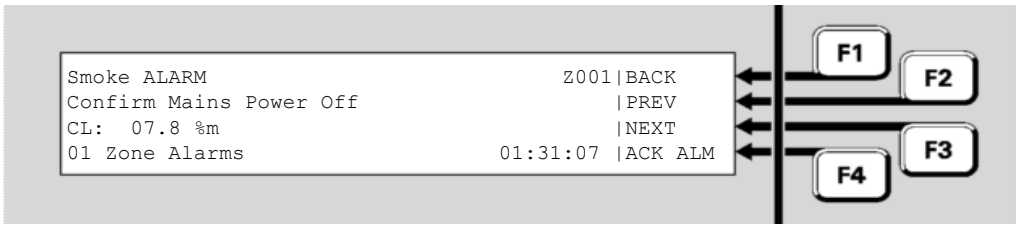


Fig 2-2 – Alarm Additional Information Display

The first line shows the alarm type and alternating zone and point number.

The second line shows the zone action text.

The third line shows the current level (CL=”current analogue level”) in appropriate units for the device type, in this example percent per metre obscuration.

The fourth line shows the number of zones in alarm, and the time at which this alarm occurred.

- Press **BACK** ←**F1** to return to the Alarm Detail screen.
- Press **NEXT** ←**F2** to step to the next (later) alarm.
- Press **PREV** ←**F2** to step to the previous (earlier) alarm.

In some circumstances, such as enabling a zone in alarm that currently has no points in alarm or for a zone going into alarm due to an alarm test, the alarm detail will show the first point that put the zone into alarm.

Silence Alarms Keyswitch

In NZ, silencing of the alarm devices is achieved with the Silence Alarms keyswitch, for use by brigade staff.

This keyswitch requires a Bulgin key to operate. When this keyswitch is operated:

- all alarm devices are silenced,
- new alarms will not re-sound the alarm devices,
- the **COMMON DEFECT** and **FAULTS** indicators will be lit,
- the key cannot be removed.

When the Silence Alarms keyswitch is restored to normal, all zones currently in alarm will be automatically disabled. Refer to the next section (“Resetting Zones in Alarm”) for instructions for resetting and enabling these zones.

On a networked system the *MX1* may be configured to allow you to silence alarm devices on remote panels. Refer to Silencing Remote Alarm Devices in Chapter 9.

Resetting Zones in Alarm

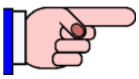
Overview

Generally the alarm state latches within the *MX1* so that each alarm can be viewed later when fire-fighting personnel arrive at the fire panel.

When the alarms have been investigated and are no longer required they can be reset.

The condition that caused each alarm must be cleared before the zone can be reset to the normal state (for example, smoke cleared from smoke detectors, manual call point element restored to normal).

Resetting an Alarm



This function requires Access Level 2.

If necessary, scroll the display with **NEXT** until the required zone alarm is shown on the display.

- Press **RESET**
- Press **OK** to confirm the reset command.

While the alarm is being reset, “Resetting” will be shown on the LCD.

If the particular zone in alarm is reset successfully, all alarm entries for that zone will disappear from the alarms list, the Zone Alarms will reduce by one, and the Events count will reduce by the number of alarm entries removed.

If an Alarm will not reset

If one or more detectors or devices in the zone are still active, the zone alarm state will not reset. At the end of the reset period, any points still in the alarm condition will be re-annunciated as new alarms.

Disabling Zones in Alarm

This function requires Access Level 2.

Overview

Disabling a zone stops the zone's state from affecting the system.

When a zone is disabled, it cannot put the system into alarm or fault, nor can an existing alarm or fault on the zone cause outputs to operate.

Disabling an Individual Alarm

If necessary, scroll the display with **NEXT** until the required zone alarm is shown on the display.

- Press **DISABLE**.
- Press **OK** to confirm the disable command.

When the particular zone is disabled, all alarm entries for that zone will disappear from the alarms list, the Zone Alarm count will reduce by one, and the Events count will be reduced by the number of entries removed.

Enabling Disabled Zones

Refer to Chapter 3, "Managing Faults and Disables", for details on how to enable zones that have been disabled.

Alarms From Other Sources

Other alarm types, such as sprinkler systems, pump run status, etc., may be connected to the *MX1* and displayed in a number of ways.

The sprinkler system will normally activate the alarm routing and alarm devices independently of the *MX1*, but use the *MX1* to simply indicate that the sprinkler system has operated and may also show which flow switches are operating within the building. These indications will usually not be alarm conditions and will clear automatically when the water flow is stopped.

Residential Mode

The *MX1* may be configured for some smoke detectors to work in residential mode (often used in permanently occupied apartments where the occupant can take action if smoke is indicated). An alarm on such a detector will not summon the Fire Brigade but a local alarm is given at the detector (for example, by a sounder base) so that the occupant(s) can investigate the situation and determine whether there is a fire.

If the situation is found to be a real fire, a general alarm can be generated by activating a manual call point, usually in a common area. If the detector is a combined smoke and heat multi-sensor, an alarm from the heat sensor will generate a general alarm.

Residential mode can include annunciation of a smoke detector alarm at a reception desk, for example.

If the situation is found to not be a real file (for example toast overheating), the local alarm will normally be able to be cancelled by operating a pushbutton within the local area.

Chapter 3
Managing Faults and Disables

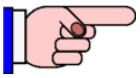
Fault Conditions

A fault condition occurs when a system component is in a condition that may affect its ability to function correctly.

The *MX1* continually checks the condition of its internal and external components, and will generate indications on the front panel and signals to the fault routing equipment, etc., when it detects a fault.

Examples of faults are:

- an *MX* detector is removed from its base,
- a field wiring problem (open circuit, short circuit or signal interruption) between the *MX1* and any of its detectors,
- a ground fault between *MX1* wiring and earth,
- a problem with the power supply or battery.

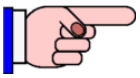


Generally, all faults are signalled to the fault routing equipment.

Disabled Conditions

A disabled condition occurs when an operator takes a component out of service, for example, to prevent a nuisance alarm when maintenance work such as building repairs or welding is being done in an area, or because it is faulty and repair may take some time.

A disabled component is prevented from contributing to alarm and fault indications or outputs. However, since the system is not in a “normal” state, under most configurations the presence of disabled components is shown by indications on the front panel.



MX1 uses non-volatile memory to store the disable status for zones, points, ancillary groups and the alarm devices. If the *MX1* is powered down or restarted within 10 seconds of disabling or enabling a zone, point, etc., then the new status may not be stored correctly and the old status will remain.

Other Off-Normal Conditions

The LCD will display a message “SYSTEM IS OFF-NORMAL” when any points are off-normal, but not in alarm or fault. This could be due to a service error such as:

- Alarm routing is isolated,
- Database Write Enable link is fitted, etc.

Pressing the **NEXT** key will display any of-normal points.

The Common Normal (Green) LED will be on if there are no off-normal conditions, no faults, and no alarms.

In this Chapter

This chapter describes using the operator interface to investigate the details of a fault condition, and to manage disables.

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

Topic	See Page
Viewing Faults	3-2
Viewing Disables	3-4
Disable Menu Options	3-6

Viewing Faults

How the ***MX1*** Indicates the Presence of a Fault

When a fault condition that has not been disabled is detected by the *MX1*, the operator interface does the following:

- The Common Defect LED will be on.
- The yellow FAULTS indicator lights.
- If fitted, a yellow zone indicator will flash for a zone fault.
- The buzzer sounds continuously (if configured, e.g., local mode panels).
- The LCD displays the number of fault conditions present and may show a fault action message, for example to call the service company, as shown below:

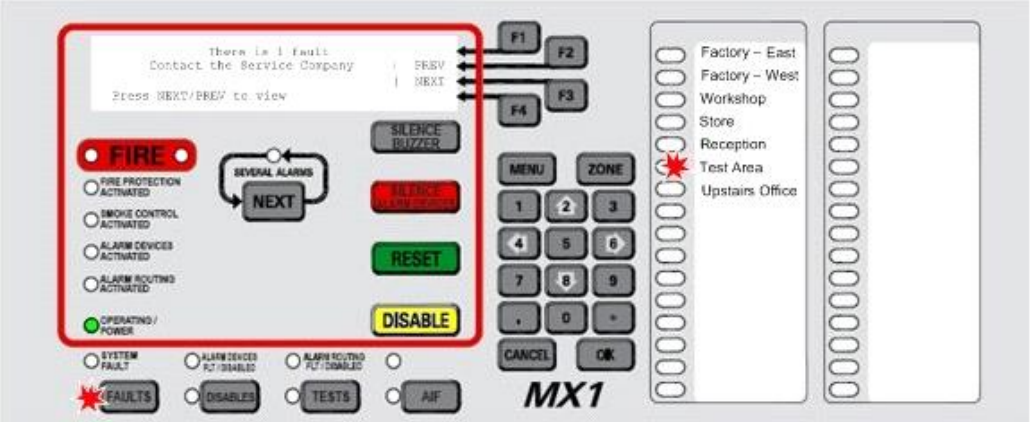


Fig 3-1 – Operator Interface Showing Fault Condition

If a fault condition occurs on a disabled item then no indication is given, but the fault(s) can be viewed by pressing **FAULTS**.

Responding to a Fault Indication

Faults should be assessed and repaired only by a trained and competent operator. Otherwise, the service company should be called. Chapter 10 contains a fault finding guide.

Viewing the Fault Details

This function requires Access Level 2.

If the Faults indicator is lit, press **FAULTS** to display the first item in fault. Pressing **FAULTS** will work from most displays as well as the base display.

Any zones in fault are listed first, in numerical order, followed by the points in fault, also in numerical order.

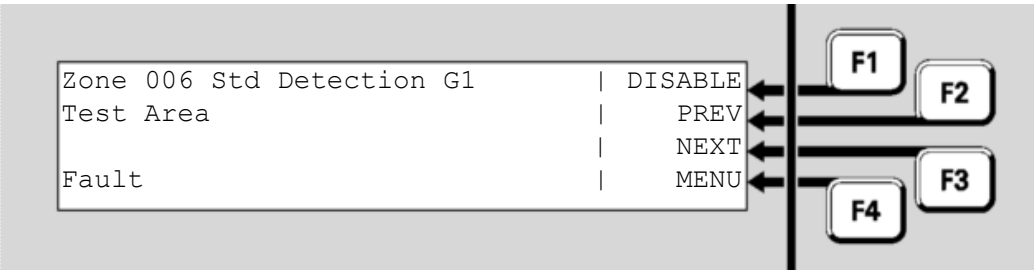


Fig 3-2 – *MX1* LCD Showing Zone Fault

"Zone 006" indicates the zone in which the fault condition has arisen.

The Profile name displayed (Std Detection G1 in this example) identifies the set of configuration settings in use for the zone.

"Test Area" indicates the location text for the zone.

The bottom two lines show the status conditions present for the zone.

To step the Fault display to the next item, press the **NEXT** key or **NEXT**←**F3** soft key.

To step to the previous item, press the **PREV**←**F2** soft key.

Zone Faults

A zone fault will be registered only if one of the points associated with that zone is or was in a fault condition.

Zones can be configured to latch their faults, i.e., to maintain the fault indication even after the point fault that originally caused it has cleared.

Point Faults

A point fault will be indicated if the point has a fault condition present. This could be a wiring or supervision fault, an addressing fault or some other detected mis-operation.

In some instances a fault on a device will put all of the points of that device into the fault state, for example Device Fail and Type Mismatch faults. Thus a single device fault may result in more than one fault being

indicated on the system. However, events for only point 0 will be logged to the event history or to the printer, so as to not unnecessarily fill the event history.

Fault indications for points are usually non-latching, i.e., when the point fault is cleared, the fault indication will automatically clear.

Therefore, while it is usual to find zones and points in the Faults list, it is possible to find only zones in the list, if all the point faults have cleared. In this situation, the point that caused the zone fault can be determined from the history log. See Chapter 4, Viewing the Event History.

Resetting a Displayed Fault Indication

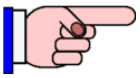
This function requires Access Level 2.

To reset a latched fault indication:

- Press **FAULTS** to display the Fault detail display.
- Press **NEXT** or **PREV**←**F2** to step through the Fault list to the zone or point to be reset.
- Press **RESET** and **OK** to confirm the reset.

If the reset was successful, the state of the zone or point will change from Fault to Normal. If the fault is still present, the fault indication will not clear, or may clear and re-announce after a few seconds.

If the fault on a zone does not clear then the fault condition is still present on one or more points, and these point faults will need to be cleared before the zone fault can be reset.



For NZ systems most faults do not latch, and so clear when the cause is removed.

Viewing Disables

How the ***MX1*** Indicates the Presence of Disabled Items

When there are one or more zones, points or components that have been disabled, the operator interface does the following:

- The yellow DISABLES status indicator lights.
- If fitted, the yellow zone indicator will turn on for a disabled zone.
- The LCD on the interface panel indicates the presence of an Off-Normal condition, as shown below.

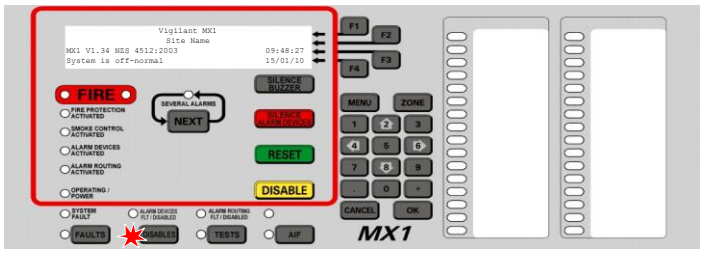


Fig 3-3 – Operator Interface Showing Disables Condition

Viewing the Disabled Items

To view the list of disabled items, press the **DISABLES** key.

The **DISABLES** key will work from most displays as well as the base display. This will show the first item in the Disables list.

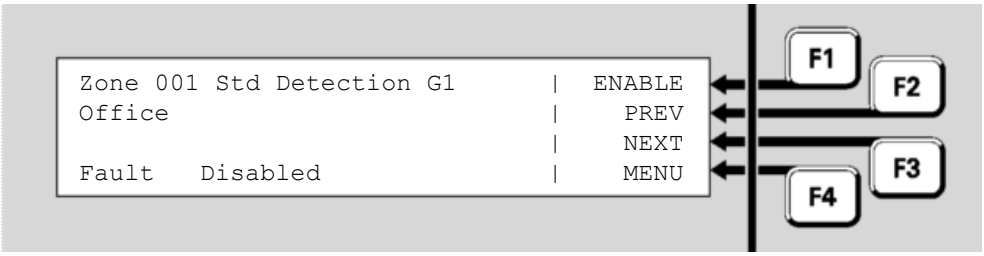


Fig 3-4 – Viewing the Disables List

In the example here, zone 001 has a fault as well as being disabled, but the Disabled condition means that this will not produce a Fault indication. However, it will still appear in the list of items that can be viewed by pressing the **FAULTS** key. Similarly disabled zones in alarm will indicate the alarm status when the Disables key is pressed.

Disabling a zone is a convenient way of hiding the state of all the points associated with that zone. However, the points themselves are not disabled by disabling the zone and may still affect other zones or outputs that they are mapped to.

Note that the disabled point or zone may have other conditions present (fault, alarm, etc.), but that these indications are prevented from affecting the system by the point or zone being disabled.

The disabled zones are listed first, in numerical order, followed by the disabled points, also in numerical order.

To step through the Disables list, press the **NEXT** key or **NEXT←F3** soft key.

To step to the previous item, press the **PREV←F2** soft key.

If there are no disabled items in the list, the display shows “no disables found” and then changes to the “Disable” menu. See page 3-6, “Disable Menu Options”.

Enabling a Disabled Item

This function requires Access Level 2.

To enable a disabled item:

- Press **DISABLES** to display the Disables list.
- Step through the Disables list with **NEXT**←**F3** or **PREV**←**F2** to the zone or point to be enabled.

Press **DISABLE** or **ENABLE**←**F1** and then **OK** to confirm the enabling.

⚠	If the disabled zone or point is in Alarm, enabling it may cause the system to enter the Alarm state.

From the Disables List other options are available by pressing the **MENU** key. These are described in the next section.

Disable Menu Options

This function requires Access Level 2.

There are commands available from the Disable menu to disable or enable whole blocks of zones or points as well as individual zones or points.

Press the **DISABLE** key from the base display. Alternatively, from the Disables List, press the **MENU**← **F4** option. This gives a menu of what to disable or enable.

CAUTION	Do not press the f.b.p **DISABLE** key when the Alarm List is being shown unless the intent is to disable the displayed zone in alarm.

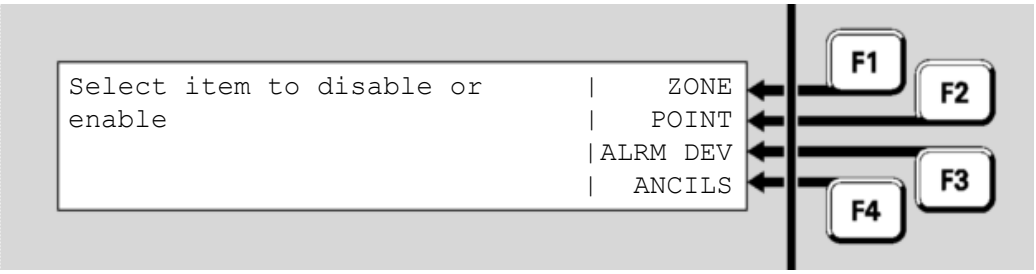


Fig 3-5 – Selecting an Item to be Disabled or Enabled

- **ZONE**←**F1** allows a zone or range of zones to be enabled/disabled. Refer to Disabling or Enabling a Zone (page 6-10).
- **POINT**←**F2** allows a point or range of points to be enabled/disabled.

Refer to Disabling or Enabling a range of Points (page 6-7).

- **ALRM DEV←F3** allows the Alarm Devices to be enabled/disabled.
- **ANCILS←F4** allows the ancillary groups to be enabled/disabled (see page 3-7).

Alarm Devices

This function requires Access Level 2.

From the Disable Menu press **ALRM DEV←F3** to enable/disable the alarm devices. The confirmation screen will show the action that is about to be performed (i.e., enable or disable) and request the **OK** key be pressed.

If **OK** is pressed the action is carried out, otherwise press CANCEL to return to the previous screen.

This function is the same as the Internal Silence Alarms function – see below.

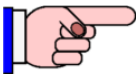
Internal Silence Alarms

This function requires Access Level 2.

To activate the internal Silence Alarms function, press the **SILENCE/RESOUND ALARMS** key.

The yellow **ALARM DEVICES DISABLED** indicator will light and the alarm devices will be switched off, if they were on.

Cancelling Internal Silence Alarms



This function requires Access Level 2.

To cancel the internal Silence Alarms function, press the **SILENCE/RESOUND ALARMS** key again. The *MX1* will ask for confirmation of this action if the alarm devices will then turn on. Press **OK** to confirm.

The yellow **ALARM DEVICES DISABLED** indicator will go out, as well as the **DISABLES** indicator if there are no other disables present.

Ancillary Groups

This function requires Access Level 2.

Many *MX1* installations have functionality for control of lifts, air-conditioning systems and so forth during alarm conditions. When the panel is undergoing tests it may be necessary to disable this functionality in order to avoid disruption to site occupants.

The Disable Ancils command provides a convenient means to enable or disable this functionality without having to address each individual function.

From the Disable menu press **ANCILS**←**F4**. This gives a display such as follows.

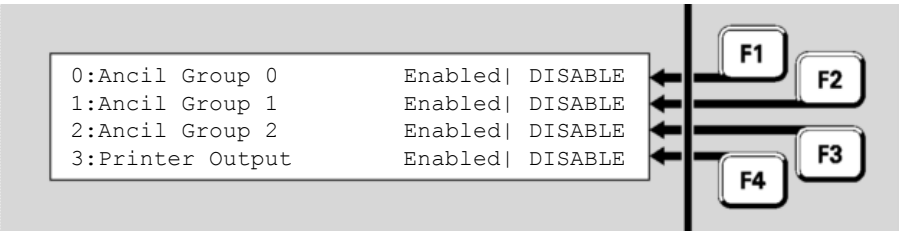


Fig 3-6 – Ancillary Groups Display

Each line represents one ancillary group and gives a description of the functionality controlled by that group, followed by its status (Enabled or Disabled). Each group can be enabled or disabled by pressing the corresponding F-key. No confirmation is required.

The functionality represented by each ancillary group is determined by the site-specific configuration. The names of the ancillary groups should describe this functionality. In the above example, “Printer Output” is one such description.

Note that if no functionality has been configured for an ancillary group, disabling that group will have no effect on the system but could result in the **DISABLES** status indicator turning on (as each Ancillary Group has a point that reflects its Enable/Disable status and these appear in the Disables list when the group is disabled).

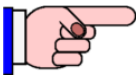
Chapter 4
Viewing the Event History

Introduction

The *MX1* maintains a history of the 900 most recent events that have occurred. These are stored in non-volatile memory, so are not lost on power down. When the history is full, the oldest event is deleted so a new event can be added.

In this Chapter

Topic	See Page
General Message Format	4-1
Viewing Event History	4-2
Zone Events	4-3
Point Events	4-5
System Events	4-6



When contacting technical support services, ensure that the event message shown on the *MX1* LCD is quoted exactly as shown.

General Message Format

Each message in the Event History shows a change in the state of some system component, for example a zone or a point. The message shows the new state, the component that changed, and the time and date when the change was registered.

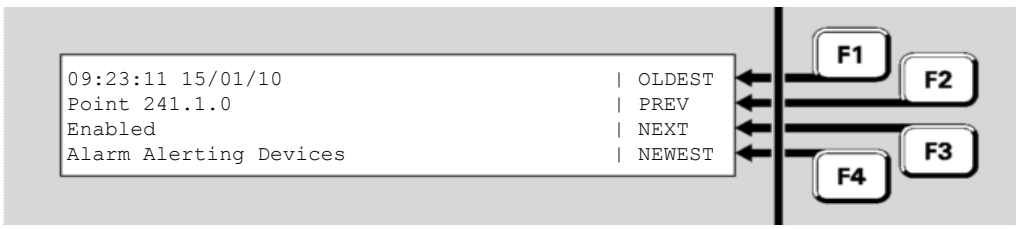


Fig 4-1 – Event History Message

In this example, the message is saying that at 9:23:11 am on 15th January 2010, the point numbered 241.1.0, representing the Alarm Devices, was enabled.

There are three types of event message:

- System, where line 2 of the display says "**`Local event`**"
- Zones, where line 2 of the display says "**`Zone nnn`**"
- Points, where line 2 of the display says "**`Point Eq.Dev.Sub`**".

The following sections describe these in more detail.

Viewing Event History

Displaying Event History

This function requires Access Level 2.

If the *MX1* display is not showing one of the base displays, i.e., Normal, Off-Normal, Fault or the Alarm list, press and hold **CANCEL** until the current base display is shown.

Press **MENU** to see a set of options:

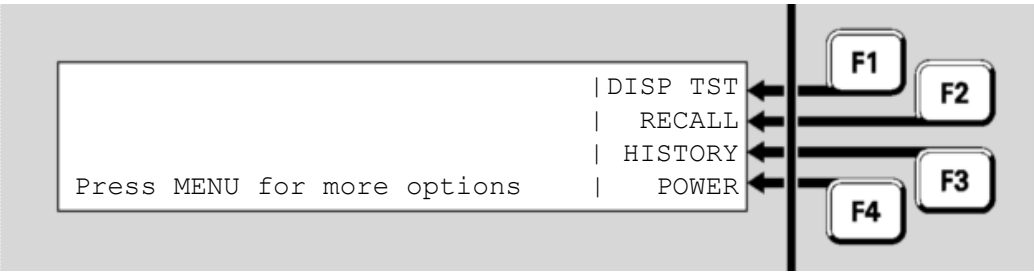


Fig 4-2 – Options Resulting from Pressing the Menu Key

Press **HISTORY←F3** to display the event history. The most recent event will be displayed first.

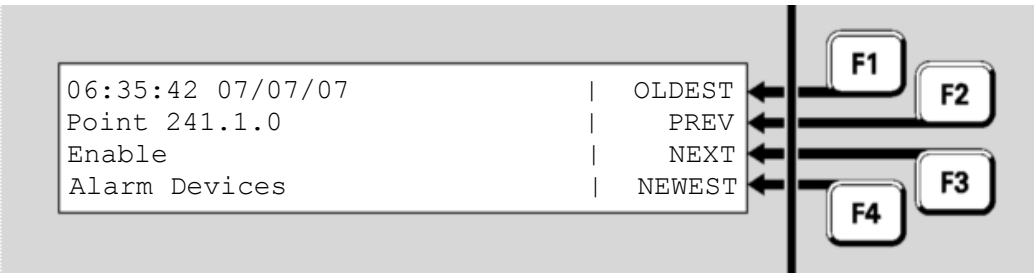


Fig 4-3 – Event History Display

The display shows:

- the time and date of the event,
- the number of the zone or point, or “Local Event” for system events,
- the type of event, e.g., Disable, Enable, Alarm, Fault, or a description of the local event,
- the text description of the zone or point involved.

Explanations of the event messages are given below.

Descriptions of the *MX1* controller and other equipment points are in Section 11.

The soft keys **F1** - **F4** are used to step forward and backward through the event log:

History Navigation Keys

- **NEXT** or **NEXT**←**F3** steps to the next (later) event.
- **PREV**←**F2** steps to the previous (earlier) event.
- **OLDEST**←**F1** shows the oldest event in the log.
- **NEWEST**←**F4** shows the newest (most recent) event.

Stepping **NEXT**←**F3** from the newest event will return to the oldest event after a brief message.

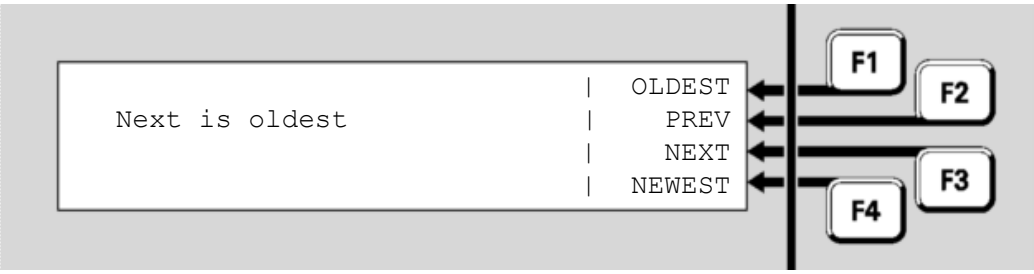


Fig 4-4 – Brief Message Shown Before Displaying Oldest Event

Stepping **PREV**←**F2** from the oldest event will return to the newest event after a similar message.

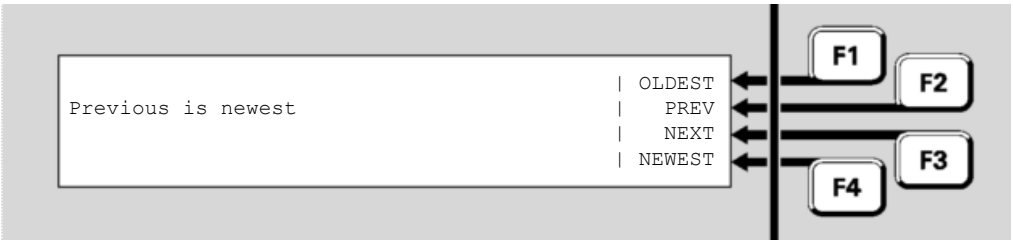


Fig 4-5 – Brief Message Shown Before Displaying Newest Event

Press **CANCEL** to return to the base display.

Zone Events

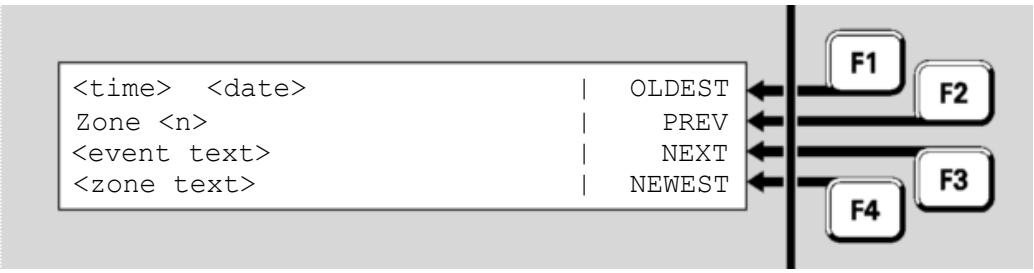


Fig 4-6 – Zone Event Text Format

The **<zone text>** is the descriptive text for the zone.
The **<event text>** is one of the following:

Zone Events Text	
Event Text	**Meaning**
Activate	This zone has become Active (distinct from Alarm state). Output points mapped to the zone become operated.
Alarm	One or more of the detectors in this zone has gone into Alarm.
Alarm ACK'D	The alarm on this zone has been acknowledged by a user.
Alarm clear	The alarm on this zone has cleared.
Alarm Test Start	A test of the processing of alarm conditions in this zone has been started.
Auto Disable	This zone has been automatically disabled/ isolated, for example following operation and restoration of the NZ Silence Alarms keyswitch.
Auto Reset Test	Auto-Reset mode has been started for this zone.
Auto Reset Timeout	Auto-Reset mode for this zone has been cancelled due to a timeout period with no new alarms.
Bad Event	The event code wasn't recognised by this panel.
Deactivate	This zone has stopped being Active.
De-operate	All output devices in this zone have been switched out of the operated condition.
Disable/Enable	This zone has been disabled/enabled by an operator command respectively.
Fault	One or more of the devices in this zone is faulty.
Fault clear	All faults on this zone have cleared.
Fault Test Start	A test of the processing of fault conditions in this zone has been started.
Fault Test Stop	A fault test has been terminated by an operator.
First alarm	A detector mapped to this zone has signalled alarm, but the zone alarm is not signalled yet because the alarm is being investigated (AAF alarm) or a second point in alarm is required (the zone is programmed for dual-hit operation).
Input activated Input deactivated	An input point mapped to this zone has become Active (distinct from Alarm) or has stopped being Active, respectively.
Normal	This zone has returned to normal.
Operate	One or more non-disabled output devices in this zone have been switched into the operated condition.
Operate Test Start	An Operate Test command has been issued for this zone. This will result in all the zone's output points being test-operated.
Pre-alarm	One or more of the detectors in this zone is in a pre-alarm condition.
Pre-Alarm clear	The pre-alarm condition on this zone has cleared.
Reset	This zone has been reset by an operator command.
Test Abort	The current test on this zone has been cancelled.
Test Fail	The current test on this zone has failed.
Test Pass	The current test on this zone has passed.

