FIRE FIGHTER'S GUIDE – FFCIF TYPE 3

1. VIEW NEXT ALARM

NEXT

Press "NEXT" key once -
- The LCD will display the next alarm.

2. ACKNOWLEDGE DISPLAYED ALARM

ACK

Press "ACK" key once.
- LCD will display "ACKD" for the displayed alarm.
- If all alarms are acknowledged, the ALARM LED will go steady.

3. RESET ALL ACKNOWLEDGED ALARMS

RESET

Press "RESET" key once.
- LCD will display "Resetting all acknowledged alarms".
- If there are no acknowledged alarms the LCD will display "No acknowledged zones to reset".
- If all alarms are reset, the LCD will exit FFCIF mode.

4. ISOLATE ALL ACKNOWLEDGED ALARMS

ISOL

Press "ISOLATE" key once.
- LCD will display "Isolating all acknowledged alarms".
- If there are no acknowledged alarms the LCD will display "No acknowledged zones to isolate".
- If all alarms are isolated, the LCD will exit FFCIF mode.

5. ISOLATE/DE-ISOLATE BELLS

BELLS ISOL *DELETE*

Press "BELLS ISO" key once.
- If the "Bells Isolated" LED is off
      The "Bells Isolated" LED will turn on.
      The bells will turn OFF if they are on.
- If the "Bells Isolated" LED is on.
      The "Bells Isolated" LED will turn off.
      If any un-isolated alarms exist, the bells will ring.

6. BRIGADE TEST

BRIG TEST

Press and hold the "BRIG TEST" key for at least 4 seconds.
-     The Alarm LED will turn on.
-     The FIP will signal Alarm to the brigade, if programmed to.

VIGILANT
Fire and Evacuation Systems

REMOTE DISPLAY UNIT (RDU)

OPERATOR'S MANUAL

Document Number: LT0133

Issue .... 2.02; 21 August 2000

The RDU is manufactured by:

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NEW ZEALAND

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VIGILANT FIRE & EVACUATION SYSTEMS
END USER LIABILITY DISCLAIMER

The RDU has a configuration programming facility which may be accessed from the keypad by using a password.

This programming facility allows the user to define detail of the operation of the RDU System which is being customised. It is possible for the user to program operational features that prevent the installed system from meeting statutory requirements.

VIGILANT FIRE & EVACUATION SYSTEMS does not accept responsibility for the suitability of the functions programmed by the user.

AS3548 NOTICE

WARNING: 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.

AMENDMENTS

ISSUE	DATE	COMMENTS	ECN
1	20/07/94	Original Issue.	-
2	08/12/97	Controller Board was 1931-2-2. Software upgraded to V2.00 adding zone tests, CRC recall, and NZ mode.	2735
2.01	11/12/98	AS3548 Class A note added (Page ii)	2897
2.02	21/08/00	Wordified and reprinted. Updated for software V2.11.	

TABLE OF CONTENTS

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CHAPTER 1
INTRODUCTION

1.1	**SCOPE**

The RDU has an Operator Display Panel with an alphanumeric "Liquid Crystal Display" (LCD) and a keypad. The keypad has numeric keys (0 to 9) and specific control keys (e.g. Bells Isolate, Reset, etc).

The operator controls the RDU by pressing the appropriate control keys. The RDU, in turn, prompts the operator by displaying messages on the LCD. Where appropriate, the RDU will provide the operator with options, numbered from 1 up. The operator selects the desired option by pressing the appropriate key on the numeric keypad. Three dots at the end of the LCD indicate that there is more than 1 line of menu options to choose from. Successive option lines are displayed by pressing the dot "." (AND) key.

Control of the RDU is therefore intuitive to an operator familiar with the basic principles of a fire alarm system.

Such an operator may well perform all desired functions without reference to this manual. This manual is intended as a guide to an unfamiliar operator and a reference for the more experienced operator.

It is recommended that the building owner's representative who is responsible for the fire alarm system, becomes familiar with the RDU operation by practice and by reference to this manual. The unfamiliar operator should learn the basic principles described in Chapter 2, and become familiar with the RDU system structure and controls.

The RDU is used in both New Zealand and Australia and this manual describes the operation of both. There are some differences in operation between the two countries and these are listed in section 2.3.6. The country mode is selected with a programmable parameter.

The Manual is structured in chapters as follows:

Chapter 1:   **Introduction**: An introduction to this manual, other RDU Product manuals and the standards relating to fire alarms.

Chapter 2:   **System Description**;   A description of the RDU system features and functions.

Chapter 3:   **Specifications**;   A summary of RDU system specifications.

Chapter 4:   **General Display & Keypad Operation;**   A description of display indications, menu structure and key functions.

Chapter 5:   **Operating Instructions - Brigade Functions;**   A detailed description of the operation and function of keys for FIRE FIGHTER'S USE provided on the RDU ("ACK", "RESET", "ISOLATE", "BRIG TEST" and "NEXT").

Chapter 6:   **Operating Instructions - System Functions;**   A description of the operation and function of keys provided on the RDU for system operation. For example, Recall History, Recall System Configuration, and Print functions.

Chapter 7:   **Operating Instructions - Zone Functions;**   A detailed description of the operation and function of keys provided on the RDU for zone functions.

SCOPE   (CONTINUED)

Chapter 8:   **Operating Instructions - Relay/Output Functions;**   A description of the RDU relay and output functions.

Chapter 9:   **Operating Instructions - Test Functions;**   A description of the operation of keys provided on the RDU to initiate tests.
eg. System Test, Bells Test, Battery Test etc.

Chapter 10:   **Placing Into Operation;**   A description of how to place a system into operation. Also included is a System Commissioning Checklist.

Chapter 11:   **System Testing & Maintenance;**   A description of fault finding, routine testing and system maintenance.

1.2 ATTACHMENTS

A FIRE FIGHTER'S GUIDE is fixed inside the front cover for quick reference in emergencies.

Your installation company should also provide the following documentation:

(a)   An "AS INSTALLED" fire detection system diagram and/or summary, describing the installed layout of the FIP and RDU system configuration.

(b)   Other "AS INSTALLED" information, such as System configuration parameters.

(c)   A Maintenance Log-Book.

1.3 ASSOCIATED DOCUMENTATION

1.3.1   PRODUCT RELATED

The following manuals for the RDU are available:

RDU Operator's Manual   This manual, LT0133, in A4 size.

RDU Installation &   Provides information for personnel
Programming Manual   responsible for system design, installation and commissioning. Part number LT0148.

1.3.2   STANDARDS RELATED

This manual makes reference to the following Australian Standards:

AS1603.4   Automatic Fire Detection and Alarm Systems
                Part 4 - Control and Indicating Equipment.

AS1670   Automatic Fire Detection and Alarm Systems-
                System Design, Installation and Commissioning.

AS1851.8   Maintenance of Fire Protection Equipment
                Part 8 - Automatic Fire Detection and Alarm Systems.

AS4050(INT)   Fire Detection and fire alarm systems - Fire Fighter's control and indicating
                facilities.

The New Zealand standard referred to is NZS4512 for New Zealand operation.

1.4   GLOSSARY OF ABBREVIATIONS

The following abbreviations and terminology may be used in this manual:

AC	Alternating Current
"ALM"	Display abbreviation for ALARM
AS	Ancillary Supervision
AVF	Alarm Verification, or check alarm.
AZC	Alarm Zone Circuit, commonly referred to as "Detection Zone"
AZF	Alarm Zone Facility, commonly referred to as "GROUP"
DC	Direct Current
EEPROM	Electrically Erasable Programmable Read Only Memory
EOL	End Of Line device
EPROM	(U.V.) Erasable PROM
F	Flashing LED indicator
FFCIF	Fire Fighter's Control & Indication Facilities, AS4050 (INT)
FIP	Fire Indicator Panel
"FLT"	Display abbreviation for FAULT
FRC	Flat Ribbon Cable
"ISO"	Display abbreviation for ISOLATED
LCD	Liquid Crystal Display
LED	Light Emitting diode (Visual Indicator)
MAF	Master Alarm Facility
MCP	Manual Call Point (break glass switch)
No	Number
O/C	Open Circuit
PCB	Printed Circuit Board
PROM	Programmable Read-Only Memory
PSU	Power Supply Unit
RAM	Random Access Memory
RDU	Remote Display Unit
S/C	Short Circuit
VB	Battery Backed Voltage
VBF	Fused Battery Backed Voltage
VNB	Non-Battery Backed Voltage
VNBF	Fused Non-Battery Backed Voltage

1.5   GLOSSARY OF TERMINOLOGY

The following terminology is used throughout this manual:

Ancillary Equipment   :   Equipment external to Fire Alarm system
Ancillary Relay   :   Relay in FIP which operates Ancillary equipment
Auto-Reset   :   Mode for one person testing of detectors
Auxiliary Output   :   Output for driving additional LEDs/relays
Baud   :   Bits per second
Brigade   :   Fire Brigade Authority, or any other authority which receives
                              the FIP alarm signals
Control Output   :   Output from FIP to other equipment
Detector   :   Alarm Detection Device (electrical transducer)
FFCIF Mode   :   The LCD is displaying the alarms list. Limited key entry
                              permitted as per AS1603.4
Global   :   A function that may affect more than one zone
MAF Zone   :   Any zone, Alarm or Ancillary Relay, that is configured to signal
                              the brigade in the event of an alarm or fault
Mapping   :   Programmable causal relationship between inputs and outputs
Zone   :   Fire searchable area of building
Display extender board :   Used with New Zealand operation only. It has common normal,
                              fire and defect leds.

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CHAPTER 2
SYSTEM DESCRIPTION

2.1 BASIC PRINCIPLES OF A FIRE ALARM SYSTEM

2.1.1 DETECTORS & ALARM ZONE FACILITY

A fire alarm system has sensors (electric transducers) which detect the presence of fire. These include heat detectors (thermals), product of combustion detectors (smoke), sprinkler system water flow switches, manual call points (break glass switches), and others.

The building being protected is divided into areas of limited size called zones. The detectors in each zone are connected to an electric circuit called an Alarm Zone Circuit (AZC). The portion of the FIP which controls the AZC is called the Alarm Zone Facility (AZF). When a detector detects fire (i.e. operates) it changes the electrical condition on the AZC and the AZF senses this (zone alarm). The detector remains in the operated state (latches) until the AZF temporarily removes the voltages to it (resets it). N.B. some detectors, e.g. flow switches, are non-latching.

As well as sensing when a detector has operated the AZF can sense a fault in the AZC wiring (zone fault).

The zone isolate function prevents a zone alarm or fault being registered by the Master Alarm Facility (MAF). Refer to Fig 2.1.1.

2.1.2 ALARM VERIFICATION

When programmed (by the installer) to do so, the AZF may perform a verification function on sensed alarms. This Alarm Verification (AVF) functions as follows:

When an AZF senses that a detector has operated, it does not register alarm immediately but delays for a period of time and then resets the detector (typical total delay is 11 seconds). If that, or another detector on the AZC operates within the next 150 seconds (or similarly programmed period) then the AZF recognises that as a verified alarm, and generates alarm to the MAF.

2.1.3 DISPLAY

There is a display of zone status which allows the operator to see if a particular zone is normal or is in alarm or fault, and if it is isolated.

There is also a separate display of common status which shows if any zone in the system is in alarm, fault, or is isolated.

```
                              FIP
        ┌─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
        │      AZF          MAF               │
        │   ┌────────┐   ┌────────┐           │
        │   │        │   │        │           │
 ┌──────────┤        │   │        │           │
 │■ O O O│  │ AZC 1  │>──┤        ├───────────┼──> Signal to
 └──────────┤        │   │        │           │    Brigade
        │   │        │   │        │           │
        │   │        │   │        │           │
 ┌──────────┤        │   │        │           │
 │■ O O O│  │ AZC 2  │>──┤        ├───────────┼──> Warning
 └──────────┤        │   │        │           │    Devices
        │   │        │   │        │           │    (e.g. Bells)
        │   │        │   │        │  ACF      │
        │   │        │   │        │ ┌──────┐  │
        │   │        │   │        ├>┤      ├──┼──> Ancillary
        │   │        │   │        │ │      │  │    Control
        │   │        │   │        │ │      │  │    Outputs
 ┌──────────┤        │   │        │ │      │  │    (e.g. Air-
 │■ O O O│  │ AZC n  │>──┤        │ │      │  │    Conditioning
 └──────────┤        │   │        │ └──────┘  │    shutdown)
        │   └────────┘   └────────┘           │
        │                                     │
Operator│                                     │
Controls ──>│                                 │──> Visual
        │                                     │    Indication
Power   ──>│                                  │    of Status
        └─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
```
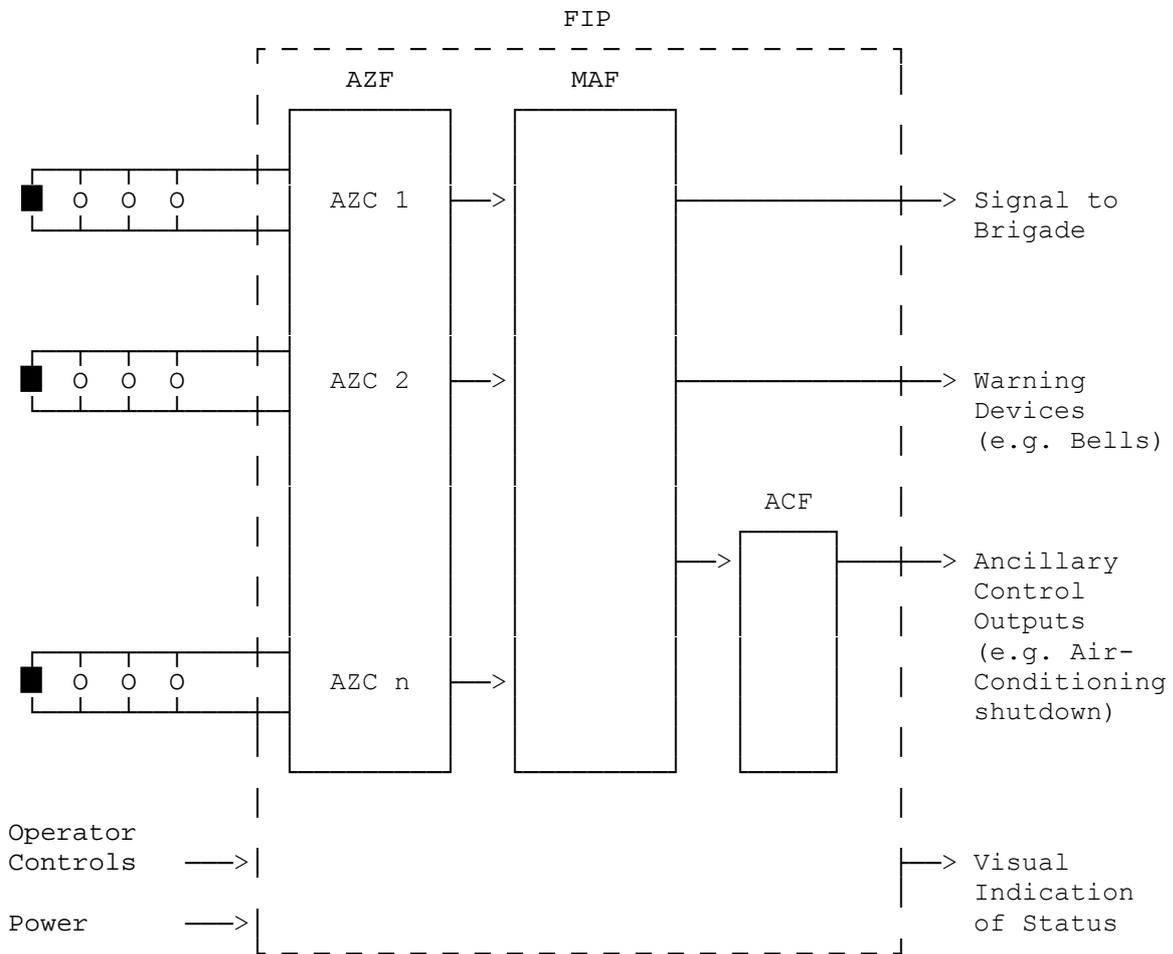
KEY

AZC   = Alarm Zone Circuit
AZF   = Alarm Zone Facility
MAF   = Master Alarm Facility
ACF   = Ancillary Control Facility
FIP   = Fire Indicator Panel
○   = Detector
■   = End of Line (circuit) Device

FIG 2.1.1
BASIC FIRE ALARM SYSTEM

2.1.4   MASTER ALARM FACILITY

The MAF receives zone status (normal, alarm, fault) and transmits it (via a signalling device) to the Brigade. It also operates the system alerting devices (e.g. electric bells) to warn people to evacuate the building.

Individual (or blocks of) zones can be isolated, the Bells output can be isolated, but the MAF (i.e. Brigade signalling) cannot be isolated.

In the RDU it is possible to have alarm zones which are not "mapped" to the MAF and/or the Bells, i.e. when in alarm, do not cause a Brigade signal or Bells operation.

2.1.5   ANCILLARY CONTROL FACILITY

The ancillary control facility consists of electric relays (electrically controlled switches) which can be used to switch equipment which is not directly part of the Fire Alarm System. Examples include shutting down air conditioning plant, returning lifts to a certain floor and releasing fire stop doors held open by electric door holders.

2.1.6   REMOTE DISPLAY UNIT

The zone status can also be annunciated remotely. The Remote Display Unit (RDU) performs this function as well as providing the operator with the facility to control the fire alarm system. Zone events can thus be acknowledged, reset or isolated at the RDU without the operator having to go to the main Fire Indicator Panel (FIP). Zone alarm and fault tests can also be initiated at the RDU. A number of RDUs (8 max) can connect to the same FIP to provide a distributed control and indication facility.

The RDU comes standard with a display to show both individual and common zone status (refer to Section 2.1.3). The FP0558 version of the RDU is supplied complete with Master Alarm (refer Section 2.1.4) and Ancillary Control (refer Section 2.1.5) facilities.

The remainder of this document details the RDU features and operation.

2.2   RDU SYSTEM DESCRIPTION

2.2.1   GENERAL

The RDU is an intelligent Remote Display Unit (RDU) which performs the functions of a Fire Fighter's Control and Indicating Facility (FFCIF) as specified by the Australian Standard AS4050 (int) for Australian operation and by NZS4512 for New Zealand operation. The differences between New Zealand and Australian operation are listed in section 2.3.6.

It can connect to an F3200, F4000 LCD or F4000 Non-LCD FIP to control the FIP remotely and to indicate FIP zone status. Up to 8 RDUs can be connected (multi-drop) to a FIP to achieve a distributed control and indication system. The functionality of a Non-LCD FIP based system, in particular, is significantly enhanced by the connection of an RDU because of the added ability to display text messages and prompts.

The RDU has a high degree of flexibility. It can be programmed as to which of zones 1 to 528 that it will process. This means that in multiple RDU systems each RDU can be assigned the zones corresponding to its own particular sector. Alternatively all RDUs can be configured for all zones if required.

An RDU can simply mimic the FIP zone status or it can be programmed to allow the operator to acknowledge, test, reset or isolate zones from the RDU. Refer to the "RDU Installation and Programming Manual", Section 6.5.4 "Mode" programming.

The RDU is ideally suited to annunciate both relay control and alarm type events. The following features of the RDU make it ideally suited for these applications:

- Programmable as to which zones are alarm type and which are relay (should be the same as the FIP).

- Programmable zone name text, eg. AIR CON. CONTROL CIRCUIT 5, LOWER GROUND FLOOR ALARM

- Individually programmable zone mapping to LCD and LED number, and for FP0558 RDUs, MAF Brigade relays, Bells, and Ancillary 1 & 2 Relays.

- One to one, selective or multiple zone status to LED mapping where 16 Zone LED display boards are fitted.

- Capability to install 16 Zone Relay Driver type boards instead of 16 Zone LED Display Boards in applications where outputs are to be switched on a per zone basis.

These features allow the RDU to be easily configured to suit a wide range of applications eg. annunciation and control for FIPs configured for automatic fire detection, AS1668 Air Conditioning Control, Gas Flood Control etc. Additional mimic-only devices can be connected to the FIP output to monitor the FIP zone status. For example, floor mimic panels, or remote outputs for evacuation panels.

Two versions of the RDU are available, FP0558 and FP0559 as shown in Figures 2.1.2 & 2.1.3 respectively. FP0558 is supplied in a cabinet
(15U, 750H, 550W, 230mmD) complete with a MAF/PSU module and Manual Call Point (MCP). There is provision for mounting up to four 16 Zone LED boards as an optional extra within the cabinet.

GENERAL   (CONTINUED)

FP0559 is a much smaller, minimally configured RDU. It is a wall mounting, low profile (4U, 177H, 450W, 50mmD) unit which is line powered from the FIP. It does not have a MAF/PSU module and there is no provision for internal mounting of 16 Zone LED display boards or a Manual Call Point (MCP). If required these items can connect externally.

2.2.2   DISPLAYS

The primary display of the RDU is a 2 line by 40 character LCD on which the status messages and prompts are shown. The LCD has backlight illumination which is turned on when there is an alarm or operator interaction. Refer Fig 2.1.3.

Common and various system statuses such as BELLS ISOLATED are displayed on 8 LEDs adjacent to the LCD.

The display panel composed of the LCD, LEDs and operator keypad is called the Operator Display panel. The portion of the display panel within the red border is called the FFCIF display. This meets the requirements of AS4050 (int) for a Fire Fighter's Control and Indicating Facility (FFCIF).

It includes the common status LEDs for ALARM, ISOLATED and FAULT.

As an optional extra, individual zone status (ALARM, ISOLATE and FAULT) can be displayed on LEDs by fitting the appropriate number of 16 Zone LED display boards. The 16 Zone LED display boards include as standard, an open collector transistor output for each zone which can be used to drive an internal or remote mimic display.

For New Zealand operation an optional display extender board (PA0742) may be connected which provides 3 common LEDs (alarm,defect,normal), and some inputs (silence alarms, trial evac, building services restore, lamp test, and external defect), and some outputs (the 3 common LEDs, an index lamp output and ancillary fire and defect outputs).

2.2.3   SERIAL COMMUNICATIONS PORT

A serial port is included in the RDU to provide the 3 (FP0558) or 4 (FP0559) wire link required for connection to the FIP.
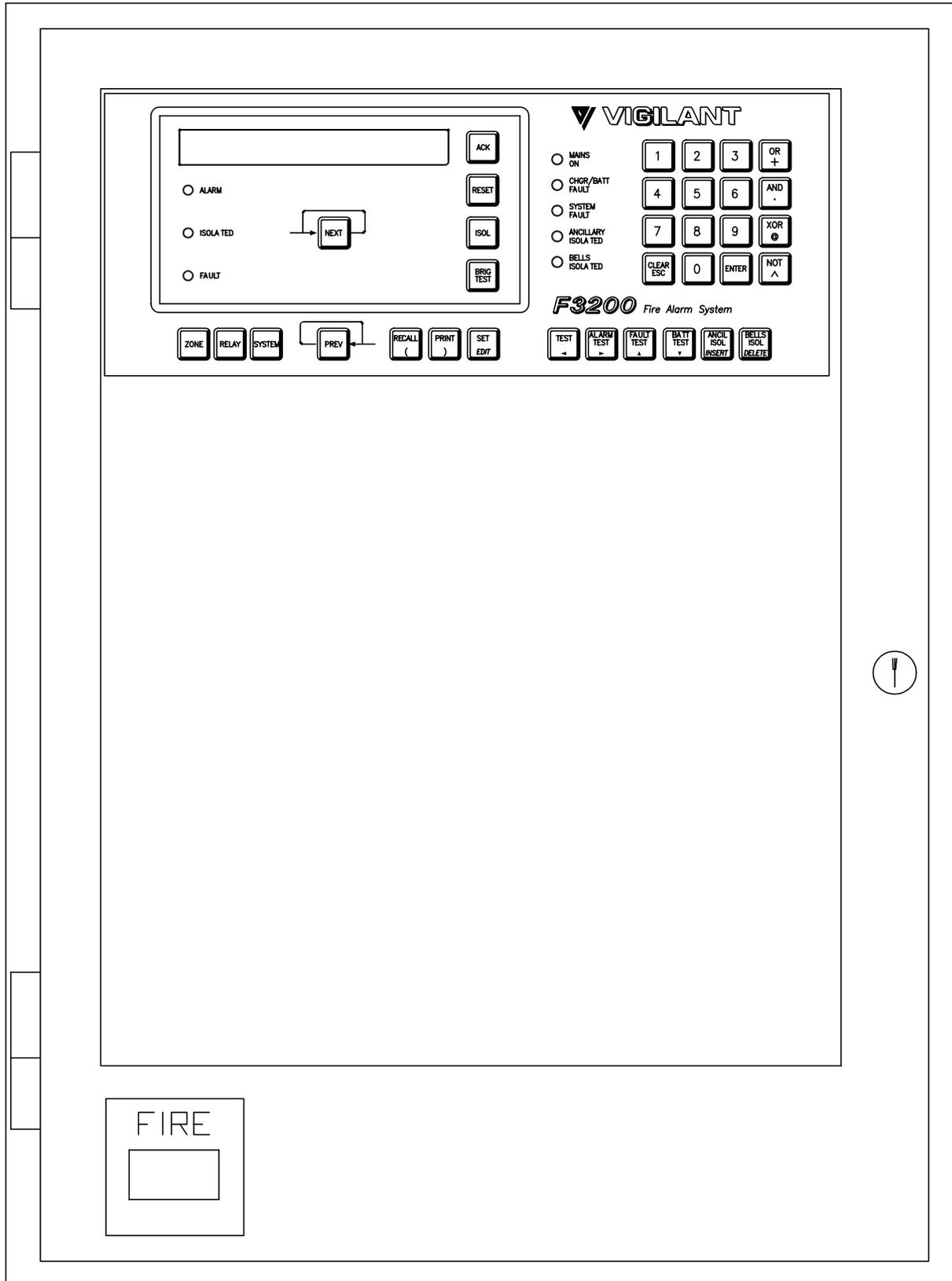
FIG 2.1.2
FP0558 MAF CONFIGURED RDU
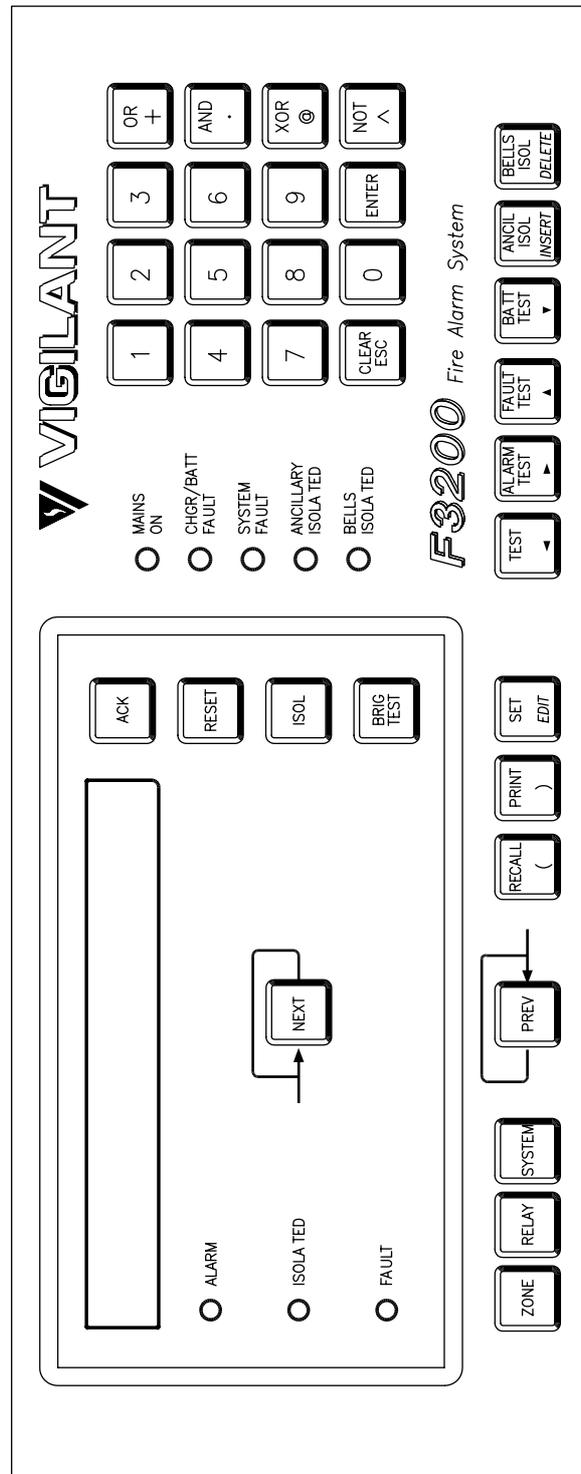
FIG 2.1.3
FP0559 NON-MAF CONFIGURED RDU

2.2.4 LOGGING PRINTER

A serial printer may be connected to the RDU printer/programmer port to provide a log of events and operator actions, and also to print the programmed database.

Events which are printed include:
Zone Events, e.g. Alarm, Fault;
Zone Commands, e.g. Reset, Isolate, Alarm test, Fault test;
System Events, e.g. communication failures, battery faults, etc.

The printout includes the time and date, the cause of the event (e.g. Zone, Relay, or RDU), and the event type. Events and commands for zones that have had a text name programmed also have the name printed. The RDU is able to store up to 70 events for printing, being the first 70 events to occur.

As events are printed, more events are able to be put into the list. If events cannot be put into the list because it is full, the RDU keeps a count of those events it has had to discard. When the RDU is next able to put more events into the list, it prints out the number of events it had to discard. The RDU separately maintains an internal history of the 70 most recent events. This history can be viewed on the LCD.

2.2.5 PROGRAMMER PORT

The printer/programmer port can be used to save or load the programmed database. The saved database can then be reloaded into the RDU (or another RDU) at some future time and this is much faster than reprogramming the entire database from the RDU keypad.

Please refer to Section 6.3.4 of the RDU "Installation & Programming Manual" for a more detailed description.

2.2.6 FP0558: MAF-CONFIGURED RDU ONLY

2.2.6.1 MAF Outputs

The FP0558 provides 7 relays as standard on the MAF/PSU module. These can be used to switch alarm bells and ancillary equipment such as door holders, air-conditioning shutdown, etc. The MAF standby, alarm, fault and isolate relays should not be used for signalling to the brigade, the brigade connection should be made to the FIP.

Each zone can be programmed to operate these relays when the appropriate condition is present, eg Alarm, Fault, Isolate etc.

2.2.6.2 Power Supply

The FP0558 RDU has a 3 Amp battery charger/power supply as standard. There is adequate room for large batteries. An optional 6 Amp battery charger/power supply is available.

Fuse protected battery backed and non-battery backed supplies are available to power external loads such as bells, illuminated signs, interposing relays, gas release solenoids, door holders, etc.

2.3   SYSTEM STRUCTURE & CONFIGURATION

2.3.1   PCB MODULES: FP0558

The printed circuit boards which could be used in the FP0558 RDU are as follows:

Controller/Display
This mounts on 4U inner door. It controls all other PCBs and the keypad, LCD, buzzer and status LEDs.

MAF/PSU
This mounts on the cabinet rear wall. It includes the battery charger, power supply, fuses, brigade plus ancillary relays and screw terminal connectors for input of communications from the FIP.

16 LED Display (optional)
This mounts on the optional 7U inner door. Includes 16 sets of 3 LEDs plus 16 open collector outputs driven off the zone alarm status.

16 Relay Driver (optional)
Mounts on 7U inner door. It includes 16 open collector outputs driven off the zone alarm status.

16 Relay Board (optional)
Mounts internally in cabinet. Includes 16 sets of voltage free change-over contacts driven by the open collector outputs of either the 16 Zone LED Display boards or the 16 Relay Driver boards.

Display Extender Board (optional)
This is used in New Zealand mode only and may mount on the optional 7U inner door or in an external picture frame cabinet.

2.3.2   STRUCTURE & INTER-CONNECTION : FP0558

A basic MAF Configured RDU system has one Controller/Display and one MAF/PSU, interconnected by Flat Ribbon Cable (FRC). Refer to Fig 2.2.2.

Where **16 Zone Display boards** are fitted, the default configuration is that:
Zone 1 corresponds to the top row of LEDs (3) on the left most Display, Zone 2 to the row below it, etc, (top to bottom, left to right). Mapping zones and relays to LEDs in other patterns is programmable.

Display boards may also annunciate Relay status. Alarm LED on <-> relay energised, Isolated LED on <-> relay isolated, Fault LED on <-> relay wiring fault (i.e. supervision fault).
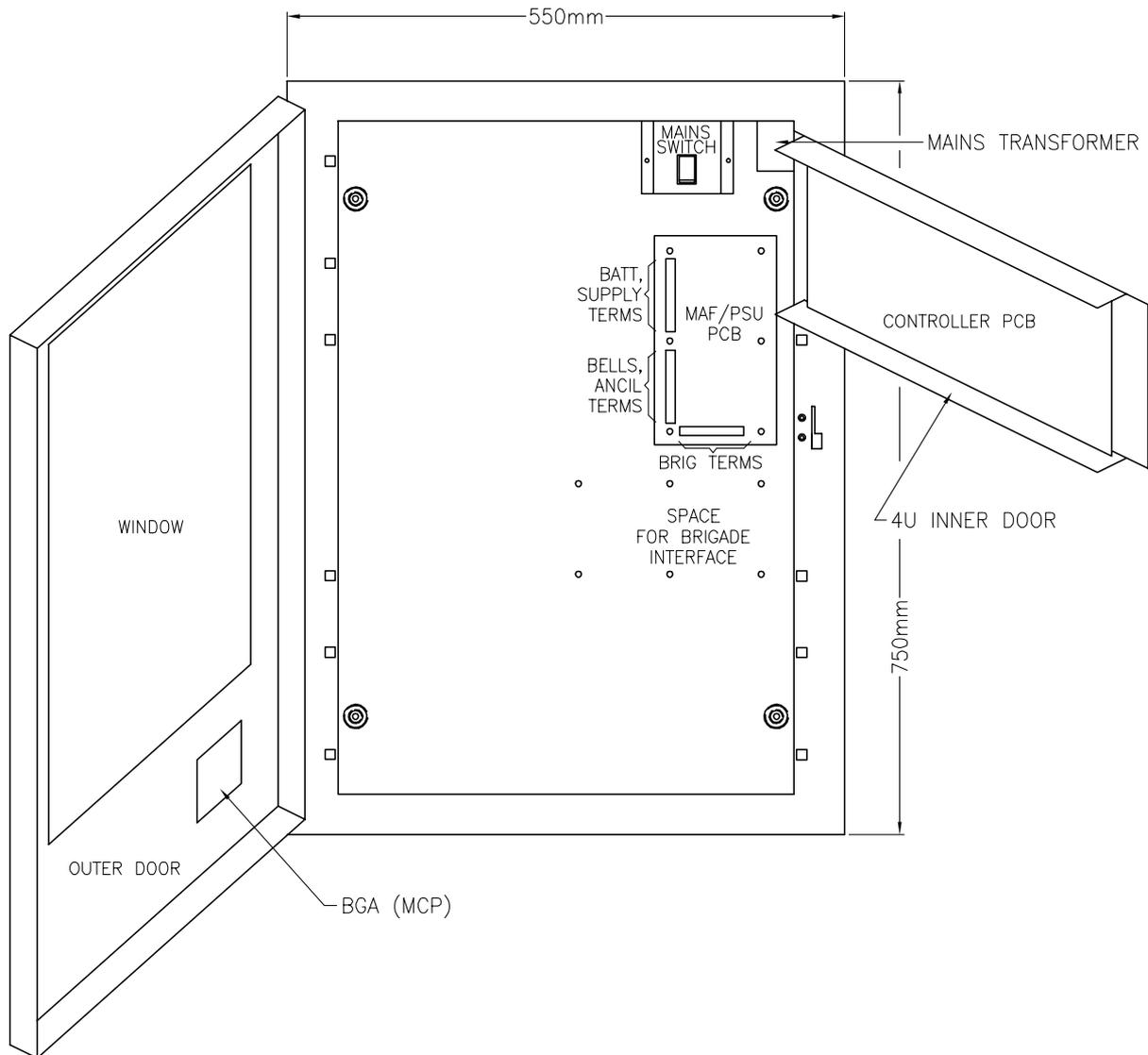
FIG 2.2.2.
FP0558 - INTERNAL LAYOUT

2.3.3　　　　　PCB MODULES: FP0559

The printed circuit boards which are used in a Non-MAF configured RDU are as follows:

- **Controller/Display** as described in Section 2.3.1.

- **Remote Termination Board** for input of power and communications from the host.

- Optional external connection of **16 Zone LED Display/Relay Driver Boards (plus Relay Board)** as required providing a suitable cabinet and PSU can be arranged.

- **Display extender board (optional)**
   This is used in New Zealand mode only.

2.3.4　　　　　STRUCTURE & INTER-CONNECTION : FP0559

A basic Non-MAF Configured RDU system has one Controller/Display and one remote termination board interconnected by Flat Ribbon Cable (FRC).

16 Zone Display/Relay driver boards can be driven off the "LED OUT" connector on the Controller/Display board. An extender cabinet could be used to mount the boards, an external PSU would also be required. The mapping of zones to LEDs is as described in Section 2.3.2.

2.3.5　　　　　CONFIGURATION

An RDU is configured by the system designer and installation staff to suit a particular customer's requirements. This is done by:

> Fitting and connecting the required modules
> (eg. MAF/PSU module, 16 Zone display/relay driver boards if any);
> adjusting or removing links on the PCBs;
> programming the RDU through the keypad.

The manual call points (MCPs), warning devices, ancillary equipment and field wiring that are connected to the RDU must match the programmed configuration. The RDU zone type (relay/alarm, default = alarm) must be programmed to match the FIP zone type. Note that relay type zones will not generate FFCIF alarm type events at the RDU. Where 16 Zone LED display/relay driver boards are fitted the board type must also be programmed (default = display);

It is not expected that the operator should program the RDU.
The Operator should not alter the links or system configuration.

**　　PLEASE NOTE　　**

If your building or occupancy requirements change, then the RDU or FIP may require reprogramming, so please consult your installation or maintenance company.

2.3.6   NEW ZEALAND MODE OPERATION

The RDU may operate in either Australian or New Zealand mode as selected by a programmable parameter. The differences for New Zealand mode operation are listed here.