Point Events

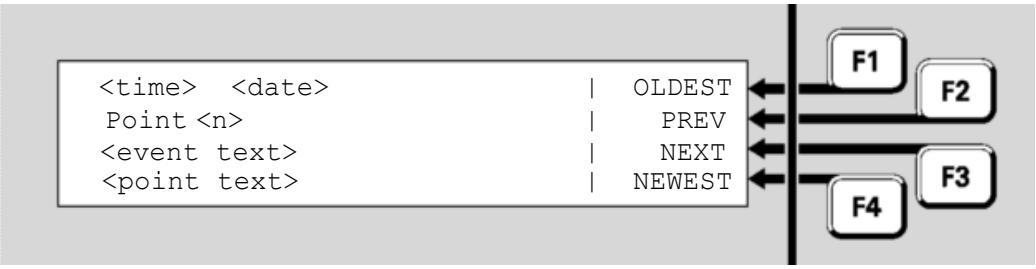


Fig 4-7 – Point Event Message Format

The **<point text>** is the configured descriptive text for this point.
The **<event text>** is one of the following:

Point Events Text	
Event Text	**Meaning**
Alarm	This point is in alarm.
Alarm Clr	The alarm condition on this point has cleared.
Alarm test fail	This point has failed its alarm test.
Alarm test start	An alarm test on this point has started or stopped, respectively.
Alarm test stop	
Auto-Reset start	Auto-Reset mode for this point (detector) has been started or stopped, respectively.
Auto-Reset stop	
Control CB Fail	This relay output point will not switch to its required state. The checkback signal does not match the required state.
Control CB Nml	This relay output point is now in its required state.
De-operate	The output device has been switched out of an operated.
Device Fail	This point (*MX* addressable device) is not responding to polling requests from the *MX1*.
Device Fail Clear	This point (addressable device) is now responding to polling requests.
Device Fault	This flame detector has a fault other than a window fault.
Dirty Alert	This point (detector) is still functional but requires service due to contamination.
Dirty Alert Clr	This point (detector) is no longer affected by contamination.
Disable	This point has been disabled.
Enable	This point has been enabled.
Fault	This point is faulty.
Fault Clr	The fault condition on this point has cleared.
Input activated	An input device has changed into or out of an activated condition, respectively.
Input deactivated	
Load Supply Fail	The separate supply to this device, for example a DIM800 or SNM800, is faulty.
Low Temp Fault	The ambient temperature for a detector with a CO sensor has gone below (above) its long term minimum operating limit.
Low Temp Normal	
O/C Fault	An input or output has an open circuit in the wiring connected to it.
Old MX ASIC Fault	The *MX* module does not support the requested function (e.g., falling edge interrupts) so needs to be replaced with a newer model.
Isolator Fault	The line isolator of the *MX* device is activated due to a short circuit condition on the *MX* loop. Only some devices will report this.
Operate	The output device has been switched into an operated.
Parameter Error	This device has been incorrectly set up at the factory and requires replacement.
Point Type Mismatch	The reported and configured types differ for this *MX* point.
Point Type OK	The reported and configured types now agree for this point.
Pre-Alarm	This detector has gone into a pre-alarm condition.
Pre-Alarm clear	The pre-alarm condition on this point (detector) has cleared.
Reset	The point has been reset, clearing any latched state.

Point Events Text	
Reset history	The point's HH and HL values have been reset.
Reset tracking	The point's TV value has been reset (to the CV).
S/C Fault	An input or output has an short circuit in the wiring connected to it.
Test De-operate	This output point has been switched into or out of an operated condition as part of a point test.
Test Operate	
Test Start Not nml	This point is not Normal at the start of a self test, for example type mismatch, device fail.
Unassigned point	There is a device at this address which is not in the system data file.
Window Fault	This flame detector has a dirty window.

System Events

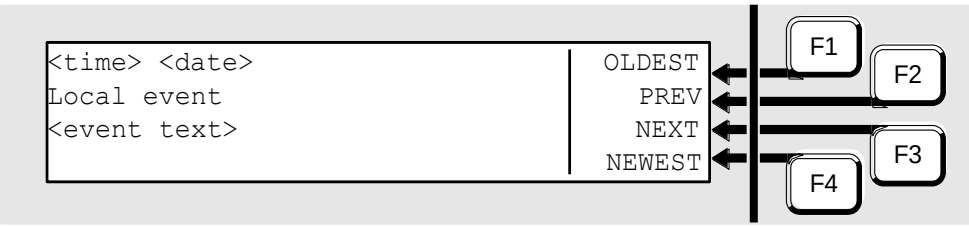


Fig 4-8 – System Event Message Format

The **<event text>** is one of the following:

System Events Text	
Event Text	**Meaning**
Alarm Devices Silence	The alarm devices were silenced after an alarm occurred.
Alarm Devices Unsilence	The alarm devices were resounded after being silenced.
Bad Event	The event code was not recognised by the panel.
Cold start	The *MX1* has been powered up.
Command Received	A zone or point command has been received on the network from the specified SID.
Commission Mode On/Off	Commissioning mode has been started/stopped.
Date changed	The system date has been changed. The new date is used for the event.
Daylight Save Start	Daylight Saving Time adjustment to the system clock has been started or stopped, respectively.
Daylight Saving End	
DB Prgrm (ID) User Name	A user able to change the system datafile logged on or logged off the programming port, respectively. ID is user ID, user name shows the user's name.
DB Prgrm end	
Diag logon (ID) User Name	A user able to use diagnostic functions logged on or logged off the diagnostic/programming port, respectively. ID is user ID, user name shows the user's name.
Diag logoff	
History Reset	Non-volatile event messages were all cleared (usually following a restore failure). All previous history events will have been lost.

System Events Text	
History restore fail	Retrieval of non-volatile event messages failed during system start up.
Keypad restart	The LCD/Keyboard microprocessor has restarted.
LCD logon	A user able to use Level 3 functions logged on or logged off, respectively.
LCD logoff	
Logic vars reset	The values of non-volatile logic variables were reset (usually following a restore failure). All nonvolatile variables will be initialised to FALSE.
Logic vars restore fail	Retrieval of non-volatile logic variables failed during start up.
Pnt disables reset	Non-volatile point disable states were reset (usually following a restore failure). All points will have become ENABLED.
Pnt disables restore fail	Retrieval of non-volatile point disable states failed during start up.
Printer events lost	The printer queue was over filled, so some events to be printed were lost.
Reboot xxx yyyyyyyy	The *MX1* internal checking routines have detected an inconsistency that needs to be addressed. Xxx, yyyyyyyy show the details of the fault. If this occurs repeatedly contact your service company.
RZDU Cmd rec'vd	An operator command was received from a connected RZDU.
RZDU test timeout	An RZDU failed to report that a self-test passed within 4 minutes of starting.
Sw fault xxx yyyyyyyy	The *MX1* internal checking routines have detected an inconsistency that needs to be addressed. xxx,yyyyyyyy show the details of the faults. If this occurs contact your service company.
System running	This is a daily timestamp, indicating the system is working.
TAP Access Granted	A temporary access password has been used to log onto the *MX1*.
Time changed	The system time has been changed. The new time is used for the event.
Warm start	The *MX1* has restarted without being powered down, for example, to change the datafile.
Zone disables reset	Non-volatile zone disable states were reset (usually following a restore failure). All zones will have become ENABLED.
Zn disables restore fail	Retrieval of non-volatile zone disable states failed during start up.

Chapter 5
Recalling Zone and Point Status

Introduction

This chapter describes using the front panel to view the status of zones and points.

The various states that zones and points can have are described on pages 1-12 and 1-15 respectively.

Note; some points may be recallable and appear to be in various “normal” states, but cannot have commands performed upon them. This may be due to the configuration settings used in a particular *MX1* installation, or that the points are for display-only purposes.

Equipment Points are listed on page 11-2.

In this Chapter

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

Topic	See Page
Recall Menu Options	5-2
Recalling Off-Normal Points and Zones	5-3
Using the Zone Button to Recall Points and Zones	5-8

Recall Menu Options

Requirements

This function requires Access Level 2.

If the *MX1* display is not showing one of the base displays, i.e., Normal, Off-Normal, Fault or the Alarm List, press and hold **CANCEL** until the base display is reached.

Press **MENU** (or from the Alarm List press TECHMENU-F4) to see a set of options:

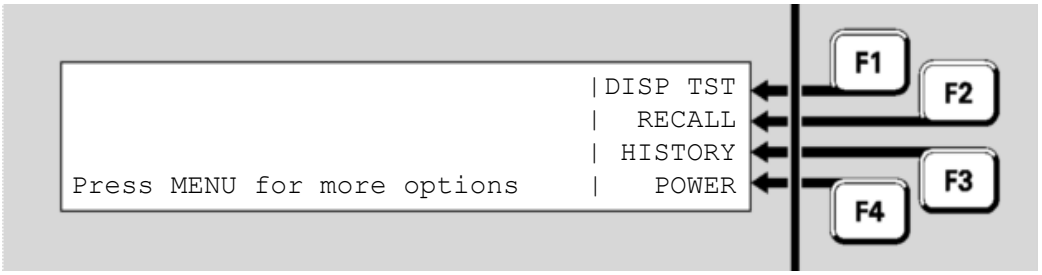


Fig 5-1 – Menu Options

Press **RECALL**←**F2** to select what to recall.

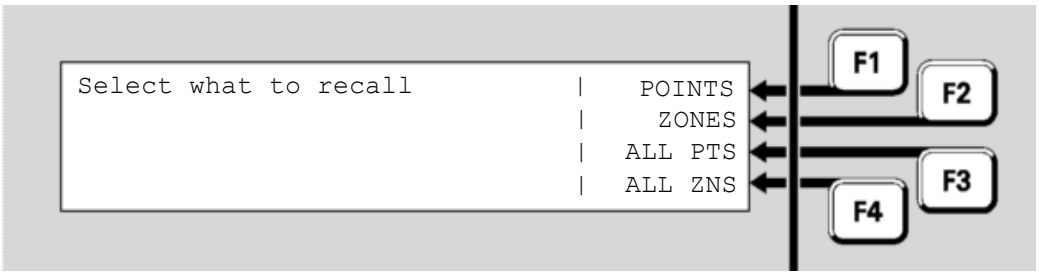


Fig 5-2 – Recalls Menu

Press:

- **POINTS**←**F1** to show the off-normal points recall options
- **ZONES** ←**F2** to show the off-normal zones recall options
- **ALL PTS**←**F3** to show the state of all points
- **ALL ZNS**←**F4** to show the state of all zones.

In the subsequent point or zone displays, pressing **MENU**←**F4** or **MENU** displays a menu of commands that may be applied to the zone or point. These are described in Chapter 6, ”Zone and Point Functions”.

Note: some points may be programmed to be excluded from off-normal or fault displays because they are not used in a particular *MX1* installation. Therefore, these will never appear in the Faults list or the Off-Normal Points list. However, they may be programmed to appear in the All Points list, and may show a state other than Normal. Some points may be programmed to never be displayed, and these points will not appear in any of the lists.

Recalling Off-Normal Points and Zones

Recall Points

The POINTS←F1 option in the Recall menu (see Figure 5-2) allows the off-normal points to be recalled.

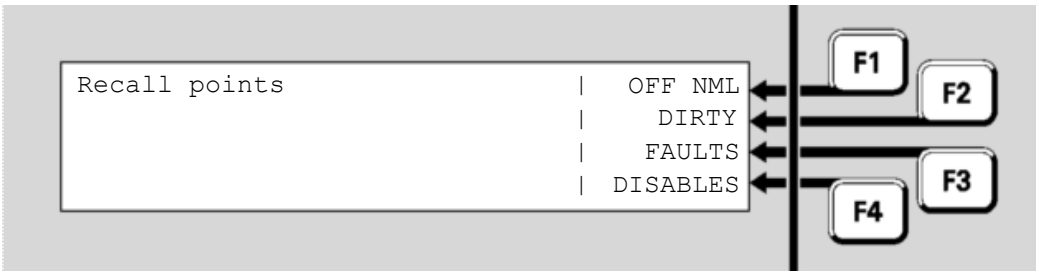


Fig 5-3 – Recall Points Display

Press:

- **OFF NML**←F1 to show all the off-normal points (i.e., not in a Normal state)
- **DIRTY**←F2 to show all points in the dirty condition
- **FAULTS**←F3 to show all points in fault
- **DISABLES**←F4 to show all disabled points.

If your panel is connected to a network you will see the following menu after you select one of the menu items:

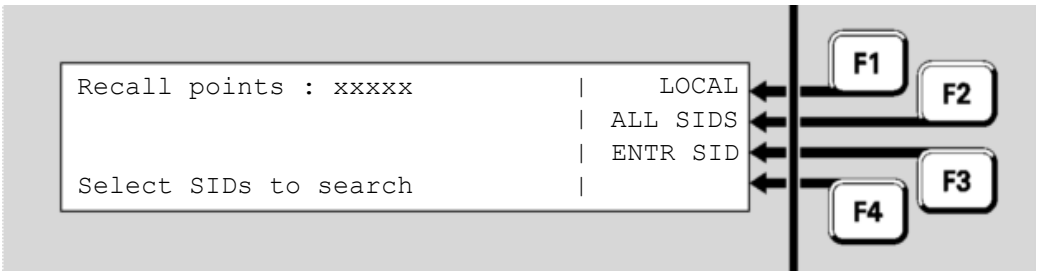


Fig 5-4 – Recall Points Network Menu

Press:

- **LOCAL**←F1 to show the selected points on the local *MX1*
- **ALL SIDS**←F2 to show the selected points on the network
- **ENTR SID**←F3 to show the selected points on a particular *MX1* panel. This will prompt you to enter the SID of the panel to search.

The points are displayed in numerical order, starting with the lowest numbered point. An example is shown in Figure 5.5.

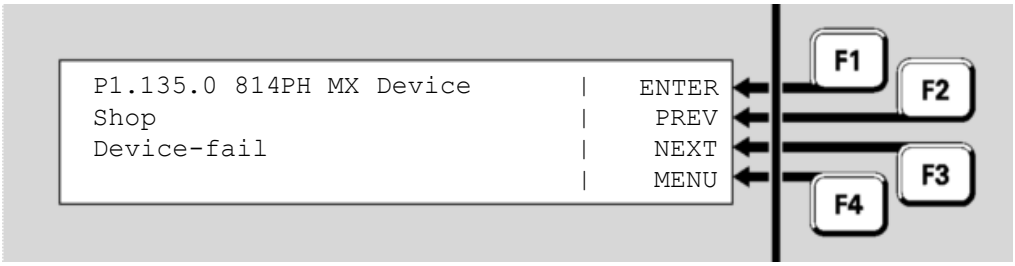


Fig 5-5 – Off-Normal Point Display

- Line 1 shows the point number, device type and point type.
- Line 2 shows the point description.
- Line 3 and 4 shows the point status. Refer page 1-12 for details.

In this example, point 1.135.0 is for a device which has been removed or become disconnected, hence the Device Fail status. ”Shop” is the point description set in the site-specific configuration. It indicates the physical location of the device.

From the point display, pressing **NEXT** or **NEXT**←**F3** steps to the next point.

After the highest numbered point, the list wraps around to the lowest numbered point again.

Pressing **PREV**←**F2** steps to the previous point in the list.

Press **ENTER**←**F1** to show the point number entry display:

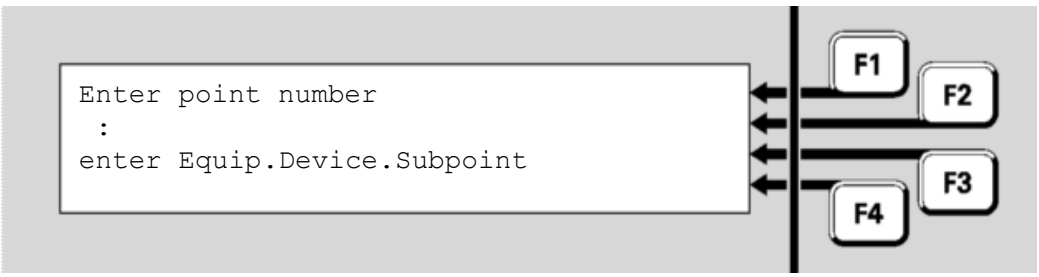


Fig 5-6 – Point Number Entry Display

This allows a new point number to be entered and its status recalled.

Enter the required point number and press **OK**.

Recall Zones

The ZONES←F2 option in the Recall menu (see Figure 5-2) allows the off-normal zones to be recalled.

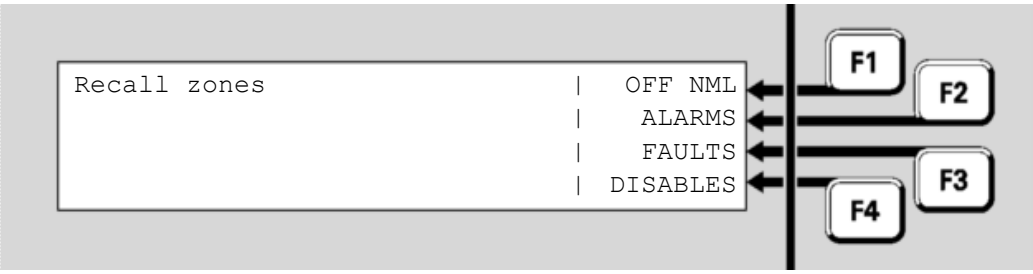


Fig 5-7 – Recall Zones Menu

Press:

- **OFF NML**←F1 to show all off-normal zones (i.e., not in a Normal state)
- **ALARM**←F2 to show all zones in alarm
- **FAULTS**←F3 to show all zones in fault
- **DISABLES**←F4 to show all disabled zones.

If your panel is connected to a network you will see the following menu after you select one of the menu items:

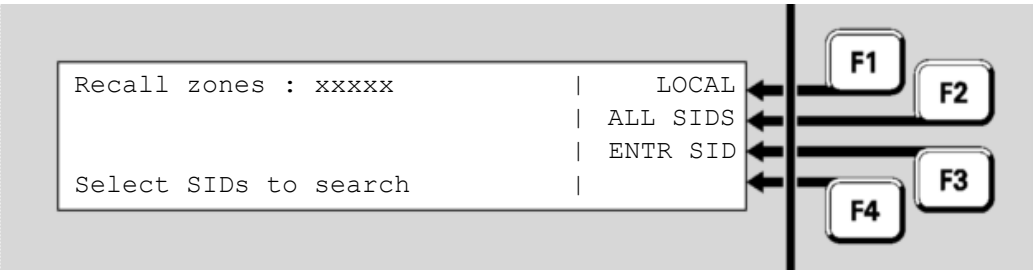


Fig 5-8 – Recall Zones Network Menu

Press:

- **LOCAL**←F1 to show the selected zones on the local *MX1*
- **ALL SIDS**←F2 to show the selected zones on the network
- **ENTR SID**←F3 to show the selected zones on a particular *MX1* panel. This will prompt you to enter the SID of the panel to search.

The zones are displayed in numerical order, starting with the lowest numbered zone. An example is shown in Figure 5.9.

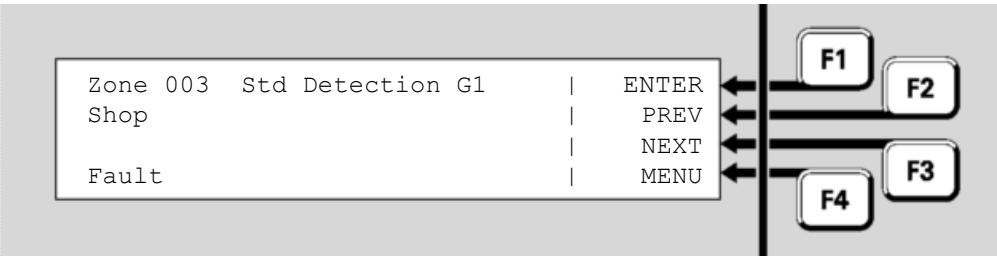


Fig 5-9 – Off-Normal Zone

The display shows the zone number and its operating profile on the top line, the zone text on the second line, and the zone status on the third and fourth lines. Refer to page 1-15 for details on the zone status conditions.

Function keys **NEXT**←F3 and **PREV**←F2 step forwards and backwards through the list of zones.

All Points

The **ALL-PNTS**←F3 option in the Recall menu (see Figure 5-2) allows all configured points to be recalled.

If your panel is connected to a network you will see the following menu:

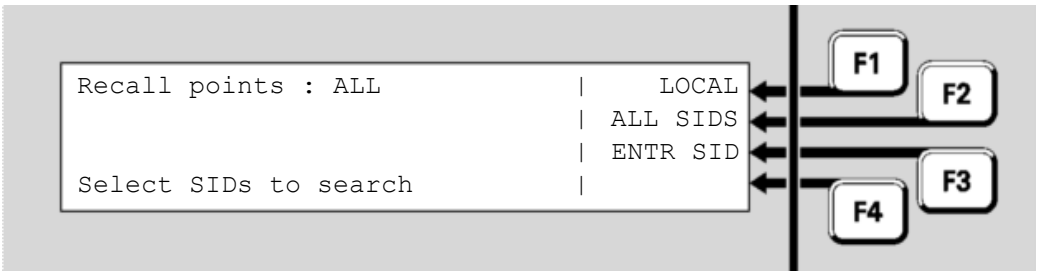


Fig 5-10 – Recall All Points Network Menu

Press:

- **LOCAL**←F1 to show the selected points on the local *MX1*
- **ALL SIDS**←F2 to show the selected points on the network
- **ENTR SID**←F3 to show the selected points on a particular *MX1* panel. This will prompt you to enter the SID of the panel to search.

All configured points will be displayed starting at the lowest numbered point, irrespective of the point condition. An example is shown in Figure 5-11.

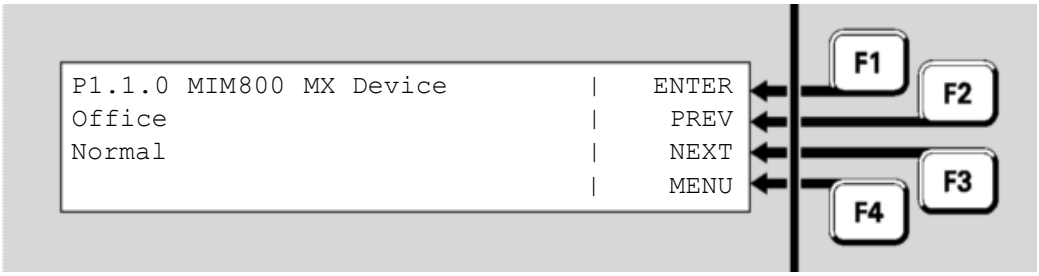


Fig 5-11 – Point Recall Display

Point numbering and usage is described in detail in Chapter 1, Point Numbers (page 1-13).

All Zones

The **ALL ZNS**←**F4** option in the Recall menu (see Figure 5-2) allows all configured zones to be recalled.

If your panel is connected to a network you will see the following menu:

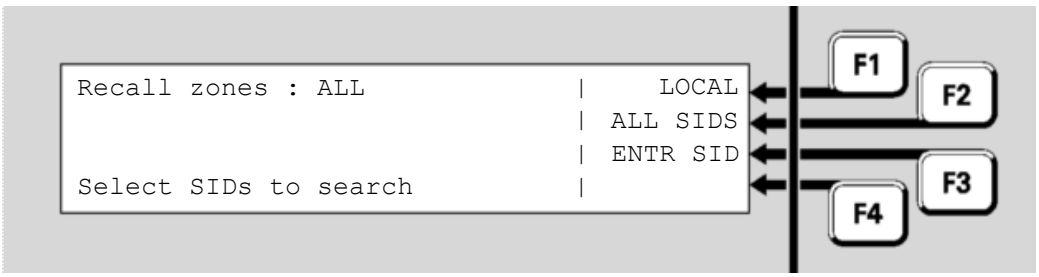


Fig 5-12 – Recall Zones Network Menu

Press:

- **LOCAL**←**F1** to show the selected zones on the local *MX1*
- **ALL SIDS**←**F2** to show the selected zones on the network
- **ENTR SID**←**F3** to show the selected zones on a particular *MX1* panel. This will prompt you to enter the SID of the panel to search.

All configured zones will be displayed starting at the lowest numbered zone, irrespective of the zone condition. An example is shown in Figure 5-13.

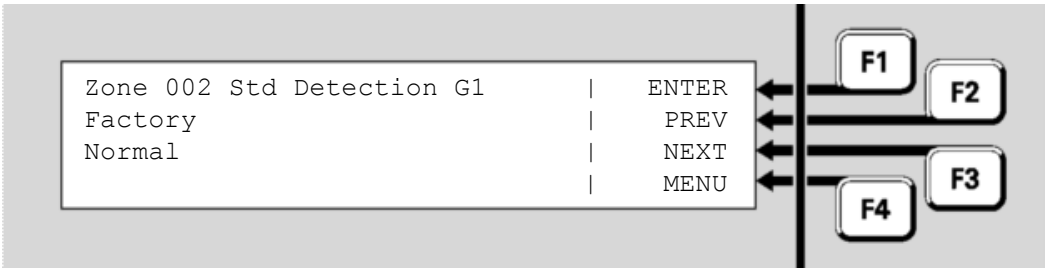


Fig 5-13 – Recall Zone Status Display

"002" is the number of the zone. "Std Detection G1" is the name of the operating profile that has been programmed for the zone.

"Factory" is the description given to the zone to associate it with its general physical location.

"Normal" indicates that no alarms, faults or other conditions are current for this zone.

Press **NEXT**←**F3** to navigate forward to the next zone, and **PREV**←**F2** to move back to the previous zone.

From the All Zones status display, you can directly enter the number of a new zone to be displayed. Press **ENTER**←**F1** to show the zone number entry display:

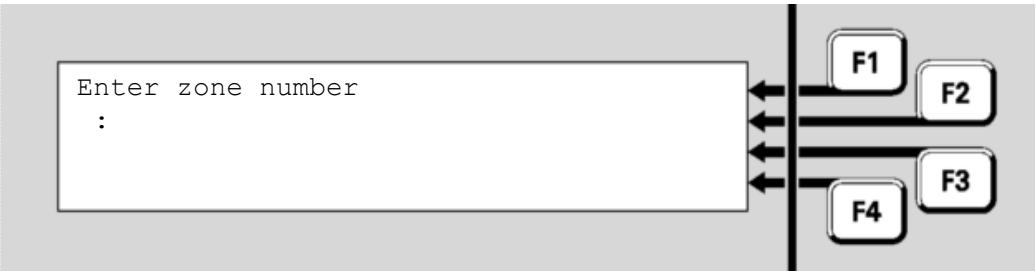


Fig 5-14 – Entering a Zone Number

Enter the number of the zone to be viewed using the numeric keypad, followed by **OK**.

Using the Zone Button to Recall Points and Zones

Zones

To recall a zone, press **ZONE** from the base display or Alarm List. Enter the required zone number and press the **OK** key. This will show the recall status display for that zone. See chapter 6 for the commands available on a zone status display.

Points

To recall a point, press **ZONE** twice from the base display or Alarm List. Enter the required point number and press the **OK** key. This will show the recall status display for that point. See chapter 6 for the commands available on a point status display.

Chapter 6
Zone and Point Functions

Introduction

This Chapter describes use of the front panel to change the status of zones and points.

Except where noted, all these commands require operator Access Level 2. See page 1-11 for more information about Access Levels.

Equipment points are described on page 11-2.

In this Chapter

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

Topic	See Page
Displaying Zone or Point Command Menu	6-2
Resetting Zones or Points	6-2
Disabling and Enabling Points or Zones	6-6
Testing Zones	6-12
Testing Points	6-16
Viewing Point Values and Settings	6-18

Displaying Zone or Point Command Menu

This function requires Access Level 2.

From any of the recall point or zone status displays described in Chapter 5, you can press **MENU** or **MENU**←**F4** to see the commands available for the currently displayed item.

Alternatively, for a zone, press **ZONE** or for a point press **ZONE** twice from the base display or Alarm List. Enter the required zone or point number and press the **OK** key. This will show the recall status display for that zone or point.

For example, in a point recall display pressing **MENU** will show a menu of commands.

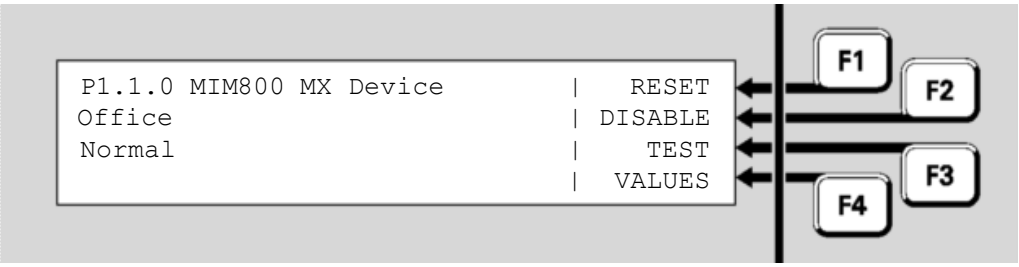


Fig 6-1 – Recall Point Status Display

- **RESET**←**F1** will reset the displayed point. See the next section for more detail.
- **DISABLE**←**F2** will disable or enable the displayed point. See page 6-6 for more detail.
- **TEST**←**F3** will test the point. See pages 6-12 and 6-16 for more detail.
- **VALUES**←**F4** will display analogue values for a point. See page 6-18 for more detail. This option is not displayed for a zone.

Pressing **MENU** again will switch back to the Recall Point or Zone Status display.

Resetting Zones or Points

Resetting a Zone

From the recall zone status display, press **MENU** or **MENU**←**F4** to display the zone menu commands.

Press **RESET**←**F1** or **RESET** to reset the zone.

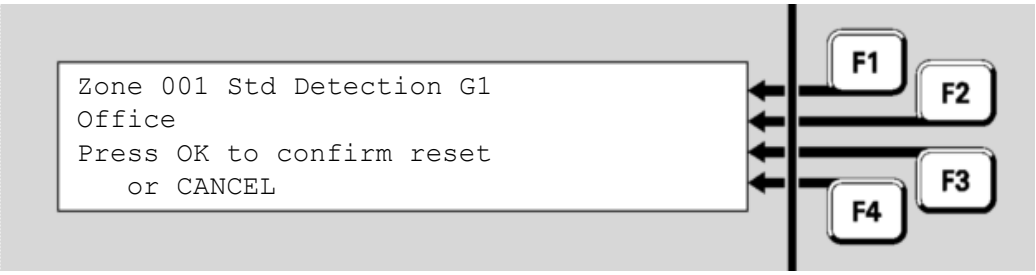


Fig 6-2 – Zone Reset Confirmation Display

In the confirmation display, press **OK** to confirm the reset or **CANCEL** for no action.

Resetting a Range of Zones

Do not press the f.b.p. **RESET** control when the Alarm List is being shown unless the intent is to reset the displayed zone in alarm.

This function requires Access Level 2.

A range of zones can be reset from a base display by pressing the **RESET** key. Reset options are as shown below.

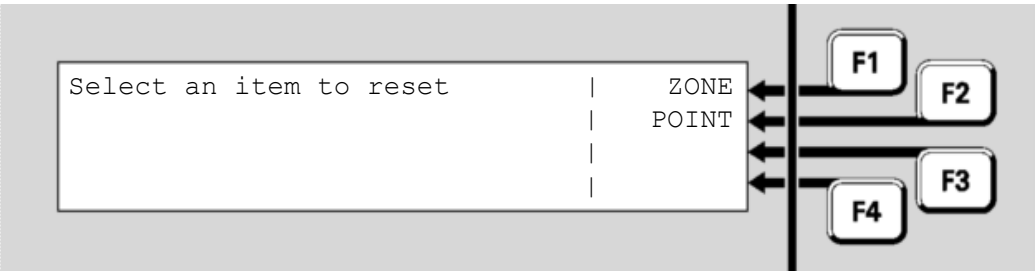


Fig 6-3 – Reset Menu

Press **ZONE←F1**.

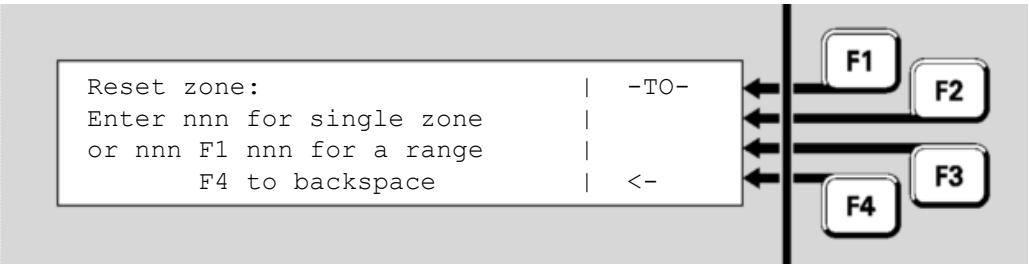


Fig 6-4 – Zone Number Entry Display – Showing Range Option

Enter the first zone in the range to be reset. Then press **F1** and enter the last zone in the range. Press **OK**.

F4 can be used as a backspace key.

The resulting menu offers one or more reset options and a cancel option.

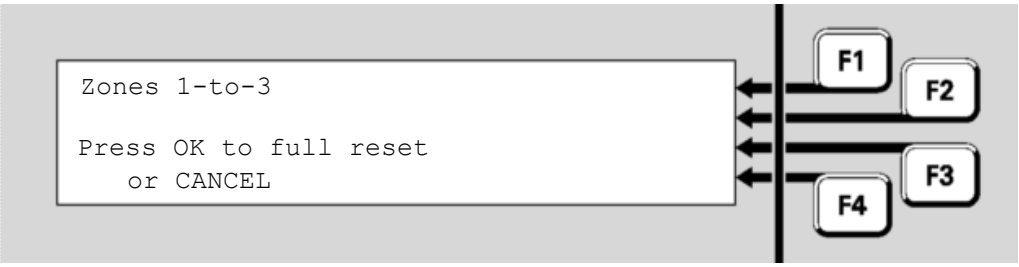


Fig 6-5 – Zone Reset Option Menu

Press **OK**, or **CANCEL**. The system will perform the reset on the configured zones in the range and then display the recall zone status display for the first zone so that the result of the command can be viewed.

Resetting a Point

From the recall point status display, press **MENU** or **MENU**←**F4** to display the point commands.

Press **RESET**←**F1** or **RESET** to reset the point. There are several options for resetting a point:

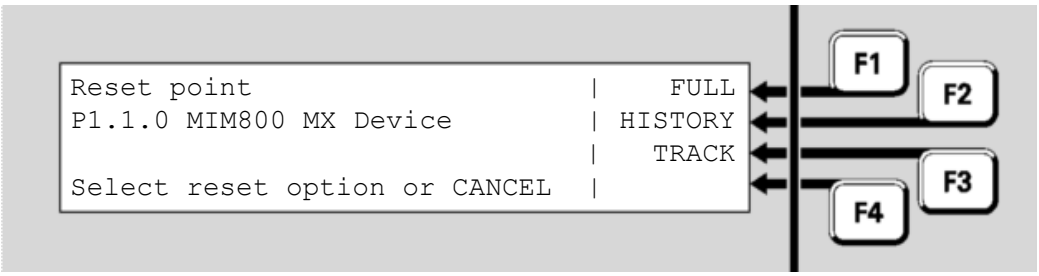


Fig 6-6 – Options For Resetting a Point

- **FULL**←**F1** is the basic reset to restore a point to a Normal state. The alarm and fault states are cleared (if possible) and any tests in progress are cancelled. This option would normally be used only for latching devices.
- **HISTORY**←**F2** sets the point's History High and History Low values to the current value, if it has history values. If it does not, this has no effect. Generally, only analogue addressable detectors have history values.
- **TRACK**←**F3** resets the point's Tracked value to the current value, if it has one. If it does not, this has no effect. Generally, only analogue addressable detectors have Tracked values. This option is useful for resetting the tracking after a new or cleaned detector has been installed.

After selecting the type of reset required you will be asked to confirm or cancel the reset. Pressing **OK** will confirm the reset and display the recall display for the point concerned. Pressing **CANCEL** will return to the display shown above.

Resetting a Range of Points

A range of points can be reset from a base display by using the **RESET** key. Reset options are as shown below.

Do not press the f.b.p. **RESET** key when the Alarm List is being shown unless the intent is to reset the displayed zone in alarm.

This function requires Access Level 2.

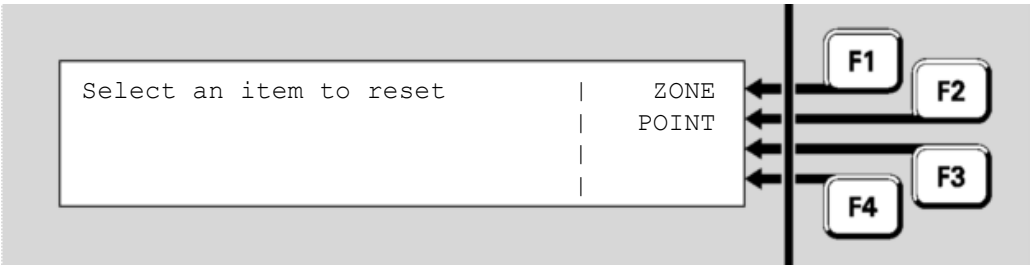


Fig 6-7 – Selecting an Item to be Reset

Press **POINT**←**F2**.

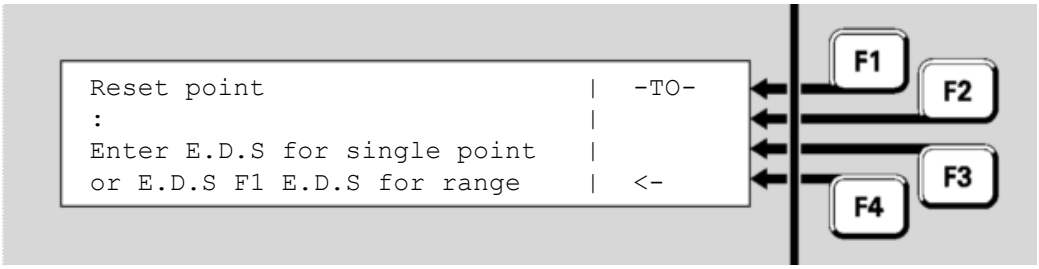


Fig 6-8 – Enter a Point Range to be Reset

Enter the first point in the range that is to be reset. Then press **F1** and enter the last point in the range.

F4 can be used as a backspace key to correct wrong entries.

For devices on the local panel, you may enter
- a single device or a range of devices, or
- a single point, or a range of points within the same device

For devices on a remote panel, you may enter
- a single point, or a range of points within the same device

For information on point numbers and ranges refer to “Point Numbers” (page 1-13). The *MX1* automatically enters the end-point in the range at the same level as the start point already entered by the operator. For example, if the first point in the range is entered as “1.1.1” and **–TO–**

←**F1** is then pressed, the prompt "1.1._" will appear.

Once the point number(s) are entered, press **OK** and you will then be asked to select the reset option. Refer to "Resetting a Point" (page 6-4) for details of the point reset options.

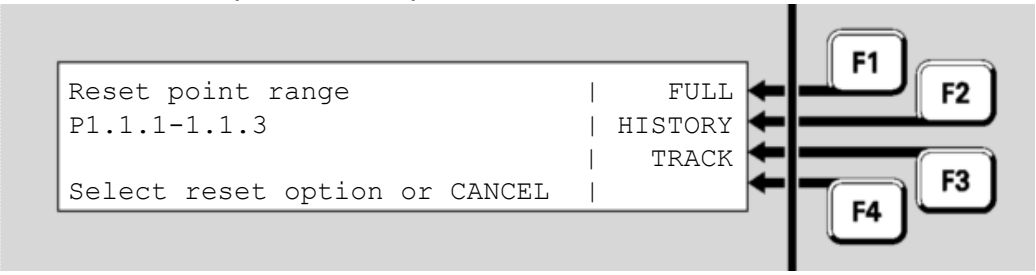


Fig 6-9 – Selecting The Reset Option

Press **FULL**←**F1**, **HISTORY**←**F2** or **TRACK**←**F3**. You will then be asked for confirmation. Press **OK**.

The configured points in the range will be reset for the selected option.

The display will then show the recall point status display for the first point in the selected range. Use the menu options to navigate through the point range, or press **CANCEL** to return to the base display.

If no points are configured in the selected range, the message "No Valid Points Selected" will be shown briefly.

Disabling and Enabling Points or Zones

Description of Operation

In general, each zone, each device, and each point may be disabled to stop conditions on the item affecting the system. For example, the smoke sensor point of an 814PH detector may be disabled to stop alarm monitoring for smoke while certain building work is going on around the detector. This will leave the heat sensor point still operational and able to detect alarms.

Disabling a device by entering the equipment and device number (i.e., no subpoint) will normally disable all sensor or input subpoints. With these subpoints disabled, a detector may be completely removed from the loop with the consequential fault condition(s) masked by disable.

Where it is required to disable only a particular element of the sensor, e.g., heat or smoke, then the relevant subpoint only should be disabled.

Note that although device fail conditions are signalled from subpoint 0, fault conditions will still be signalled from other sensor input subpoints if a device is removed with only subpoint 0 disabled.

Some subpoints will be programmed such that they cannot ordinarily be disabled, e.g., detector LED subpoints. However, if these subpoints are in a Device Fail condition, they can be forced into a disable state by first logging into Access Level 3 before using the disable point command(s). In this case the confirmation screen will describe the disablement as a “Force Disable”.

If a zone is disabled this will disable functionality for all its points as well, unless the points map to another zone or their status is used directly. In this case it will be necessary to disable the points directly.

If all points that map to a zone are disabled then the zone becomes disabled automatically. It will not be possible to enable the zone until at least one point that maps to the zone is enabled. Note that you must separately enable the zone after you have enabled the point.

As soon as a zone is enabled it will resume its programmed behaviour in activating alarm devices, alarm outputs and fault outputs.

MX1 uses non-volatile memory to store disable status for zones, points, ancillary groups and the alarm devices. If the *MX1* is powered down or restarted within 10 seconds of disabling or enabling a zone, point, etc., then the new status may not be stored correctly and the old status will remain.

Disabling or enabling a Point from a Recall Point Status display

From a recall point status display (refer Chapter 5), press **PREV**←**F2** or **NEXT**←**F3** to reach the required point, then press **MENU**←**F4.**

Press **DISABLE**←**F2** or **DISABLE** to disable or enable the point. In the confirmation display, press **OK** to confirm or **CANCEL** for no action.

If this point is configured so that it cannot be disabled, a message “**This point cannot be disabled**” will be displayed briefly.

Disabling or Enabling a range of Points

From the base display, press **DISABLE**, then **POINT**←**F2**.

Do not press the f.b.p. **DISABLE** control when the Alarm List is being shown unless the intent is to disable the displayed zone in alarm.

This function requires Access Level 2.

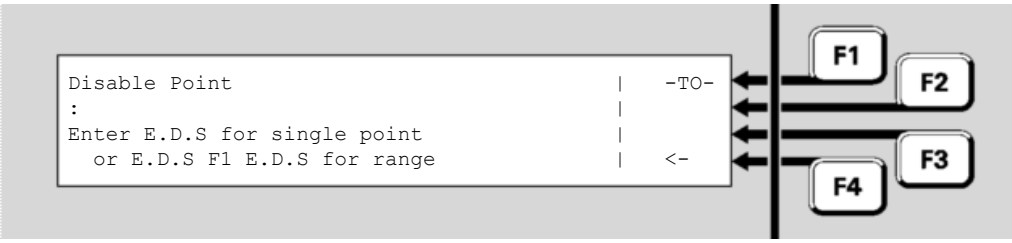


Fig 6-10 – Point Number Entry Display – Disable Points

For devices on the local panel, you may enter
- a single device or a range of devices, or
- a single point, or a range of points within the same device

For devices on a remote panel, you may enter
- a single point, or a range of points within the same device

Enter the first point in the range, then **F1** followed by the last point in the range. Point numbering is described in "Point Numbers" on page 1-13. Note that the selected range cannot span equipment numbers. If the starting point is a device number then the end point must be another device on the same equipment number. If the starting point number includes a sub-point, then the end point must include a sub-point of the same device. After pressing the **-to-←F1** key, the end point entry is automatically configured to the allowed range.

F4 can be used to backspace to correct wrong entries.
Press **OK**. If no configured points exist in the entered range, "No Valid Points Selected" is shown briefly before the point number entry display (Fig 6-10) is re-displayed.

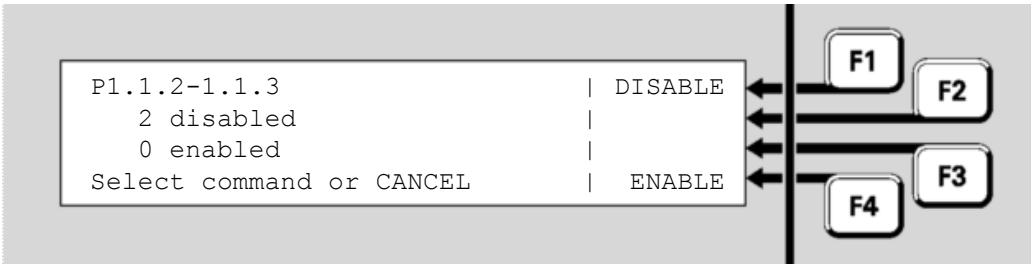


Fig 6-11 – Point Disable/Enable Menu

Fig 6-11 shows the number of configured points in the range that are already disabled and enabled.

Press **F1** to disable the range of points, or **F4** to enable the range of points. A confirmation display will be shown.

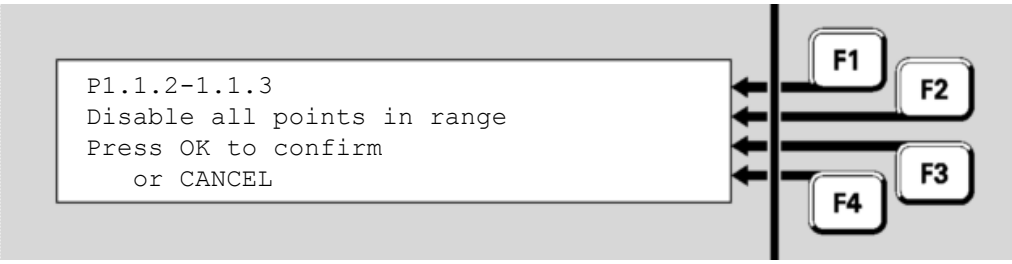


Fig 6-12 – Disable Point Range Confirmation Display

Press **OK** to carry out the function or press **CANCEL** to abort the command and return to the previous display.
On Enabling a range of points the following choice is given:

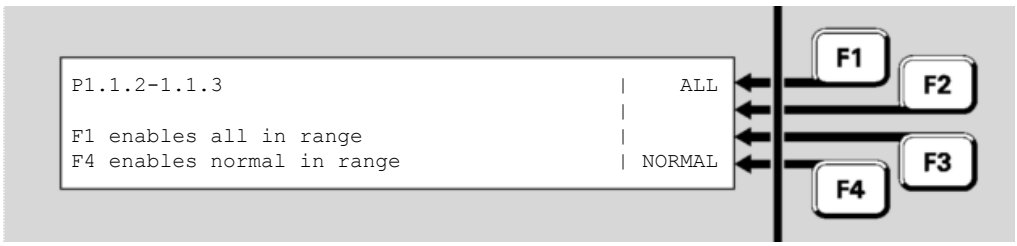


Fig 6-13 – Enable Point Range Choice Display

Pressing:
- **ALL**←**F1** will enable all points in the range irrespective of their status (e.g., points could be in alarm).
- **NORMAL**←**F4** will enable only those points in the range that are in the Normal condition (i.e., points in alarm, fault, test, etc., will remain disabled).

Press **OK** in the following confirmation screen to carry out the selected point enables.

Disabling or Enabling a Zone from Recall Display

From the Recall Zone Status display, press **MENU** or **MENU**←**F4** to display the zone commands.

To jump to a specific zone, press **ENTER**←**F1** from the Recall Zone Status display and enter the required zone number - for example, Zone 23. This would be entered as **2** **3** **OK**.

Press **MENU**←**F4**, then **DISABLE**←**F2** or **DISABLE** to disable the zone. If the zone is already disabled, the F2 option will be **ENABLE** instead of **DISABLE**. In the confirmation display, press **OK** to confirm or **CANCEL** to abort the command.

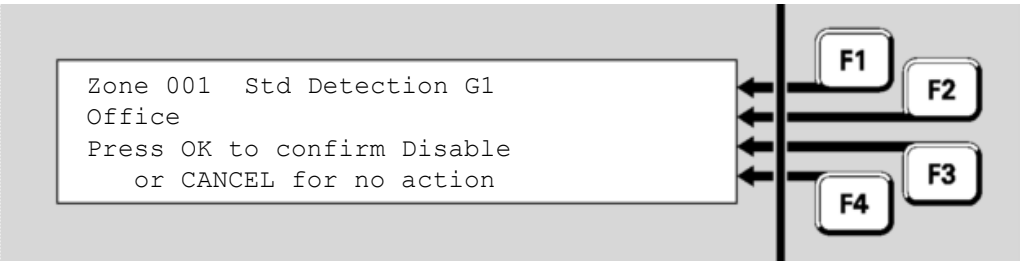


Fig 6-14 – Confirming Zone Disable

When a zone is disabled, the corresponding zone indicator will light yellow.

If this zone is configured so that it cannot be disabled, a message, "**`This zone cannot be disabled`**", will be displayed briefly.

Disabling or Enabling a Zone or a Zone Range

Do not press the f.b.p. **DISABLE** control when the Alarm List is being shown unless the intent is to disable the displayed zone in alarm.

This function requires Access Level 2.

From the base display press **DISABLE**, then **ZONE**←**F1**. A single zone or a range of zone numbers can be entered in this display:

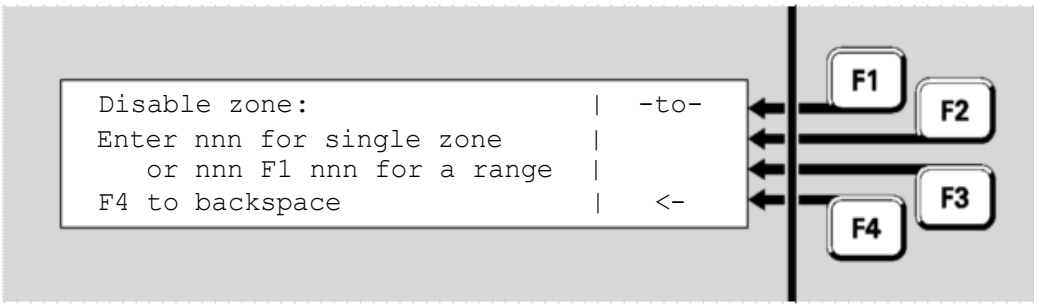


Fig 6-15 – Entering Zones To Be Disabled or Enabled

Enter a single zone or the required range and press **OK**. For example:

- If only zone 2 is to be disabled, this is entered as **2** **OK**.
- If the zone range 23 to 38 inclusive is to be enabled or disabled, this would be entered as **2** **3** **F1** **3** **8** **OK**.

F4 can be used as a backspace key to correct entry mistakes.

If a single zone has been entered, this display results;

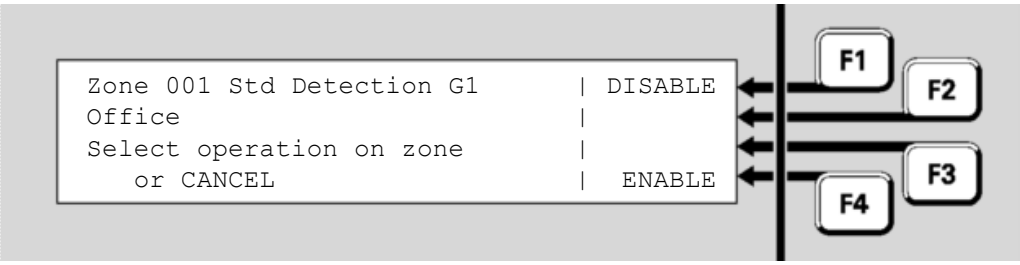


Fig 6-16 – Disabling Or Enabling a Single Zone

Press **DISABLE**-**F1** to disable the zone or **ENABLE**-**F4** to enable the zone. Press **OK** in the following confirmation display to complete the command, or **CANCEL** to abort it.

If a range of zones has been entered, the next display shows how many configured disabled and enabled zones there are in this range. Note that the entered zone range may include zone numbers that are not configured for this system, and therefore the sum of the disabled and enabled zones displayed may not tally with the apparent number of zones.

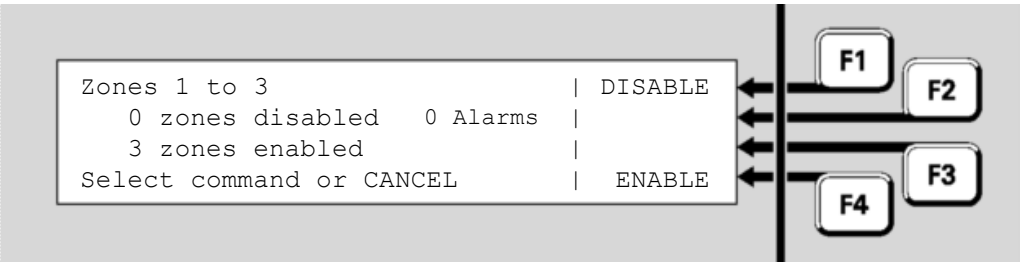


Fig 6-17 – Displaying/Enabling a Range of Zones

To disable the range of zones, press **DISABLE**←**F1**, and a confirmation display will result.

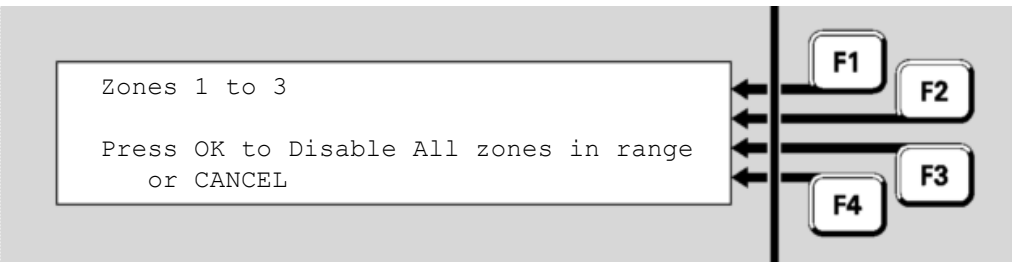


Fig 6-18 – Disabling All Zones an a Range

Press **OK** to confirm the command. You will be returned to the Recall Zone Status display for the first zone in the specified range. Press **CANCEL** to return to the previous display.

To enable the zones in the range (refer Fig 6-17), press **ENABLE**←**F4**.

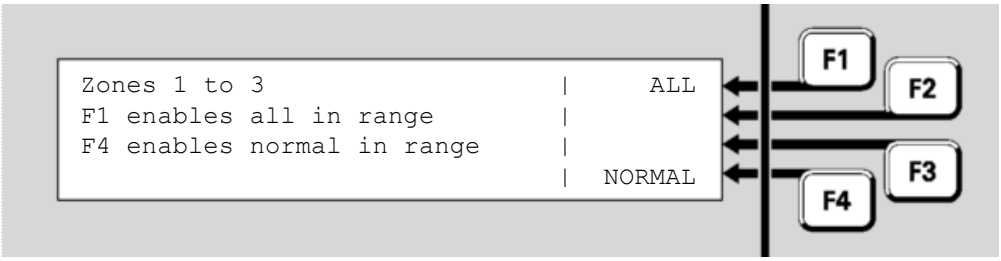


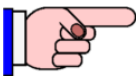
Fig 6-19 – Choice for Enabling a Range Of Zones

Selecting **ALL**←**F1** will enable all zones in the range, irrespective of their status.

If any of these zones are in Alarm or Fault states, they will resume their programmed behaviour in activating alarm devices and fault outputs once they have been enabled.

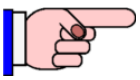
If **NORMAL**←**F4** is selected, only those zones in the range that are in the normal state will be enabled. Since (dependant on the configuration in use) enabling zones in alarm could activate remote signalling, alarm devices, etc., this option permits the system to be returned to service without accidentally enabling an alarm and perhaps signalling the brigade.

In the confirmation display press **OK** to enable the zones in the range, or **CANCEL** to abort the command.



Attempting to enable a zone that has all of its points disabled will not work even though it falls within the specified range of zones. To enable the zone, one or more of its points will need to be enabled first.

Testing Zones



This function requires Access Level 2.

From the recall zone status display, press **MENU** or **MENU**←**F4** to display the menu options, then press **TEST**←**F3** to display the zone test menu.

Alternatively, from the base display press **TESTS**, **INITIATE**←**F4**, **ZONE**←**F1** and enter the zone number.