1.   Display extender board.

        This is an optional board (PA0742) which may be used in NZ mode and provides some outputs and inputs as follows.
        Outputs   -   common normal, alarm and defect LEDs
                       -    index lamp output
                       -    ancillary fire and defect outputs

        Inputs   -   silence alarms
                       -    trial evac
                       -    building services restore
                       -    lamp test
                       -    external defect

2.   FIP battery very low alarm event.

        When the FIP powers up it will immediately generate a battery very low alarm and signal brigade alarm until reset. It will also send an event to the RDU for annunciation. This event can be acknowledged and reset at the RDU (or FIP) providing acknowledgement and reset are enabled at the RDU. A battery very low status can also occur at the RDU. This will be logged to the history and a defect condition generated, but there is no FFCIF event or brigade alarm signalled for this.

3.   MAF board usage.

        The MAF board used for New Zealand operation is the same as used for Australian operation. In NZ mode, the brigade alarm relay is normally energised and de-energises for alarm - the opposite of Australian mode. The "MCP" (manual call point) input on the MAF board cannot be used when in New Zealand mode and is ignored.

4.   Bells isolate and Silence Alarms operation.

        The Silence Alarms input on the display extender board is normally connected to a keyswitch which can be used to silence the bells i.e. de-energise the bells relay at either or both the RDU and the FIP. This is dependent on programming. Refer to the RDU Installation and Programming Manual (LT0148).

5.   Trial evacuation input.

        The trial evac keyswitch connected to the display extender board can be used to energise the bells relay at the FIP or RDU if programmed to. Refer to the RDU Installation and Programming Manual (LT0148). Trial evac overrides bells isolate and the Silence Alarms keyswitch and operates the bells even if the bells are isolated.

6.   Building services restore input.

        The BSR keyswitch connected to the display extender board is used to isolate ancillary outputs at the FIP and/or RDU depending on programming. Refer to the RDU Installation and Programming Manual (LT0148).

NEW ZEALAND MODE OPERATION (CONTINUED)

7.   Battery low monitoring.

        The battery low input is monitored continuously (Australian mode only monitors the
        battery low input during a battery test). A daily automatic 40 minute battery test is
        done as part of the daily "Auto Test" initiated by the FIP. A one minute battery test
        can be initiated from the RDU front panel keypad. A battery test can only be done if
        the RDU has a MAF board connected. Battery test resistors which are normally
        present on the MAF board for Australian operation are removed for New Zealand
        operation.

CHAPTER 3
SYSTEM SPECIFICATIONS

3.1 GENERAL

3.1.1 PART NUMBERS

FP0558, FP, REMOTE DISPLAY UNIT (RDU), FULL CABINET & MAF/PSU
Full size cabinet complete with MCP mounted externally, Controller/Display with FFCIF LCD & Keypad, MAF/PSU (includes 7 relays, 3A PSU), Blanking plate covering lower 7U of 15U height cabinet.

FP0559, FP, REMOTE DISPLAY UNIT (RDU), SLIMLINE, WALL MOUNT
Wall mount, low profile cabinet with Controller/Display with FFCIF LCD & Keypad.

FP0577, FP, REMOTE DISPLAY UNIT (RDU), 4U 19" RAC
4U, 19" rack mounting RDU Controller for mounting in a 19" rack cabinet.

FP0585, FP, REMOTE DISPLAY UNIT (RDU), SMALL CABINET, C/W MAF/PSU
8U, 19" cabinet containing RDU Controller and MAF/PSU. No space for LED mounting.

FP0772, FP, REMOTE DISPLAY UNIT (RDU), SLIMLINE, FLUSH MOUNT
Flush mounting cabinet containing RDU Controller, no MAF/PSU.

3.1.2 CONTROLS

KEYPAD

Type	:	Polyester Membrane
Keypress	:	Buzzer gives short "beep" for valid keypress
Number of		
Keys	:	34 (plus 5 concealed with no function)
FFCIF Keys	:	ACK; RESET; ISOL; BRIG TEST; NEXT
4x4 Keypad	:	Digits 0-9; Clear/Esc; Enter; 4 x Logic Keys

KEYPAD FUNCTIONS

Zone Functions   -   Acknowledge, Reset, Isolate, Recall, Alarm test, Fault test

Relay Functions   -   Acknowledge, Reset, Isolate, Recall

Ancillary Functions   -   Test, Isolate, Reset, Recall (requires MAF/PSU)

System Functions   -   Buzzer Test, Display Test
                        -    System Test
                        -    Recall : Alarms, Faults, Isolates, System Faults, History, Database CRC
                        -    Set time and date
                        -    Program and view parameters
                        -    Print, save and verify database
                        -    Battery Test, Bell Test, Bell Isolate

Brigade Functions   -   Acknowledge Alarms
                        -    View alarms (Next & Prev)
                        -    Reset acknowledged zones in alarm
                        -    Isolate acknowledged zones in alarm
                        -    Brigade Test (Non-Mimic modes only)

BUZZER (INTERNAL SOUNDER)

Mounted on Controller/Display PCB

Tone Steady   :   Fault
                        Unisolated zone fault
                        Unisolated ancillary relay supervision fault
                        System Fault

Pulsing 2Hz   :   Alarm (note 1)

Slow Pulse   :   Door closed (FP0558) or keyswitch not operated (FP0559) with
                        Database Write Enabled (Lk7) or RDU left in program mode. For New
                        Zealand operation - door closed or keyswitch not operated when an
                        off normal condition exists (see definition of common normal led for list
                        of off normal conditions.)

Cadence   :   System-Test failed (note 2)

Short Pulse   :   Valid keypress

Long Pulse   :   Invalid keypress

Notes

1.   Relay type and Non-LCD configured zones will not turn on the alarm buzzer. This is
        because FFCIF LCD alarm type events are not generated for zones configured in this
        way.

2.   The System Test failure cadence is fast pulses with a pause.

3.1.3   DISPLAYS

Standard Operator Display

Includes	:	LCD; FFCIF LEDs; System Status LEDs
Panel Size	:	19", 4U
FFCIF Type	:	3 (common indicators & common controls)
Standard	:	Complies with AS4050 (int) - 1992
LCD Size	:	2 Lines of 40 characters - 5.5mm (H) x 3.2mm (W) per character
Site Name	:	40 Characters max.
Zone Name	:	30 Characters max.
Relay Name	:	30 Characters max.
FFCIF LEDs	:	ALARM (red); ISOLATED (yellow); FAULT (yellow)
System Status LEDs	:	MAINS ON (green); CHGR/BATT FAULT (yellow); SYSTEM FAULT (yellow); ANCILLARY ISOLATED (yellow); BELLS ISOLATED (yellow)
Internal LEDs	:	Mains On (green), Fuse Blown (yellow) on MAF/PSU pcb.

DISPLAYS (CONTINUED)

Optional Additional LED Displays

Requires 1 x ME0060 plus 1 x FZ3031 plus 1-3 x FP0475 as required.

ME0060, MECH ASSY, 1901-79, RAC EXT INNER DOOR
(19", 7U, mounts up to 4 x 16 Zone LED Display Bds)

FZ3031,KIT,F3200,16 ZONE LED DISPLAY,LHS POSITION
(as per FP0475, but with 1.2m FRC, allows mtg of Display Bd in furthest left position.
Required for first display).

FP0475, FP, 16 ZONE DISPLAY EXTENDER KIT, 1901-26

Includes   :   1 x LED Display Bd (16 zone parallel LED display); FRC; Power leads;
                         zone name label.

Format   :   7U Parallel LED display mounts directly below the standard 4U LCD.
                         The LCD and common LEDs operate as per standard. Zone status is
                         shown on the zone LEDs.

Zone LEDs   :   ALARM (red); FAULT (yellow); ISOLATED (yellow)

Name Space   :   10mm x 60mm per zone on paper label.
                         E.g. 2 lines of 23 characters at 10 per inch.

Optional NZ Display Extender Board

This is used in New Zealand mode only and has a common normal LED (green), common
alarm LED (red), and common defect LED (yellow).

3.1.4   ENVIRONMENTAL

Operating Temperature   :   -5°C to 45°C (Ambient)
Relative Humidity   :   95% maximum @ 40°C (non-condensing)

3.2 MECHANICAL SPECIFICATIONS

3.2.1 FP0558

CABINET

Style	:	Wall mounting Hinged outer door with large window (hinges to left) Accepts 19" rack mounting equipment 4U Display on hinged inner door (hinges to right)
Construction	:	Welded steel
Material	:	1.2mm and 1.6mm mild steel
Size	:	750mm (H) x 550mm (W) x 210mm (D) * MCP is an additional 20mm.
Finish	:	Powdercoat BFF-998-CW Cream Wrinkle (Iron Phosphate pre-treat)
Weight	:	Unpackaged Packaged 20kg 22kg

3.2.2 FP0559

CABINET

Style	:	Wall mounting low profile 4U Display mounted on hinged door door hinges left (003 key lock).
Construction	:	Welded steel
Material	:	1.2mm mild steel
Size	:	177mm (H) x 450mm (W) x 50mm (D)
Finish	:	Powdercoat PR12/816C Grey (Iron Phosphate pre-treat)
Weight	:	Unpackaged Packaged 2.8kg 3kg

3.3   ELECTRICAL SPECIFICATIONS

3.3.1   FP0558/FP0585

3.3.1.1 Mains Supply

Voltage	:	240Vac +6% -10%
Current	:	0.5A
Frequency	:	50Hz
Termination	:	2.5sq mm TPS with wire protectors.

3.3.1.2 Battery Charger & PSU

Input Voltage	:	31Vac rms (Transformer sec)
PSU Voltage	:	27.3Vdc (nominal at 20°C)
Temperature Comp.	:	-36mV per °C nominal
Non-Battery Backed	:	28.0V dc nominal
Supervision	:	Charger High 28.1V nominal Charger Low 26.6V nominal
Max Charger Current	:	3Adc

3.3.1.3 Battery

Battery Voltage	:	24Vdc nominal (2 x 12Vdc)
Compatible Makes	:	Sonnenschein A200 series Sonnenschein A300 series Powersonic PS12 series Yuasa NP series
Capacity	:	6 to 50 Ahr(dependent on configuration)
Space	:	Up to 220H x 520W x 175D. (i.e. 2 of 220 x 260 x 175)
Battery Test Load	:	46 Ohm nominal. Suitable for 6 Ahr battery. Provision for fitting extra resistors.

3.3.1.4 Fuses

Location   : MAF/PSU Module

Number	Name	Size		Rating	Type
F1	+VBF1	5 x 20mm	2A	Glass Cartridge, Std	
F2	+VBF2	5 x 20mm	6A	Glass Cartridge, Std	
F3	+VNBF	5 x 20mm	2A	Glass Cartridge, Std	
F4	+VE	5 x 20mm	2A	Glass Cartridge, Std	
F5	Mains In	5 x 20mm	6A	Glass Cartridge, Std	
F7	+VBELLS	5 x 20mm	2A	Glass Cartridge, Std	

3.3.1.5   Quiescent & Alarm Currents

	Quiescent	Alarm
FP0558/FP0585 Australian Mode (notes 1-2) (includes 16ma for energised standby relay)	44mA	152mA
FP0558/FP0585 New Zealand Mode (notes 1-2) (includes 16mA for energised alarm relay)	76mA	136mA
MAF/PSU - all relays off	9mA	
Current per Ancillary Relay (includes bells)	11mA	11mA
Current per Brigade Relay	16mA	16mA
Controller/Display - LCD backlight off, status LEDs off	19mA	
- LCD backlight on, status LEDs off	75mA	
Current per status LED on	3mA	
16 Zone LED Display (optional)	0mA	16mA/LED (steady)
16 Zone Relay Driver and Relay Bd (optional)	0mA	11.5mA/relay (operated)
NZ Display Extender	16mA	16mA
Total electronics max rating (ie. DC Fuse max. rating)	2000mA	

Notes

1.   FP0558/FP0585 current includes Controller/Display and MAF/PSU but no 16 Zone
        LED Display or Relay Driver boards and is at 24Vdc battery supply.

2.   Quiescent and alarm currents do not include external loads e.g. door holders, bells,
        NZ index illumination bulb, etc.

3.3.2   FP0559/FP0577/FP0772

3.3.2.1   DC Supply

Voltage   :   24Vdc (22 - 28V)
Termination   :   2.5sq mm TPS 4 Way block with wire protectors.

3.3.2.2   Fuses

Location   :   Remote Termination PCB

Number	Size	Rating	Type
F1	5 x 20mm	2A	Glass Cartridge, Std

3.3.2.3   Quiescent & Alarm Currents

	Quiescent	Alarm
FP0559/FP0577/FP0772 (excludes any Zone LEDs)	19mA	78mA

3.4 INPUT SPECIFICATIONS

3.4.1 FP0558/FP0585 INPUTS

Terminations On MAF/PSU module:
- RZDU communications input/output
- Battery Termination, AC Input, Door Switch, MCP and spare inputs.

3.4.1.1 MAF/PSU Inputs

Battery Termination   One pair screw terminals (4sq mm max cable)

AC Input   31V rms, 3.6A rms, 2.8mm tab terminals

Door Switch   5V, 0.5mA, Unsupervised, 4 Way .1" pcb header, J6

MCP   5V, 1mA, Supervised, 2k7 EOLR,
                        4 Way .1" pcb header, J6

3.4.2 FP0559/FP0577/FP0772 INPUTS

On Remote Termination Board:
- RDU communications input/output
- RDU power supply input
- key micro-switch input.

On Controller/Display Board:
- RDU MCP input.

3.4.2.1 REMOTE TERMINATION INPUTS

Key switch Input   -   Termination via 4 Way .1" male molex (J7)
                       Routes via J6 FRC header to 5V, 15K Ohm pull up
                       resistor "IDAT" input on the MAF board.

RDU Comms   -   Termination to TX, RX, 0V, +24V screw terminals.

3.4.2.2 CONTROLLER/DISPLAY INPUTS

Spare Input   RDU MCP (where fitted)
                   10k Ohm EOL resistor

3.4.3 NZ DISPLAY EXTENDER BOARD INPUTS

All inputs except   Closure below 1.5V @ 0.35mA required to activate
(Evac Defect-)   Open voltage = 5V

Evac Defect-   Closure below 4.5V @ 1mA required to activate
                      Open voltage = 24V

3.5   OUTPUT SPECIFICATIONS

3.5.1   CONTROLLER PRINTER/PROGRAMMER

Printer/Programmer Port

Form	Pseudo RS232
	Rx, Tx, 0V signals only
Transient Protection	Allows external wiring
Transmission Rate	9600 Baud (programmable) ASCII Xon, Xoff Protocol
Termination	4 Way .156" male molex (J1)

3.5.2   16 LED DISPLAY / RELAY DRIVER BD

The most common use the open collector outputs will be to switch LEDs on "mimic" displays. The mimic outputs can also be used to drive the 16 way Relay Bd PA0470.

Output Type   : 16 * Open Collector driven by alarm status
Output Rating : 200mA (max) current sink capability @ 30V

3.5.3   MAF/PSU OUTPUTS

MAF/PSU OUTPUTS

Brigade Relays

Number/Type	4 relays, 1 pole changeover contacts
Standby	Normally energised
	De-energises on battery fail or panel fail or in program mode.
Fault, Isolated, Alarm (Australian)	Normally de-energised Energise on active state
Alarm (New Zealand)	Normally energised. De-energise for alarm.
Rating	ELV only
	30V, 5Adc resistive
	30V, 3Adc inductive
Isolation	1500V rms contact to coil.

Ancillary & Bells

Number	3 relays

MAF/PSU OUTPUTS   (CONTINUED)

Anc 1, Anc 2   1 Pole changeover contacts
                          Voltage-free

Rating   ELV only
                          30V, 2Adc resistive
                          30V, 1Adc inductive

Operation   Programmable

Default   Active on any unisolated Zone Alarm.

Supervision   Separate terminal, 2 modes, programmable
                          (refer to Installation & Programming manual)

Anc 3/Bells   1 relay, 2 pole
                          Link selectable function

Standard Format   Bells, Switched 24Vdc output
                          2 terminals, Bells +, -

Rating   24V, 1.5A Inductive Bells

Supervision   Programmable, requires diode at each device

Number of Branches	Resistor End of Line (each branch)
1	3k3
2	6k8
3	10k

RZDU Comms

Tx, Rx, 0V   3 Wire (+VBF2 also available)

Transmission Rate   1200 Baud

Protocol   Vigilant RZDU

3.5.4   REMOTE TERMINATION BOARD OUTPUT SPECS

REMOTE TERMINATION BOARD OUTPUTS

RZDU Comms & Power

Tx, Rx, 0V, +24V   3 Wire Tx, Rx, & 0v comms connection to J2 plus +24V input
                         connection to J1 for power (ie. 4 wire connection to FIP).

Transmission Rate   1200 Baud

Protocol   Vigilant RZDU

3.5.5   NZ DISPLAY EXTENDER BOARD OUTPUTS

Open Collector pulling down to 0V

All outputs except   Off Voltage = 30V max
Lamp +, Lamp -   On Voltage = 1.1V @ 100mA (max)

Lamp + (Open Collector)   Off Voltage = 0V
Pull up to VBATT   On Voltage = VBATT -1V @ 400mA (max)

Lamp -   Connected to Batt -

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CHAPTER 4
GENERAL DISPLAY & KEYPAD OPERATION

4.1 INTERPRETING THE LEDS

4.1.1 OPERATOR DISPLAY LEDS

The 8 LEDs on the Operator Display Panel indicate status as follows:

LED off (unlit) for function off; LED on (steady) for function on;
The ALARM and CHGR/BATT FAULT LEDs indicate further information by flashing;
The bells isolate and ancillary isolate LEDs will flash at 2Hz to indicate local isolation or be on steady to indicate FIP isolation with flashing/local indication overriding steady/FIP indication.
The MAINS ON LED is on when mains power is present (FP0558 only);
All LEDs (except MAINS ON) flash rapidly for 2 seconds on FIP power up, and at 1Hz for LED Test.

LED	State	Interpretation
ALARM	Flashing	Unacknowledged alarm in FFCIF alarm queue.
	Steady	No unacknowledged alarms but at least one MAF mapped zone in alarm (includes isolated zones), also see *1.
ISOLATED	Steady	Any of the following is mapped to the MAF and is isolated: alarm type zones; relay type zones; ancillary relay; bells,*1.
FAULT	Steady	Any of the following is mapped to the MAF and is in fault: alarm type zones, relay type zones or Relay Supervision Fault (isolated or un-isolated), also see *1.
CHGR/BATT	Steady	DC supply less than battery very low threshold voltage.
SYSTEM FAULT	Steady	System Fault, e.g. electronics faulty, module unplugged, keypad unplugged or all zones isolated.
ANCILLARY ISOLATE	Steady	An ancillary isolate condition is present at the FIP and the ancillary 1 relay (if any) at the RDU is isolated. For NZ operation, the ancillary fire and defect outputs (if any) are isolated.
	Flashing	An ancillary isolate condition is present locally at the RDU. Either the anc 1 or anc 2 relays (if any) are isolated or the anc fire and defect outputs (if any) are isolated. For NZ operation the building services restore keyswitch activated will cause the LED to flash.
BELLS ISOLATED	Steady	FIP bells output and RDU bells output (if any) are isolated.
	Flashing	The bells output at the RDU is isolated locally at the RDU, or for NZ operation the Silence Alarms keyswitch is activated.

OPERATOR DISPLAY LEDS (CONTINUED)

FP0558 only

MAINS ON	Steady	Mains power is present.
CHGR/BATT FAULT	Flashing	Battery test failed (battery capacity less than 45%). Note, while the LED is flashing Battery Test cannot be re-started.
	Steady	Battery charger voltage is too high or low.

*1 :LED also on for Non-MAF mapped entities if totals = MAF & Non-MAF.

4.1.2 16 ZONE LED DISPLAY BOARD LEDS

When these boards are fitted they provide 3 LEDs per zone or module relay.

For an alarm type zone the 3 LEDs are interpreted as follows:

LED	State	Interpretation
ALM	Flashing	Unacknowledged alarm at FIP.
	Steady	Acknowledged alarm at FIP. Ack'd by this RDU, another RDU or directly at FIP or Alarm in zone which is isolated.
ISO	Flashing	Zone is in Auto-Reset mode (walk test) at FIP.
	Steady	Zone is isolated.
FLT	Steady	Zone is in fault. (Independent of isolate status)

For a relay type zone the 3 LEDs are interpreted as follows:

LED	State	Interpretation
ALM	Steady	1. If not isolated then the relay is currently energised. 2. If isolated, then the relay is currently de-energised but would be energised if the relay was not isolated.
ISO	Steady	Relay is isolated.
FLT	Steady	Fault in wiring from relay to its ancillary interface device (i.e. supervision fault).
NORMAL	Steady	There are no off normal conditions at the RDU or FIP.
	Off	There is an off normal condition at the RDU or FIP.
ALARM	Flashing	There is an alarm condition at the FIP.
DEFECT	Flashing	There is a defect condition at the FIP.

4.2   LCD BASE DISPLAY & MENU STRUCTURE

4.2.1   GENERAL

The menu structure of the RDU takes the form of an inverted tree, with a display screen for every branch. Each screen provides either the status being searched for, a message, or a menu of options.

Options are normally presented with numbers, and the desired choice is made by pressing the appropriate digit (0 to 9), or by pressing a specific control key e.g. "ACK" (Acknowledge), "RESET", "ALARM TEST", etc. Each choice takes the display down a level in the menu tree.
Three dots at the end of the line indicate that there is more than 1 line of menu options to choose from. Successive option lines are displayed by pressing the dot "." (AND) key.

Generally, where control functions are to be performed they are selected as just described, with a message saying. "Press ACK to perform function" e.g. "Press ACK to reset zone".

Pressing "ACK" then initiates the function.

The "CLEAR ESC" (Escape) key is used to return up levels in the menu tree. To get from a function or status message in one branch of the tree to a function or status message in another branch of the tree, generally "CLEAR ESC" must be repeatedly pushed until the menu option gives the choice of the two branches.

If "CLEAR ESC" is pressed enough times, the display returns to the trunk of the tree with one of two screens being displayed. These two screens are termed the base display.
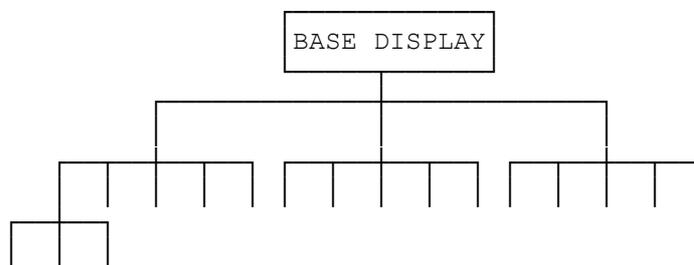
FIG 4.2.1
MENU STRUCTURE

4.2.2   BASE DISPLAY

When the system is normal (no faults, alarms or isolates) then the base display has the site name on the top line, with the software version, date and time on the bottom line. For example:

```
LISBORN DAIRY FACTORY
RDU V2.00                              07/12/97 2:09:36
```

When any event has left the RDU in a non-normal state, the base display shows the totals of the non-normal conditions under 4 headings. An example of a system with one zone or supervision fault, and two alarm or relay type zones isolated follows.

```
Alarms : 0        Isol : 2        Fault : 1        Other : 0
Press the RECALL key to view
```

BASE DISPLAY (CONTINUED)

The non-normal conditions can be viewed by pressing the "RECALL" key followed by the desired option (refer to Chapter 6). Once the condition is displayed, control functions such as ISOL (Isolate) and RESET can be performed.

The totals are as follows:

Alarms   Includes alarms on maf-mapped alarm type zones (including isolated and Non-LCD zones), also see *1.

Isol   Includes all isolated maf-mapped alarm & relay type zones, and (FP0558 only) ancillary plus bell relays. Also see *1.

Faults   Includes all faults on maf mapped alarm type zones, relay type zones, and (FP0558 only) ancillary plus bells relay supervision faults (whether isolated or deisolated). Also see *1.

Others   If Totals = MAF only (ie default):
                Includes all system faults plus non-maf mapped alarm & relay type zone isolates, faults and alarms/activates.
                Also includes maf mapped relay type zones activated.

                If Totals = MAF & Non-MAF:
                Includes all system faults plus maf & non-maf mapped relay type zone activates.

*1: Also includes Non-MAF mapped entities for totals = MAF & Non-MAF.

Note that if an unisolated non-MAF mapped zone has both fault and alarm present, then the Others total will be incremented by 2.

Pressing "RECALL" then "Global" gives the options of Alarms, Isolates, Faults and Others as per the base display. A recall of All Alarms and All Faults is also available at this level. All Alarms and All Faults show any maf & non-maf mapped zones irrespective of the totals setting. Also note that an All Faults Recall also includes system faults.

Hence any abnormal states can be found, including faults and alarms on zones/relays not mapped to the MAF, whether isolated or not.

Note that if an alarm occurs on any un-isolated alarm type zone which is mapped to the LCD then the display will switch from the base display (or wherever it was) to the FFCIF mode (i.e. display the alarm). Refer to Section 5.1).

When in FFCIF mode, if all alarms are acknowledged, then the display can be returned to the "totals" base display by pressing "CLEAR ESC".

4.2.3   SELECTIVE FUNCTIONS

The following functions can be selected from the Base Display:

System Functions
Menus for system functions can be selected by pressing "SYSTEM", "RECALL", or "SET". Refer to Chapter 6.

SELECTIVE FUNCTIONS (CONTINUED)

Zone Functions
Zone functions can be selected directly by pressing "ZONE", or indirectly by pressing "RESET", "ISOL", "ALARM TEST" or "FAULT TEST". Refer to Chapter 7.

Relay Functions (FP0558 only)
Relay functions can be selected directly by pressing "RELAY", or indirectly by pressing "RESET", "ISOL" or "TEST". Refer to Chapter 8.
Direct acting (non-menu) relay functions include "ANCIL ISOL" and "BELLS ISOL".

Test Functions
Test functions can be selected directly by pressing "TEST" or indirectly by pressing "SYSTEM", or "RELAY". Zone tests can be initiated with "ALARM TEST" or "FAULT TEST". Refer to Chapter 9.
Direct acting (non-menu) test functions include "BATT TEST" (FP0558 only) and "BRIG TEST".

Print Functions
Print functions can be selected pressing "PRINT". Refer to Chapter 10.

Isolate Functions
The "BELLS ISOL" and "ANCIL ISOL" keys may be used (depending on programming) to isolate or deisolate locally or to cause isolation or deisolation to occur at the FIP. The bells isolate key is always direct acting and does not bring up a menu. The ANCIL ISOL key may only be used at the base display and is either direct acting or brings up a menu, depending on programming. If direct acting, the ANCIL ISOL key causes an ancillary isolate or deisolate command to be sent to the FIP. Otherwise the operator is prompted to select either the ancillary 1 relay or the ancillary 2 relay. Refer to Chapter 8 Relay Functions.

Keyswitch Functions in New Zealand mode.

For NZ operation three keyswitches may be connected to the display extender board. The operation of these depends on programming.

Silence Alarms keyswitch.
This is used to silence the bells, either system wide or locally.

Building Services Restore.
This is used to isolate ancillary outputs, either system wide or locally.

Trial evacuation.
This is used to activate the bells, either system wide or locally, and overrides the silence alarms keyswitch and any bells isolation.

4.3 RESPONDING TO ALARMS

WHEN THE FFCIF ALARM LED INDICATOR IS FLASHING AND THE LCD IS
DISPLAYING AN UNACKNOWLEDGED ALARM, PROCEED AS FOLLOWS:

STEP 1 **DO NOT PRESS "ACK", "RESET" OR "ISOLATE" KEYS ON THE PANEL**
until the Fire Brigade arrives. The "NEXT" key can be pressed to view the
next zone alarm in the list if there is more than one alarm present. If the
"NEXT" key is pressed, the internal sounder will silence, but the bells will
continue to ring.

STEP 2 INVESTIGATE THE ALARM (if possible by Fire Safety Crew), and implement
appropriate fire control and extinguishing measures.
The **FIRE SEARCH AREA** (zone) will be indicated by the zone text displayed
on the LCD (and by the flashing zone "ALM" LED where the LED display is
fitted).

STEP 3 Evacuate the areas if necessary.

STEP 4 **ADVISE THE BRIGADE** of both real fires and false alarms.

STEP 5 **KEEP A MEMBER OF THE FIRE SAFETY CREW ON STANDBY** to direct
fire fighters to the source(s) of alarm and inform them of measures already
taken.

STEP 6 **RECORD ALL EVENTS IN THE LOG BOOK PROVIDED.**

**   PLEASE NOTE   **

The above procedure should be executed by a trained fire officer, and may need to be
modified in accordance with any special conditions applying to the particular installation.

4.4   DEALING WITH FAULTS

4.4.1   WHAT IS A FAULT?

A fault is any situation which prevents the fire alarm system from performing its functions correctly. Possible faults at the FIP could include defects in wiring to the detectors, faulty detectors, or faults detected from supervision of relay input modules. This information would be sent to the RDU as zone status information. System Faults can also occur at the RDU. Eg. communications loss between the FIP and the RDU (ie. scan fail), or detection of battery very low voltage.

In normal operation the system fault, FFCIF fault and charger/batt fault LEDs should all be off and the green "MAINS ON" LED (FP0558) indicator should be on.

For New Zealand operation, the common normal LED on the display extender board will be on steady if there are no off normal conditions at the FIP or the RDU.

4.4.2   RESPONDING TO FAULT SIGNALS

When a fault occurs, the fault sounder operates (steady tone). If a fault exists on a zone or relay which is mapped to the maf then the FFCIF "FAULT" LED will be ON. If a system fault exists, the "SYSTEM FAULT" LED will be ON. If a Battery/Charger fault exists, the "CHGR/BATT FAULT" LED will be ON or FLASHING.

If a fault or other off-normal condition exists, the LCD will display the number of Alarms, Faults, Isolates and Other off-normal conditions. Note that where a zone or relay is not mapped to the MAF it is shown under Other, not Faults.

The "CLEAR ESC" key or "ACK" key may be pressed in order to silence the panel's fault sounder until a service technician arrives.

To determine the source of the fault conditions, use the following keypad commands (Refer to Section 6.1):
        Recall Global Faults
        Recall Global All Faults
        Recall Global Other
        Recall System Faults
        Recall Zone Faults
        Recall Relay Faults (FP0558 only)
        Recall History

Note that the Recall Zone searches will show all zones that have faults, regardless of the Isolate status of the zone. The Recall History command can help to determine the sequence of fault conditions as the events are displayed chronologically.

Once the source of the fault has been determined, call the service company to rectify it.

**   PLEASE NOTE   **

(a)   Subsequent faults will re-start the fault sounder.
(b)   RECORD ALL EVENTS IN THE LOG BOOK PROVIDED.

CHAPTER 5
OPERATING INSTRUCTIONS
- BRIGADE FUNCTIONS

5.1   INTRODUCTION TO LCD BRIGADE FUNCTIONS

5.1.1   GENERAL OPERATION & DISPLAY

The RDU allows an operator to perform routine functions such as acknowledging, resetting and isolating zones, setting the time and date, and reviewing zone status, etc.

When an alarm occurs, the RDU switches from the base (or other) display to FFCIF mode and displays the alarm. The keys that can be used are then limited to those within the Fire Fighter's Control and Indicating Facility (FFCIF), plus the "PREV" key, the "CLEAR ESC" key and the "BELLS ISOL" key. The FFCIF is the area of the keypad within the red border, as shown in Figure 5.1.
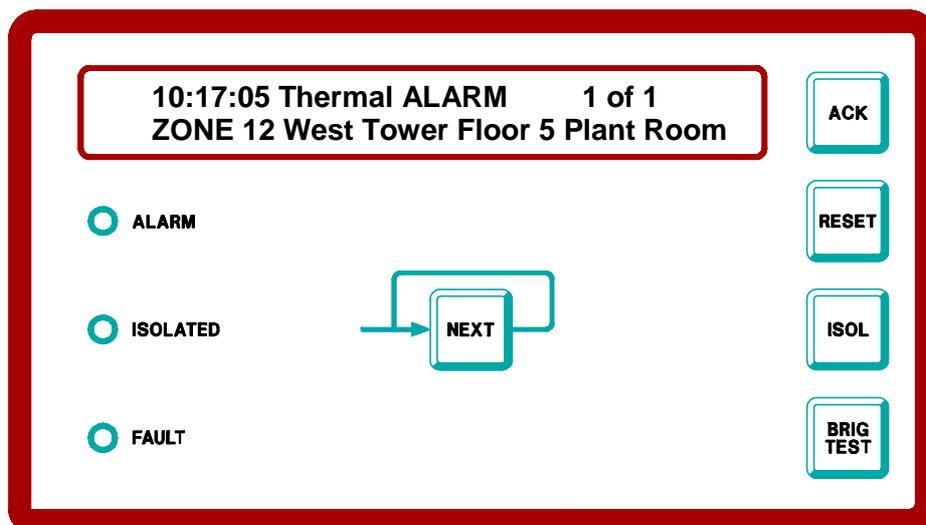
FIG 5.1
EXAMPLE FIRE FIGHTER'S CONTROL & INDICATING FACILITY ALARM DISPLAY

The FFCIF operates as follows:

Each zone alarm is displayed on the LCD and must be individually acknowledged by pressing the "ACK" key when the alarm is displayed. All acknowledged alarms can be reset or isolated by pressing the "RESET" and "ISOLATE" keys respectively.

All alarms must be acknowledged before the display can exit from the FFCIF mode.

The "BELLS ISOLATE" key may be used to isolate or de-isolate the bells at the FIP or RDU, (if programmed to), at any time.

Once all alarms have been acknowledged and then reset or isolated, the RDU restores the display and keypad status to where it was before the alarm occurred. Consequently, partially entered commands can be finished, or any recalls that were being done can be continued.

5.1.2 FFCIF OPERATION

When the RDU is displaying an alarm the LCD shows the following information:

(i)   The time at which the alarm occurred.
(ii)   The zone alarm type.
(iii)   Whether the alarm is acknowledged or not (Figure 5.1 shows an unacknowledged alarm).
(iv)   The total number of alarms and the sequence number of the currently displayed alarm.
(v)   The zone number and location.

The RDU maintains a list of alarms in the order in which they occurred. In the absence of operator intervention, the LCD display will show the first alarm. All alarms in the list can be viewed, one by one, by pressing the "NEXT" or "PREV" keys.

Each alarm can be individually acknowledged when it is displayed by pressing the "ACK" key. The text "ACKD" appears on the display whenever an acknowledged alarm is viewed.

Once an alarm has been acknowledged, it can be removed from the alarms list by:

(i)   Pressing the "RESET" key - all acknowledged alarms are RESET, and removed from the list; or

(ii)   Pressing the "ISOLATE" key - all acknowledged alarms are ISOLATED, and removed from the list; or

(iii)   The alarm condition being cleared from a non-latching detector on a non-latching zone.

After all alarms have been acknowledged, pressing the "CLEAR ESC" key will exit from the FFCIF display even if there are still zones in alarm. After exiting, the FFCIF display can be recalled by using the RECALL Alarm List command from the base display.

5.2   SILENCING THE INTERNAL SOUNDER

5.2.1   FUNCTION

Pressing any key will silence the internal sounder, ie, cancel the pulsing alarm tone, steady fault tone, or rapid pulsing test fail tone.

Note that the key pressed will still be processed as if the sounder was not on. Therefore, it is safest to use the "CLEAR ESC" key to silence the sounder and not to use the "ACK" key for faults or other states which are not automatically displayed.

Note: The alarm bells at this RDU (FP0558 only) are silenced by a bells isolate command at either the FIP or RDU (according to programming).

5.2.2   OPERATING SEQUENCE

CLEAR ESC   Press "CLEAR ESC" key once.
                - The internal sounder silences.

NOTE:

If a key sequence was being entered, it may be necessary to re-enter number information or the last command as the "CLEAR ESC" key will, in addition to silencing the buzzer, either step back through the menu or clear any number entry sequence that had been started.

If all zone alarms are acknowledged, pressing the "CLEAR ESC" key will result in the LCD exiting FFCIF mode. It can be re-entered by use of the Recall command by pressing the "RECALL" key when the base display is shown and selecting the Alarms List option (option 2).

5.3   BELL ISOLATE OR DE-ISOLATE

5.3.1   FUNCTION

The "BELLS ISOL" key may be used at any time to isolate or de-isolate the bells at either the FIP or at this RDU according to what the RDU is programmed for. The "Bells Isolated" LED shows the current isolated status of the bells at either the FIP or the RDU (also refer to Section 8.2.1). For an FP0559 RDU (which does not have its own bells relay), the "BELLS ISOL" key may be used to isolate or de-isolate the FIP bells if programmed to.

5.4   ACKNOWLEDGE ZONES IN ALARM

5.4.1   FUNCTION

In FFCIF mode, pressing the "ACK" key performs the following functions:

(a)   The displayed alarm is acknowledged.

(b)   The pulsing internal sounder is silenced.

5.4.2   OPERATING SEQUENCE

ACK   Press "ACK" key once:

-      Internal sounder will be silenced.

-      LCD displays "ACKD" for the currently displayed alarm.

-      If there are no more unacknowledged alarms in the system, the ALARM LED goes steady.

-      Where fitted, the flashing red "ALM" LED indicator for the zone goes steady.

OPERATING SEQUENCE (CONTINUED)

NOTES:

(a)   Subsequent non-isolated zone ALARMS or FAULTS on the system will re-operate the indicators, and sounder, as appropriate.

(b)   If an unacknowledged FAULT condition existed before the alarm then the sounder will still be silenced. However, the FAULT LED will be ON, indicating the presence of a zone or relay fault.

5.5   RESET ACKNOWLEDGED ZONES IN ALARM

5.5.1   FUNCTION

In FFCIF mode pressing the "RESET" key performs the following functions for all acknowledged zones in the alarm list.

(a)   RESETS all acknowledged zone(s).
(b)   Silences the internal sounder.
(c)   The acknowledged zone alarms are removed from the alarm list.
(d)   (FP0558 only) If no more un-isolated alarms exist, the bells, ancillary and Brigade Alarm relays will turn OFF, if they were ON.

5.5.2   OPERATING SEQUENCE

Press "RESET" key once:

RESET

-   LCD displays "Resetting all acknowledged alarms".
-   All acknowledged zones in the alarm list will be reset.
-   Where fitted, all acknowledged (steady) red alarm LED indicators will be turned OFF.
-   The internal sounder will be silenced.
-   (FP0558 only) If there are no more unisolated zones in alarm then the Brigade alarm relay will de-energise and the Local Bells will be silenced.