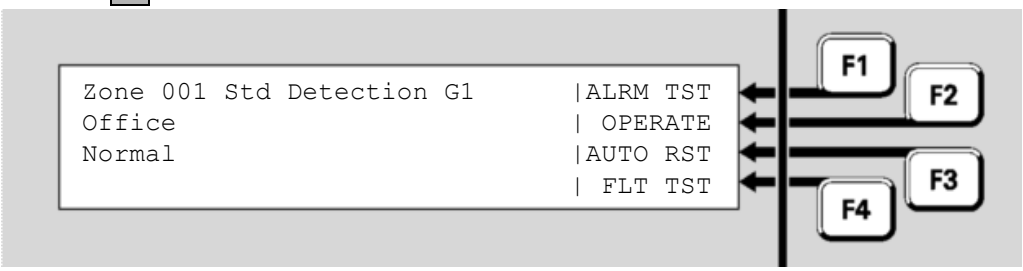


Fig 6-20 – Zone Test Status and Menu

Test options for a zone are:

- **ALRM TST**←F1 – perform an alarm test on this zone.
- **OPERATE**←F2 – force all output points controlled by this zone to operate.
- **AUTO RST**←F3 – put this zone into Auto-Reset test.
- **FLT TST**←F4 – perform a fault test on the zone.

If any of these test options is selected, a confirmation display/prompt will be displayed. Press OK to confirm that the test should start.

While the test is running, none of the other tests can be started for this zone. However, tests can be started or stopped on other zones, and other front panel functions can be used, for example viewing history, point status recalls, etc.

The zone test can be stopped by resetting the zone. This is most easily done by pressing the TESTS key then **SEARCH**←F1, to display the list of items currently being tested, stepping to the desired zone under test by pressing NEXT, and pressing RESET then OK to confirm the reset.

Do not start any zone tests while the zone is being reset (resetting is shown on the status screen) as the reset process will clear the test.

Alarm Test

This test generates an alarm in the zone by finding all enabled points that are mapped to the zone and putting them into a test alarm condition. Those devices with a physical alarm test capability will have it activated. Other devices will have an alarm condition simulated by the *MX1*. An Alarm Test can be performed on both Enabled and Disabled Zones. The Enabled zones will be automatically disabled at the start of the test so as not to activate any outputs.

The zone can be manually enabled during the test so that the flow-on effects of the alarm can be observed.

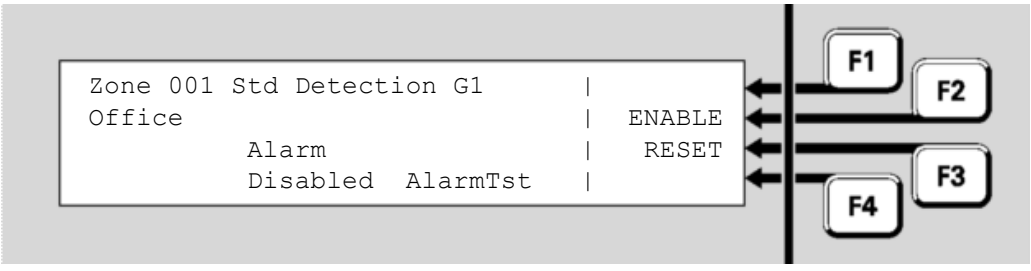


Fig 6-21 – Zone Alarm Test Status and Menu

Press **ENABLE**← F2 to enable the zone. Note that enabling the zone while the alarm test is in progress may sound the alarm devices, call the

brigade, etc., when the zone goes into alarm.

Pressing **RESET**←**F3** will end the test and clear any alarm indications. It will also restore the zone's enable/disable status to what it was before the test was started.

The test passes when the zone goes into the alarm condition. The zone will go into alarm condition only when all enabled points mapped to it have gone into alarm. If this does not occur (e.g., because a device is in Device Fail or all alarm-generating points are disabled) within three minutes the test will fail.

Note: Each point put into alarm by the Zone alarm test will be logged (if enabled) to the printer and history, show Alarm in their status and activate any directly controlled outputs.

Operate Test

This test will allow all the output points controlled by the zone to be operated. After the test command is confirmed, the zone will be disabled. It is necessary to enable the zone to actually operate all the output points. They will then operate for a programmed time (typically 5 seconds) or until the zone is disabled (**F2**), the test stopped (**F1**), or the zone reset (**F3**).

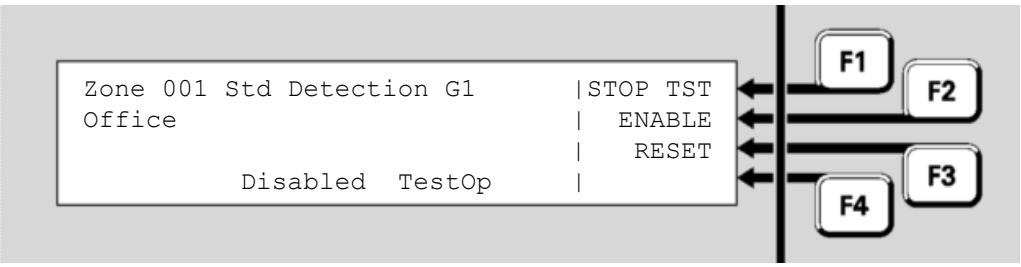


Fig 6-22 – Zone Operate Test Status and Menu

During the test, the menu options are:

- **STOP TST**←**F1** – stops the operate test on this zone.
- **ENABLE**←**F2** – will enable the zone in order to allow the output points to be actually operated.
- **RESET**←**F3** – stops the operate test and also resets any latched states (e.g., faults) for this zone.

Note that both **STOP TST**← **F1** and **RESET**←**F3** will also restore the zone's enable/disable status to what it was before the test was started.

Auto-Reset

The Auto-Reset test allows *in-situ* alarm testing of detectors and devices mapped to the selected zone without the need for a second person resetting alarms at the *MX1* panel.

The test bypasses all filtering, i.e., AVF, SmartSense and FastLogic are turned off, so that each device goes into alarm as fast as possible.

The Auto-Reset test uses the alarm devices to signal to the tester when a device mapped to the tested zone has gone into alarm (or Active Input). The alarm devices are operated for approximately 3 to 4 seconds, but

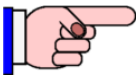
only if the alarm devices are enabled. As additional points are tested, the alarm devices will operate as noted.

Once the point has gone into alarm (or into Active Input) and been processed by the zone the point is then ignored until it returns to normal (for at least 60 seconds). This allows devices to be tested quickly in succession, without waiting for smoke to clear or temperature to drop, for example. The zone status display and alarm LED continue indicating alarm even though the point alarms clears.

The Alarm (or Active Input) event for each point will be recorded in the event history, if event logging has been configured for the point. See Chapter 4 for more about viewing the event history.

The zone is automatically disabled during Auto-Reset test to prevent operation of mapped outputs, the alarm devices and alarm routing. However outputs activated directly from the point states will continue to work during Auto-Reset test unless the points or outputs are disabled.

If the zone is manually enabled during the Auto-Reset test all outputs controlled by the zone (including, for example, alarm routing) will operate.



If the zone is configured so that it cannot be disabled, Auto-Reset test cannot be used.

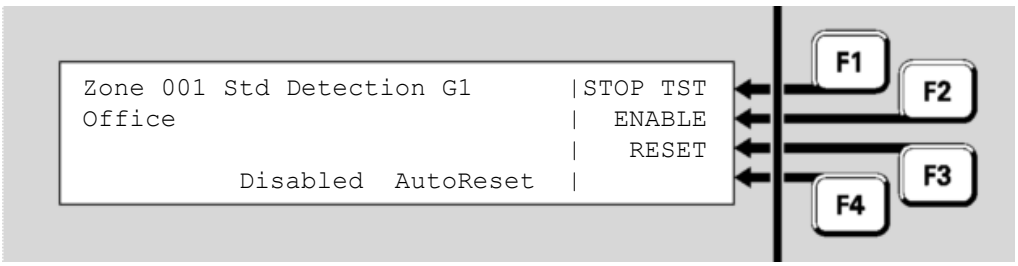


Fig 6-23 – Zone Auto-Reset Test Status Menu

During the test, the menu options are:

- **STOP TST**←**F1** – stops the Auto-Reset test on this zone and then enables the zone.
- **ENABLE**←**F2** – will enable the zone in order to allow the mapped output points to be operated.
- **RESET**←**F3** – stops the Auto-Reset test and also resets any latched indications (e.g. fault) for this zone. The zone will revert to its original Disabled state (unless this was changed during the test).

Note that both **STOP TST**← **F1** and **RESET**←**F3** will also restore the zone's enable/disable status to what it was before the test was started.

The Auto-Reset test will automatically cancel if no new alarm is received for two hours. In this case, the zone will revert to the state it was in (enabled or disabled) when the test was started.

On exiting the test (whether stopped, reset, or timeout) if an alarm is still present (e.g., call point left operated) the alarm will be treated normally and may generate a nuisance alarm. Therefore it is recommended the zone be disabled before the test, and enabled again only after confirming 1-2 minutes after the test is exited that the state of the zone is normal.

Fault Test

This test generates a fault condition for the zone. You will be asked to confirm or cancel the test. The following display will be shown during the test.

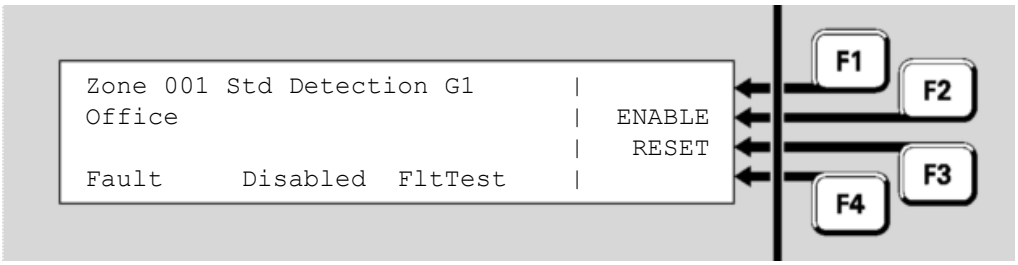


Fig 6-24 – Fault Test Status Menu

If the zone does not go into fault, the test fails.

Note that the test will disable the zone being tested, and the fault is simulated. If it is required to test how the system is affected by the zone fault, the zone can be manually enabled during the test by pressing **ENABLE**←F2.

To stop the test, press **RESET**←F3**.** This will also restore the zone's enable/disable status to what it was before the test was started.

Testing Points

This function requires Access Level 2.

From the recall point status display, press MENU or **MENU**←F4 to display the menu options.

Press **TEST**←F3 to display the test options for the point, which will depend on the point type, as described in the following sections.

Alternatively, from the base display, press the TESTS key, **INITIATE**←F4 and select **POINT**←F2. Enter the required point number, then press OK.

Addressable Detectors and Modules

Addressable devices, such as detectors, have several inputs and outputs differentiated by the sub-point number. For example, an *MX* 814CH detector has:

- An analogue input point for the CO sensor,
- An analogue input point for the heat sensor,
- An output point for the integral LED,
- An output point for the remote indicator,
- An output point for a functional base.

Each point can be tested independently.

Analogue Input Point

The test options for an analogue input point are:

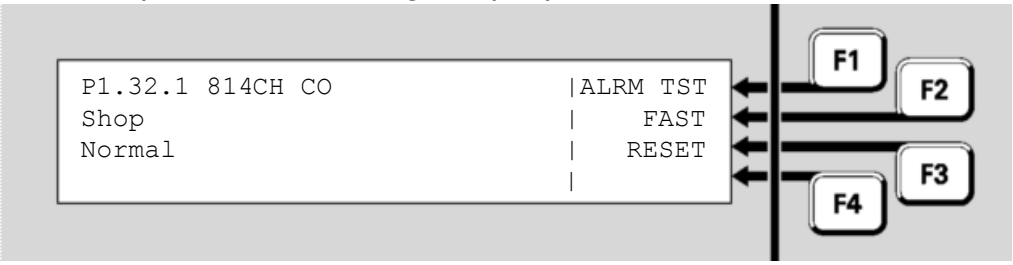


Fig 6-25 – Analogue Input Point Test Menu

- **ALRM TST**←F1 starts a full alarm test. Any programmed delays and algorithms for the point will be included.
- **FAST**←F2 starts a fast alarm test, bypassing any programmed delays and algorithms.
- **RESET**←F3 resets the point.

WARNING: the Alarm and Fast point tests do not automatically disable the point (or mapped zones) so all programmed alarm devices and alarm routing operate as for a real alarm.

Disabling the point or mapped zone(s) before the test will prevent these operating, and only the display and zone indicator will show the alarm.

The amount of time taken for an Alarm or Fast test is dependent on the type of device being tested, and on detailed settings in the system configuration. For example, heat and smoke detectors with nuisance alarm rejection algorithms will react more slowly to an Alarm test than to a Fast test, whereas a contact input point will react quickly to both Alarm and Fast tests.

Input Points

An input point is something such as General Purpose Input 1 on the controller board. There are no test options for these points.

Output Points

An output point is something that can be controlled, such as an *MX* device LED or an ancillary relay.

Test options for output points are:

- **OPON**←F1 puts the point into the Operated state, after a confirmation prompt.

- **RESET**←F3 resets the point, including any latched states and turns off any TestOp state.

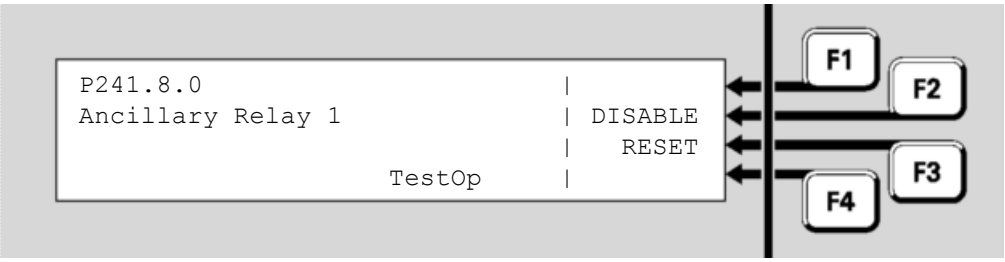


Fig 6-26 – Output Point - Test in Progress

While the Operate Test is active, the test options are:

- **DISABLE**←F2 will disable the point. If the point is already disabled this option will be **ENABLE**←F2.
- **RESET**←F3 resets the point (stopping the test), including any latched states.

The point is not automatically disabled by this test, so testing some outputs may activate external equipment such as sounders, door releases or even fire suppression equipment.

Also, at most 10 detector LEDs can be turned on at the same time. Testing more than 10 simultaneously will still pass, just the LED will not turn on.

Viewing Point Values and Settings

This function requires Access Level 2.

Using Point Value Data

MX1 translates sensor readings into analogue values. These values are processed by algorithms to determine the status of the point. The raw values, equivalent levels measured in physical units (for example, ppm CO, ºC Temperature, % Obscuration, % Alarm) and algorithms for a point can be recalled on the display.

These are intended for device fault or performance diagnosis, and are not very meaningful without a good understanding of the system.

Displaying Point Values

From the Recall Point Status display, press **MENU** or **MENU**←**F4**:

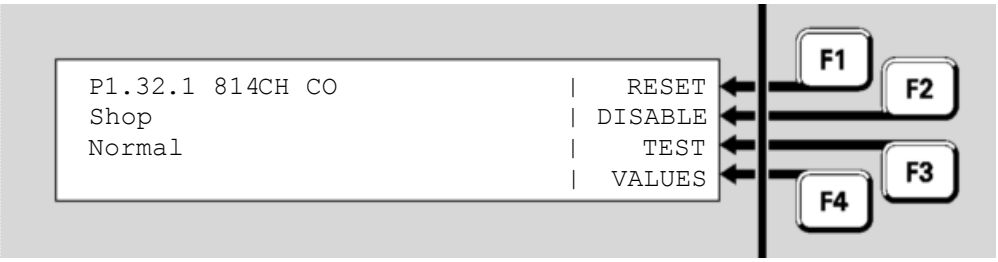


Fig 6-27 – Recall Point Status Display

Press **VALUES**←**F4** to view the point's current levels. Note that not all points have information for any or all of these displays. For those points, the *MX1* displays messages to that effect.

Current Level Values

These examples show typical displays for the points of an *MX* 814CH combined carbon monoxide and heat addressable detector.

The display shows the sensor/input current level, that is, a value converted from the raw value into appropriate, real-world units, together with the pre-alarm and alarm thresholds.

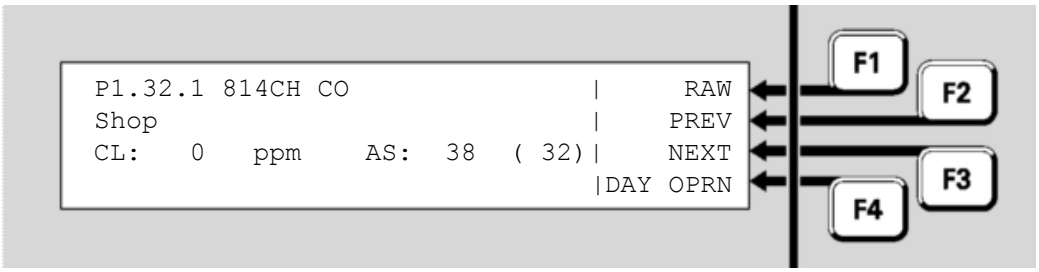


Fig 6-28 – Point Current-Level Display – Physical Values

- CL - Current level in appropriate units for the device type, in this case, parts per million of carbon monoxide.
- AS - Alarm Sensitivity (threshold) in parts per million of carbon monoxide, followed by the Pre-Alarm Sensitivity (threshold) in parts per million of carbon monoxide in brackets for the current algorithm (day or night mode). For smoke detectors using the fast logic algorithm the alarm sensitivity is shown as 0.0 = Low, 0.1 = Med, 0.2 = High; and the pre-alarm sensitivity is always 0.
- For heat devices, the fourth line may also contain Rate-of-Rise (ROR) information.

The displayed values will be updated at about 5 second intervals, as new readings are received from the detector.

Raw (Unconverted) Data Readings

Pressing **RAW←F1** will show the raw (unconverted) readings from the sensor/input:

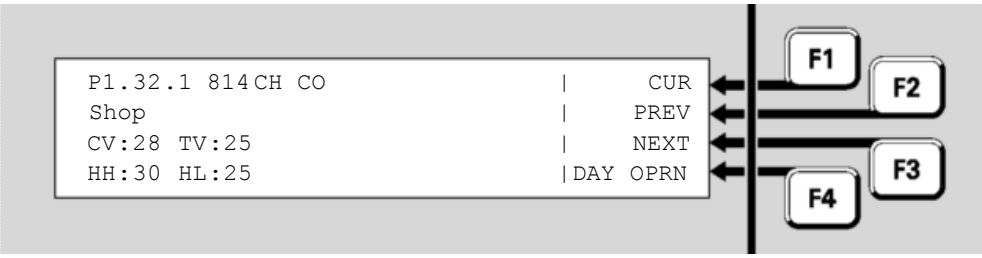


Fig 6-29 – Point Raw-Value Display

The readings displayed will depend on the *MX* point type and include:

- CV - Current Value, or RAW - raw value. The unconverted current value or reading for the sensor or input, but calibrated as required for the device.

  If the raw value from the sensor indicates a fault (e.g., very low value) then the raw value is the uncalibrated value so the actual fault can be seen. Also the current level will be 0.

- TV - Tracked Value, a long-term smoothed version of CV. For 801F and 801FEx flame detectors this shows the fault status.
- HH and HL - History High and History Low are the highest and lowest values of CV since the point's history was last reset (see page 6-4).
- For heat sensors that have Rate-of-Rise enabled the current rate-of-rise (RoR) and the highest rate-of-rise (RoRHH) values are also shown.
- For photoelectric sensors, the contamination level is shown on the third line.
- H% shows the history high as a percentage of the alarm threshold. For example, H% = 120 means the input went to 120% of the alarm threshold.

To return to the Point Current-Level Display (physical units of measure) press **CUR←F1**.

Algorithm

Pressing the **DAY OPRN**←**F4** key on any point value display will show the Day algorithm for that point if the point is on an *MX1* panel.

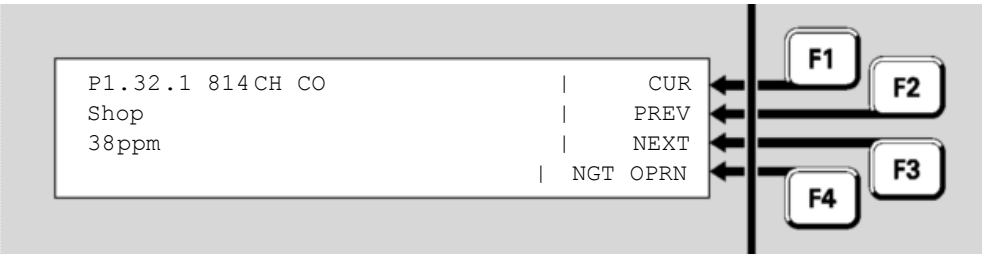


Fig 6-30 – Point Algorithm Settings

On the third line the name of the Day algorithm will be shown – typically this will describe the detection mode and sensitivity. Then pressing **NGT OPRN**←**F4** will show the name of the Night algorithm (usually this will be the same as the Day algorithm). The currently used sensitivity settings are shown in the Point Current Level Display (Fig 6.28).

Dirty

Pressing the **DIRTY**←**F4** key on any point value display will show the percent dirty values for that point if the point is on an *MX4428* panel.

Chapter 7
Logging On to Access Level 3

Introduction

Most service functions are available at Access Level 2. See Access Levels on Page 1-11.

Critical service functions are available at Access Level 3 which is entered on the keypad using a User Code and PIN at Access Level 2.

This chapter describes logging on to Access Level 3.

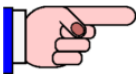
In this Chapter

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

Topic	See Page
Logging On to Access Level 3	7-1

Logging On to Access Level 3

Logging On



This function requires Access Level 2.

If the *MX1* display is not showing one of the base displays (Normal, Off-Normal, Fault or the Alarm List), press **CANCEL** until the base display is reached.

Press **MENU** three times to reach the logon option.

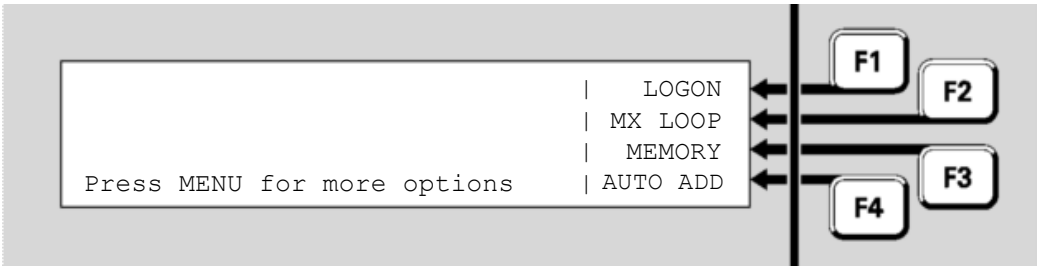


Fig 7-1 – Menu Options-Third Screen

Press **LOGON←F1** to see the logon display. Note that if no option is shown at **F1**, the *MX1* is already at Access Level 3.

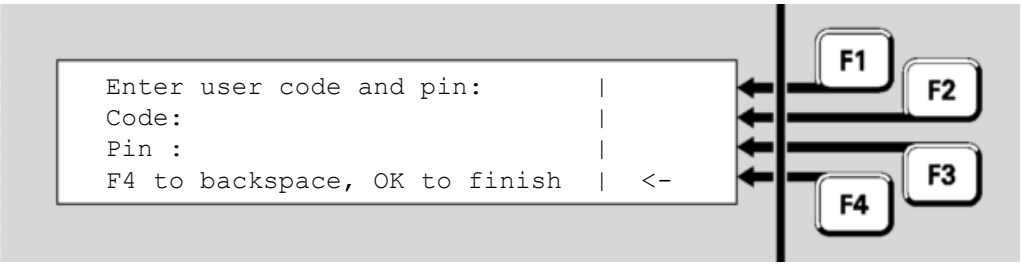


Fig 7-2 – Log On Display

Using the numeric keypad, enter the single digit user code followed by the PIN for this user code. Press **OK** after the PIN is entered.

Each digit of the user code and PIN are represented on the display by an '*' symbol when you enter them. If you mis-key a number, press **F4** to backspace over it, then re-enter the correct number.

If the user code and PIN match, a "verified" display will show briefly:

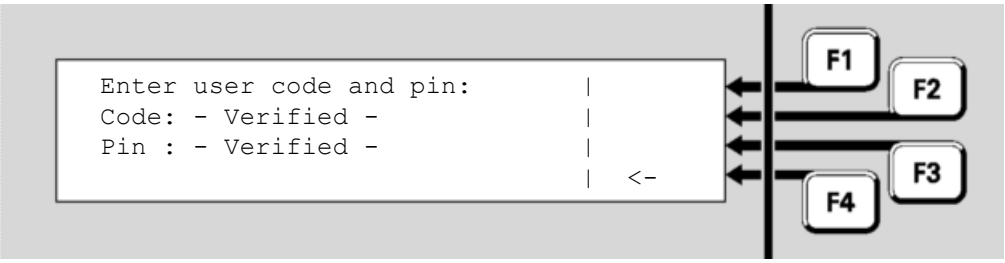


Fig 7-3 – Successful Level 3 Logon

This will be followed by the Menu display, but with the **LOGON←F4** option removed.

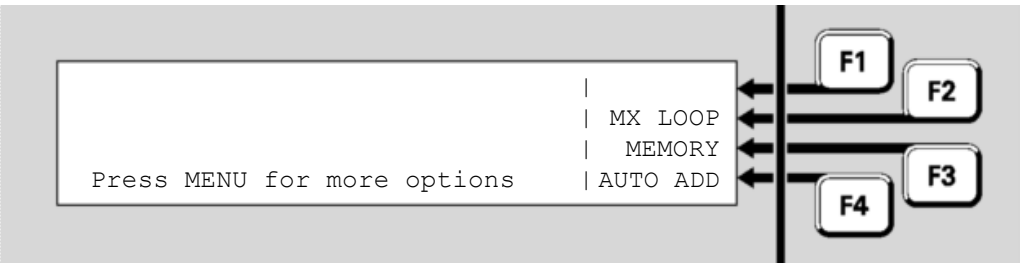


Fig 7-4 – Level 3 Menu Display

Logging Off

You will remain logged on to Level 3 until one of the following happens:

- The cabinet door is closed and locked (which operates the door switch) or the keyboard-enabling keyswitch is switched off.
- The door switch is operated manually.
- The system is restarted as part of loading a new configuration data file.
- The system is powered down and powered up again.
- Ten minutes elapse since the last key is pressed.

Chapter 8
Other Service Functions

Introduction

This chapter describes other service functions that are available from the *MX1* front panel.

Some of these commands require operator Access Level 3. See Chapter 7 for how to log on to operator Access Level 3.

In this Chapter

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

Topic	See Page
Front Panel Display Test	8-1
Setting System Time and Date	8-2
Power Supply Status and Battery Testing	8-3
MX Loop Status	8-5
System Memory Status	8-7
Test System	8-10
Test Alarm Devices	8-11
Replacing an *MX* Device	8-12
Buzzer Disable and Mute	8-14
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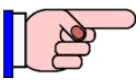
Front Panel Display Test



This function requires Access Level 2.

Testing the Front Panel Display

The LCD and indicator lights on the front panel of the *MX1* can be quickly checked for correct operation by using the display test.

If the *MX1* display is not showing one of the base displays, i.e., Normal, Off-Normal, Fault or the Alarm list, press **CANCEL** until the base display is reached.

Press **MENU** to see a set of options.

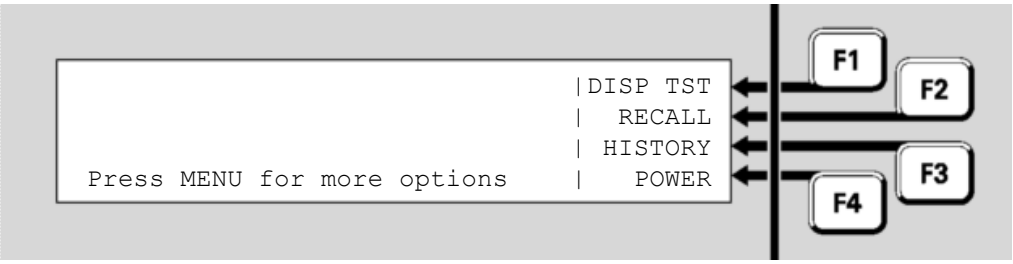


Fig 8-1 – Base Menu

Press **DISP TST**←**F1** to start the display test:

- All the keypad indicators apart from the zone indicators will light steadily for the entire test.
- Each column of each set of 16 zone indicators will light in sequence, followed by each row of each set of zone indicators lighting in sequence.
- The LCD will go blank and a solid black horizontal bar will step from the top row to the bottom of the display.
- The buzzer will beep at its quiet and loud volume settings.

At the end of the test, the above menu will be shown again.

Setting System Time and Date

This function requires Access Level 2.

Setting the Time and Date

From the base display, press **MENU** twice to see a menu with a Date option. Press **DATE**←**F2** to select the Date/Time menu:

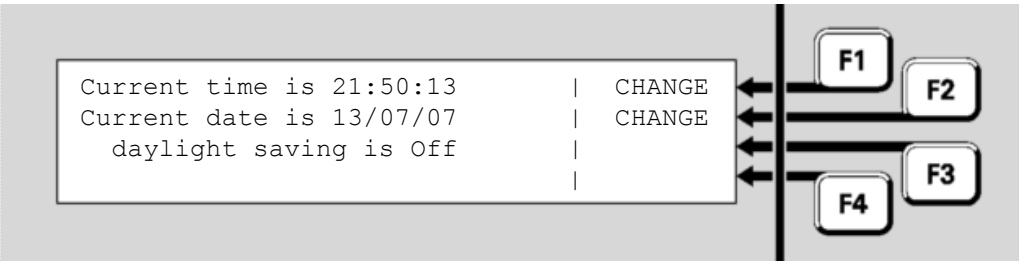


Fig 8-2 – Date And Time Change Menu

Setting the Time

To change the system time, press **CHANGE**←**F1**. All the digits are set to zeroes.

Enter the current time in 24-hour format as **HHMMSS**. Separators between the hours and minutes, and minutes and seconds, are not required. Press **OK** to store the new time and start the clock**.**

For example, a time of 1:35:00pm would be entered as **1 3 3 5 0 0 OK**

Setting the Date

To change the system date, press **CHANGE**←**F2**. All the digits are set to zeroes.

Enter the day, month and year without separators.

For example, a date of 21 December 2004 would be entered as **2 1 1 2 0 4**.

Press **OK** to store the new date.

Daylight Saving

The Daylight Saving status is determined automatically by the current date and the site's configuration.

Power Supply Status and Battery Testing

This function requires Access Level 2.

From the base display press **MENU**, then **POWER**←**F4** to view the Power Supply Status.

The PSU and battery voltage and current readings are not calibrated. There may be offsets that become apparent, especially at low current levels to/from the battery. If accurate readings are required then suitable voltmeters and ammeters must be used to obtain the necessary measurements.

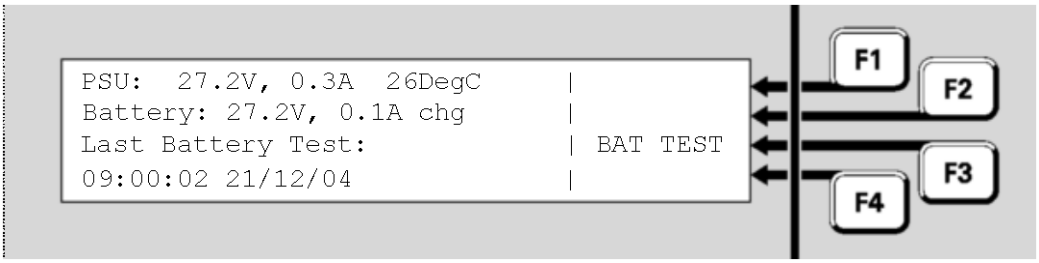


Fig 8-3 – Power Supply Status

The following information is displayed:

- **PSU:** is the power supply output voltage and current. The voltage reading may periodically fluctuate slightly when a Battery Connection check is made. Note that the current includes both battery-backed and non-battery-backed loads.
- **Temperature:** is the approximate temperature in the *MX1* cabinet in °C.
  Battery: is the voltage and current flowing at the battery terminals of the controller. The current is shown as **chg** for charge current flowing into the battery, and **dis** for discharge current flowing out of the battery.

- **`Last Battery Test:`** shows the time/date and result of the most recent battery test (manual or automatic).

Pressing **`BAT TEST`**←**F3** will start a manual battery test. The duration of this battery test is determined by the system configuration (usually 1 minute). The test will not start if the mains power is off, or a battery test (automatic or manual) is already in progress.

During the battery test, a progress indication will be displayed showing the number of minutes remaining for the test. A manual battery test cannot be cancelled once under way. The battery test lowers the battery charger voltage (to 22-23V) so that the panel and loads are powered by the battery.

The manual battery test function does not qualify as a monthly battery test to the requirements of NZS 4512.

Automatic Battery Tests

MX1 also carries out automatic battery tests. The scheduling and duration of these tests are determined as part of the *MX1* configuration, and require no operator intervention under normal conditions.

By default the test will start at 9am on each working day and last for 60 minutes.

If the battery fails the automatic test the **FAULTS** indicator will light and the failure will be logged in the Event History (see Chapter 4). Where available, the service company will be notified.

The automatic battery test can be cancelled as follows.

From the base display press **TESTS**, **`INITIATE`**←**F4** , then **MENU**, **`BATTERY`**←**F3** to view the Battery Test status screen.

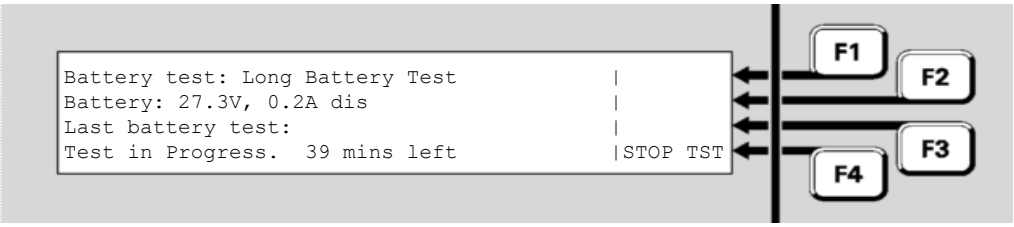


Fig 8-4 – Battery Test Menu

If the automatic test is running, as indicated by a Battery Test status of 'Long Battery Test", press **`STOP TEST`**←**F4** to stop the test.

This function requires Access Level 2.

MX Loop Status

Viewing Loop Status

From the base display press MENU three times then **MX LOOP**←F2 to view the *MX* Loop Status.

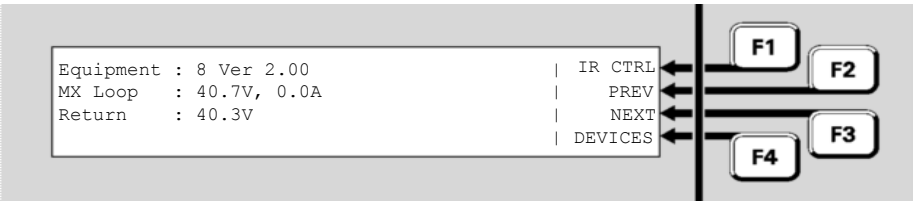


Fig 8-5 – *MX* Loop Status

- Equipment: shows which *MX* loop is being viewed. 1 is the on-board loop and 2 onwards are the optional *MX* Loop Cards. The firmware version for each *MX* Loop Card will be included. Press **PREV**←F2 or **NEXT**←F3 to switch between loops.
- *MX* Loop: is the voltage and current being fed to the loop wiring.
- Return: the voltage at the return end of the loop.

Normally the power is fed via the AL terminals and the loop return voltage is measured at the AR terminals. In this situation the points described below will all be normal.

Under fault conditions, the power feed may be switched to the AR end (for a short circuit at the AL terminals), or feed via both ends (for an open circuit in the loop, or a short circuit between two short circuit isolators).

Fig 8.5 shows a typical situation. The power feed is applied to the start of the loop, which is drawing only a light load current. The voltage at the end of the loop is being monitored to detect any breaks in the wiring.

If power is being fed to the AR side, the Return voltage displayed will be 0V. If the loop is drawing too much current, the *MX* Loop voltage display will also be 0V. A more detailed assessment of the *MX* Loop condition can be gained from the presence of these points in the fault list (refer to Chapter 11 (“Equipment Point Descriptions”) for details).

- *MX* Loop Left S/C – is in Fault if there is a short circuit between the AL+ and AL- terminals.
- *MX* Loop Right S/C – is in Fault if there is a short circuit between the AR+ and AR- terminals.
- *MX* Loop Open Circuit – is in Fault if there is an open circuit in the loop wiring. Note that an activated short circuit isolator will also register as an open circuit fault.
- *MX* Loop Overload – is in Fault if too much current is being drawn by the *MX* Loop. The normal capacity for each loop is 1A.

Press **IR CTRL**←F1 to access the Infrared commands. Note this command requires operator Access Level 2.

The **DEVICES**←F4 command allows the loop to be scanned for all *MX*

devices that are present, or to identify where a break may be. See Scanning for *MX* Devices page 8-6.

IR Control

From *MX* Loop Status display press **IR CTRL**←F1 to access the IR (Infrared) commands.

This command requires operator Access Level 2.

The 850 detectors support infrared (IR) communication with the 850EMT *MX* service tool. This allows technicians to carry out functions such as programming the detector's device number, reading its parameters and status, using an IR connection while standing some distance from the detector.

Before you can communicate with a detector using IR the loop the detector is connected to must be put into IR mode. Select the required *MX* loop (see Figure 8-5) and then press **IR CTRL**←F1. This will show the IR controls – see Figure 8-6a.

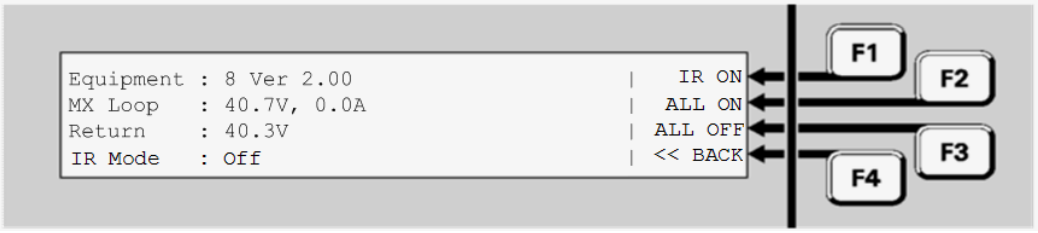


Fig 8-6a – *MX* Loop IR

Pressing **IR ON**←F1 will activate IR mode on the currently displayed loop.
Pressing **IR OFF**←F1 will deactivate IR mode on the displayed loop.
Pressing **All ON**←F2 will turn on IR mode on all loops.
Pressing **All OFF**←F3 will turn off IR mode on all loops.
Pressing << **BACK** ←F1 will return to the previous display (Figure 8-5).

IR mode automatically times out after 8 hours if it is not turned off via the menu.

CAUTION

A detector in IR mode cannot communicate with both the panel and the 850EMT service tool at the same time. Therefore while a detector is communicating with the service tool it is 'off line' and can no longer send alarms to the *MX1*. After 1 minute the detector will go into Device-fail at the *MX1*.

Scanning for *MX* Devices

The **DEVICES**←F4 command on the *MX* Loop Status screen can be used to scan that *MX* Loop for all *MX* devices present – even if the *MX1* has no, or a different, datafile present.

This can be used, for example, at installation time to check all devices have been installed, wired and addressed correctly, even without any datafile having been programmed into the *MX1*.

It can also be used if a foreign device is found (P241/26/5 goes into fault) by looking through each loop for FRGN devices, or when a loop break is present to identify those devices on each side (L or R) of the break.

The *MX1* will poll every address from 0 to 255 (note addresses 0 and 251-255 are not supported by the *MX1* for configured devices) and attempt to identify the type of device present (this may fail if two or more devices are present at the same address).

Figure 8-6b shows an example resulting display.

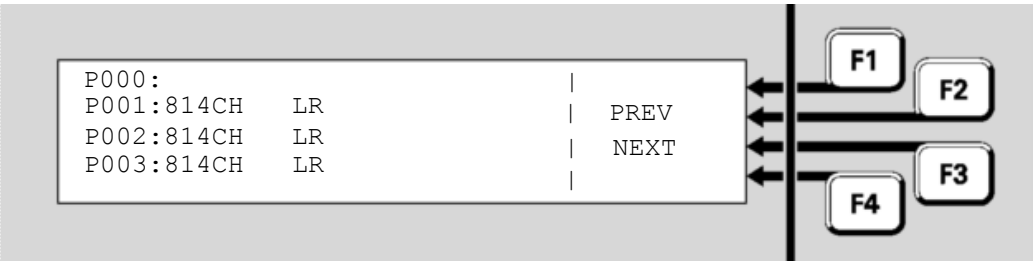


Fig 8-6b – Example *MX* Loop Scan Display

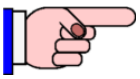
Each screen will show 4 addresses (e.g., 0, 1, 2, 3) plus:

- The device type – blank if no device present at that address.
- L, R, or LR to indicate the device is visible from the left side, right side or both left and right side of the loop.
- DUP if two or more devices are present at the address.
- MISM if the device type does not agree with the type programmed in the *MX1*'s datafile.
- FRGN if the device is not programmed at all in the *MX1*'s datafile.
- UNDR if the address is 0 (under-addressed).
- OVER if the address is 251-255 (over-addressed).

NEXT←F3 and **PREV**←F2 can be used to step through the various addresses.

System Memory Status

Viewing System Memory Status



This function requires Access Level 2.

From the base display press MENU three times then **MEMORY**←F3 to view the System Memory Status menu.

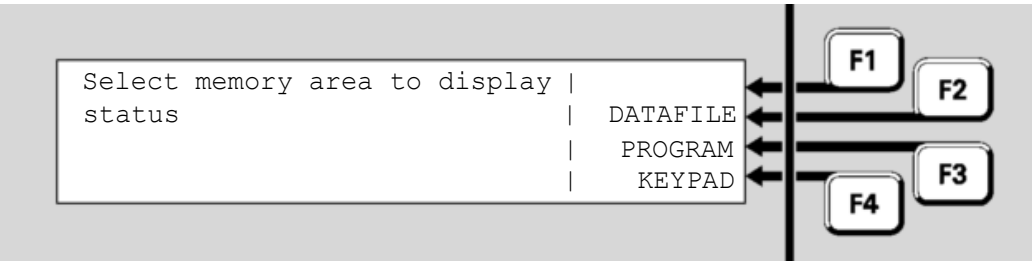


Fig 8-7 – System Memory Status Menu

Menu options are:

- **DATAFILE**←F2 displays information about the two site-specific configuration data files. There are two copies of the configuration file; only one of these will be active at any time.
- **PROGRAM**←F3 displays information about the controller firmware.
- **KEYPAD**←F4 displays information about the LCD/keyboard firmware.

Note the firmware version for each *MX* Loop Card is shown on the *MX* Loop Status screen Figure 8-5.

Viewing Datafile Status

Press **DATAFILE**←F2 to show the status of the first copy of the site-specific configuration.

The filename, date and CRCs of the configuration files stored in the *MX1* can be viewed. This will also show which configuration files are active.

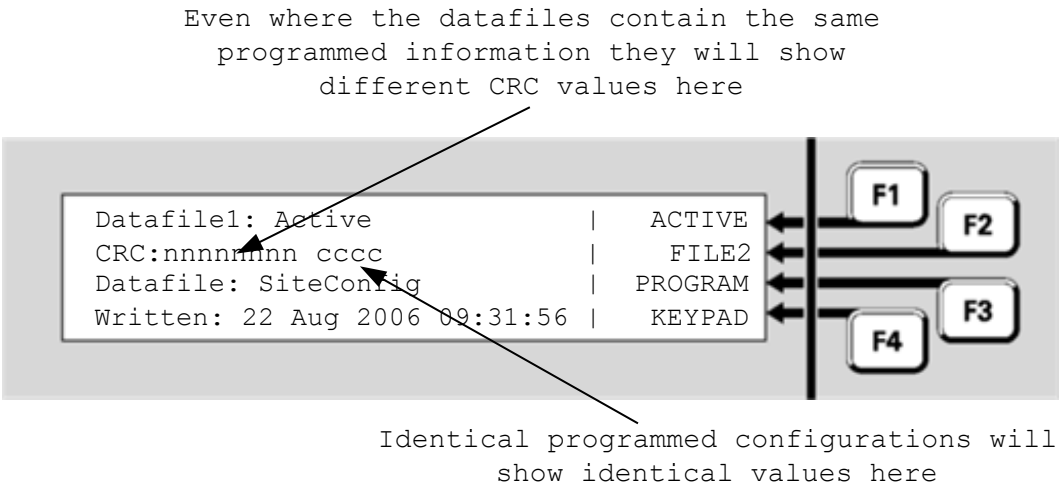


Fig 8-8 – Site-Specific Data Display – Datafile 1 Active

The following information is displayed:

- `Datafile1`: this shows the number of the data file and Active if this configuration file is being used or Disabled if not being used.
- `CRC`: this shows two values. The first is the integrity checksum for this data file, followed by the CRC for the configuration file (the same as displayed by SmartConfig). The correctness of the integrity checksum controls a system point, `Database 1 CRC`, which will produce a fault indication if the checksum is not correct. Note that the integrity checksum shown on line 2 for each data file will be different even when both data files are loaded from the same SmartConfig data file. The second value shows the "invariant" configuration data file CRC. This is the same value as calculated and displayed by SmartConfig using the Show CRC command, so these can be compared to confirm that the configuration data file in the *MX1* is the same as that in SmartConfig.

  If the same SmartConfig data file is loaded into both data file locations, the invariant CRC value will be the same for each of the data files.

- `Datafile`: the name of the SmartConfig file when it was downloaded into the *MX1* by SmartConfig.
- `Written`: the time and date on the PC when the configuration was last changed before being downloaded. Note that random characters may appear in the time and date fields when there is no valid datafile.

Menu options are:

- **ACTIVE**←F1 is an Access Level 3 command and will appear only if Access Level 3 is enabled. It forces this data file to become the active copy. A confirmation prompt is displayed. Press OK to restart the system and switch to this data file. If this data file is not valid, the system will automatically switch back to the other data file.
- **FILE2**←F2 switches to the equivalent status display for the second data file.
- **PROGRAM**←F3 displays information about the controller firmware.
- **KEYPAD**←F4 displays information about the LCD/keyboard firmware.

Viewing Controller Firmware Status

From the System Memory Status menu, press **PROGRAM**←F3 to show the status of the controller firmware.

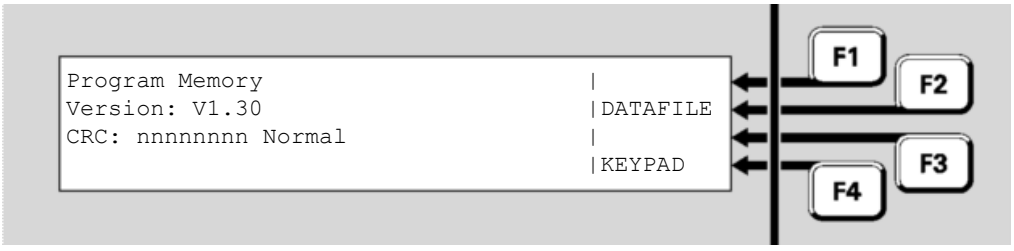


Fig 8-9 – Controller Firmware Display

The following information is displayed:

- `Version`: is the version of the controller firmware. This is also shown in the base display when the system is normal.
- `CRC`: the most recently calculated integrity checksum for the controller firmware and the correctness of the result. This checksum status controls a system point (241.27.3 Firmware CRC), which will produce a fault indication if the checksum is not correct.

Viewing Keyboard Firmware Status

From the Memory Status menu, press **KEYPAD**←F4 to show the status of the LCD/keyboard firmware.

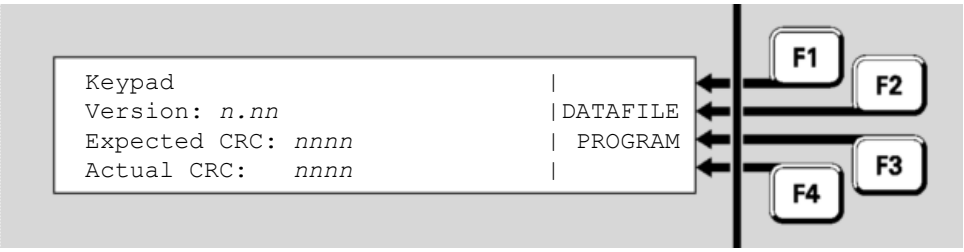


Fig 8-10 – LCD/Keyboard Firmware Status

The following information is displayed:

- `Version`: is the version of the keyboard firmware. This is also shown briefly on the LCD when the system powers up.
- `Expected CRC`: the correct value for the integrity checksum for the keyboard firmware.
- `Actual CRC`: the actual calculated checksum for the keyboard firmware. This checksum status controls a system point (243.1.6 `Keypad Firmware CRC`), which will produce a fault indication if the actual checksum does not match the expected value.

Test System

This function requires Access Level 2.

The Test System command allows the *MX1* firmware version, firmware CRC, and the two configuration datafile CRCs, to be viewed on one screen. This allows easy recording and checking.

From the base display press TESTS, which will show the following screen.

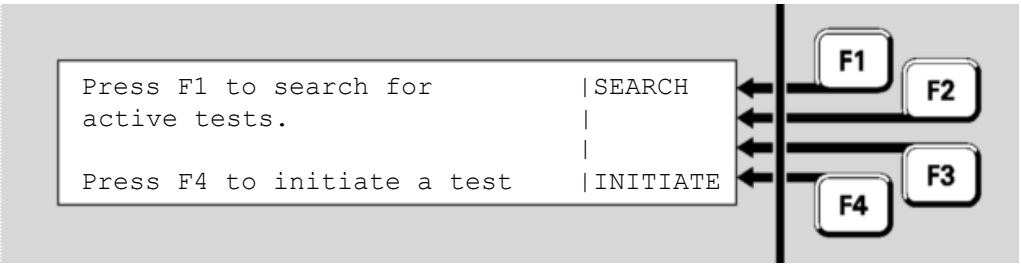


Fig 8-11 – Tests Screen

Press the **INITIATE**←F4 option and MENU twice so that a **SYSTEM**←F1 option is shown. Press **SYSTEM**←F1 to show the following screen.

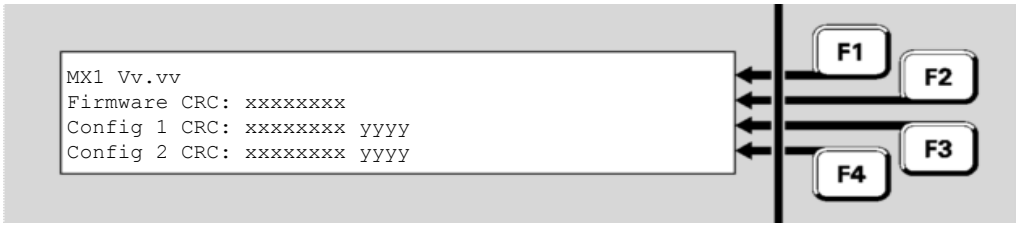


Fig 8-12 – Tests System Screen Shows Firmware and Config CRCs

The top line shows the *MX1* Controller firmware version, Vv.vv. The second line shows the firmware CRC. The third and fourth lines show the internal checksum (xxxxxxxx) and CRC (yyyy) for the two configuration datafiles. The CRC of the datafiles is the CRC as shown by the SmartConfig Show CRC command and can be used to confirm the datafiles are identical or the same as the file on the PC.

Test Alarm Devices

This function requires Access Level 2.

The Test Alarm Devices command allows all the alarm devices to be operated simultaneously, for example, during a trial evacuation of the building. The alarm devices operate until the test is stopped.

From the base display press TESTS, **INITIATE**←F4 and press **ALARM DEV**←F3 so the alarm devices test status screen is shown.

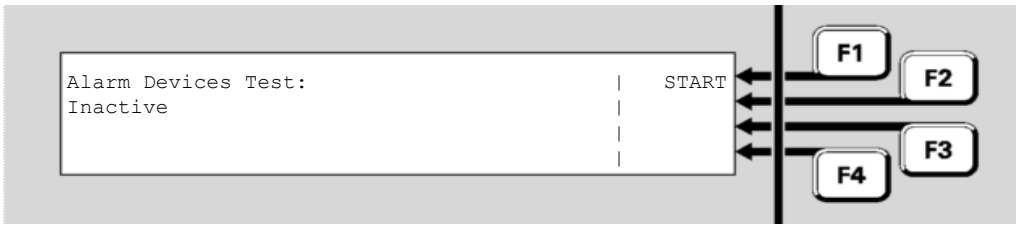


Fig 8-13 – Alarm Devices Test Status Screen

This shows the status of the test (Inactive or Active) and allows the test to be started (if the test is inactive) and stopped (if the test is active).

Press **START**←F1 to initiate the test – all alarm devices will operate unless they have been disabled. Conduct the test and then press **STOP**←F4 when complete.

The test can also be started by OpOn testing point 241.1.0 (the Alarm Devices point) and stopped by resetting this point.

Replacing an *MX* Device

From time to time it may be necessary to replace an MX loop device with a new one. When supplied, new *MX* devices are factory set to address 255. This section describes two methods to install and automatically re-address replacement *MX* devices.

From the base display press MENU three times, then press **AUTOADD**←F4 to show two choices:

- **OneAtTme**←F1 – "One at a Time" – allows one device to be replaced at a time by removing that device, fitting the appropriate replacement, then re-addressing the replacement from the *MX1* front panel.

- **Multiple**←F2 – allows multiple devices to be disabled from the front panel, then each device to be replaced (one at a time) and for the replacement to be automatically re-addressed when it is fitted. This allows multiple devices to be replaced in one trip away from the *MX1*.

One At A Time Re-Addressing

This method can be used when

- a single addressable device is to be replaced, and
- the replacement device is of the same type, and
- the replacement device is unaddressed (i.e., set to the factory default address of 255).

Remove the device to be replaced (note that this may create a device fail fault) and fit the replacement unit. Press **OneAtTme**←F1 at the AutoAdd menu. This will result in one of the following displays – Figures 8-14 – 8-18.

Figure 8-14 shows the device that has been removed and that the replacement device has been recognised and is ready to be programmed. Press F4 to program the replacement device with the missing device's address. Once done, the device-fail fault on the point should clear, and affected zones can be reset to clear their faults.

Repeat the process for additional devices needing replacement.

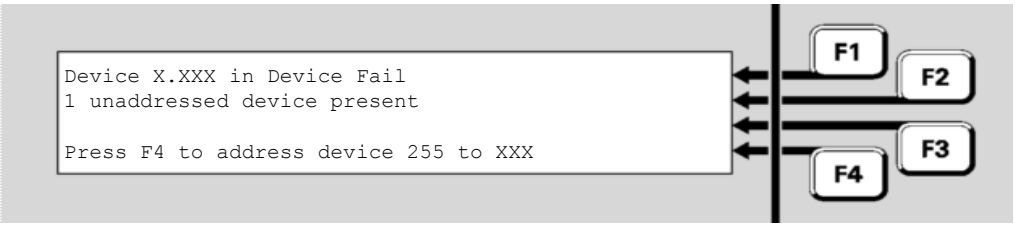


Fig 8-14 – Device Programming Menu

If the Auto-Addressing function does not find all of the required conditions met, one of the following displays (Fig 8-15, 8-16, 8-17 or 8-18) will be shown to indicate the cause.

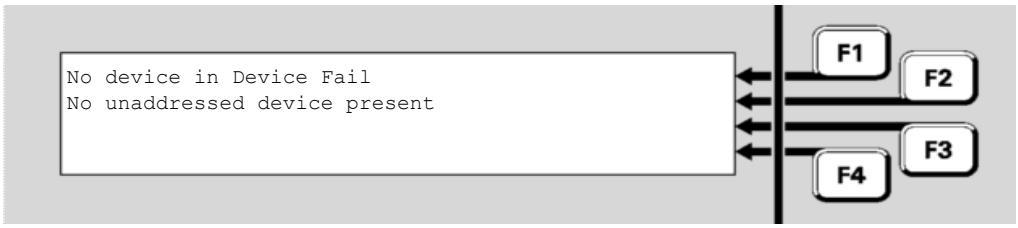


Fig 8-15 – Device Programming Menu – No Devices in Device Fail

There must be one (and only one) device in device fail on that *MX* loop for the re-addressing function to be used.

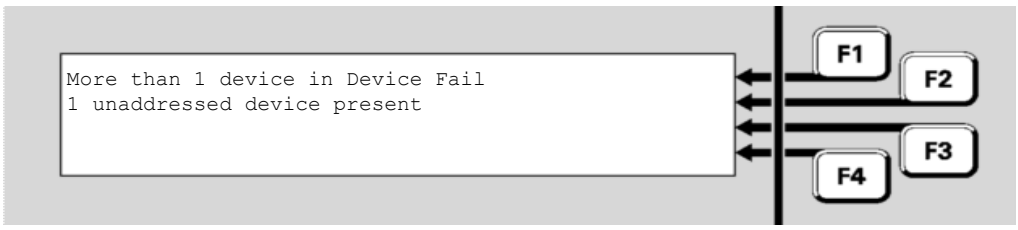


Fig 8-16 – Device Programming Menu – Multiple Devices

The OneAtTme function can be used only when there is a single device in Device Fail.

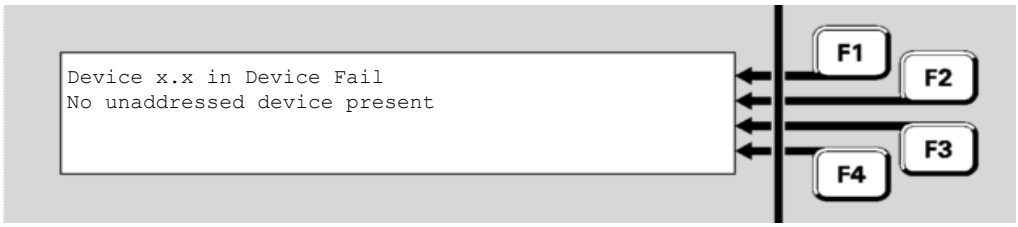


Fig 8-17 – No Unaddressed Device Present

Ensure that the new device has been correctly fitted to its base, or wired into the loop, that it has not already been programmed, and that no other device programmed to address 255 is installed on the loop.