NOTES:

(a)   If the alarm condition on the zone circuit has not been removed, then the zone alarm indicators and Local Bells will be re-activated (if not isolated), and a new zone alarm will be put into the alarm list.

(b)   Pressing "RESET" in the FFCIF mode has no effect on isolated zones or zones in Auto-Reset mode, as they are unlikely to be in the alarm list.

(c)   This command option is not available if the RDU is configured for for one of the mimic type modes of operation (eg. Non-LCD Mimic, Type 2 Mimic, Type 3 Mimic). This is because mimics cannot control the FIP that they are connected to.

5.6   ISOLATE ACKNOWLEDGED ZONES IN ALARM

5.6.1   FUNCTION

In FFCIF mode pressing the "ISOL" key performs the following functions for all acknowledged zones in the alarm list.

(a)   ISOLATES all acknowledged zones in the alarm list.
(b)   Silences any internal sounder condition.
(c)   The acknowledged zone alarms are removed from the alarm list.
(d)   If there are no more unisolated zones in alarm, (FP0558 only) the Brigade Alarm relay, Ancillary relays and Bells will turn off.

5.6.2   OPERATING SEQUENCE

ISOL

Press "ISOL" key once:

-   The acknowledged zones in the alarm list will be isolated - shown by the corresponding amber "ISOLATED" LED indicator turning ON.

-   The internal sounder, if on, will be silenced.

-   (FP0558 only) The Local bells (if any) will be silenced so long as all alarms are isolated, ie there are no unacknowledged alarms.

NOTES:

(a)   Subsequent non-isolated zone ALARMS on the system will re-operate the alarm indications, alarm sounder and local bells.

(b)   Subsequent non-isolated zone FAULTS on the system will operate the fault indication and steady fault sounder.

(c)   To DE-ISOLATE alarm zones, FFCIF mode must be exited and the zone selected for de-isolation. Refer to the Exiting FFCIF mode section in this chapter and the Individual Zone Isolating/De-Isolating section in Chapter 7. Note that it is not possible to de-isolate zones from an RDU configured for Non-LCD mode of operation.

(d)   This command option is not available if the RDU is configured for one of the mimic type modes of operation (eg. Non-LCD Mimic, Type 2 Mimic, Type 3 Mimic). This is because mimics cannot control the FIP that they are connected to.

5.7 EXITING FFCIF MODE

5.7.1 FUNCTION

While in FFCIF mode access to all other functions and displays is prevented. On occasion it may be necessary to recall an Isolated Alarm, de-isolate a zone or perform some other function. To do so, FFCIF mode must be exited.

FFCIF mode can be exited only when <u>ALL</u> alarms in the list have been acknowledged.

When FFCIF mode is exited, the LCD reverts to the display it had before the alarms occurred. At that stage, the required functions can be performed e.g. Recall Alarms.

5.7.2 OPERATING SEQUENCE

Press the "CLEAR ESC" key once:

CLEAR ESC

- If all alarms are acknowledged, FFCIF mode is exited and the LCD reverts to the display state that was showing before the alarms occurred.

- If any alarms are <u>NOT</u> acknowledged, the sounder will produce an error tone, and FFCIF mode will not be exited. It is necessary to acknowledge all alarms before FFCIF mode can be exited.

NOTE: To re-enter FFCIF mode to view the list of alarms, use the Recall Alarm List command sequence. Refer to Section 5.8 Recalling Alarms.

5.8 RECALLING ALARMS

5.8.1 FUNCTION

It is possible for there to be un-isolated, acknowledged alarms present in the FFCIF queue, but the display <u>NOT</u> be in FFCIF mode. The FFCIF alarm list can be recalled and thus put the display into FFCIF mode.

If a zone is in alarm but it is isolated or it does not map to the maf, it will not be in the FFCIF queue. It can be recalled via "Recall" "Zone" "Alarms" or "Recall" "Global" "Alarms".

5.8.2 OPERATING SEQUENCES

Press the "CLEAR ESC" key until the base display is shown.

Press the "RECALL" key followed by the "2" key to select "Alarm List".

RECALL (**2**   to display the FFCIF Alarm List.

OPERATING SEQUENCES (CONTINUED)

If there are no alarms in the FFCIF alarm queue, then the LCD will briefly display "Alarm queue is empty" and revert to the base display.

Alternatively, press the "RECALL" key followed by the "1" key twice to show all zones in alarm (includes isolated zones).

RECALL (	**1**	**1**	for all alarms.

5.8.3   NON-FFCIF ALARMS

It is possible to have zones not mapped to the LCD or the MAF (i.e. display only zones, e.g. flow switch). These might be displayed on an 16 Zone LED Display board.

If such a zone goes into alarm the buzzer will not sound, the LCD will not automatically display the alarm, and the FFCIF ALARM LED will <u>not</u> be on. The base display will show this in the "Other" total, not "Alarm". These zones can be found by recalling "Global" "Other", or "Global" "All Alarms".

5.9   BRIGADE TEST

5.9.1   FUNCTION

The RDU Brigade Test function turns on the Brigade alarm relay at the FIP. This function is only available for LCD protocol non-mimic modes of RDU operation.

Note that the Brigade Test function turns on the Brigade alarm relay at the FIP, not at the RDU. This is because the Brigade connection would normally be made at the FIP and not at the RDU.

5.9.2   OPERATING SEQUENCE

BRIG TEST

Press and hold the "BRIG TEST" key for at least 4 seconds:
- The FIP MAF alarm relay will activate (if programmed to).
- The FIP and RDU "ALARM" LEDs will turn on.

Release the "BRIG TEST" key.

After a short period:
- The FIP MAF alarm relay will de-activate and the FIP and RDU "ALARM" LEDs will turn off unless there are unisolated MAF mapped zones still in alarm.

NOTE: The "Brig Test Disabled" message is shown if the "BRIG TEST" key is pressed and the RDU is programmed for a mode that does not support Brigade Test (e.g. Mimic modes).

CHAPTER 6
OPERATING INSTRUCTIONS
- SYSTEM FUNCTIONS

6.1   RECALL HISTORY

6.1.1   FUNCTION

The RDU keeps a list of the last 70 events in chronological order. The RECALL HISTORY command allows an operator to view the most recent event stored, and to move forwards and backwards through the list. When either end of the list is reached, the LCD automatically shifts to the other end of the list and displays whether the event is the newest (latest) or oldest (earliest).

6.1.2   OPERATING SEQUENCE

From the base display, press:

```
RECALL      3
  (
```

The display will show the most recent history event.

To access the event that occurred <u>before</u> the event displayed, press:

```
PREV
```

If the "PREV" key is pressed when the event displayed is the oldest event, the LCD will briefly display a message indicating that the event to be displayed is the most recent event and then it displays that event.

To access the event that occurred <u>after</u> the event displayed, press:

```
NEXT
```

If the "NEXT" key is pressed when the event displayed is the most recent event, the LCD will briefly display a message indicating that the event to be displayed is the oldest event on record, and then displays it.

6.2	RECALL SYSTEM FAULTS

6.2.1 FUNCTION

Allows an operator to view on the LCD the current causes of a "SYSTEM FAULT" indication.

6.2.2 OPERATING SEQUENCE

From the base display, press:

```
┌────────┐ ┌────────┐ ┌────────┐           ┌────────┐ ┌────────┐ ┌────────┐
│        │ │ RECALL │ │        │           │ RECALL │ │        │ │        │
│ SYSTEM │ │        │ │   1    │           │        │ │ SYSTEM │ │   1    │
│        │ │   (    │ │        │           │   (    │ │        │ │        │
└────────┘ └────────┘ └────────┘           └────────┘ └────────┘ └────────┘
                                     OR
```
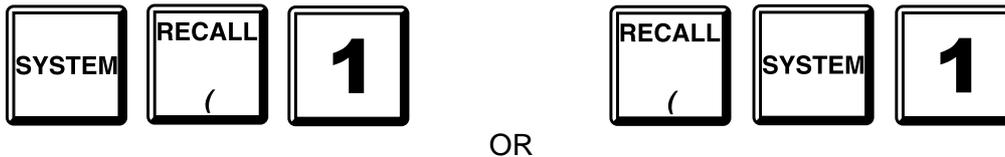
If there are no system faults, a brief message is displayed saying so, and the LCD reverts to the base display.

If a system fault exists, the LCD will display it. To view the next fault, press:

```
┌────────┐
│        │
│  NEXT  │
│        │
└────────┘
```

To view the previous fault, press:

```
┌────────┐
│        │
│  PREV  │
│        │
└────────┘
```

6.2.3 LIST OF SYSTEM FAULTS

The complete list of faults which can be displayed by a system fault recall is as follows:

1. MAF installed configuration mismatch
    This fault occurs when the programmed MAF installed status is different from the actual physical presence or absence of a MAF board. This system fault will remain until either the MAF board is installed or removed to be in agreement with the database or the database is re-programmed to be correct.

2. Display/Relay Board configuration mismatch
    This fault occurs when the programmed number of 16 Zone LED Display or Relay Driver boards is different from that physically present. This System fault will remain until the correct number of modules is installed or the database is re-programmed with the actual number present.

SYSTEM FAULT RECALL FAULT LIST   (CONTINUED)

3.   EEPROM database checksum error. The panel is inoperational if this fault is
        present.

4.   EEPROM database version error
        This fault condition means that the EEPROM database checksum is correct but the
        database is an old version with a format which cannot be used.

        All zone status processing is disabled when this fault is present and the panel is
        inoperational.

5.   EEPROM write fail
        This fault will occur if a write to EEPROM database memory during program mode
        fails.

6.   Banked EEPROM error. There has been an error in reading or writing to the banked
        portion of EEPROM. The panel is inoperational if this fault is present.

7.   All zones isolated
        This fault will occur if all zones (mapped to MAF) are isolated. This can be inhibited
        with an option in programming, but doing so may contravene AS1603.4.

8.   Scan Fail
        This fault indicates communication with the FIP has failed. The RDU is inoperable if
        this fault is present.

9.   Keypad disconnected. The loom between the keypad and Controller/Display Bd is
        disconnected/faulty.

10.   Battery failed
        This fault means that the DC supply has fallen to 21 volts or below. Either both mains
        and the battery voltage have failed (FP0558 only) or the DC line power from the FIP
        (FP0559) has fallen to 21 volts or below. When this system fault is present the
        Charger/Batt fault LED comes on and MAF configured RDUs de-energise the
        standby relay and processing of all MAF board inputs stops and relay outputs are
        held in their current state.

11.   RAM write read fault
        A read/write test of main RAM has failed. This can occur during System and Remote
        Test.

12.   EPROM CRC error
        A checksum calculation of EPROM memory has failed. This can occur during
        System and Auto Test.

13.   LED Display Board Fault
        There is a fault with a LED Display or Relay Driver board. This can occur if either the
        wrong number of boards are installed or there is a break in the cabling between
        boards.

14.   LCD display fault
        A fault has occurred with the 80 character LCD. This can occur at startup or during
        an LCD test.

SYSTEM FAULT RECALL FAULT LIST   (CONTINUED)

15.   Shift register bus fault
        This error indicates a fault with the bus connecting the Controller with the MAF/PSU.
        It may be caused by a break or short in the flat ribbon cable (e.g. bd unplugged) or by
        temporary noise or by a circuit board fault.

        When this fault occurs all outputs will be held in their current state and all processing
        of inputs will stop until the fault clears. If the fault does clear, processing of outputs
        and inputs will resume automatically.

16.   Battery low
        This occurs in New Zealand mode operation only. It indicates that the supply voltage
        has fallen below 24.4 volts to warn that the battery is losing charge. A battery fail
        event will occur at 21 volts.

17.   Clock crystal timebase check fail.
        This error message occurs only at startup and indicates the frequency of the clock
        chip on the Controller is out of tolerance to the microprocessor. The Controller will
        restart and try the test again.

18.   Clock register write read fail.
        A test of the Controller time/date clock registers has failed. The Controller will restart
        and try the test again.

SYSTEM FAULTS MAF CONFIGURED RDU (FP0558) Only

19.   Fuse blown
        One of the fuses on the MAF board has blown.

20.   Charger fault
        A battery charger fault has occurred.

21.   Mains fail
        Note: A mains fail is not a true system fault and does not cause the "SYSTEM
        FAULT" LED to turn on.

6.3   RECALL SYSTEM CONFIGURATION

6.3.1   FUNCTION

The operator can view the RDU configuration database without the risk of changing it. Note that the "View" or "Program" access codes will be necessary to gain entry to this menu option. The menu structure is parallel to the system branch of the RDU Programming Menu. This is detailed in Figure 6.1.2 of the Installation and Programming Manual.

6.3.2   OPERATING SEQUENCE

From the base display, press:

```
┌─────────┐  ┌─────────┐  ┌─────────┐
│RECALL   │  │         │  │         │
│         │  │SYSTEM   │  │    2    │
│  (      │  │         │  │         │
└─────────┘  └─────────┘  └─────────┘
```

Enter the "View" or "Program" password in response to the "Enter 6 digit access code" prompt. Refer to the RDU Installation and Programming manual for further details.

6.4   RECALL MANUAL CALL POINT (MCP)

6.4.1   FUNCTION

To view the MCP input state if an MCP is installed at this RDU.

The FIP maps the input state for the MCP at the RDU to a specific zone. The information is then re-transmitted as zone status information to all RDUs. The ability to view the MCP input state allows the operator to inspect the MCP state irrespective of any subsequent zone mapping at the FIP.

The MCP input cannot be used with New Zealand operation and is ignored.

6.4.2   OPERATING SEQUENCE

Press the "CLEAR ESC" key until the base display is shown.

Press the "RECALL" key followed by the "7" key (for FP0558 MAF RDU) or
"6" key (for FP0559 non-MAF RDU), to select the "MCP" option.

The MCP status shown will be one of the following input conditions:

normal   -   the MCP is not in alarm or fault.

alarm   -   the MCP is in alarm.

fault   -   the MCP is in fault.

Not Installed   -   the MCP is programmed as not installed.

6.5   SET SYSTEM TIME

6.5.1   FUNCTION

Allows an operator to set the time in the real-time clock within the RDU.

6.5.2   OPERATING SEQUENCE

To set the time, press:

SET *EDIT*   1
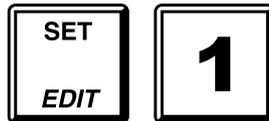
The current time is displayed. Enter the new time, in 24 hour format, i.e. the hours value is 00 to 23 where 01 is 1am and 23 is 11pm. Hours, minutes and seconds may be entered. E.g. to set the time to 13:52:40pm, press: "135240 ENTER".

6.6   SET SYSTEM DATE

6.6.1   FUNCTION

Allows an operator to set the date in the real-time clock within the RDU.

6.6.2   OPERATING SEQUENCE

To set the date, press:

SET *EDIT*   2

The current date is displayed. Enter the new date.

E.g. To set the date to 14/07/94, press: "140794 ENTER"

6.7   PRINT OPTIONS

6.7.1   FUNCTION

To initiate a printout of the history, system status or programmed database to the printer.

6.7.2   OPERATING SEQUENCE

From the base display press:

```
┌──────────┐
│ PRINT    │
│          │
│     )    │
└──────────┘
```
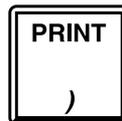
A menu with 3 options will be shown. Press a numeric key "1", "2", "3" to select the appropriate option or press the "CLEAR ESC" key to return to the base display.

Note :   The printer serial port is normally used for printing events. While an operator requested printout is in progress no events will be printed, but events will be held in a queue of up to 70 events.

The options are:

1:      History dump

        The history dump is a printout of the 70 most recent events
        as shown by "Recall" "History" on the LCD. This includes

        -       Zone alarm and fault status conditions,
        -       Zone commands such as reset and isolate initiated at this RDU, another RDU
                or at the FIP,
        -       System events such as communication failure, battery fail etc.

        The printout includes the time and date, the cause of the event (e.g. Zone, Relay, or RDU), event type and zone name (if any) for zone events.

2:      System Status

        The system status printout is the current status eg. alarm, fault, isolate for all zones, and relays (FP0558 only). Note that status information is only printed for zones configured for this RDU.

3:      Print Database

        This will initiate a formatted printout of the entire programmed database of the RDU. Note a password is required.

        This can either be printed on a hard copy printer or captured on a portable computer.

        It is recommended that this is done at the completion of programming of the RDU for both checking the programming and for future reference.

OPERATING SEQUENCE   (CONTINUED)

While a print operation is in progress the display will show

"Print in progress. Press RESET to cancel".

Pressing the "RESET" key will terminate the printout immediately. Pressing the "CLEAR ESC" key while the printout is in progress will return to the base display and the printout will continue.

6.8	RECALL DATABASE CRC

To check the validity of the RDU database press the RECALL key from the base display and select either option 8 "CRC" (for FP0559 non-MAF RDU) or option 9 "CRC" (for FP0558 MAF RDU). The value of the current database CRC will be displayed as 4 hex digits and the date and time that the database was last changed will also be shown. The database checksum will be recalculated and verified.

This can be done as part of weekly or monthly system testing to check that the database has not been modified without authorisation. I.e. after an RDU has been completely programmed and commissioned, the recall CRC function should be done and the CRC and time and date should be recorded for future checking and these values should be updated every time the database is modified by an authorised user.

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CHAPTER 7
OPERATING INSTRUCTIONS
- ZONE FUNCTIONS

7.1   GLOBAL ZONE ISOLATE

7.1.1   FUNCTION

To isolate all zones in alarm.

This command option is available in both LCD (ie. Type 2, Type 3 etc.) and Non-LCD modes of RDU operation. It is not available for mimic type modes (ie. Type 2 Mimic, Type 3 Mimic, Non-LCD Mimic) since mimics cannot control the FIP.

7.1.2   OPERATING SEQUENCE - GLOBAL ZONE ISOLATE

From the base display,

for a non-MAF RDU (FP0559), press:

ISOL	**2**

For a MAF RDU (FP0558), press:

ISOL	**3**

Notes:

1.   Some types of FIP will apply the isolate command only to zones that are programmed to be of interest to the particular RDU sending the command.

2.   A zone will be isolated only if it is currently in alarm. A zone which is in fault and not in alarm will not be isolated.

3.   There is no global de-isolate command at an RDU.

7.2   ZONE ISOLATE OR DE-ISOLATE

7.2.1   FUNCTION

To isolate or de-isolate a selected zone or group of zones.

This command option is only available in LCD non-mimic modes of RDU operation.

7.2.2   OPERATING SEQUENCE - SINGLE ZONE

From the base display, to isolate or de-isolate zone nnn press:

```
[ZONE]  [n]  [n]  [n]  [ISOL]  [ACK]
```

To isolate the zone shown on a zone status recall display, press:

```
[ISOL]      followed by      [ACK]
```

The LCD displays the current isolate status of the zone. Pressing the "ACK" key changes the isolate state. Pressing the "CLEAR ESC" key aborts the Isolate command.