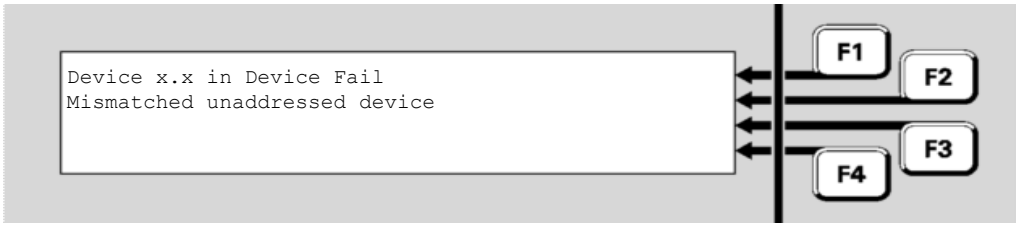


Fig 8-18 – Device Mismatch

Check that the replacement device is of the same type as the removed one. The OneAtTme function can program only replacement devices that are of the same type as the device they are to replace.

Multiple Device Re-Addressing

The **Multiple** addressing method allows multiple devices to be disabled, and then in a single trip away from the *MX1* panel, replace each device (one at a time) and have the replacement automatically re-addressed to match the removed one. Press **MULTIPLE**←F2 from the AutoAdd menu.

This will show a screen like Figure 8-19.

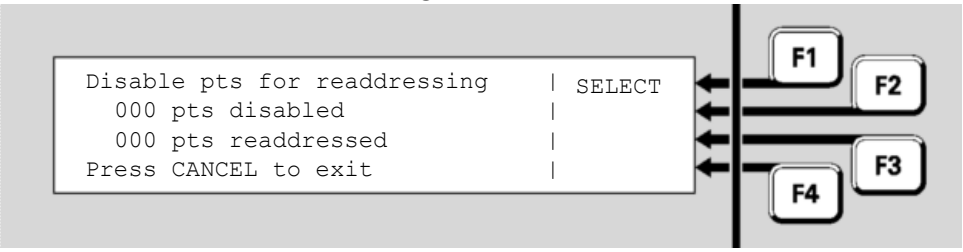


Fig 8-19 – Multiple Device Re-Address Display

This screen will show the total number of *MX* Devices that have been disabled (at least sub point 0 must be disabled for the device to be included in this count). It will also show the number of devices that have been re-addressed, incrementing as each device is removed and a replacement re-addressed.

Use the **SELECT**←F1 command to select those devices to be disabled and thus allow re-addressing. This command operates the same as Disabling or Enabling a point from a Recall Point Status display – Page 6-9. Press CANCEL to return to the Multiple Device Re-Address screen Fig 8-19.

Then proceed around the premises, replacing each selected device with a new device of the same type. When the new device is re-addressed its LED will turn on for 5 seconds and then start normal polling. Note this will not work if:
- the replacement device is not the correct type.
- the replacement device is not address 255.
- more than one device is not present on the loop (Device Fail).
- or the original device had not been disabled.

After all required devices have been replaced, recall each one (e.g., use the Disables command) and check that no device fail condition is present, then re-enable it. Also reset any zone faults, then check that point 241.26.5 is not in fault. This could happen if a replacement device is not re-addressed and so is seen as a foreign device.

Note this screen will not revert to the base display on a timeout or if the outer door is closed (allowing the cabinet door to be locked while replacing devices) or keyboard disabled, so it is necessary to press CANCEL to exit this re-addressing mode.

Buzzer Disable and Mute

Two commands are available to stop the alarm and fault buzzer from sounding - for example, during commissioning, annual surveys, or fault

finding. Using these at either the *MX1* panel or the remote FBP will disable/mute the buzzers at both units, except for keypress beeps.

- Buzzer Mute: This is a temporary buzzer mute function and lasts for 24 hours or until the mute is cancelled – manually or by power down or restart of the *MX1*. Note that this will stop the buzzer from sounding for any alarms and fault conditions.

- Buzzer Disable: This function is an Access Level 3 command and lasts for as long as the buzzer is disabled.

Temporary Buzzer Mute

This function requires Access Level 2.

From the base display press TESTS then select **INITIATE**←F4 option and MENU to show the **BUZR DIS**←F1 option. Press this to display the Buzzer status screen.

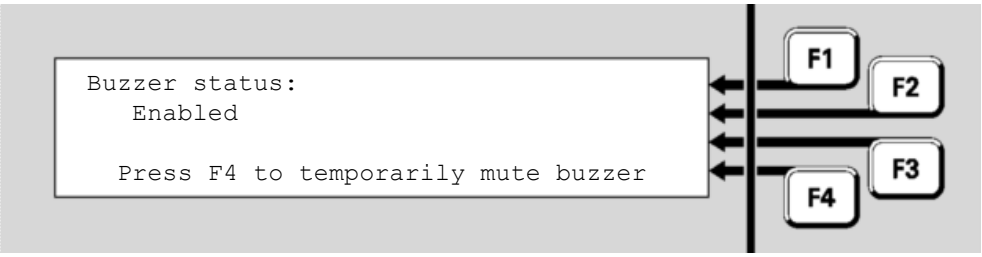


Fig 8-20 – Temporary Buzzer Mute Status

This will show the Buzzer status as Enabled, Muted or Disabled. When it's Enabled, press F4 to temporarily mute the buzzer for 24 hours, or until earlier cancelled.

Once the buzzer has been temporarily muted it will appear in the tests recall as Point 243.1.14 in a TestOp status, which can be cancelled by resetting this point.

F4 can be used to enable the buzzer if it is disabled or muted.

Buzzer Disable (Access Level 3)

This function requires Access Level 3.

CAUTION

Do not press the f.b.p. DISABLE control when the Alarm List is being shown unless the intent is to disable the displayed zone in alarm.

Log on to Access Level 3 if not already (see Section 7). From the base display press DISABLE then MENU (twice if any Disables are present) to show the **BUZR DIS**←F1 option. Press this to show the buzzer status screen.

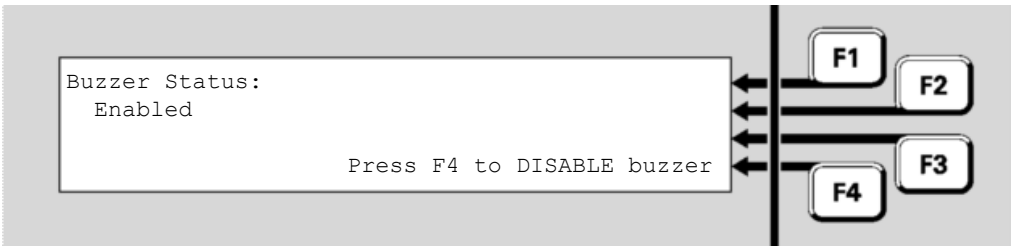


Fig 8-21 –Buzzer Disable Status

This will show the Buzzer status as Enabled, Disabled or Muted. Press F4 to enable or disable the buzzer. Once the buzzer has been disabled it will appear in the Disables List (point 243.1.14) and can be re-enabled from there.

Commissioning Mode (Access Level 3)

This function requires Access Level 3.

During Commissioning Mode the system may produce unexpected nuisance alarms as the processing algorithms for detectors are bypassed, making them sensitive to smoke, etc.

Commissioning Mode reduces the time required for in-situ detector tests and setup procedures to be performed, by removing the processing algorithms.

The acknowledgement times for AAF and AIF are reduced to 10 seconds and the search times for AAF, ADF and AIF are reduced to 30 seconds.

To initiate Commissioning Mode, login to Access Level 3 and use the following procedure.

1. Press TESTS, **INITIATE**←F4.
2. Press MENU until "COMMISSN" appears in the display.
3. Press **COMMISSN**←F2, then **START**←F1. The following LCD indication should appear, a countdown from 120 minutes begins and point 241.27.10 will be put into TestOp state. Commissioning mode will end when this countdown is complete or it is manually stopped.

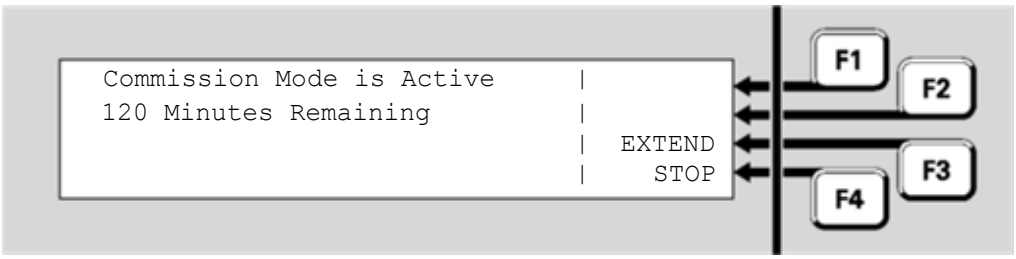


Fig 8-22 – Active Commission Mode Display

4. If the message “Commission Mode is Stopped” appears, press **START**←F1 to start Commissioning Mode again.
5. To extend Commissioning Mode by returning the countdown to 120, press **EXTEND**←F3.
6. To end Commissioning Mode, press **STOP**←F4.

Resetting the System (Access Level 3)

You cannot stop the test by pressing TESTS and then attempting to Reset or Disable the point (241.27.10) indicating that Commissioning Mode is active. You need to repeat the steps above and press **STOP**←F4.

This function requires Access Level 3.

CAUTION

Do not press the f.b.p. RESET control when the Alarm List is showing unless the intent is to reset all zones in alarm.

The *MX1* operation can be restarted from the LCD. This function requires Access Level 3. Refer to Section 7 to log on to level 3. From the base display, press the RESET key.

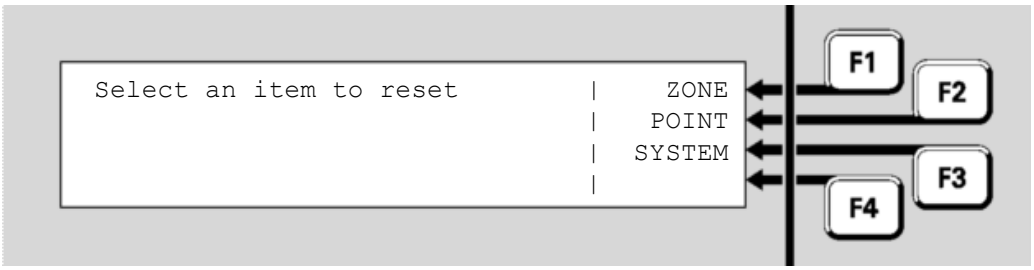


Fig 8-23 – Access Level 3 Reset Menu

Press **SYSTEM**←F3 to see the following prompt;

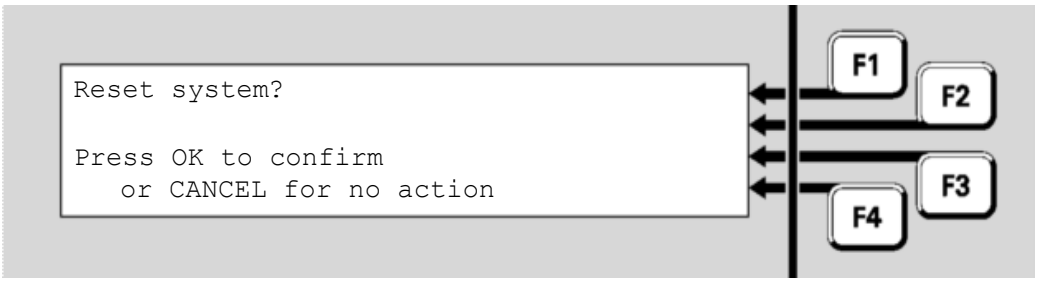


Fig 8-24 – System Reset Confirmation Screen

Press OK to restart the *MX1* panel as if power had been removed and re-applied.

Chapter 9
Networking

Introduction

Multiple *MX1* fire panels along with other compatible panel-link devices, may be connected together to form a network.

Some of the devices which may be part of the network include:
1. *MX1* fire panels
2. XLG colour graphics system
3. QE90 evacuation system
4. NSA Nurse Station Annunciator
5. PMB Panel-Link Modbus Bridge
6. NDU Network Display Unit
7. NLDU Network LED Display Unit
8. MX4428 fire panel
9. Compact FF

Networking allows *MX1* fire panels to share:

(i) Alarm information for display and control of alarms on the LCD. Alarms on one *MX1* can be displayed at other *MX1*s and Colour Graphics displays. Alarms can be silenced, reset and disabled from the *MX1*s and Colour Graphics displays.

(ii) Output logic status, allowing status and controls generated by the output logic at one *MX1* to be used by the output logic at another *MX1*, e.g., for extended AS 1668 Fan Controls.

(iii) MAF Status, so that one *MX1* can be a main brigade display and signalling point for a number of *MX1* panels on the site.

(iv) Event Information for status monitoring and network event printing. An *MX1* may be programmed to perform system wide event printing and event history, or from just selected panels.

(v) Control for activating, disabling and silencing the Alarm Devices on remote *MX1*s as a result of alarms or operator controls on the local *MX1*.

Network Zone/Point functions include:

(i) Recall the status of a specific zone or point on a remote *MX1*.
(ii) Search for zones or points of a specific condition on remote *MX1*s.
(iii) Send reset, disable, alarm test, fault test, abort test, and operate test commands on a single zone or range of zones or points to a remote *MX1*.

By using Tandem mode it is possible to take control of a remote panel on the network and operate it as if you were standing in front of it.

Keypresses are sent across the network to the remote panel and display updates are sent back to be displayed locally. This allows functions such as zone tests, enabling / disabling zones, etc., to be carried out remotely.

In this Chapter

Topic	See Page
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Network Status Points	9-5
Network Comms Status	9-6
Network MAF Status	9-7
Network Fault Status	9-10
Network Warning Status	9-11

Zone & Point Numbering

When *MX1* panels are networked together there must be a way to identify each *MX1* and the points and zones on that *MX1*.

In this manual, reference is made to "local" and "remote" panels. A local panel is the panel at which the operator is at. Remote panels are all other panels on the network. This applies even if a number of networked panels are co-located.

When a networked *MX1* is configured, it is programmed with a unique number between 1 and 254. This is its System Identification Number, or SID. The SID is used to:

(a) Identify a specific *MX1*.
(b) Identify a zone or point on a specific *MX1*, by combining the SID and zone or point number as detailed below.

For a networked *MX1*, point and zone numbers are displayed in the following formats:

Zszzz where s is the SID and zzz is the panel zone number
Pseee.d.s where s is the SID, eee is the equipment number, d the device number and s the sub-point.

Note that the panel zone number and the equipment number are always displayed as 3 digits, with leading ‘0’s where required.

E.g. Z35018 is Zone 18 on *MX1* number 35
P5023.4.1 is Point 23.4.1 on *MX1* number 5.

When entering zone and point numbers on the keyboard there are two formats that can be used:

(i) Point and zone number(s) without the SID. These numbers can be used for accessing zones and points on the local panel. E.g., Point 23.4.0 and Zone 57. Note that when these points are displayed they will include the SID.

(ii) Point and zone number(s) including the SID. These numbers can be used for accessing zones and points on the local or on a remote panel. Multiply the SID by 1000 and add it to the point or zone number. E.g., point 12034.4.1 (Point 34.4.1 on SID 12) and zone 32105 (Zone 105 on SID 32).

E.g.	Z1057	is Zone 57	on *MX1* number 1
	Z35218	is Zone 218	on *MX1* number 35
	P5023.4.1	is Point 23.4.1	on *MX1* number 5.

Note that all zeroes must be entered, e.g., for Zone 1 on Panel 2, the entry must be 2001, i.e., the intermediary 0s are necessary.

Note that any point or zone range that extends across more than one *MX1*, e.g., Z35097 to Z36002, is illegal.

Tandem Mode

It is possible to take control of a remote panel on the network and operate it as if you were standing in front of it. Keypresses are sent across the network to the remote panel and display updates are sent back to be displayed locally. The common LEDs on the local front panel always show the status of the local panel and do not show the status of the remote panel. It is only the content of the LCD from the remote panel that is shown at the local panel.

From the base display press: MENU twice and select TANDEM.

Enter the SID number (1 to 254) of the remote panel to access followed by the ENTER key as per the example in Figure 9-1.

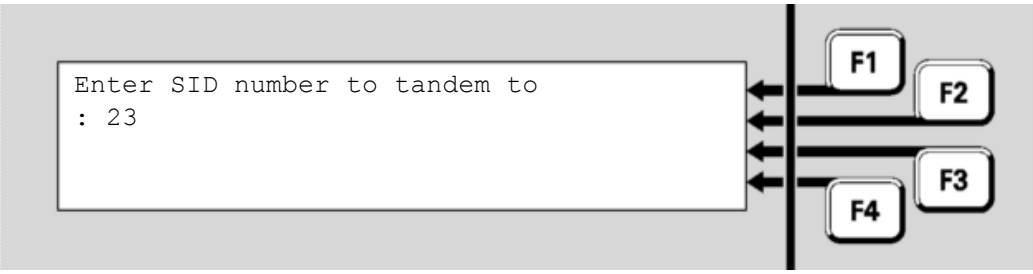


Fig 9-1 – Entering SID

If you have successfully connected to the remote panel the remote panel's type, software details, SID and site name will be displayed for about 2 seconds as per the example in Figure 9-2.

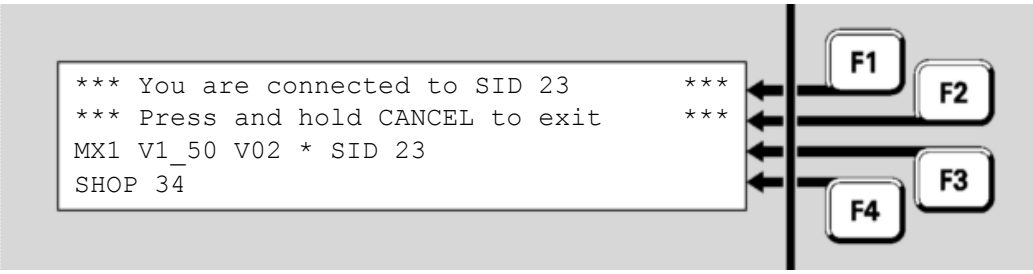


Fig 9-2 – Connected Display

If the connection cannot be established *No response from SID xx* will be displayed as per the example in Figure 9-3.

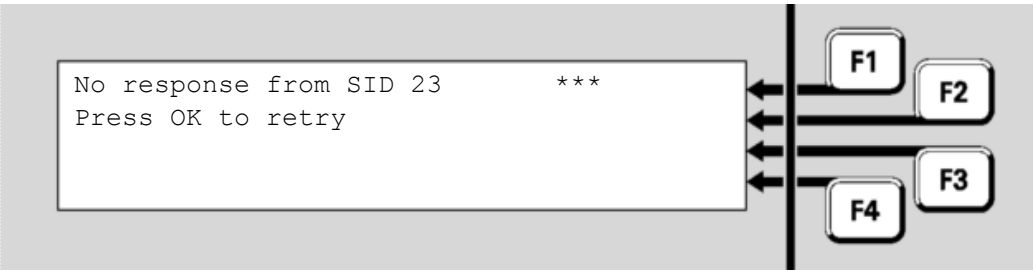


Fig 9-3 – Failed to Connect Display

Press:
OK to retry,
CANCEL to return to the previous menu.

While in Tandem mode a column of * characters will flash, either replacing the '|' characters if there is a menu displayed (as per the example in Figure 9-4) or on the right hand side of the display.

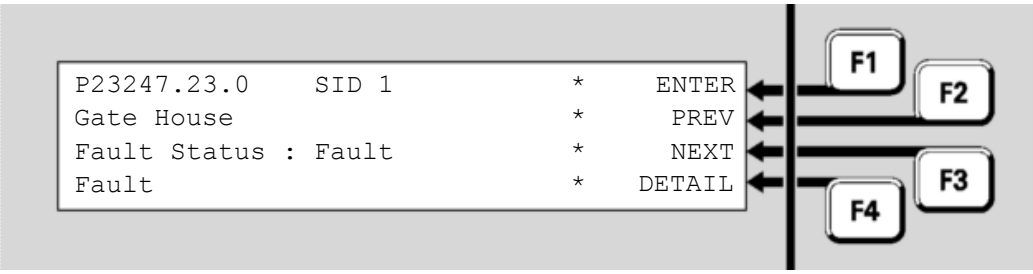


Fig 9-4 – Tandem Mode

During Tandem mode, all keypresses are sent to the remote panel, and display updates come from the remote panel.

To exit the Tandem connection, press and hold the CANCEL key for approximately one second and select OK when prompted. Also, if no keys are pressed for 5 minutes, a prompt is given to maintain the connection. If no key is pressed then the connection is cleared after 10 seconds. If a new unacknowledged FF alarm occurs while tandem mode is active, the tandem connection is terminated automatically and the FF alarm list is displayed.

If the device being connected to is an AS4428 panel with a two line LCD, then *MX1* provides a menu on the fourth line of the LCD to allow keys

that are present on the AS4428 panel but not on *MX1,* to be used.

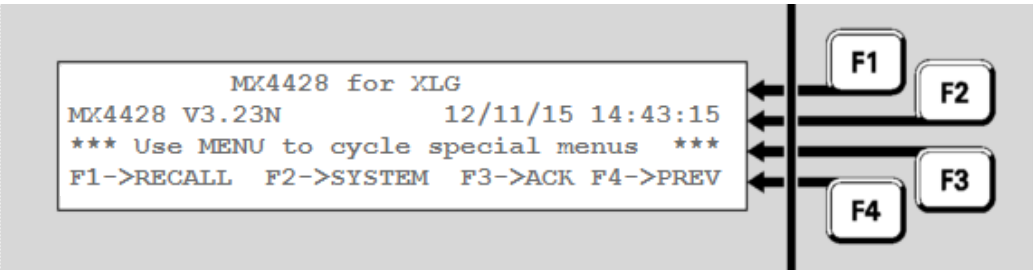


Fig 9-5 – Tandem Mode Menus

The MENU key can be used to cycle through the sets of extra keys.

Network Interface Device Points

The *MX1* Controller points 241.32 to 241.34 are used to display the status of the network interface device used to connect the *MX1* to the network.

Points 241.32.x are used to display I-HUB status information
241.33.x are used to display PIB status information
241.34.x are used to display the status of other network interface devices.

Refer to Equipment 241 – *MX1* Controller in Chapter 11 for descriptions of these points.

Network Status Points

Each panel on the network has a number of points associated with it to display status information. The point numbers have the form ***247.SID.Sub,*** which consists of three parts:

- ***247*** is the equipment number used for network status points
- ***SID*** is the SID number of the remote panel or device
- ***Sub*** is the sub-point number, which indicates the type of status information.

All panels and devices have the following points:
247.*SID*.0 to display the Network Comms Status - see Fig 9-7
247.*SID*.1 to display the MAF Status – See Fig 9-8

Some devices may also include the following points:
247.*SID*.2 to display the Fault Status – See Fig 9-12
247.*SID*.3 to display the Warning Status – See Fig 9-13

These points are described in the following sections.

The example shown in Figure 9.5 shows the entry of the point number for requesting the Comms Status of an *MX1* with a SID of 23.

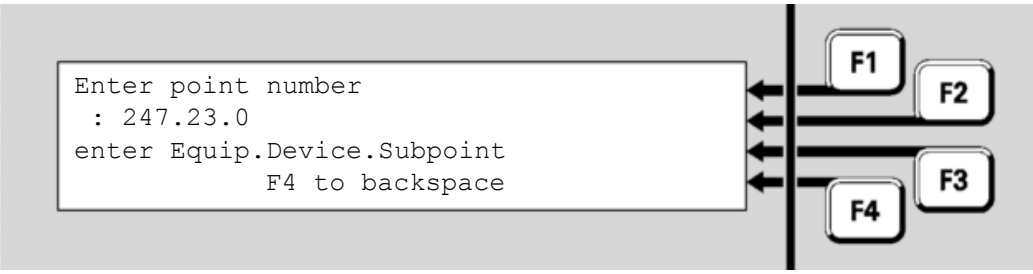


Fig 9-6 – Enter Point Number

Network Comms Status

The format of the Comms Status display is shown in Figure 9-7.

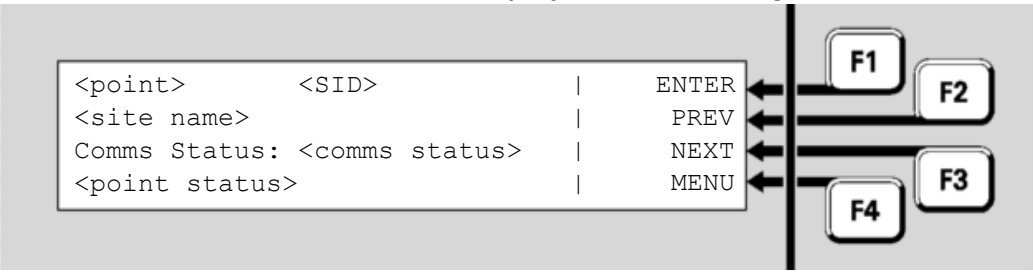


Fig 9-7 – Comms Status Menu

The **<point>** is the point number and, **<SID>** and **<site name>** are the SID and name of the remote panel or device.

The **<comms status>** will be one of the following:

Not Monitored	The local panel is configured to not monitor the network communication links to the remote panel.
Normal	The communication links are functioning normally.
Link A fail	One of the two communication links (A) has failed, the other link is still operational.
Link B fail	One of the two communication links (B) has failed, the other link is still operational.
Scan fail	All communication links between the local and remote panel have failed.

The **<points status>** is one of the following:

Normal	The current network communication status is Normal or Not Monitored.
Fault	One or more of the communication links is in fail.
Disabled	The point has been disabled.

Network MAF Status

The format of the MAF Status display is shown in Figure 9-8.

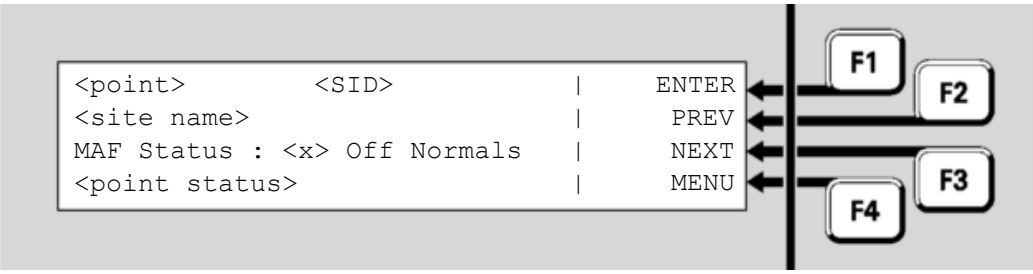


Fig 9-8 – MAF Status Display

The **<point>** is the point number and **<SID>** and **<site name>** are the SID and name of the remote panel or device.

<x> is either 'No' or the number of off normals present.

The **<points status>** is one of the following:

Normal	There are no off normals.
Fault	There are 1 or more off normals that map to a fault condition present.
Disabled	The point has been disabled.

Press **MENU**←**F4** to display additional menu items as shown in Figure 9.9.

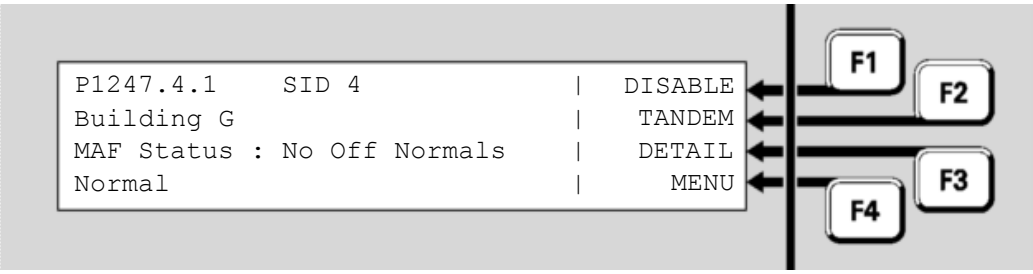


Fig 9-9 – Additional Menu Items

Press:

- **DISABLE**←**F1** to disable the point
- **TANDEM**←**F2** to remotely control that remote panel
- **DETAIL**←**F3** to display the MAF totals and status from the remote panel
- **MENU**←**F4** to display the default menu (as per Figure 9.8).

Press **DETAIL**←**F3** to display the MAF totals and status as shown in the example in Figure 9.10.

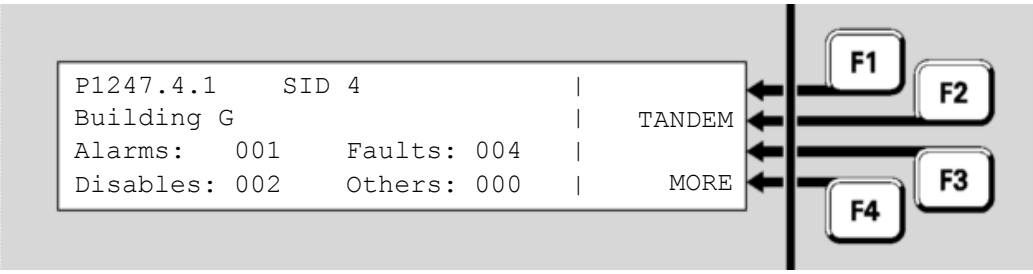


Fig 9-10 – MAF Totals

This displays the totals sent from the panel across the network. What the totals represent depends on the configuration of the panel, but typically the totals indicate the number of each type of event present at the panel. In the example shown in Figure 9.9 one zone or point is in alarm, 4 faults exist and 2 disables.

Press **MORE←F4** to display the general conditions (MAF Status) being reported by the remote panel as shown in the example in Figure 9.11.

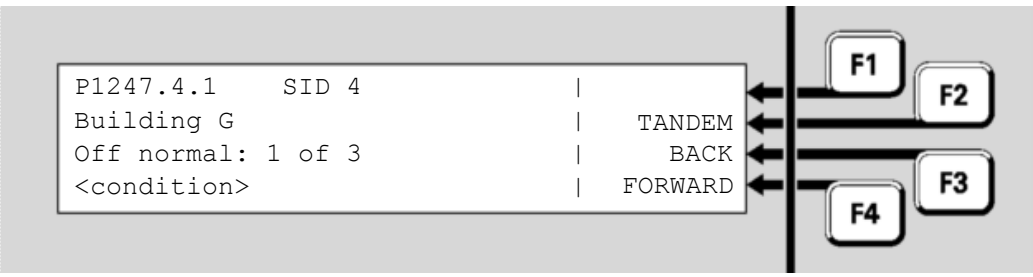


Fig 9-11 – General Conditions

The descriptions in the table below give an explanation to the condition being reported by the remote panel. Some conditions indicated are for reporting purposes only, e.g. PSU Fault, while others allow suitably programmed systems to interact with each other, e.g., Alarm Devices Activate.

A particular network system may not support all conditions listed. Additionally, the programming of a network system can also affect which causes can contribute to a particular condition.

The **<condition>** is one of the following:

Condition	Description
Abnormal	The remote system is in an abnormal condition, for example programming links are fitted.
Alarm Buzzer On	The remote system has its Alarm buzzer on.
Alarm Devices Silence Control	The remote system has asserted a control signal used to co-ordinate shared Alarm Devices.
Alarm Devices Silenced	The remote system Alarm Devices are Fire Brigade Panel Silenced.
Alarm Routing Disabled	The remote system has its Alarm Routing (brigade calling) disabled.
Alarm Routing Fault	The remote system has a fault associated with its Alarm Routing system (brigade calling).

Ancillary Disabled	The remote system is indicating that ancillary outputs are disabled.
AS4428 System Fault	The remote system has an AS4428 System Fault, which may include non-Zone, non-point fault statuses such as RZDU faults, power supply faults, network problems, etc.
AS7240 System Fault	The remote system has an AS 7240 System Fault condition. See Status Indication page 1-7.
Bell Isolated	The remote system is signalling that its AS1603 Bell (or equivalent) is disabled.
Bell On	The remote system is signalling that its AS1603 Bell (or equivalent) is activated.
Brigade Disabled	The remote system is indicating that some or all of its brigade/monitoring service signalling outputs are disabled.
Brigade Test	The remote system has its AS 4050(int) Brigade Test function active.
Common Point Disable	The remote system has one or more points that are disabled.
Common PreAlarm	The remote system is signalling that one or more of its detectors are in the Prealarm condition.
Disables Routing Disabled	The remote system has its Disables Routing (monitoring service) disabled.
Disables Routing Fault	The remote system has a fault associated with its Disables Routing system (monitoring service).
Enabled alarms to recall	The remote system is indicating it has one or more enabled alarm conditions that can be recalled.
Enabled faults to recall	The remote system is indicating it has one or more enabled fault condition that can be recalled.
External Strobe Alarm	The remote system has alarm conditions that would activate the External Strobe.
External Strobe Isolate	The remote system has its External Strobe disabled/isolated.
External Strobe On	The remote system has its External Strobe outputs operated.
External Strobe Silence	The remote system is signalling that other panels can turn off their External Strobe.
Fault Buzzer On	The remote system has its Fault buzzer on.
Fault Routing Disabled	The remote system has its Fault Routing (monitoring service) disabled.
Fault Routing Fault	The remote system has a fault associated with its Fault Routing system (monitoring service).
FBP AIF Attended	The remote system has its Alarm Investigation Facility function enabled, and a suitably trained operator is in attendance.
Group Alarm Devices Activated	The remote system has local alarm conditions that are will activate the Alarm Devices.
MAF Alarm	The remote system has a brigade alarm that will activate the warning system or external strobe.
MAF Alarm No Bells	The remote system has a brigade alarm.
MAF Disable	The remote system has a disable condition that is signalled to the monitoring service.
MAF Disabled Alarm	The remote system has a disabled brigade alarm.
MAF Disabled Fault	The remote system has a disabled fault.

MAF Fault	Remote system has a fault that is signalled to the monitoring service
Network Fault	The remote system has network faults, such as network path faults and communication failures.
NonMAF Alarm	The remote system has a non-brigade alarm.
NonMAF Disable	The remote system has a disable condition that is not signalled to the monitoring service.
NonMAF Disabled Alarm	The remote system has a disabled non- brigade alarm.
NonMAF Disabled Fault	The remote system has a disabled , non-monitored fault.
NonMAF Fault	The remote system has a fault that is not signalled to the monitoring service
Off-normals to recall	The remote system is indicating it has one or more off-normal conditions that can be recalled.
Plant Disabled	The remote system is indicating that plant outputs are disabled.
PSU Fault	The remote system has one or more power supply faults (for example, charger low, battery low or disconnected).
Reset Active	The remote system has a reset in progress.
Standby	The remote system has conditions which may include power supply inadequate, all zones isolated, or other critical faults or conditions that could compromise the operation of the system.
Test Fail Indication	The remote system has an unacknowledged test failure.
Unacknowledged System Faults Present	The remote system has one or more unacknowledged AS 4428 System Faults.
Warning System Alarm	The remote system has alarm conditions that would activate the Warning System.
Warning System Isolate	The remote system has its Warning System disabled/isolated.
Warning System On	The remote system has its Warning System outputs operated.
Warning System Silence	The remote system is signalling that other panels can silence their Warning System.

Network Fault Status

The format of the Network Fault Status display is shown in Figure 9-12.

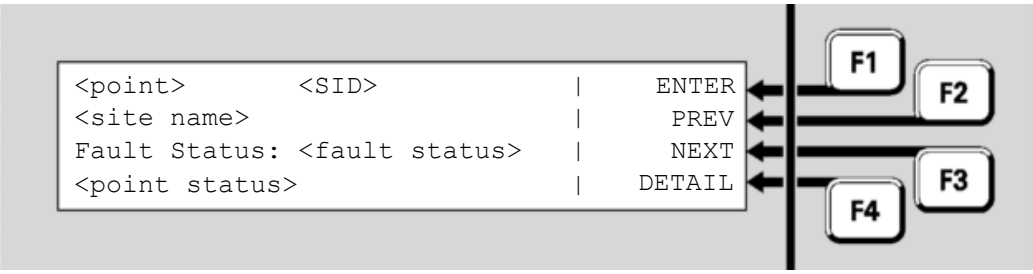


Fig 9-12 – Fault Status

The **<fault status>** is one of the following:

Normal	There are no network faults present.
Fault	There are 1 or more network faults present.

The **<points status>** is one of the following:

Normal	There are no network faults present.
Fault	One or more network faults present.
Disabled	The point has been disabled.

Refer to the user manual for the specific remote device for further details.

Network Warning Status

The format of the Network Warning Status display is shown in Figure 9-13.

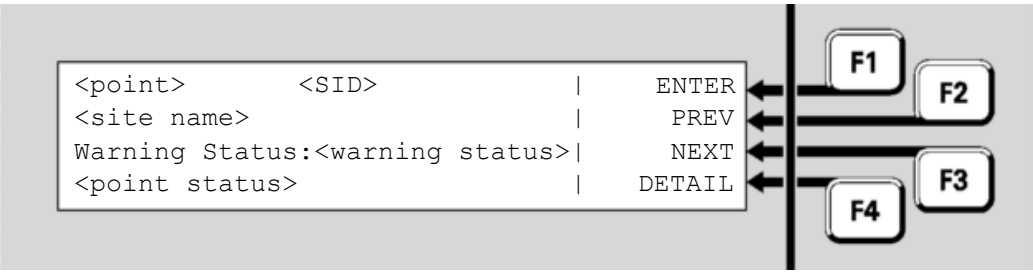


Fig 9-13 – Warning Status

The **<warning status>** is one of the following:

Normal	There are no network warnings present.
Fault	There are 1 or more warnings present.

The **<points status>** is one of the following:

Normal	The warning status is Normal.
Fault	One or more warnings are present.
Disabled	The point has been disabled.

Refer to the user manual for the specific remote device for further details.

Chapter 10
Buzzer Cadences, LCD Error Messages and Fault Finding

Introduction

This chapter explains the buzzer cadences, some of the error messages shown on the LCD, and provides some fault finding procedures.

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

Contents

Topic	See Page
Buzzer Cadences	10-1
Troubleshooting – LCD Messages and Actions	10-1
Quick Reference – Alphabetical List of Possible LCD Messages	10-8

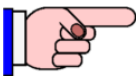
Buzzer Cadences

The following table describes the various buzzer cadences that may be encountered.

Note that in general alarms will override faults, thus when both a new alarm and a new fault condition exist the buzzer will produce the alarm cadence.

Buzzer pulses at 2 Hz	A new alarm exists.
Buzzer steady	A new fault exists.
Buzzer pulses at 0.5 Hz	Abnormal state.
Buzzer volume on high	Panel is at level 1 access.
Buzzer volume on low	Panel is at level 2 access or higher.
No buzzer for alarm or fault	Buzzer may be temporarily muted, or disabled.

Troubleshooting – LCD Messages and Actions



Messages may be presented in upper or lower case depending on the version of *MX1* firmware in use.

The messages are listed here in alphabetical order regardless of case.

Troubleshooting LCD Messages		
LCD Message	**Meaning/Cause(s)**	**Action**
"Aborted" CONTEXT: Battery Test menu	Last battery test status is not known; previous test was aborted before test completion.	
"Alarm Devices cannot re-sound due to network silencing" CONTEXT: Silence Alarm Devices keypress	Alarm devices cannot be un-silenced locally because a remote panel is sending a silence state on the network.	Find the remote panel that has its Alarm Devices disabled and enable them.
"Alarm test is not allowed on this zone" CONTEXT: Zone command	The configuration data file specifies that the zone cannot be tested.	
"Alarm test not allowed" CONTEXT: Point Alarm Test	Point is configured to be "not testable".	If the point needs to be tested, change the configuration data file and use a different profile for the point.
"All points in zone are disabled. Enable at least one point first." CONTEXT: Zone enable menu	Fire alarm standards require that a zone cannot be enabled if all points on that zone are disabled.	Enable at least one point.
"Command is not allowed at this time" CONTEXT: Zone command	The command cannot be applied because the zone is currently in alarm or is currently being reset.	Try again in a few seconds.
"Command is not allowed because all points in the zone are disabled" CONTEXT: Zone command	Fire alarm standards require that a zone cannot be enabled if all points on that zone are disabled.	Enable at least one point.
"Command is not valid for this zone" CONTEXT: Zone command	This can happen if an operate command was applied to a zone.	
"Command not sent. Queue is full" CONTEXT: Point or zone command to a remote panel.	There may be a problem with the network connection.	Check the network connection is working. Re-starting the local *MX1* panel might help.
"Command not accepted. Not supported" CONTEXT: Command to remote point or zone.	The remote panel does not support the command that was sent to it and doesn't know how to execute it.	Check that the point or zone number has been entered correctly.
"Command not accepted. Not allowed" CONTEXT: Command to remote point or zone.	The remote panel does not allow commands to be sent to it from this panel. This is determined by the configuration data file in the remote panel.	Check that the point or zone number has been entered correctly.
"Command failed. All points are disabled. CONTEXT: Command to remote zone	Fire alarm standards require that a zone cannot be enabled if all points on that zone are disabled.	Enable at least one point on the zone.

Troubleshooting LCD Messages		
LCD Message	**Meaning/Cause(s)**	**Action**
"Command not accepted. Device is busy" CONTEXT: Command to remote point or zone.	The remote panel is unable to execute the command at this time, probably because it is still executing a previous command.	Try again in a few seconds.
"Disable is not allowed on this zone" CONTEXT: Zone disable	The configuration data file specifies that the zone cannot be disabled.	
"ERROR: CRC TEST FAILED" "*MX1* Keyboard VX.XX" "Calc CRC: 0xXXXX Stored CRC: 0xXXXX" CONTEXT: LCD/Keyboard start-up	Microprocessor cannot read from flash (microprocessor is faulty) , OR	Replace LCD/Keyboard PCB.
	Problem with LCD/Keyboard program download, OR	Download LCD/Keyboard program again.
	Invalid program binary file was downloaded.	Check and re-download LCD/Keyboard program.
"ERROR: CANNOT COMMUNICATE WITH MAIN BOARD" "*MX1* Keyboard VX.XX" CONTEXT: LCD/Keyboard start-up	LCD/Keyboard cannot communicate with Controller.	Check that the FRC is correctly inserted into J8 of Keyboard and J30 of Controller.
	Controller is having its firmware programmed.	Check that Controller indicators B and C are flashing to show normal processing.
	No valid configuration data file in panel (e.g., after updating Controller firmware.	Press SILENCE buzzer and recheck when programming is completed. Reload configuration data file.
	System restarted on "No Database".	Download the configuration data file.
	Faulty loom.	Replace.
	Faulty Controller/LCD/ Keyboard.	Replace.
"Error processing command" CONTEXT: Alarm Devices Test operate Alarm Devices enable/ disable	Configuration data file corrupt or memory corrupt.	Use Smart Config to extract the active database and check it matches the master file. Check that point 241.1 is present in the database and has a "check" in the "can be disabled" column. Restart the panel. Contact service company.

Troubleshooting LCD Messages		
LCD Message	**Meaning/Cause(s)**	**Action**
"ERROR: RAM TEST FAILED" "*MX1* Keyboard VX.XX" CONTEXT: LCD/Keyboard start-up	Internal RAM failed test at keypad start-up. Microprocessor is probably faulty. Point 1.7 (ram test) on the keypad equipment is probably also indicating fault unless the fault is intermittent.	Re-start the keypad. Contact service company. Replace LCD/Keyboard PCB.
"ERROR: UNABLE TO RECEIVE CONFIG DATA" "*MX1* Keyboard VX.XX" CONTEXT: Message is displayed on LCD in response to a fault in the *MX1.*	LCD/Keyboard comms are OK but Controller won't send a valid config message to the Keyboard. Likely cause is that LCD/Keyboard and Controller board firmware versions are incompatible.	Install compatible firmware versions in LCD/Keyboard and Controller. Contact service company.
Shows --Invalid-- on lines prompting for user name and PIN. CONTEXT: Login Display	User code and PIN do not match what is in the active configuration data file.	Check the valid user code and PINs for the active data file.
"Invalid entry" CONTEXT: Entering a number	The number is out of range.	Check that the point, zone or SID number you are entering is valid.
Display stuck at "Loading Keyboard Information…" CONTEXT: Memory menu	Keyboard not responding to a request for information. If the keys and LCD are actually functional then this may indicate memory corruption or software problem.	Power *MX1* down and up again. Check correct LCD/Keyboard firmware version is installed.
"Local database disallows sending commands to this SID" CONTEXT: Point or zone command menu.	The configuration data file specifies that this panel may not send commands to the remote panel.	
"Long Battery Test" CONTEXT: Battery Test menu	Automatic battery test is currently active.	
"Loop is busy. Try again later" CONTEXT: Device diagnostic poll scan on the *MX* loop status menu.	A diagnostic poll scan is active on another display by another operator.	Wait for the other operator to exit the *MX* loop status menu.
"Manual Test" CONTEXT: Battery Test menu	Manual battery test is currently active.	None.
"Not alarm testable" CONTEXT: Point alarm test	The point is configured as "not testable". Check the configuration data file.	

Troubleshooting LCD Messages		
LCD Message	**Meaning/Cause(s)**	**Action**
"No History to View" CONTEXT: History Log menu	There is no stored history. This could happen if the history is reset with a command on the diagnostic terminal.	None. To check if the history is working, close and open the door and some events should be logged.
"No Items found" CONTEXT: Point/Zone range reset/ enable/ disable menus	There are no points/ zones in the specified range to which the command can be applied.	
Not all points disabled Not all points enabled Not all zones disabled Not all zones enabled CONTEXT: Enable/ disable command to a range of points or zones.	The command was not applied to one or more points or zones in the specified range. There are several things that can cause this, including that a point/ zone may have been configured to not allow a disable command or that a zone was in alarm.	Use point or zone recall commands to check which points or zones did not obey the command.
"Not in Test" CONTEXT: Battery test menu	Battery test is not active.	
"Not Started" CONTEXT: Battery test menu	There have been no battery tests done since the panel was last re-started or was powered on.	
"Operate test not allowed" CONTEXT: Point operate test	The point is configured to be not testable.	
"Point not configured in database" CONTEXT: Point recall	The SID specified by the point number that has been entered, does not appear in the list of SIDs in this panel's configuration database.	If you need to recall a point from the specified SID from this panel, you need to add the SID to the configuration data file.
"PreAlarm" CONTEXT: Zone recall menu	One of the points that is mapped to the zone is in pre-alarm.	Use the history display to determine which point is in pre-alarm. Use the off-normal recall menu to find points in pre-alarm. Check analogue values of the point in pre-alarm using the values menu.
"Point not testable at this time" CONTEXT: Point alarm test	Some devices (e.g., 814CH) cannot be tested again after a test, until a delay has elapsed.	Wait 60 seconds and try again.
"Remote panel did not respond" CONTEXT: Point or zone command	Communication with the remote panel may have been lost or it has been taken offline.	Check for communication faults and that the remote panel is still online.

Troubleshooting LCD Messages		
LCD Message	**Meaning/Cause(s)**	**Action**
"SID xx not responding, retry yy" CONTEXT: Recall of remote point or zone.	The remote panel SID xx is not responding. The yy value indicates how many attempts have been done. There may be a fault in the network or the panel may be offline.	Check that the remote panel is online and that there are no network faults.
"SID xx is busy, retry yy" CONTEXT: Recall of remote point or zone.	The remote panel SID xx is busy and unable to provide the requested information at present. It may be busy with a prior request.	Try again in a few seconds.
"Test in progress. ## mins left" Also showing *[Battery voltage]* *[Battery Current]* CONTEXT: Battery test menu	There is currently a manual or long-term automatic battery test in progress. Minutes to completion is shown.	
"Test Pass" CONTEXT: Battery test menu	Last battery test succeeded. Signifies that the battery voltage has stayed above the minimum voltage acceptable for the duration of a long-term or manual battery test.	
"The command handler is busy. Please wait a few seconds and try again" CONTEXT: Zone commands for local zones.	This indicates that a previous command is still being executed. If the previous command was a range command for a large number of local zones, there may be a delay while all of the associated events are sent on the network.	Try again in ten seconds.
"This point cannot be disabled" CONTEXT: Point disable menu	The point is configured so that it cannot be disabled by the user.	
"This zone cannot be disabled" CONTEXT: Zone disable menu	The zone is configured so that it cannot be disabled by the user.	
"Unable to Test: Alrm Routing Error" CONTEXT: Battery test attempted.	A manual battery test is not permitted while *MX1* is signalling an alarm.	Wait until the alarms have been reset.
"Unable to Test: Battery busy" CONTEXT: Battery test attempted.	A manual battery test cannot start while an automatic battery test is in progress.	Wait until the automatic test is completed.
"Unable to Test: Battery charging" CONTEXT: Battery test attempted.	The battery is allowed to charge for twice the length of the previous battery test. This message indicates the charging period is underway.	Wait until the charging period has finished.

Troubleshooting LCD Messages		
LCD Message	**Meaning/Cause(s)**	**Action**
"Unable to Test: Battery low" CONTEXT: Battery test attempted.	The battery voltage is so a battery test is not permitted.	Wait for the battery to re-charge.
"Unable to Test: Mains failed" CONTEXT: Battery test attempted.	Battery tests are not permitted while mains power is failed.	Wait until mains power is restored.
"Unable to Test: No battery" CONTEXT: Battery test attempted.	There is no battery connected or the battery is completely discharged or faulty.	Connect good batteries and try again, or wait until the batteries have charged.
"-Verified-" CONTEXT: Logon display	The user code and PIN entered matches that contained in the active configuration data file.	
"Zone not configured in database" CONTEXT: Zone recall	The SID specified by the zone number that has been entered, does not appear in the list of SIDs in this panel's configuration database.	If you need to recall a zone from the specified SID from this panel, you need to add the SID to the configuration data file.
#74 Pvar dataflash fail #75 zone disables dataflash fail #76 pnt disables dataflash fail #77 History dataflash fail CONTEXT: Software fault point status display	Persistent variables, zone disables, point disables and event history are stored in non-volatile "data-flash" memory. These faults indicate that the panel tried to write data to the dataflash and failed or that the history stored in the dataflash was found to be invalid at start-up.	Contact the service company. Replace the main board.

Quick Reference – Alphabetical List of Possible LCD Messages

This section sets out the LCD messages that may be encountered during service operations. The messages are listed in alphabetical order.

Due to ongoing changes to system software (firmware), these lists are subject to change without prior notice.

LCD Messages		
Message	**Occurs In**	**Meaning**
`Invalid`	Logon Display	User code and/or password entered do not match that contained in the active datafile.
`Next is OLDEST`	History recall	User has pressed the 'next' button to view a newer history event, however there is none. The menu therefore wraps round and displays the oldest history event.
`No History to View`	History recall	There is no stored history.
`No offnormal zones found`	Zone recall	There are no off-normal zones.
`No offnormal points found`	Point recall	There are no off-normal points.
`Zones not found`	Zone recall	There are no zones set up as "Show in Sequential Recall".
`No faults found`	Fault recall	There are no zones or points in fault.
`No disables found`	Disables recall	There are no zones or points disabled.
`No TESTS in progress` `No Tests Found`	Tests recall	There are no zones or points currently under test.
`Previous is NEWEST`	User has pressed the 'previous' button to view an older history event, however there is none.	The menu therefore wraps round to display the newest history event.
`Test cannot start at this time.`	Point Test Screen – performing operate, alarm test normal, alarm test fast.	Point is not configured to perform the test requested.
`This point cannot be disabled`	Point disable display, Point Test Screen, Point Recall Screen.	Configuration does not permit this point to be disabled by operator.
`This zone cannot be disabled`	Zone isolate display, Zone Test Screen, Zone Recall Screen.	Configuration does not permit this zone to be disabled by operator.
`Wrapping to first in list`	Recall screens	The next item is the first in the list.

Chapter 11
System Information

Introduction

This chapter contains system information for the *MX1*.

In this Chapter

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

Topic	See Page
Equipment Point Descriptions	11-2

Equipment Point Descriptions

Equipment 241 – ***MX1*** Controller

The following tables list the default Point text and a description of all the in-built points. Some *MX1* configurations may have these points changed or deleted.

Point Number	Point Text	Description
241.1	ALARM DEVICES	This point indicates the Alarm Devices status and is used to enable/disable the Alarm Devices. "Alarm Devices" are devices (e.g. sounders and sirens) that operate to signal to building occupants that a fire is present and the area should be evacuated. The state of the Alarm Devices is controlled by output logic, such that it is operated when there is an alarm on a non-disabled zone that is mapped to the Alarm Devices. When the Alarm Devices are disabled, the Alarm Devices point indicates disabled and the Alarm Devices Disabled/Fault LED on the *MX1* front panel is on steady, i.e. enabling/disabling this point enables/disables the alarm devices. If the Alarm Devices point is in fault, then the Alarm Devices Disabled/Fault LED on the front panel flashes (if the Alarm Devices point is not disabled). Do not disable the Alarm Devices to stop signalling of an Alarm Devices fault since this will also prevent the alarm devices from operating. Disable the source of the fault. This point does not indicate if Trial Evac or Silence Alarms are active. When the Alarm Devices are test operated, this point indicates a status of "TestOp".
241.2	GPIN1	Provides the status of the G.P IN 1 input (J2-1).
241.3	GPIN2	Provides the status of the G.P IN 2 input (J2-2).
241.4	GPOUT1	GPOUT1 is an open collector output (J7-1) with supervision capability. The Operate state of the output can be controlled by system or user logic. If supervision has been enabled in the configuration then the Fault state is determined and shown by the supervision input point GPOUT1S.
241.5	GPOUT1S	GPOUT1S is the supervision point for GPOUT1. If supervision is enabled on GPOUT1 then the Fault state of the output will show on this point. If GPOUT1 is not used then this point can be used as an input.
241.6	GPOUT2	GPOUT2 is an open collector output (J7-2) with supervision capability. The Operate state of the output can be controlled by system or user logic. If supervision has been enabled in the configuration then the Fault state is determined and shown by the supervision input point GPOUT2S.
241.7	GPOUT2S	GPOUT2S is the supervision point for GPOUT2. If supervision is enabled on GPOUT2 then the Fault state of the output will show on this point. If GPOUT2 is not used then this point can be used as an input.
241.8	ANC1	ANC1 is an ancillary relay with supervision capability (J4). The Operate state of the point can be controlled by system or user logic to energise the relay. If supervision has been enabled in the configuration then the Fault state is determined and shown by the ANC1S (241.9) point.
241.9	ANC1S	ANC1S is the supervision input (J4-5) for ancillary relay 1. If supervision is enabled on ANC1 then the Fault state of the output will show on this point. If supervision is not enabled on ANC1 then ANC1S is a clean contact input with states determined by the configuration.

Point Number	Point Text	Description
241.10	ANC2	ANC2 is an ancillary relay with supervision capability (J5). The Operate state of the point can be controlled by system or user logic to energise the relay. If supervision has been enabled in the configuration then the Fault state is determined and shown by the ANC2S (241.11) point.
241.11	ANC2S	ANC2S is the supervision input (J5-5) for ancillary relay 2. If supervision is enabled on ANC2 then the Fault state of the output will show on this point. If supervision is not enabled on ANC2 then ANC2S is a clean contact input with states determined by the configuration.
241.12	ANC3	ANC3 is an ancillary relay with supervision capability (J6). The Operate state of the point can be controlled by system or user logic to energise the relay. If supervision has been enabled in the configuration then the Fault state is determined and shown by the ANC3S (241.13) point.
241.13	ANC3S	ANC3S is the supervision input (J6-5) for ancillary relay 3. If supervision is enabled on ANC3 then the Fault state of the output will show on this point. If supervision is not enabled on ANC3 then ANC3S is a clean contact input with states determined by the configuration.
241.14.0	FIP Pwr Nml	This point is unused and included for future enhancement only. This point is intended to represent the "FIP PWR NORM-" PIN (J8-7) on the Brigade Signalling Interface. This open collector output is operated when power is supplied to the panel and de-operated when power is removed. There is no link between this point and the actual output.
241.14.1	FIP Comms OK	Provides the status of the "FIP COMMS OK-" PIN (J8-6) of the Brigade Signalling Interface. S/C to 0V gives the Normal state and O/C gives the Fault state.
241.14.2	Brigade Disable Relay	The Operate state controls the "FIP ISOL-" PIN (J8-8) on the Brigade Signalling Interface, the DISABLE/ISOL relay (J11) and the isolate component of the ASE+ signal on the ASE Interface (J12).
241.14.3	Brigade Alarm Relay	The Operate state controls the "FIP FIRE" PIN (J8-4) on the Brigade Signalling Interface, the FIRE/ALM relay (J11) and the fire component of the ASE+ signal on the ASE Interface (J12).
241.14.4	Brigade Fault Relay	The Operate state is OR-ed with the Fault state of the points RAM test, DB1 CRC Fault, DB2 CRC Fault, FW CRC, S/W Faults and also a check on whether output logic is running, and then controls the "FIP DEF-" PIN (J8-1) on the Brigade Signalling Interface, the FAULT/DEF relay (J10) and the fault component of the ASE+ signal on the ASE Interface (J12).
241.14.5	Brig Test	Provides the status of the "Brigade Test-" PIN (J8-2) of the Brigade Signalling Interface. S/C to 0V gives the ActiveInput state and an O/C gives the Normal state.
241.14.6	Brig Isol	Provides the status of the "Brigade Isol-" PIN (J8-3) of the Brigade Signalling Interface. S/C to 0V gives the state ActiveInput and an O/C gives the Normal state.
241.14.7	SGD Flt	Provides the status of the "SGD FLT+" PIN (J8-5) of the Brigade Signalling Interface. S/C to 0V gives the Normal state and O/C gives the Fault state.
241.15	Temperature	Point is unused but included for future enhancement.
241.16	LED1	LED1 is the "FAULT" LED (LD1). The Operate state can be controlled with system or user logic to turn the LED on or off. In the event that the system is started with no valid configuration data file then this LED is controlled by the system to toggle every 2 seconds (1/4Hz).