7.2.3   OPERATING SEQUENCE - ZONE RANGE

To isolate or de-isolate a range of zones from the base display, press:

```
[ZONE]  [n]  [n]  [n]  [AND .]

[m]  [m]  [m]  [ISOL]
```
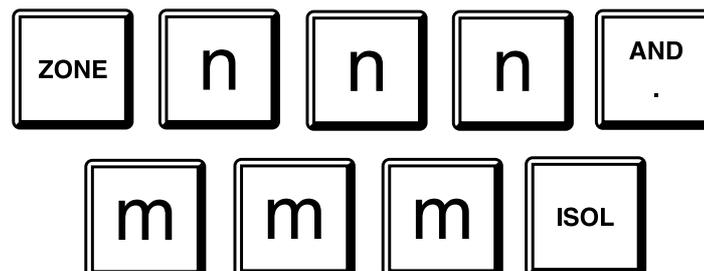
OPERATING SEQUENCE - ZONE RANGE (CONTINUED)

Or
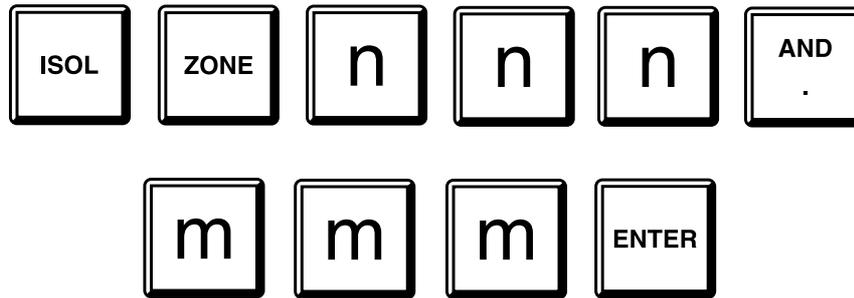
The LCD will display the selected range of zones, i.e. zone nnn to zone mmm inclusive, plus the options to isolate or de-isolate the range.

To isolate the range of zones, press:

To de-isolate the range of zones, press:

7.2.4   NOTES

(a)   Single digit zone numbers can be entered as "n" followed by "AND" or "ISOL" as appropriate.

(b)   Isolated zone(s) can indicate alarm and fault but cannot enter FFCIF mode or operate system outputs.

(c)   If the zone is in Auto-Reset mode, the effect of an isolate or de-isolate command at an RDU depends on the type of FIP. For an F4000 type FIP, de-isolating a zone in auto reset mode will take the zone out of auto reset mode and leave it isolated. For an F3200 FIP, zone isolate or de-isolate commands do not take the zone out of auto reset mode.

(d)   De-isolating a zone which is currently in alarm will be treated as if it were a new alarm on the zone.

(e)   De-isolating a zone which is currently in fault will not turn the buzzer on but will log a fault event and will operate the brigade fault relay if the zone is mapped to the MAF.

(f)   This command option is only available for LCD type modes of RDU operation. Non-LCD protocol does not support operations on specific individual or ranges of zones.

(g)   This command option is not available for mimic type RDU modes of operation. Mimic type RDUs cannot control the FIP.

7.3 GLOBAL ZONE RESET

7.3.1 FUNCTION

To reset all zones in alarm.

This command option is available in both LCD (ie. Type 2, Type 3 etc.) and Non-LCD (ie. Non-LCD) modes of RDU operation. It is not available for mimic type modes (ie. Type 2 Mimic, Type 3 Mimic, Non-LCD Mimic) since mimics cannot control the FIP.

7.3.2 OPERATING SEQUENCE - GLOBAL ZONE RESET

From the base display,

for a non-MAF RDU (FP0559), press:

RESET **2**

for a MAF RDU (FP0558), press:

RESET **3**

Notes:

1. Some types of FIP will apply the reset command only to zones that are programmed to be of interest to the particular RDU sending the command.

2. A zone will be reset only if it is currently in alarm. Any latched fault on the zone will not be cleared. A zone which is in fault and not in alarm will not be reset.

7.4	ZONE RESET

7.4.1   FUNCTION

To reset a selected zone or range of zones by:

- Instructing the FIP to apply an electronic reset to the AZC to reset latched detectors.
- Clearing latched ALARM and FAULT conditions and indications.
- Silencing the alarm and fault sounder.
- Cancel any zone test in progress on the zone(s).
- Cancel any zone Auto-Reset mode of operation.

This command option is only available in LCD non-mimic modes of RDU operation.

7.4.2   OPERATING SEQUENCE

To reset one zone only:

To reset zone number nnn from the base display press:

[ZONE] [n] [n] [n] [RESET]

Or:

[RESET] [ZONE] [n] [n] [n] [ENTER]

From a zone status display, to reset the displayed zone, press:

[RESET]

- The LCD will query if this is the zone to be RESET. Press "ACK" to reset, or "CLEAR ESC" to abort.

- The red zone alarm LEDs (if fitted) will be turned OFF and the alarm circuit reset.

- The amber fault LEDs (if fitted) will be turned OFF.

- The common alarm and fault LEDs will turn off if there are no other zones (mapped to the MAF) in alarm or fault respectively.

OPERATING SEQUENCE   (CONTINUED)

To reset a range of zones:

From the base display, press:

ZONE	n	n	n	AND .

m	m	m	RESET

Or:

RESET	ZONE	n	n	n	AND .

m	m	m	ENTER
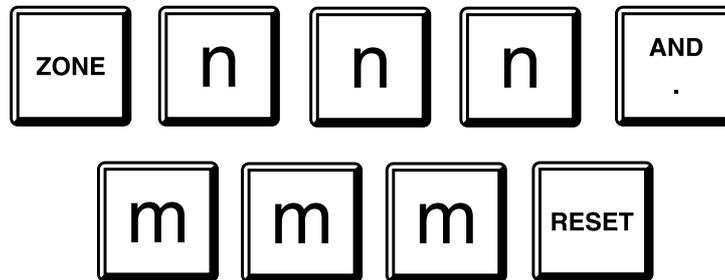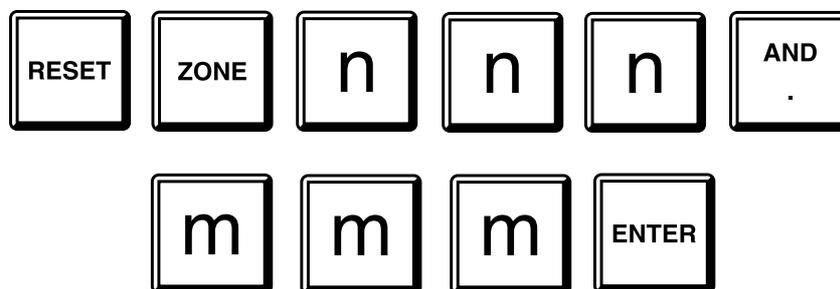
The LCD will display the range of zones selected. Press the "ACK" key to initiate the reset of zones nnn to mmm inclusive or press the "CLEAR ESC" key to abort with no reset.

7.4.3   NOTES

(a)   Single digit zone numbers can be entered as "n" followed by "AND" or "RESET" as appropriate, i.e. leading zeros are not required.

(b)   If a detector or circuit is still in alarm or fault, then after the zone reset and circuit input delay the zone will return to alarm or fault.

(c)   If the amber fault indicator reappears, then isolate the zone and call the service company.

7.5   ZONE TEST

7.5.1   FUNCTION

To perform an alarm test or fault test on a selected zone or range of zones by instructing the FIP to apply an electronic circuit test condition to all circuits mapped to the zone(s).

The command must be enabled with programming. Not all types or versions of FIP are able to process and execute the zone test commands from the RDU. Also, this command option is only available in LCD non-mimic modes of RDU operation.

The RDU will not issue a test command for any zone which is not programmed as being of interest to the RDU i.e. is not mapped to either an LED or the LCD. Either a single zone at a time or a range of zones simultaneously may be tested. When a range of zones is tested, only zones of interest to the RDU will be tested. The FIP will not carry out the zone test if it currently has a system or auto test running or if the zone is already under test. If the test passes, a fault or alarm will occur on the zone and be indicated at the RDU.

There is no indication at the RDU that a zone test is active on any zone. Also there is no indication at the RDU of any test failure which may occur, other than the failure of the zone to go into alarm or fault. The FIP will perform the zone test as if the test had been initiated at the FIP keypad and will log any test fail which occurs. The test may be terminated at any time with a zone reset command at either the FIP or RDU. The FIP will terminate the test automatically after approximately three minutes from the start of the test.

Not all types and versions of FIP are able to process and execute zone test commands from an RDU. Also, F4000 panels are not able to test a range of zones - they can only test one zone at a time, but the zone may have multiple circuits mapped to it. FIPs which currently support zone test commands are:
         F4000 V2.21 onwards,
         F3200 V2.00 onwards.

7.5.2 OPERATING SEQUENCE

<u>To test one zone only</u>:

To alarm test zone number nnn from the base display press:

| ZONE | n | n | n | ALARM TEST ► |

Or:
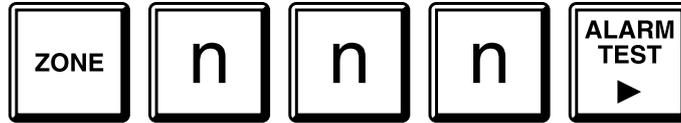
| ALARM TEST ► | n | n | n | ENTER |

To fault test zone number nnn from the base display press:

| ZONE | n | n | n | FAULT TEST ▲ |

Or:

| FAULT TEST ▲ | n | n | n | ENTER |

From a zone status display, to alarm test the displayed zone, press:

| ALARM TEST ► |

From a zone status display, to fault test the displayed zone, press:

| FAULT TEST ▲ |

- The LCD will prompt to check that you wish to test the selected zone or zones. Press "ACK" to initiate the test, or "CLEAR ESC" to abort. There is no indication on the display that a test is active on any zone.

OPERATING SEQUENCE   (CONTINUED)

To alarm test a range of zones:

From the base display, press:

ZONE	n	n	n	AND .
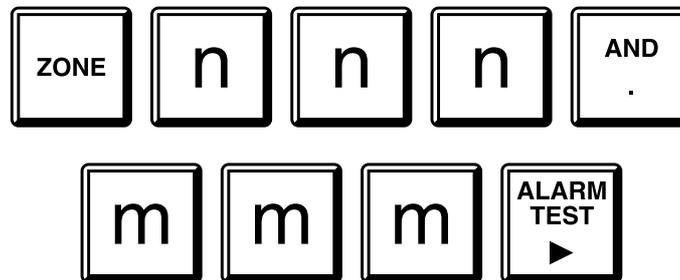
m	m	m	ALARM TEST ►

To fault test a range of zones:

From the base display, press:

ZONE	n	n	n	AND .
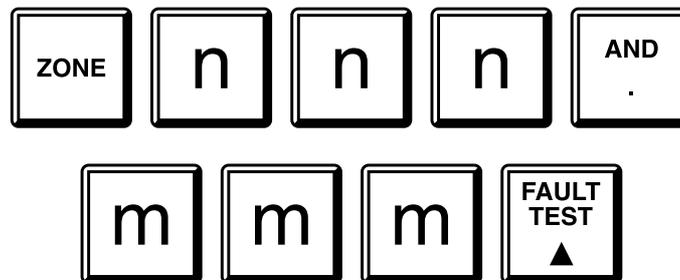
m	m	m	FAULT TEST ▲

The LCD will display the range of zones selected. Press the "ACK" key to initiate the alarm test or fault test of zones nnn to mmm inclusive or press the "CLEAR ESC" key to abort. The RDU will not initiate a test on any zones within the range that are not programmed as being of interest to it.

7.5.3   NOTES

(a)   Single digit zone numbers can be entered as "n" followed by "AND" or "ALARM TEST" or "FAULT TEST" as appropriate, i.e. leading zeros are not required.

7.6   ZONE STATUS RECALLS

7.6.1   FUNCTION

Allows an operator to recall the status of a specific zone, or search for those zones meeting a specified criteria, e.g. in fault, alarm etc.

7.6.2   OPERATING SEQUENCE - ZONE STATUS

To recall a specific zone's status.
From the base display or from a zone status display press:

ZONE	n	n	n	RECALL (
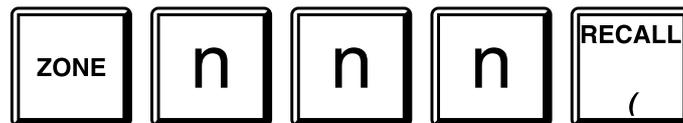
where nnn is the zone number (leading zeros need not be entered).

To view the status of other zones, press:

NEXT   to view the status of the next zone.

PREV   to view the status of the previous zone.

Press the "ZONE" key to select a different zone.
Press "CLEAR ESC" to return to the base display.

The first line of the LCD displays the zone number and any zone name programmed for that zone. The second line displays the zone alarm type text for that zone, followed by its status.

The status consists of any of the following:

normal	-	the zone is not in alarm or fault
alarm	-	the zone is in alarm.
fault	-	the zone is in fault.
isolated	-	the zone is isolated.
deisolated	-	(or deiso) the zone is de-isolated.
disabled	-	The zone does not map to this RDU, meaning that the zone does not map to an LED or the LCD at this RDU. Status information for this zone is ignored by this RDU.

7.6.3   OPERATING SEQUENCE - ZONE SEARCHES

The zone search functions allow an operator to query the RDU for zones meeting specified status criteria, e.g. in alarm.

To start a search from the base display, press:

RECALL (ZONE

Then select the option required. Note that relay type zones appear in the activated, faults and isolate recalls but not in alarm recalls. Valid options are:

"1"   Alarms   -   Searches for any zones in alarm, whether or not they are isolated or mapped to the MAF.

"2"   Isolates   -   Searches for any zones that are isolated or in Auto-Reset mode, whether or not they are mapped to the MAF.

"3"   Faults   -   Searches for any zones in fault, whether or not they are isolated or mapped to the MAF.

"4"   Activated   -   Searches for any relay zones in the activated state.

"5"   All off normal - Searches for any zones in alarm, fault isolated, zone test, or Auto Reset mode.

"6"   Status   -   Prompts for a zone number and displays the status of that zone as described in the previous section.

"7"   Config   -   Prompts for an access code then displays the configuration for that zone. The configuration for other zones can be displayed by entering a different zone number as described in the next Section.

When an option has been selected, the RDU searches for a zone starting from Zone 1 up to the last zone (zone 528 Max) that meets the specified criteria.

Once a zone is found, the LCD display reverts to a zone status display for that zone. When the "NEXT" or "PREV" key is pressed, the search continues for the next or previous zone respectively, that meets the original search criteria.

If no zones matching the criteria are found, then the LCD briefly displays a message saying so, and reverts to the base display.

7.7   ZONE CONFIGURATION RECALL

7.7.1   FUNCTION

The operator can view the RDU's programmed zone settings without the risk of changing the configuration database. Either the "View" or "Program" access codes will be required to gain entry to this menu option. The menu structure is similar to the zone branch of the RDU Programming Menu Structure.
Refer to the RDU Programming and Installation Manual for details.

7.7.2   OPERATING SEQUENCE

From the base display, press:

| RECALL (| ZONE | 7 |

Enter the "View" or "Program" password in response to the "Enter 6 digit access code" prompt. The configuration and zone name (if any) for the first zone will now be shown. The configuration for any other zone can be viewed by entering a zone number within the range 1 to 528 when the cursor is flashing on the zone number field. Alternatively the next zone can be viewed by pressing the "Next" key, or the previous zone by pressing the "Prev" key.

To view configuration of next zone, press:

| NEXT |

To view configuration of previous zone, press:

| PREV |

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CHAPTER 8
OPERATING INSTRUCTIONS
- RELAY/OUTPUT FUNCTIONS

8.1 INTRODUCTION

For MAF configured RDUs (FP0558) the functions which can be applied to ancillary/bell relays are : isolate/de-isolate, reset and test.

For both non-MAF RDU (FP0559) and MAF RDU (FP0558), the BELLS ISOL key or the ANCILL ISOL key at the base display can be used (depending on programming) to send a bells or ancillary isolate or deisolate command to the FIP. The processing of these commands at the FIP depends on the type and version of FIP. An F4000 FIP will process the ancillary command as ancillary zone zero isolate or deisolate. An F3200 FIP (V2.00 onwards) will process it as Plant Isolate/Deisolate.

The status of the ancillary/bell relays may be viewed on the display.
The status of MAF relays (Alarm, Fault, Isolate and Standby) cannot be viewed, and MAF relays cannot be tested directly.

8.1.1 ANCILLARY RELAYS

On an FP0558 RDU the Ancillary 1, 2 and Bell relays are controlled by a non-isolated zone alarm on any zone which is programmed (mapped) to operate that particular relay.

I.e. each zone may be programmed (mapped) to operate any of
Ancillary 1, Ancillary 2 or Bell relays when a zone alarm occurs. If a zone is isolated it will not operate any mapped relay when an alarm occurs (also Refer to Section 6.6.1.5 of the RDU Installation and Programming Manual).

8.1.2 ISOLATION

Non-MAF RDU (FP0559)
For a non-MAF RDU, the BELLS ISOL and ANCILL ISOL keys may be used to send an isolate or deisolate command to the FIP if programmed to. The ANCILL ISOL key may be used only at the base display, but the BELLS ISOL key may be used from any display. For both of these keys, the command is initiated immediately without any prompting on the LCD.

MAF RDU (FP0558)
The bells relay may be isolated by a bells isolate function at either the FIP or the RDU, depending on what is programmed in the RDU. A bells isolate / de-isolate command can be done with either the "BELLS ISOL" key or with the "ISOLATE" key from the relay status display.

A specific relay can be isolated or de-isolated via the "Isolate" "Relay" or "Relay" "Isolate" keypresses. The ancillary relays can also be isolated or de-isolated via the "Isolate" key from the relay status display (refer to Section 8.6).

The Ancillary 1 and 2 relays may be individually isolated or de-isolated.

The Ancillary 1 relay may be programmed to follow an ancillary isolate state received from the FIP or it may be isolated or deisolated locally (depending on programming). The ancillary 2 relay never follows the FIP state and can only be isolated or deisolated locally at the RDU. If programmed to, isolating or deisolating the ancillary 1 relay may also cause an ancillary isolate or deisolate command to be sent to the FIP (if passon is enabled with programming).

ISOLATION (CONTINUED)

For New Zealand operation, the building services restore (BSR) keyswitch at this RDU, at the FIP, or another RDU (depending on programming), being activated causes the ancillary 1 and 2 relays and the ancillary fire and defect outputs at the RDU to be isolated. When a relay is isolated due to an activated BSR keyswitch, the keypad commands at the RDU for isolate and deisolate do not work. Similarly with Silence Alarms and bells isolate. When the Silence Alarms keyswitch is activated the keypad cannot be used for bells isolate/deisolate.

8.2 ANCILLARY RELAY ISOLATE

8.2.1 ISOLATING/DE-ISOLATING BELLS

8.2.1.1 FUNCTION

The RDU may control the bells isolate status at either or both the FIP and the RDU, and similarly the FIP may control the bells isolate status at both the FIP and the RDU depending on what has been programmed at the RDU. The effect of pressing the "BELLS ISOL" key (or ISOLATE key) at the RDU depends on what has been programmed at the RDU.

The status of the Bells isolation is shown on the "BELLS ISOLATED" LED. If it is on steady or flashing then either or both the FIP and RDU bells are isolated and will not sound. If the LED is OFF then the RDU bells, (if any), will sound when an un-isolated alarm is present on any zone which is programmed (mapped) to operate the bells. If the bells isolate LED is flashing at 1Hz then it indicates that both the FIP and RDU bells are isolated. If the LED is on steady then the RDU bells relay is isolated locally at the RDU. For New Zealand operation, the Bells Isolate LED will flash at 2Hz if the Silence alarms keyswitch is operated.

De-isolating the bells allows the bells to turn on for subsequent alarms occurring, and can serve to immediately turn the bells on if any un-isolated zone alarm condition exists for zones which are mapped to the bells.