Point Number	Point Text	Description
241.17	LED2	LED2 is the "A" LED (LD2). The Operate state can be controlled with system or user logic to turn the LED on or off.
241.18	LED3	LED3 is the "B" LED (LD3). The Operate state can be controlled with system or user logic to turn the LED on or off. This LED is currently used as a diagnostic LED by system logic. It is toggled every 3 passes of logic to indicate output logic is running.
241.19	LED4	LED4 is the "C" LED (LD4). This LED is currently used as a diagnostic LED by the system. It is toggled approximately every 500ms to indicate the system is operating normally. This LED is not available for use by the user.
241.20	CALLPT	Shows the state of the manual call point input (J3-3). Fault is >0.95V (O/C), Normal is 0.35-0.95V (2K7 ELD), Alarm is <0.35V.
241.21	DOOR	Provides the status of the door input which uses a clean contact switch to monitor the door open/closed status. Normal (closed) is S/C to 0V, ActiveInput (open) is O/C.
241.22	FW WR EN	Provides the status of the "Firmware Write Enable" jumper. ActiveInput when jumper is fitted, Normal when not fitted.
241.23	DB WR EN	Provides the status of the "Database Write Enable" jumper. ActiveInput when jumper is fitted, Normal when not fitted.
241.24.0	Batt Voltage	Point is unused but included for future enhancement.
241.24.1	PSU I	Point is unused but included for future enhancement.
241.24.2	PSU V	Point is unused but included for future enhancement.
241.25.0	Mains	Provides the state of the mains power supply to the panel. This point is placed into Fault when the mains power has failed, and Normal otherwise.
241.25.1	Batt Low	Indicates battery voltage low level. Point will be in Fault when the battery voltage drops below the threshold set in the configuration, and Normal otherwise.
241.25.2	Batt Conn	Indicates battery connectivity. The state is Normal if the battery is found to be connected or Fault if the battery is disconnected or very discharged.
241.25.3	Earth	Indicates earth monitoring fault condition. Point will be in Fault when an earth fault is detected, Normal otherwise.
241.25.4	Battery Test	Indicates battery test state. Point will be in ActiveInput when battery test is active, Normal otherwise.
241.25.5	VBF1 Fuse	Provides the status of the fuse (F3) protecting the ANC1 power supply (J4-1). Normal indicates the fuse is intact, Fault indicates that the fuse has blown or is not fitted.
241.25.6	VBF2 Fuse	Provides the status of the fuse (F4) protecting the ANC2 power supply (J5-1). Normal indicates the fuse is intact, Fault indicates that the fuse has blown or is not fitted.
241.25.7	VBF3 Fuse	Provides the status of the fuse (F5) protecting the ANC3 power supply (J6-1). Normal indicates the fuse is intact, Fault indicates that the fuse has blown or is not fitted.
241.25.8	RZDU Fuse	Provides the status of the fuse (F2) protecting the RZDU power supply (J24-1). Normal indicates the fuse is intact, Fault indicates that the fuse has blown or is not fitted.
241.25.9	Battery Capacity	Indicates that the long-term battery test has failed. Point will be in Fault while test is running and has failed, Normal otherwise.
241.25.10	VNBF Fuse	Provides the status of the fuse (F6) protecting the non-battery backed power supply (J15-1). Normal indicates the fuse is intact, Fault indicates that the fuse has blown or is not fitted.

Point Number	Point Text	Description
241.25.11	Charger High	Provides indication of whether the charger voltage is higher than it should be. The threshold is determined by the Charger High voltage setting in the configuration. Normal indicates the charger voltage is less than the specified voltage, Fault indicates that the charger voltage is too high.
241.25.12	Charger Low	Provides indication of whether the charger voltage is lower than it should be. The threshold is determined by the Charger Low voltage setting in the configuration. Normal indicates the charger voltage is higher than the specified voltage, Fault indicates that the charger voltage is too low.
241.25.13	Battery Fail	Provides indication of whether the battery voltage is at or below the level at which the battery is considered totally discharged. The threshold is determined by the Battery Fail voltage setting in the configuration. Normal indicates the battery voltage is higher than the specified voltage, Fault indicates that the battery voltage is too low, thus the battery is totally discharged and system performance may be affected.
241.25.14	Power Supply Supervision	Provides indication of whether the system voltage is at or below the level at which system operation cannot be guaranteed. The threshold is determined by the System Power Fail voltage setting in the configuration. Normal indicates the system voltage is higher than the specified voltage, Fault indicates that the system voltage is too low, thus system operation cannot be guaranteed.
241.26.0	Loop 1 Left S/C	Indicates a short circuit on the left hand side of the in-built *MX* Detector Loop connector (J31). The point state is Fault if a short circuit is detected between the AL+ (J31-1) and AL- (J31-2) terminals, otherwise the point is Normal.
241.26.1	Loop 1 Right S/C	Indicates a short circuit on the right hand side of the in-built *MX* Detector Loop connector (J31). The point state is Fault if a short circuit is detected between the AR+ (J31-3) and AR- (J31-4) terminals, otherwise the point is Normal.
241.26.2	Loop 1 O/C	Indicates that an open circuit fault has been detected on the in-built *MX* Detector Loop connector (J31). The point state is Fault if an open circuit is detected on either the +ve loop or the -ve loop, otherwise the point is Normal.
241.26.3	Loop 1 Overload	This point indicates an over-current fault on the in-built *MX* Detector Loop (J31). The point state goes to Fault while an *MX* Loop overload induced reset takes place and also if there have been 5 of these resets within the preceding 5 minutes, otherwise the point is Normal.
241.26.4	Loop 1 Polling Rate	Indicates an in-built *MX* Polling loop rate fault condition. A fault state on this point occurs when the *MX1* is unable to communicate with the *MX* loop devices quickly enough, which may affect correct operation of detectors and modules. The fault condition will remain for 30 minutes from when the *MX1* becomes able to communicate quickly enough. The fault condition can also be cleared by resetting this point – if the fault condition remains the point will re-enter the fault condition within a short period of time.
241.26.5	Common Foreign Point	Has a fault status if a device that is not programmed into the *MX1* configuration data file is detected on the *MX* loops. The fault status automatically clears when the presence of the foreign device is no longer detected.
241.26.6	Common Dirty Alert	Has a fault status if there are any non-disabled points with a status of dirty.
241.26.10	IR Mode On	Active when Infrared mode is enabled for *MX* loop 1. Places the *MX1* into the off-normal state.

Point Number	Point Text	Description
241.27.0	S/W Faults	If the internal checking routines detect an inconsistency then this point is put into fault. Refer to the history and/or printer log for "Sw Fault" events that give more detail as to the type of fault. Note some faults will automatically clear and others may need this point to be reset to clear the fault. Irrespective of this, occurrences of a software fault should be advised to the service company for assessment.
241.27.1	DB1 CRC Fault	Provides the status of configuration data file1. The point state is Fault if a CRC check of configuration data file1 fails, otherwise the state is Normal.
241.27.2	DB2 CRC Fault	Provides the status of configuration data file2. The point state is Fault if a CRC check of configuration data file2 fails, otherwise the state is Normal.
241.27.3	FW CRC	Provides the status of the controller firmware. The point state is Fault if a CRC check of the firmware fails, otherwise the state is Normal.
241.27.4	RAM Test	Provides the status of the Controller boards RAM. The point state is Fault if an error is detected with the RAM, otherwise the state is Normal.
241.27.5	Auto Test	Point is unused but included for future enhancement.
241.27.6	Self Test	Point is unused but included for future enhancement.
241.27.7	Cold Start	Point is unused but included for future enhancement.
241.27.8	Warm Start	Point is unused but included for future enhancement.
241.27.9	Foreign RZDU	This point indicates that there are one or more foreign RZDUs detected in the system. The point state is Fault if a reply is received from an RZDU with an address that corresponds to an RZDU that is not enabled in the configuration data file. The fault will automatically clear if replies from the foreign RZDU stop being received.
241.27.10	Commission Test	Provides status of the *MX1* Commission Test function, for recall on the LCD and to light the Tests indicator on the keypad. When Commission Mode is active, the status of this point will show ActInput and TestOp. Otherwise it will show Normal.
241.27.11	Startup Flags	This point signals Fault for 12 seconds following restart of the panel. This includes cold starts, user initiated reboots, and system controlled or uncontrolled watchdog restarts. The Startup Flags status can be used to ensure that a fault is sent to the brigade signalling equipment, or not.
241.27.12	Output Logic	This point signals fault if the *MX1* has what appears to be an uncorrupted configuration data file but which contains compiled Output Logic with fatal problems. If this fault is signalled, the ability of the *MX1* to act as a fire alarm is severely compromised. The *MX1* firmware will force the System Fault and Faults indicators on, and will force the fault relay into its de-energised state. This fault can only be corrected by restarting the panel using a configuration data file with output logic compiled without the problem, which could be either the alternative configuration data file stored in the *MX1* or a newly downloaded configuration data file.
241.27.13	Panel Attended	This point signals when the AIF is in attended mode.
241.27.14	Printer output	This point is disabled if the printer output is disabled.
241.28	ISO Sys Fault	Point is unused but included for future enhancement.

Point Number	Point Text	Description
241.29.0	Sil Alms	This point indicates whether any Silence Alarms keyswitches are active. The status of this point is determined by output logic in the system logic page. When the equation for ESA (External Silence Alarms) is true, this point indicates both ActiveInput and Fault. The default equation for ESA includes the local Silence Alarms keyswitch on the *MX1* front panel and the Silence Alarms keyswitches on any connected RZDUs. NZS 4512 requires a defect be signalled when any Silence Alarms keyswitch is active, which is why this point is assigned a status of fault (as well as ActiveInput) when the equation for ESA is true. The operation of Alarm Devices outputs are inhibited when Silence Alarms is true, though this will not prevent Trial Evac from operating the Alarm Devices.
241.29.1	Trial Evac	This point indicates whether any Trial Evac keyswitches are active. The status of this point is determined by output logic in the system logic page. When the equation for TEV is true, this point indicates a status of ActiveInput. The default equation for TEV includes the local Trial Evac keyswitch on the *MX1* front panel and the Trial Evac keyswitches on any connected RZDUs.
241.29.2	Services Restore	This point indicates whether any Services Restore keyswitches are active. The status of this point is determined by output logic in the system logic page. When the equation for BSR (Building Services Restore) is true, this point indicates a status of ActiveInput. The default equation for BSR includes the local Services Restore keyswitch on the *MX1* front panel and the Services Restore keyswitches on any connected RZDUs.
241.29.3	Auto Dis. Zones Pres	This point will be set to Fault when there are zones automatically disabled due to the zones being in alarm at the time of a silence alarms keyswitch restoration to normal, otherwise the state is Normal.
241.30.0	Common Routing	Provides the common status of the routing outputs. The status will show Alarm when the Alarm routing output should be activated, ActInput when the Fault or Disables routing outputs should be activated. It will become disabled when all of the Alarm, Fault and Disables routing points are disabled. It cannot be enabled until at least one of those points becomes enabled.
241.30.1	Alarm Routing	Provides the alarm routing status. The status will show ActInput when the alarm routing output should be activated, Fault if an Alarm Routing Fault is present, Disable if the Alarm Routing is disabled (in which case the Alarm Routing output is not activated when this point has an ActInput status.)
241.30.2	Fault Routing	Provides the fault routing status. The status will show Active Input when the fault routing output should be activated, Fault if a Fault Routing Fault is present, Disable if the Fault Routing is disabled (in which case the Fault Routing output is not activated when this point has an Active Input status.)
241.30.3	Disables Routing	Provides the disables routing status. The status will show ActInput when the disables routing output should be activated, Fault if a Disables Routing Fault is present, Disable if the Disables Routing is disabled (in which case the Disables Routing output is not activated when this point has an ActInput status.)
241.31.0	Ancillary Disables, Ancil Group 0	The disable status of this point may be used to control the operation of site-specific ancillary functions.
241.31.1	Ancillary Disables, Ancil Group 1	The disable status of this point may be used to control the operation of site-specific ancillary functions.

Point Number	Point Text	Description
241.31.2	Ancillary Disables, Ancil Group 2	The disable status of this point may be used to control the operation of site-specific ancillary functions.
241.31.3	Ancillary Disables, Ancil Group 3	The disable status of this point may be used to control the operation of site-specific ancillary functions.
241.32.0	I-HUB Panel Connection	Provides status of the *MX1* connection to the I-HUB. Fault indicates that communication is not possible – usually because the wrong serial port is used, the connection is broken, the I-HUB is turned off, or a non I-HUB device is connected. Refer to **NETWORK CONNECTION STATUS** below for descriptions for the MAF Status text displayed.
241.32.1	I-HUB - Local PIB	Provides status of local PIB(s) that are directly connected to the local I-HUB.
241.32.2	I-HUB - Remote PIB	Provides status of remote PIB(s) reported by local PIB(s) that are directly connected to the local I-HUB.
241.32.3	I-HUB - Ring Channel 1 Break	Indicates fault when a ring break is present on I-HUB port 1.
241.32.4	I-HUB - Ring Channel 2 Break	Indicates fault when a ring break is present on I-HUB port 2.
241.32.5	I-HUB - Hardware	Indicates fault if the I-HUB has a hardware fault present (EEPROM checksum fault in the I-HUB).
241.32.6	I-HUB - PSU	Indicates fault if the I-HUB has detected a PSU fault through its PTT input.
241.32.7	I-HUB - Neighbour I-HUB Has No SID	Indicates fault if the local I-HUB has a physically adjacent neighbour I-HUB that has no programmed SID number of its own and has been unable to borrow a SID number from a locally connected *MX1*. This can happen if the neighbour I-HUB's *MX1* has been turned off or there is no *MX1* directly connected to the neighbour I-HUB.
241.32.8	I-HUB - Multi-Drop Port Access	Has an active status if the local I-HUB has detected multiple consecutive message collisions on a multi-drop port and is hence unable to transmit. This can be caused by an overloaded multi-drop network or by a wiring fault preventing the I-HUB from receiving its own transmissions.
241.32.9	I-HUB - Message Discard	Indicates fault if the I-HUB has discarded a message after not receiving confirmation of reception from the remote end despite multiple retries. This can be caused by a fault or failure of the device connected at the remote end, wiring faults, overloading, or noise. The port number that the fault has occurred on is indicated in a *MX1* system event.
241.32.10	I-HUB - Queue Overflow	Indicates fault if the I-HUB has had a queue overflow and message(s) have consequently been lost. This could be due to a wiring fault, device failure, noise, or other network performance problems. The port number that the fault has occurred on is indicated in a *MX1* system event.
241.32.11	I-HUB - Queue Warning	Has an active status if the I-HUB has had a queue exceed the configured queue warning level. This could be due to a wiring fault, or other network performance problems. The port number that the warning has occurred on is indicated in a system event.
241.32.12	I-HUB - Generic Fault	Indicates fault if the I-HUB has a generic fault. This is for use with future versions of the I-HUB firmware – connect to the I-HUB's diagnostic port for more information.
241.32.13	I-HUB - Generic Warning	Has an active status if the I-HUB has a generic warning. This is for use with future versions of the I-HUB firmware – connect to the I-HUB's diagnostic port for more information.

Point Number	Point Text	Description
241.33.0	PIB Panel Connection	Provides status of the *MX1* connection to the PIB. Fault indicates that communication is not possible – usually because the wrong serial port is used, the connection is broken, the PIB is turned off, or a non PIB device is connected. This will also indicate fault when a PIB with V1.02 or below firmware is connected. Refer to **NETWORK CONNECTION STATUS** below for descriptions for the MAF Status text displayed.
241.33.1	PIB - Reserved	Unused.
241.33.2	PIB - Remote PIB	Provides status of remote PIB(s) reported by the local PIB that is connected directly to the *MX1*.
241.33.3	PIB Ring Break (FAS1)	Provides the external fault status (usually wired to indicate a ring break on the IP network) of the local PIB that is connected directly to the *MX1*.
241.33.4	PIB - Remote PIB External Fault (FAS1)	Provides the external fault status (usually wired to indicate a ring break on the IP network) of remote PIB(s) reported by the local PIB that is connected directly to the *MX1*.
241.33.5	PIB - PIB Internal / IP Connection	Indicates fault if the PIB has an internal fault (e.g. checksum failure), or the Ethernet / IP connection has failed.
241.33.6	PIB - PIB PSU	Indicates fault if the PIB has detected a PSU fault (voltage below minimum).
241.33.7	PIB - Reserved	Unused.
241.33.8	PIB - Reserved	Unused.
241.33.9	PIB - PIB PLink Message Discard	Indicates fault if the PIB has had to discard message(s) on the Panel-Link interface. This could be due to a wiring fault.
241.33.10	PIB - PIB Queue Overflow	Indicates fault if the PIB has had a queue overflow. This could be due to a wiring fault, or other network performance problems.
241.34.0	NIC Panel Connection	Provides status of the *MX1* connection to the other network interface. Fault indicates that communication is not possible – usually because the wrong serial port is used, the connection is broken, the wrong baud rate is selected, or the network interface is turned off. Refer to **NETWORK CONNECTION STATUS** below for descriptions for the MAF Status text displayed.

NETWORK CONNECTION STATUS	
DISPLAYED TEXT	**DESCRIPTION**
Normal	The connection to the I-HUB, PIB or Other network interface device is working correctly.
Disabled	The connection to the network interface has been disabled.
Fault Type Mismatch	The network interface detected does not match the interface configured in the *MX1* panel's database.
Fault	The connection to the network interface has failed.
Fault Duplicate SID	Another device on the network has the same SID number as the *MX1*.

Equipment 242 – Pseudo Points

The status of these points is generated by specific programming in the configuration

Equipment 243 – LCD/ Keyboard

Point	Point Description	Description
243.1.0	Scan Fail	This point is placed into fault if the *MX1* does not receive valid replies from the LCD/keyboard.
243.1.1	Enable	This point determines whether the LCD/keyboard will be set up to ignore or accept keypresses from the keypad. If the operate state is true, the keypad will be enabled and accept keypresses.
243.1.2	LED Board	This point is placed into fault when the LCD/keyboard detects an LED board fault. Not used in New Zealand.
243.1.3	Keyboard	This point is placed into fault when the LCD/keyboard detects a fault on the numeric keypad.
243.1.4	Ext Fault	This point is placed into fault when the LCD/keyboard external fault input has been activated.
243.1.5	Micro Test	This point is placed into fault when the LCD/keyboard micro test fails.
243.1.6	CRC Fail	This point is placed into fault when the LCD/keyboard program CRC check fails.
243.1.7	RAM Test	This point is placed into fault when the LCD/keyboard RAM test fails.
243.1.8	Channel A	This point is placed into fault when communication channel A is detected to be in fault. Currently not implemented.
243.1.9	Channel B	This point is placed into fault when communication channel B is detected to be in fault. Currently not implemented.
243.1.10	Access Level 2	This point determines whether the menu will be in Access Level 2. If the operate state is true, menu level 2 access is enabled.
243.1.11	Alarm Buzzer	This point shows the state of the alarm buzzer on the LCD/keyboard, which is controlled directly by internal logic. It is also sent to any RDUs allowing the buzzer to be mimicked. ActInput indicates that the alarm buzzer is active.
243.1.12	Fault Buzzer	This point shows the state of the fault buzzer on the LCD/keyboard, which is controlled directly by internal logic. ActInput indicates that the fault buzzer is active. It is also sent to any RDUs allowing the buzzer to be mimicked.
243.1.13	LCD Fault	This point is placed into fault when the LCD/keyboard LCD fails.
243.1.14	Buzzer Disable	This point indicates as Disabled when the buzzer has been disabled, and TestOp when the buzzer is muted.
243.2.0 through to 243.19.0	Switch Input n	This point is placed into ActInput if switch input n on the keypad is active.
243.20.0 through to 243.35.0	Open Collector Output n	This point drives the open collector output n. Its operate state can be driven by the mapped zone's operate state or by logic.
243.36.0	FRC Monitor	This point is placed into fault when the FRC to the 26 way Switch Input connector is removed.
243.36.1	Switch Input set 0 Monitor	This point is placed into fault when the end-of-line resistor is missing from switch input set 0, which contains inputs 16-18.
243.36.2	Switch Input set 1 Monitor	This point is placed into fault when the end-of-line resistor is missing from switch input set 1, which contains inputs 1-3.

Point	Point Description	Description
243.36.3	Switch Input set 2 Monitor	This point is placed into fault when the end-of-line resistor is missing from switch input set 2, which contains inputs 4-6.
243.36.4	Switch Input set 3 Monitor	This point is placed into fault when the end-of-line resistor is missing from switch input set 3, which contains inputs 7-9.
243.36.5	Switch Input set 4 Monitor	This point is placed into fault when the end-of-line resistor is missing from switch input set 4, which contains inputs 10-12.
243.36.6	Switch Input set 5 Monitor	This point is placed into fault when the end-of-line resistor is missing from switch input set 5, which contains inputs 13-15.
243.37.0	Fire Protection Active	When this point is placed into the Operate state by a logic equation the corresponding indicator on the keypad turns ON.
243.37.1	Smoke Control Active	When this point is placed into the Operate state by a logic equation the corresponding indicator on the keypad turns ON.
243.37.2	Spare Indicator	When this point is placed into the Operate state by a logic equation the corresponding indicator on the keypad turns ON.
243.37.3	Spare Indicator A	NOT SUPPORTED
243.37.4	Spare Indicator B	NOT SUPPORTED

Equipment 244 – RZDU Points

Point	Point Description	Description
244.x.0	Scan status	This point is in fault if the *MX1* does not receive replies from the RZDU.
244.x.1	Callpoint	This point is in alarm and/or fault if the MCP at the RZDU is in alarm and/or fault. Not used in New Zealand.
244.x.2	Batt Low	This point is in fault if the battery voltage is low at the RZDU.
244.x.3	Common Defect	This point is in fault if there is a fault at the RZDU. It will be necessary to review the fault at the RZDU itself.
244.x.4	Batt Fail	This point is in fault if the battery has failed at the RZDU.
244.x.5	Charger	This point is in fault if the charger is out of specification at the RZDU.
244.x.6	Mains	This point is in fault if the RZDU has no mains supply.
244.x.7	Silence Alarms	This point indicates if the Silence Alarms switch at the RZDU is active.
244.x.8	Trial Evac	This point indicates if the Evacuation switch at an RZDU is active.
244.x.9	Serv Restore	Not currently supported by *MX1* on an RZDU.
244.x.10	Self Test	This point is in fault if the RZDU has failed its self-test.

Equipment 245 – Additional Loop Cards

Point	Point Description	Description
245.x.0	Loop x Left S/C	Indicates a short circuit on the left hand side of the xth *MX* Detector Loop. The point state is Fault if a short circuit is detected between the AL+ (J1-1) and AL- (J1-2) terminals, otherwise the point is Normal.
245.x.1	Loop x Right S/C	Indicates a short circuit on the right hand side of the xth *MX* Detector Loop . The point state is Fault if a short circuit is detected between the AR+ (J1-3) and AR- (J1-4) terminals, otherwise the point is Normal.
245.x.2	Loop x Open Circuit	Indicates that an open circuit fault has been detected on the xth *MX* Detector Loop. The point state is Fault if an open circuit is detected on either the +ve wire or the -ve wire, otherwise the point is Normal.

Point	Point Description	Description
245.x.3	Loop x Overload	This point indicates an over-current fault on the xth *MX* Detector Loop. The point state goes to Fault while an *MX* Loop overload induced reset takes place and also if there have been 5 of these resets within the preceding 5 minutes, otherwise the point is Normal.
245.x.4	Loop x Polling Rate	Indicates an *MX* Polling loop rate fault condition. A fault state on this point occurs when the *MX1* is unable to communicate with the *MX* loop devices quickly enough, which may affect correct operation of detectors and modules. The fault condition will remain for 30 minutes from when the *MX1* becomes able to communicate quickly enough. The fault condition can also be cleared by resetting this point – if the fault condition remains the point will re-enter the fault condition within a short period of time.
245.x.5	Loop x Left Relay Status	Display AL Relay status (open/close).
245.x.6	Loop x Right Relay Status	Display AR Relay status (open/close).
245.x.7	Loop x Communication Status	Indicates whether the loop card is operating or not. “Normal” = operating “Fault” = not operating, or disconnected, or plugged into the wrong port
245.x.8	Loop x Flash CRC Status	The result of comparing the Expected and Actual CRC of the Loop Card Flash Memory - “Normal” or “Fault”
245.x.9	Loop x RAM Test Status	The result of the most recent RAM test on the Loop Card - “Normal” = passed “Fault” = failed
245.x.10	IR Mode On	Active when Infrared mode is enabled for *MX* loop x. Places the *MX1* into the off-normal state.

These points are repeated for each configured *MX* Loop Card. Value x is the loop number.

Equipment 245 – Fan Control Boards

245.248.0	Common Scan Fail	Indicates unable to communicate with one or more AS 1668 fan controls.
245.248.1	Common CRC Fault	Indicates CRC fault reported from one or more AS 1668 fan controls.
245.248.2	Foreign Control	Indicates unconfigured AS 1668 fan controls detected.

These points are allocated for AS 1668 fan controls when the equipment number 248 for DSS functions is configured.

Equipment 246 – Remote FBP

Point	Point Description	Description
246.1.0	Scan Fail	This point is placed into fault if the *MX1* does not receive valid replies from the Remote FBP.
246.1.1	Enable	This point determines if the keypad on the Remote FBP is enabled. If the operate state is true, the keypad will be enabled and accept keypresses.
246.1.2	LED Board	This point is placed into fault when the Remote FBP detects an LED board fault.
246.1.3	Keyboard	This point is placed into fault when the Remote FBP detects a fault on the keypad.
246.1.4	Ext Fault	This point is placed into fault when the Remote FBP external fault input has been activated.

Point	Point Description	Description
246.1.5	Micro Test	This point is placed into fault when the Remote FBP micro test fails.
246.1.6	CRC Fail	This point is placed into fault when the Remote FBP program CRC check fails.
246.1.7	RAM Test	This point is placed into fault when the Remote FBP RAM test fails.
246.1.8	Channel A	This point is placed into fault when communication channel A is detected to be in fault. Currently not implemented.
246.1.9	Channel B	This point is placed into fault when communication channel B is detected to be in fault. Currently not implemented.
246.1.10	Access Level 2	This point determines whether the menu for the Remote FBP will be in Access Level 2. If the operate state is true, menu level 2 access is enabled.
246.1.11	Alarm Buzzer	This point shows the state of the alarm buzzer on the Remote FBP, which is controlled directly by internal logic. ActInput indicates that the alarm buzzer is active.
246.1.12	Fault Buzzer	This point shows the state of the fault buzzer on the Remote FBP, which is controlled directly by internal logic. ActInput indicates that the fault buzzer is active.
246.1.13	LCD Fault	This point is placed into fault when the Remote FBP LCD fails.
246.1.14	Buzzer Disable	This point indicates as Disabled when the buzzer has been disabled, and TestOp when the buzzer is muted.
246.2.0 through to 246.19.0	Switch Input n	This point is placed into ActInput if switch input n on the keypad is active.
246.20.0 through to 246.35.0	Open Collector Output n	This point drives the open collector output n on the Remote FBP. Its operate state can be driven by the mapped zone's operate state or by logic.
246.36.0	FRC Monitor	This point is placed into fault when the FRC to the 26 way Switch Input connector is removed.
246.36.1	Switch Input set 0 Monitor	This point is placed into fault when at the Remote FBP the end-of-line resistor is missing from switch input set 0, which contains inputs 16-18, for NZ RFBPs this includes brigade keyswitches.
246.36.2	Switch Input set 1 Monitor	This point is placed into fault when at the Remote FBP the end-of-line resistor is missing from switch input set 1, which contains inputs 1-3.
246.36.3	Switch Input set 2 Monitor	This point is placed into fault when at the Remote FBP the end-of-line resistor is missing from switch input set 2, which contains inputs 4-6.
246.36.4	Switch Input set 3 Monitor	This point is placed into fault when at the Remote FBP the end-of-line resistor is missing from switch input set 3, which contains inputs 7-9.
246.36.5	Switch Input set 4 Monitor	This point is placed into fault when at the Remote FBP the end-of-line resistor is missing from switch input set 4, which contains inputs 10-12.
246.36.6	Switch Input set 5 Monitor	This point is placed into fault when at the Remote FBP the end-of-line resistor is missing from switch input set 5, which contains inputs 13-15.
246.37.0	Fire Protection Active	When this point is placed into the Operate state by a logic equation the corresponding indicator on the Remote FBP turns ON.

Point	Point Description	Description
246.37.1	Smoke Control Active	When this point is placed into the Operate state by a logic equation the corresponding indicator on the Remote FBP turns ON.
246.37.2	Spare Indicator	When this point is placed into the Operate state by a logic equation the corresponding indicator on the Remote FBP turns ON.
246.37.3	Spare Indicator A	NOT SUPPORTED
246.37.4	Spare Indicator B	NOT SUPPORTED

Equipment 247 – SID Points

Point	Point Description	Description
247.x.0	SID Comms Status	Provides the communication status of the remote SID.
247.x.1	SID MAF Status	Displays the MAF status of the remote SID. Refer to page 9-9 for the MAF Status conditions displayed.
247.x.2	NIC Fault Status	For SIDs that support this, displays the fault status of the remote network interface (an I-HUB). Refer to the descriptions for the points 241.32.1 through 241.32.13 (earlier in this section) for an explanation of the faults that can appear.
247.x.3	NIC Warning Status	For SIDs that support this, displays the warning status of the remote network interface (an I-HUB). Refer to the descriptions for the points 241.32.1 through 241.32.13 (earlier in this section) for an explanation of the warnings that can appear.

Value x is the SID number.