For an FP0558 (maf RDU) the bell isolate/de-isolate operation can be done from the bells relay status display with the ISOLATE key as well as with the BELLS ISOL key.

Australian Operation

There are four different modes, (described below), that can be programmed (with passon, follow, local parameters) which determine the bells isolate functions at the RDU.

1. **RDU programmed to control the FIP bells isolate status (passon enabled).**

   The RDU bells isolate status follows the FIP bells isolate status - i.e. they are either both isolated or both de-isolated.
   The bells isolate LED will flash at 1Hz if both the FIP and RDU bells (if any) are isolated and off if they are both de-isolated. Pressing the "BELLS ISOL" key once will attempt to toggle the current bells isolate status. There may be a delay of 2 to 4 seconds before the bells isolate LED at the RDU shows the new status while the bells isolate command is sent to the FIP and then back to the RDU.

ISOLATING/DE-ISOLATING BELLS (CONTINUED)

2. **RDU programmed to follow (but not control) the FIP bells isolate status and with local control enabled.**

    The RDU is not able to alter the FIP bells isolate status.
    With "local control" enabled (FP0558 maf RDU only) then the RDU bells relay is isolated if either the FIP bells are isolated or if "locally isolated". The RDU bells isolate LED will flash at 1 Hz if "FIP Isolated", or otherwise be on steady if locally isolated, or otherwise be off. Pressing the BELLS ISOL key will toggle the local bells isolate status and will not affect the FIP bells isolate status.

3. **RDU programmed to follow (but not control) the FIP bells isolate status and with local control disabled.**

    With "local control" disabled then the RDU BELLS ISOL key is ignored and has no effect on the FIP or RDU bells isolate status. The RDU bells isolate LED will flash at 1Hz if "FIP isolated" and otherwise be off.

4. **RDU programmed with local bells isolate control only.**

    The RDU does not control or follow the FIP but may locally isolate or deisolate its bells relay. This is allowed only with an FP0558 RDU. The bells isolate LED is on steady if the RDU bells relay is isolated and is off if the relay is de-isolated. Pressing the BELLS ISOL key will toggle the current bells isolate status.

New Zealand Operation

Operation in NZ mode is similar to Australian mode except that the Silence Alarms keyswitch can be used to isolate the bells. Depending on what is programmed at the RDU, the Silence Alarms keyswitch may cause a silence alarms/bells isolate to occur at the FIP or just at the RDU, or at neither. There are three different things which can cause the bells relay at the RDU to be isolated - FIP bells isolation, local bells isolate (controlled by the BELLS ISOL key at the RDU) and Silence Alarms keyswitch at the RDU. There are four different modes, (described below), that can be selected with programming (with passon, follow, local parameters) which determine the bells isolate and Silence Alarms keyswitch functions at the RDU.

1. **RDU programmed to control the FIP bells isolate status and to send the state of the RDU Silence Alarms keyswitch to the FIP ("passon" enabled).**

    The RDU bells isolate status follows the FIP bells isolate status - i.e. they are either both isolated or both de-isolated. Both the BELLS ISOL key and the Silence Alarms keyswitch at the RDU can be used to isolate / de-isolate the bells but the BELLS ISOL key has no effect if the Silence Alarms keyswitch is in the activated (isolated) position.

    If the Silence Alarms keyswitch is in the isolate position then both the FIP bells and the RDU bells are isolated and the RDU bells isolate LED will flash at 2 HZ and pressing the BELLS ISOL key at either the RDU or FIP has no effect.

ISOLATING/DE-ISOLATING BELLS (CONTINUED)

If the Silence Alarms keyswitch is in the de-isolate position then the BELLS ISOL key can be used to toggle the current bells isolate status and the bells isolate LED will be flashing at 1Hz if the bells are isolated and otherwise be off. Pressing the "BELLS ISOL" key once will attempt to toggle the current bells isolate status. There may be a delay of 2 to 4 seconds before the bells isolate LED at the RDU shows the new status while the bells isolate command is sent to the FIP and then back to the RDU.

2. **RDU programmed to follow (but not control) the FIP bells isolate status and with local control enabled.**

The RDU is not able to alter the FIP bells isolate status and does not transmit the state of its Silence Alarms keyswitch to the FIP.

With "local control" enabled (FP0558 maf RDU only) the RDU bells relay is isolated if either the FIP bells are isolated or if "locally isolated" with the BELLS ISOL key or the Silence Alarms keyswitch. The RDU bells isolate LED will flash at 1Hz if "FIP Isolated", 2Hz for Silence alarms, or be on steady if locally isolated, and otherwise be off. Pressing the BELLS ISOL key will have no effect if the Silence Alarms keyswitch is on and otherwise it will toggle the local bells isolate status and will not affect the FIP bells isolate status.

3. **RDU programmed to follow (but not control) the FIP bells isolate status and with local control disabled.**

With "local control" disabled the RDU BELLS ISOL key and Silence Alarms keyswitch are ignored and have no effect on the FIP or RDU bells isolate status. However, the RDU bells are isolated if the FIP/RDU bells are isolated and otherwise off.

4. **RDU programmed with local bells isolate control only.**

Local isolate control only is allowed only with an FP0558 RDU. The RDU is not able to alter the FIP bells isolate status and does not transmit the state of its Silence Alarms keyswitch to the FIP.

The RDU does not control or follow the FIP but may locally isolate or deisolate its bells relay with either the BELLS ISOL key or with the Silence Alarms keyswitch. The BELLS ISOL key is ignored if the Silence Alarms keyswitch is in the isolate position. The bells isolate LED flashes at 2 HZ if the Silence alarms keyswitch is on, on steady if locally isolated, and otherwise off. If the silence alarms keyswitch is off, pressing the BELLS ISOL key will toggle the current bells isolate status.

8.2.2   NON-MAF RDU ANCILLARY ISOLATE/DEISOLATE

8.2.2.1   FUNCTION

To send an ancillary isolate or deisolate command to the FIP for a NON-MAF RDU (FP0559). The ancillary isolate LED shows the current FIP state - the LED is flashing at 1Hz to indicate the FIP state is isolated. The effect of the ancillary isolate/deisolate command at the FIP depends on the type of FIP connected. For an F4000 FIP, an ancillary zone zero isolate or deisolate occurs. For an F3200 or F2000 FIP a Plant isolate/deisolate may occur. This function is enabled or disabled with programming according to the setting of the ancillary isolate passon, follow, local parameters.

8.2.2.2   OPERATING SEQUENCE

From the base display, press:

```
┌──────────┐
│  ANCIL   │
│  ISOL    │
│──────────│
│ INSERT   │
└──────────┘
```

The command to do ancillary isolate or deisolate is sent immediately to the FIP without any prompting of the operator on the LCD. If the command is successful, the ancillary isolate LED at the RDU will indicate the new status after 4 to 8 seconds.

8.2.3   INDIVIDUAL RELAY ISOLATE / DEISOLATE

8.2.3.1   FUNCTION

To individually isolate or de-isolate ancillary 1, ancillary 2 or the bells relay. The bells relay is also referred to as ancillary relay number 3.

Deisolating an ancillary relay may cause the relay to turn on and isolating a relay will cause the relay to turn off if it was on.
Deisolating a relay may cause the Brigade Fault relay to turn on if there is a latched supervision fault on the ancillary relay and the ancillary relay is mapped to the MAF.

For New Zealand operation the building services restore keyswitch at the RDU, FIP, or another RDU, may be used (if programmed to) to isolate the ancillary 1 and 2 relays and the ancillary fire and defect outputs at the RDU. When the ancillary outputs at the RDU are isolated by a building services restore keyswitch, the RDU keypad cannot be used to isolate or deisolate the ancillary relays. If the building services restore keyswitch at the RDU is on, then the RDU ancillary isolate LED will flash at 2Hz.

8.2.3.2   OPERATING SEQUENCE

From the base display press

```
┌────────┐  ┌────────┐
│  ISOL  │  │ RELAY  │
└────────┘  └────────┘
```

and enter the relay number 1,2 or 3.

Alternatively from the base display press:

```
┌────────┐  ┌────────┐  ┌────────┐
│ RELAY  │  │   n    │  │  ISOL  │
└────────┘  └────────┘  └────────┘
```

Where n is the number of desired ancillary relay. Then press the "ACK" key to change the current isolate status of the relay. The action carried out depends which relay and what the programmed setup in the RDU is for that relay.

OPERATING SEQUENCE (CONTINUED)

Ancillary Relay 3 (bells)

For the bells relay there is a set of programmable parameters (passon, follow and local), associated with the relay and section 8.2.1 describes the isolating and deisolating of the bells.

Ancillary Relay 2

Ancillary relay 2 can always be isolated and deisolated locally and is not affected by the FIP ancillary isolate state. There are no passon/follow/local parameters associated with the ancillary 2 relay and isolating or deisolating it does not affect the FIP. For New Zealand operation, the building services restore keyswitch at the RDU or FIP can also be used to isolate the ancillary 2 relay (depending on programming).

Ancillary Relay 1

The action taken at the RDU when ancillary relay 1 is isolated or deisolated depends on the programming of parameters passon, follow and local associated with ancillary isolate. For New Zealand operation the ancillary fire and defect outputs are also isolated if ancillary relay 1 is isolated.

RDU Ancillary Isolate LED

LED off - no ancillaries isolated.
LED flashing at 2Hz - RDU building services restore keyswitch on.
LED flashing at 1Hz - either ancillary relay 1 or 2 is locally isolated
LED on steady - RDU ancillary relay 1 is isolated and the FIP has an
                   isolated ancillary.

There are four different modes, (described below), that can be programmed (with passon, follow, local parameters) which determine the ancillary isolate functions at the RDU.

1. Passon and follow both enabled.

The RDU has been programmed to control the FIP ancillary isolation status and also to follow it. Ancillary relay 1 follows the isolation status received from the FIP. Pressing the ISOLATE key at the ancillary relay 1 status display causes a command to be sent to the FIP to either isolate or deisolate the FIP status. The FIP then sends the new isolate status to the RDU which causes the ancillary relay 1 to be either isolated or deisolated. Hence there may be a delay of up to 8 seconds before the relay is isolated or deisolated at the RDU. The action taken at the FIP depends on the type of FIP. For an F4000 FIP, an ancillary zone zero isolate or deisolate occurs. For an F3200 or F2000 FIP a Plant isolate/deisolate may occur. Hence this may cause relays and outputs throughout the system to turn on or off.

2. Passon disabled, follow and local enabled.

The RDU has been programmed to follow, but not control, the FIP ancillary isolation status. The RDU is not able to alter the FIP ancillary isolation status.

With both follow and "local control" enabled (FP0558 maf RDU only) the RDU ancillary 1 relay is isolated if either the FIP ancillary state is isolated or if "locally isolated". The RDU ancillary isolate LED will flash at 1Hz if FIP isolated, or otherwise be on steady if locally isolated and otherwise be off. The ancillary 1 isolate/deisolate command alters the local isolate status and does not affect the FIP ancillary isolate status.

OPERATING SEQUENCE (CONTINUED)

3. Passon and local disabled, follow enabled.

The RDU is not able to alter the FIP ancillary isolation status.
With "local control" disabled and follow enabled, the ancillary 1 relay isolate command is ignored and has no effect on the FIP or RDU. The RDU ancillary isolate LED will flash at 1Hz if "FIP isolated" and otherwise be off.

4. Passon and follow disabled, local enabled.

The RDU has local ancillary isolate control only. The RDU does not control or follow the FIP but the ancillary 1 relay may be locally isolated or deisolated and the ancillary isolate LED will be on steady when locally isolated.

8.3   ANCILLARY RELAY RESET SUPERVISION FAULT

8.3.1   FUNCTION
To reset a latched supervision fault on an ancillary relay.

8.3.2   OPERATING SEQUENCE
Press

to select ancillary relays, then press numeric key "1", "2" or "3" to select the desired ancillary relay to reset the fault.

Alternatively from the base display press

Where n is the number of the desired ancillary relay. Then press the "ACK" key to reset the fault.

Notes:

If the fault is still physically present on the relay wiring then the relay status will remain in fault.

8.4 ANCILLARY RELAY TEST

8.4.1 FUNCTION

To briefly turn on an ancillary relay output for five seconds.

If the relay is isolated the test command will not energise the relay.

If the relay is already energised before the test starts then the test command will have no effect on the relay and will not de-energise it.

For the bells relay (relay 3), this command is not affected by programming and will always operate the local bells relay.

8.4.2 OPERATING SEQUENCE

From the base display press:
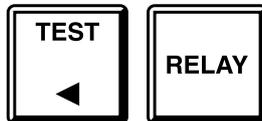
then press numeric key "1", "2" or "3" to select the desired ancillary relay to test.

Alternatively from the base display press:

then press "ACK" to energise relay output n, or press "CLEAR ESC" to abort. The relay will be energised for five seconds or until "ACK" is pressed.

8.5 BELL TEST

8.5.1 FUNCTION

To operate the Bell Output at either or both the FIP or the RDU (depending on programming) for a period of five (5) seconds. If "bell test passon" is enabled then when a bell test is initiated at the RDU, a command is sent to the FIP to request the FIP to do a bell test. Currently there is no version of FIP which is able to process a bell test command from an RDU but in future there may be. If the RDU bell test is programmed to operate locally then the RDU bells relay will turn on for 5 seconds if not isolated. A non maf RDU (FP0559) which does not have a bell relay, may be programmed with bell test passon enabled so that a bell test at the RDU will cause the bell relay at the FIP to turn on. Also, if the RDU is programmed with "bells follow", then whenever the FIP bells are turned on, the RDU will also turn on its bells relay, so that if the RDU is programmed with bell test passon and no local bells test, then the bells test done at the FIP would also cause the RDU to turn on its bells relay. In this case there would be a delay of 4 to 8 seconds before the bells output turns on at the RDU.

Note that the ancillary relay test described in section 8.4 always operates the local RDU bells relay (if not isolated), and never sends a bell test command to the FIP.

8.5.2   OPERATING SEQUENCE

From the base display press:
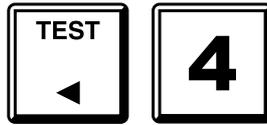
The LCD will show "Press ACK to test bells output".

Press the "ACK" key to initiate the test.

The bells test will then operate for 5 seconds and stop automatically or it can be stopped at any time by pressing the "ACK" key.

8.6   ANCILLARY RELAY STATUS RECALL

8.6.1   FUNCTION

To display the status of an ancillary relay, or search for those ancillary relays meeting a specified criteria, e.g. activated, isolated, in fault etc.

8.6.2   OPERATING SEQUENCE - RELAY STATUS

From the base display press:

to select ancillary relays

then press numeric key "1", "2" or "3" to select the desired ancillary relay.

Or press:

The display will show the ancillary relay number on the top line or if ancillary relay 3 has been selected then the display will show BELLS on the top line.

The status of the relay will be shown on the bottom line of the display as follows:

deactivated   - if the relay is de-energised
activated   - if the relay is energised
not supervised   - if supervision is not enabled
supervised   - if supervision is enabled
normal   - no supervision fault
fault   - supervision fault
open circuit   - supervision fault

OPERATING SEQUENCE - RELAY STATUS (CONTINUED)

short circuit	- supervision fault
isolated	- if relay isolated
deisolated	- if relay de-isolated

The "RESET", "ISOLATE" and "TEST" keys may be used from this display and "NEXT" and "PREV" may be used to step through the three ancillary relays.

8.6.3 OPERATING SEQUENCE - RELAY SEARCHES

The relay search functions allow an operator to query the RDU for relays meeting specified status criteria, e.g. activated, isolated etc.

To start a search from the base display, press:

Then select the option required. Valid options are:

"1" Activated - Searches for any ancillary relays in the activated state, whether or not they are isolated or mapped to the MAF.

"2" Isolates - Searches for any relays that are isolated, whether or not they are mapped to the MAF.

"3" Faults - Searches for supervision faults, whether or not they are isolated or mapped to the MAF.

"4" Status - Prompts for a relay number and displays the status of that relay as described in the previous section.

"5" Config - Prompts for an access code then displays the configuration for the first ancillary relay. The Configuration of other relays can be displayed by entering a different relay number as described in the next Section.

When an option has been selected, the RDU searches for a relay starting from the first ancillary relay and ending at the last (ie. the bells relay), to find a relay that meets the specified criteria.

If a relay is found that meets the specified criteria, the LCD display reverts to a status display for that relay. When the "NEXT" or "PREV" key is pressed, the search continues for the next or previous relay respectively, that meets the original search criteria.

If no relays matching the criteria are found, the LCD briefly displays a message saying so, and reverts to the base display.

8.7   ANCILLARY RELAY CONFIGURATION RECALL

8.7.1   FUNCTION

The operator can view the ancillary relay configuration without the risk of changing it. Either the "View" or "Program" access codes will be necessary to gain entry to this menu option. The menu structure is similar to the relay branch of the RDU Programming Menu Structure. Refer to the RDU Installation and Programming Manual for details.

8.7.2   OPERATING SEQUENCE

From the base display, press:

```
┌─────────┐  ┌─────────┐  ┌─────────┐
│RECALL   │  │         │  │         │
│         │  │ RELAY   │  │   5     │
│   (     │  │         │  │         │
└─────────┘  └─────────┘  └─────────┘
```

Enter the "View" or "Program" password in response to the "Enter 6 digit access code" prompt. The MAF/PSU module installed status will now be shown as "Installed" or "Not Installed". If the MAF is installed then pressing the "Enter" key will result in the configuration of the first ancillary relay being shown. The configuration of the Anc1, 2 or Bells relay can be viewed by entering a number within the range 1 to 3 when the cursor is flashing on the relay number field. Alternatively the next relay can be viewed by pressing the "Next" key, and the previous relay by pressing the "Prev" key.

To view the configuration of the next ancillary relay, press:

```
┌─────────┐
│         │
│ NEXT    │
│         │
└─────────┘
```

To view the configuration of the previous ancillary relay, press:

```
┌─────────┐
│         │
│ PREV    │
│         │
└─────────┘
```

8.8   NEW ZEALAND MODE TRIAL EVAC OPERATION

The NZ display extender board can have a trial evac keyswitch connected which can be used to energise the bells relay at either the FIP or the RDU depending on what is programmed at the RDU.

If the RDU is programmed to have trial evac sent to the FIP (passon enabled) then activating the trial evac keyswitch at the RDU will cause the bells relay at the FIP to be energised and may also cause the bells relay (if any) at the RDU to be energised depending on the type and version of FIP.

If the RDU is programmed to have trial evac take effect locally then activating the trial evac keyswitch at the RDU will cause the bells relay at the RDU to be energised.

A bells test may be initiated from the keypad which will also cause the bells relay to be energised if not isolated.

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CHAPTER 9
OPERATING INSTRUCTIONS
- TEST FUNCTIONS

9.1   SYSTEM TEST

9.1.1   FUNCTION

The System Test checks the integrity of the system hardware and software. It tests the RAM and EPROM, and checks the database EEPROM.

9.1.2   OPERATING SEQUENCE

From the base display, press:

A system test cannot be initiated if any of the following are present:

        (a)   Database EEPROM checksum error.
        (b)   Battery very low.
        (c)   Shift register bus fault.
        (d)   Remote-test currently in progress.

If none of the above are present, a system test will be initiated and the LCD will show "System test in progress - press RESET to abort".

The test may be terminated prematurely by pressing the "RESET" key.

If the test fails for any reason, a test fail cadence will sound on the buzzer and an error message will appear on the display.

9.1.2.1   MEMORY TESTS

A test of the Controller RAM, EPROM and EEPROM checksum is done. If the RAM or EPROM test fails, then the Brigade standby relay will de-energise and the "SYSTEM FAULT" LED will turn on but processing of zone alarms and faults will continue.

If the database EEPROM checksum test fails then all zone alarm and fault processing will stop and the RDU will become inoperational and the standby relay will de-energise.

To recover, do the following.

First, power the panel off and on again. This will check the database EEPROM and start processing if the checksum is correct. If the fault does not clear then enter program mode using the "SET" key and entering the password. Then exit program mode which will calculate and save the checksum of the database and then re-check the checksum.

It is advisable to do a printout of the entire database and re-check all of the programmed data. Alternatively, upload a new database into the RDU by entering program mode and loading a previously saved database.

9.2   LCD/LAMP (LED) TEST

9.2.1   FUNCTION

To momentarily flash all LED indicators to visually inspect that they are working correctly, and to test operation of the LCD.

9.2.2   OPERATING SEQUENCE

From the base display, press:

TEST ◄   2

A number of different test patterns are displayed on the LCD.

At the same time as the LCD test pattern is shown, the LED indicators on the front panel will be flashed on for half a second, off for half a second, for 5 seconds. The "MAINS ON" LED is not affected by the test. The other front panel LEDs should be on and off simultaneously for the 5 seconds.

After the front panel LEDs and LCD have been tested, the zone (and relay) LED Display boards will be tested, one board (16 zones) at a time. Each Display board will be tested for about 2 seconds and all 48 LEDs on the board will be turned on for 1.5 seconds and then off for half a second.

The testing of the LED display boards can be terminated by pressing "RESET".

The test can be paused or resumed at a particular display board by using the "ISOL" key. The test can be stepped to the next Display board by using the "ACK" key. The "ACK" key can be used to step to the next display board when the test is in pause mode.

9.3   BUZZER TEST

9.3.1   FUNCTION

To test the buzzer for both loud and quiet operation. (The buzzer has loud operation for when the RDU door is closed, and quiet for when the door is open).

9.3.2   OPERATING SEQUENCE

From the base display, press:

TEST ◄   3

The buzzer will turn on "loud" for 2-3 seconds, followed by "quiet" for 2-3 seconds.

9.4   BATTERY TEST (FP0558 ONLY)

9.4.1   FUNCTION

To initiate a test on the standby battery for MAF configured RDUs (FP0558) by applying a test load for one minute. With New Zealand operation a 40 minute battery test is initiated by a command from the FIP at the start of every auto test - i.e. weekdays only.

9.4.2   OPERATING SEQUENCE

From the base display press the "BATT TEST" key.

```
┌──────────┐
│  BATT    │
│  TEST    │
│   ▼      │
└──────────┘
```

-   The message "Press ENTER to initiate battery test" will appear. Press the "ENTER" key to initiate the battery test, or "CLEAR ESC" to exit. When the battery test is initiated the display will show "Battery test in   progress - press ACK to abort".

TO STOP THE BATTERY TEST WHEN RUNNING
-   Press the "ACK" key.

THE TEST PASSES   -   If after application of the test load for one minute, the battery voltage is still within specification, then the test will terminate and the LCD displays "Battery test passed. Press ACK".

-   Press the "ACK" key and the LCD will revert to the base display.

THE TEST FAILS   -   If during the test a battery low is detected, the test will terminate and the "CHGR/BATT FAULT" LED indicator will flash.

-   The LCD will display "Battery test failed. Press ACK".

-   Press the "ACK" key to exit back to the base display. Note the "CHGR/BATT FLT" LED indicator will continue to flash for a period of 60 seconds.

-   Perform another battery test after 24 hours and if this fails as well contact your service company.

Note: It is not possible to start another battery test until 60 seconds after the previous one. A message to this effect is shown on the display.

9.5   ANCILLARY RELAY/BELLS TEST (FP0558 ONLY)

The ancillary and bell relay tests only apply to MAF configured RDUs (FP0558). These tests are described in Sections 8.4 and 8.5.

Note that while the ancillary relays can be tested the MAF brigade alarm, fault, isolate and standby relays can not be tested directly. Receipt of alarm, fault or isolate zone status information from the FIP is required to operate the appropriate MAF brigade relay.

CHAPTER 10
PLACING INTO OPERATION

10.1   GENERAL

This chapter describes the procedure to place an RDU into operation. It assumes that the mains and other field wiring has been connected, but that the battery has not. Note that all electronic modules were tested and adjusted in the factory and should need no further adjustment.

Customisation will be required by the system installer to program the RDU to set up a number of parameters, including :

-       RDU address to match that at the FIP (default = 1);
-       type of Display / Relay Driver board(s) fitted (if any);
-       and many other parameters.

Please refer to Chapter 6 of the "RDU Installation and Programming Manual" for more information.

10.2   PLACING INTO OPERATION: FP0558

10.2.1   VISUAL INSPECTION

Before switching on power, inspect the cabinet and internals. Check as follows:

1.   Check that all equipment is securely mounted, and that all cables are connected at the appropriate points. The factory checklist is included.

2.   Check the 16 Zone LED Displays (if present) are fitted and connected correctly with link LK1 fitted on the last board only. For New Zealand operation, check that the display extender board (if any), is connected correctly and that none of the display boards have link LK1 fitted.

3.   Check that (if required) the additional battery test resistors, 6A power supply and overcurrent protection device are fitted. Note that batteries are not to be connected yet. **For New Zealand operation, all battery test resistors (R52, R53) must be removed otherwise they will burn out when the 40 minute daily auto battery test is done.**

4.   Check that links Lk2-4 on the MAF are fitted (unless Anc3, clean contacts is being used).

5.   Check that a 3 wire comms connection has been made to the FIP with Tx & Rx at the FIP routed to Rx & Tx respectively at the RDU. Also check that the FIP has been programmed correctly to send status/ receive commands to/from the RDU.

The "MAINS ISOLATE SWITCH" is located at the top right hand side of the cabinet rear, to the left of the mains transformer, behind the inner display door. This controls the mains power to the RDU, charger and power supply, and should be left on once the RDU is operational.

NOTE: The Battery is not disconnected by the "MAINS ISOLATE SWITCH".

10.2.2 POWER UP

NOTE: The Battery is not disconnected by the "MAINS ISOLATE SWITCH".

To place the RDU into operation, perform the following steps:

STEP 1 Ensure that the Mains Isolate Switch is OFF.

STEP 2 Ensure that 240 VAC is connected to the panel from the mains distribution switchboard.

STEP 3 If an E2INIT is required before programming, fit Lk7 on the Controller to the DATABASE WRITE ENABLE position and fit minijump SW1. (Refer to the RDU Programming and Installation Manual).

Turn the Mains Isolate Switch ON.

STEP 4 Check that the buzzer sounds and all LEDs on the Operator Display panel flash for 2 seconds (except Mains On).

STEP 5 Check that the green "MAINS ON" LED indicator is on.
The Controller performs tests on its memory, electronics, and the LCD.

STEP 6 If doing an E2INIT, remove minijump SW1 and press "ACK" to complete the sequence.

STEP 7 Check that the LCD has good visibility. The LCD displays the RDU pcb configuration before showing the Base Display.

STEP 8 Install and connect the batteries.
Take care not to short the battery leads or connect in reverse polarity when connecting.

STEP 9 If required, complete programming as per the RDU Programming and Installation Manual and then fit Lk7 on the Controller to the DATABASE PROTECT position. Use the Recall CRC command from the Recall menu (refer section 6.8) and record the database CRC and last changed time/date in the logbook.

STEP 10 Perform a Battery Test. If this fails check the battery connections, leave for 24 hours and then retest.

STEP 11 Perform a Bells and System Test at the RDU, then a system test at the FIP (de-isolate all zones first).

STEP 12 Check that zone status conditions at the FIP are received and annunciated correctly at the RDU and that commands issued at the RDU (non-mimic mode) act correctly to acknowledge, reset and isolate zones. A full commissioning test should be carried out as per AS1670 or NZS4512.

10.3   PLACING INTO OPERATION: FP0559

10.3.1   VISUAL INSPECTION

Before switching on power (ie. do not install RDU remote termination board Fuse F1),
inspect the cabinet and internals. Check as follows:

1.   Check that all equipment is securely mounted, and that all cables are connected at
the appropriate points. The factory checklist is included.

2.   Check that a 4 wire comms plus power connection has been made to the FIP with Tx
& Rx at the FIP routed to Rx & Tx respectively at the RDU. Also check that the FIP
has been programmed correctly to send status/ receive commands to/from the RDU.

3.   Double check the FIP MAF/PSU and battery to ensure there is sufficient capacity to
cope with the extra loading due to connection of the RDU.

10.3.2   POWER UP

To place the RDU into operation, perform the following steps:

STEP 1   If an E2INIT is required before programming, fit Lk7 on the Controller to the
DATABASE WRITE ENABLE position and fit minijump SW1. Install the 2A
Fuse supplied into holder F1 on the Remote Termination Board.

STEP 2   Check that the buzzer sounds and all LEDs on the Operator Display panel
flash for 2 seconds (except Mains On).

STEP 3   The Controller performs tests on its memory, electronics, and the LCD.

STEP 4   If doing an E2INIT, remove minijump SW1 and press "ACK" to complete the
sequence.

STEP 5   Check that the LCD has good visibility. The LCD displays the RDU pcb
configuration before showing the Base Display.

STEP 6   If required, complete programming and then fit Lk7 on the Controller to the
DATABASE PROTECT position.

STEP 7   Perform a System Test at the RDU, then a system test at the FIP (de-isolate
all zones first).

STEP 8   Check that zone status conditions at the FIP are received and annunciated
correctly at the RDU and that commands issued at the RDU (non-mimic
mode) act correctly to acknowledge, reset and isolate zones. A full
commissioning test should be carried out as per AS1670.

10.4   COMMISSIONING CHECKLIST: FP0558

The following checklist should have been completed and supplied by the manufacturer. It should be placed with other System Configuration Information. Commissioning staff should check the installed RDU against it. (Note that all pcbs are electronically tested and adjusted before being fitted to the RDU).

1.   CABINET & GENERAL

A)   Cabinet colour - Standard Cream Wrinkle (BFF 998 CW)   ☐

- Other: ☐

B)   Cabinet undamaged (Paint OK)   ☐

C)   Door aligned correctly   ☐

D)   Window undamaged and fitted correctly   ☐

E)   MCP fitted and undamaged   ☐

F)   Cabinet Door locks firmly, operates microswitch   ☐

G)   Lock - 003 Type & two keys supplied   ☐

H)   Door seals fitted to top and sides   ☐

I)   Display Keypad and 4U door fitted & aligned correctly   ☐

J)   Standoffs fitted to cabinet rear (none missing)   ☐

K)   Operator Manual, battery leads & MCP key included   ☐

L)   VIGILANT RDU label completed   ☐

2.   PCBS & WIRING

A)   MAF/PSU Fitted securely on standoffs   ☐

B)   Controller/Display fitted securely   ☐

C)   FRC Looms fitted correctly   ☐

D)   MCP & door switch wires fitted to J6 of MAF/PSU, secured   ☐

E)   Earth wire fitted to display door   ☐

F)   All modules earth to cabinet metal   ☐

COMMISSIONING CHECKLIST   (CONTINUED)

3.   POWER SUPPLY

A)   Mains Wired correctly, MOV, cap fitted ☐

B)   "Mains Isolate Switch" and "NAE" label fitted ☐

C)   Mains Earth wired to stud, good contact ☐

D)   All 6 fuses fitted to MAF/PSU ☐

E)   Mains Switch neon off/on for switch off/on ☐

F)   MAF/PSU Mains On LED on, Fuse Blown LED off ☐

G)   VRECT at DC IN tab 40-42Vdc ☐

H)   Charger Voltage 27.3-27.4V warm, 27.5-27.6V cold ☐

4.   OPERATION

A)   LEDs bright through window, "MAINS ON" LED on ☐

B)   Correct modules are configured and found on E2INIT ☐

C)   Buzzer louder with microswitch operated
          (Controller Lk2 fitted if board 1931-84) ☐

D)   Controller Lk7 in "Protect" position ☐

E)   LCD contrast correct for front view ☐

F)   System test pass ☐

G)   Recall -> MCP shows "MCP Alarm" for MCP operation ☐

H)   Acknowledge silences buzzer, Zone Resets ☐

SERIAL NUMBER [＿＿＿＿＿＿＿＿＿＿] TEST PASSED ☐

DATE : …………............   SIGNATURE : …………....................

10.5 COMMISSIONING CHECKLIST: FP0559

The following checklist should have been completed and supplied by the manufacturer. It should be placed with other System Configuration Information. Commissioning staff should check the installed RDU against it. (Note that all PCBs are electronically tested and adjusted before being fitted to the RDU).

1. CABINET & GENERAL

A) Cabinet colour - Standard APO Grey ☐

- Other: ☐

B) Cabinet undamaged (Paint OK) ☐

C) Door aligned correctly ☐

D) Cabinet Door locks firmly, operates microswitch ☐

E) Lock - 003 Type & two keys supplied ☐

F) Display, Keypad and Status LEDs fitted & aligned correctly ☐

G) Operator Manual included ☐

H) VIGILANT RDU label completed ☐

2. PCBS & WIRING

A) Controller/Display fitted securely ☐

B) Remote Termination Bd fitted securely, Fuse F1 installed ☐

C) FRC Looms fitted correctly ☐

D) Door switch fitted to J7 of Remote Termination Bd ☐

3. OPERATION

A) LEDs bright through window ☐

B) Correct modules are configured and found on E2INIT ☐

C) Keypad disabled, Buzzer louder with keyswitch hard clk-wise ☐

D) Controller Lk7 in "Protect" position ☐

COMMISSIONING CHECKLIST   (CONTINUED)

E)   LCD contrast correct for front view   ☐

F)   Passes System Test   ☐

G)   Acknowledge silences buzzer, Zone Resets   ☐

H)   Controller Lk2 (Service Mode) Fitted   ☐

SERIAL NUMBER   [   ] TEST PASSED   ☐

DATE : ……………..............   SIGNATURE : …………......................

CHAPTER 11
SYSTEM TESTING AND MAINTENANCE

11.1   SYSTEM TESTING AND FAULT FINDING

The RDU has various test and diagnostic facilities to check functionality of the system and assist fault finding.

Self Testing includes checking: FIP to RDU communications; Controller memory; real time clock; I/O bus communications; display/relay driver boards present; LCD module operation; and MAF/PSU module (FP0558 only) functionality.

Should the RDU discover a fault it will annunciate a System Fault and take appropriate action. For example, if the RDU detects a loss of receive communications from the FIP the System Fault Buzzer and LED will turn on, processing of zone status will cease, the Standby relay will de-energise (FP0558 only) and a recall of system faults will show "Scan Fail".

Remote Auto Test operates on a daily basis (holidays excluded) on command from the FIP and includes checks on the RDU memory and configuration database.

Operator controlled tests include LED, LCD display tests, Buzzer tests, battery test, and ancillary relay/bells output tests. Please refer to Chapter 9 for more detail.

Routine testing should include checking that zone status messages (eg. alarm, fault) as sent from the FIP are received and annunciated correctly at the RDU. Also check that commands sent from the RDU (Non-Mimic modes of operation only) are received and acted on at the FIP.

The cause of any faults within the system can be found as per Section 4.4.

> Should a fault occur within the RDU electronics or system wiring, the operator should call a service person to check functionality and establish which facilities do not operate.
>
> Only a suitably trained technician should attempt to repair wiring or replace suspect modules.

Test points on the pcb modules allow checking of DC voltages and various signals.

Once it is established which particular module has a fault, the RDU should be disconnected from all sources of power (both mains and battery) and the module replaced by a trained technician.

> Faulty electronic modules should be returned to the factory for repair and testing.
> It is not recommended that service staff repair electronic failures on site.
> All faults and alarms should be recorded in the system log book, with time and date of occurrence.

11.2   SYSTEM MAINTENANCE

For Australian operation, the Australian Standard AS1851 requires that the building owner/occupier (or a nominated representative) maintain the Fire Protection Equipment and carry out system tests on a regular basis.

For New Zealand operation, regular and annual testing is required. For details, refer to Vigilant Maintenance Manual, Fire Alarm Systems (company confidential) and NZS 4512. The weekly, monthly and annual tests described here are recommended.

It is the responsibility of the owner/occupier to ensure that maintenance is performed.

Personnel performing maintenance tests must receive sufficient training and instruction.

It is normal for the owner/occupier to contract maintenance to a bona fide Fire Alarm Company

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The following tests are recommended:

11.2.1   WEEKLY TESTING

Where it is required, the recommended procedure for weekly testing is:

Step 1:   Check that the LCD is showing the 'System Normal' base display, the System Fault LED is off and that the Mains On LED is on (FP0558 only).

Step 2:   Advise the Brigade (as per the specified local agreement) that you are about to undertake a routine test of the fire system. Inform all building occupants that the fire bells will be tested.

Step 3:   Check the validity of the database. Use the Recall CRC command (refer section 6.8) from the Recall menu and check the database CRC and last changed time and date against the values in the log book.
Perform a System Test at the FIP.

Step 4:   Select one zone at the FIP that is mapped to an alarm type zone at this RDU and perform an Alarm Test.

               Verify that: (a)   The zone status is annunciated correctly at the RDU, on the LCD display, the alarm buzzer, and on the correct zone LED where 16 zone LED display boards are fitted.

                                     (b)   Where a MAF/PSU module is fitted, the RDU MAF alarm and bells relays operate assuming that the zone is mapped to the MAF, and Bells.

WEEKLY TESTING   (CONTINUED)

Step 5:   Acknowledge and reset the alarm at the RDU. Verify that the
                   alarm status is cleared (Non-Mimic operating modes only).

Step 6:   Perform a Battery Test (FP0558 only). This is not necessary for New Zealand
                   operation since a 40 minute battery test at the RDU is initiated with every FIP
                   auto test.

Step 7:   Check that the LCD is showing the 'System Normal' base display and that the
                   Mains On LED is on (FP0558 only).

Step 8:   Record the results of these tests in the Log Book.

Step 9:   Inform the Brigade and all others concerned that the test is concluded.

11.2.2   MONTHLY TESTING

In addition to the Weekly Testing described above, perform the following monthly tests:

Step 1:   Test outputs and audible alarms.

Step 2:   Perform an LED and Display test.

Step 3:   Visually inspect the cabinet and panel to ensure it is clean, operable and
                   intact. Inspect the dust seal, and ensure that it is undamaged.

NOTES:

1.   If there are Mimics, repeater Panels, etc connected to the RDU; these also require
          testing and inspecting.

2.   The integrity of the RDU is only as good as that of the FIP from which it receives
          status information. As such the FIP must also be adequately maintained and tested,
          preferably at the same time as the RDU is tested. Please refer to the FIP Operator's
          Manual for the relevant system test procedure.

11.2.3   ANNUAL TESTING

Australian Standard AS1851.8 requires that all fire detection and alarm systems be
thoroughly tested each year by a competent service/maintenance company.

The service/maintenance company should ensure that the performance of the procedure set
out in AS1851.8 is witnessed by the owner of the RDU System installation, or the owner's
authorised agent.

For New Zealand operation, regular and annual testing is required. For details, refer to
Vigilant Maintenance Manual, Fire Alarm Systems, (company confidential), and NZS 4512.