

Head Office

Wellington

PO Box 35-063
Naenae
17 Eastern Hutt Rd
Wingate
Lower Hutt
Tel (04) 567-3229
Fax (04) 567-3644

www.pertronic.co.nz

sales@pertronic.co.nz
tech@pertronic.co.nz

Auckland Office

PO Box 15-867
New Lynn
119 Lansford Cres
Avondale
Auckland
Tel (09) 820-8228
Fax (09) 820-8284



ISO 9001: 2000

International Standards
Certifications
QAC/R61/0051

**PERTRONIC
MINI-MIMIC
TECHNICAL MANUAL
NEW ZEALAND**

Valid For:

**PCB Hardware: v1.34.xx and greater
PCB Firmware: v2.26**

Issue 2

The contents of this manual are copyright.

**This document is to be used only for operating
Pertronic Fire Alarm systems.**

**This document is not to be reproduced,
photocopied or passed in part or whole to a third
party without the express, written authorization of
Pertronic Industries Ltd**



Acronyms:

EOL	End of Line	- end of line termination, nominally 470Ω Resistor, used to monitor the presence and integrity of the RS485 bus
------------	-------------	---

Glossary:

F100A	Pertronic F100A series Fire Alarm Panel
F120A	Pertronic F120A series Fire Alarm Panel
NDU	Network Display Unit



CONTENTS

1. INTRODUCTION	1
1.1 LCD Mini-Mimic	1
1.2 Functional Description	2
1.3 Specification	3
2. MODELS	4
2.1 MINI-MIMIC with ZONE ALARM (NZS4512:2003): F100AMMRZ-3	4
2.2 MINI-MIMIC with LOCAL ALARM RESET (NZS4512:2003): F100AMMR-3	4
2.3 MINI-MIMIC with NEXT (NZS4512:2003): F100AMM-3	4
2.4 MINI-MIMIC with LOCAL ALARM RESET (NZS4512:1997): F100AMMR	5
2.5 MINI-MIMIC NZS4512:1997: F100AMM	5
3. COMMISSIONING	6
3.1 Configurable Settings	6
3.2 Installation	7
3.3 Firmware Configuration:	9
4. OPERATION	11
4.1 Normal Mode	11
4.2 Alarm	11
4.3 Evacuate	11
4.4 Sprinkler Operation	11
4.5 Communication Error	11
5. PRODUCT CODES	12

FIGURES

Figure 1.1 LCD Mini-Mimic	1
Figure 1.2 Mini-Mimic PCB Layout	1
Figure 2.1 LCD Mini-Mimic with Zone Alarm (2003)	4
Figure 2.2 LCD Mini-Mimic with Reset (2003)	4
Figure 2.3 LCD Mini-Mimic with Next (2003)	4
Figure 2.4 LCD Mini-Mimic with Reset (1997)	5
Figure 2.5 LCD Mini-Mimic (1997)	5
Figure 3.1 Mini-Mimic Configuration	7

1. INTRODUCTION

1.1 LCD Mini-Mimic

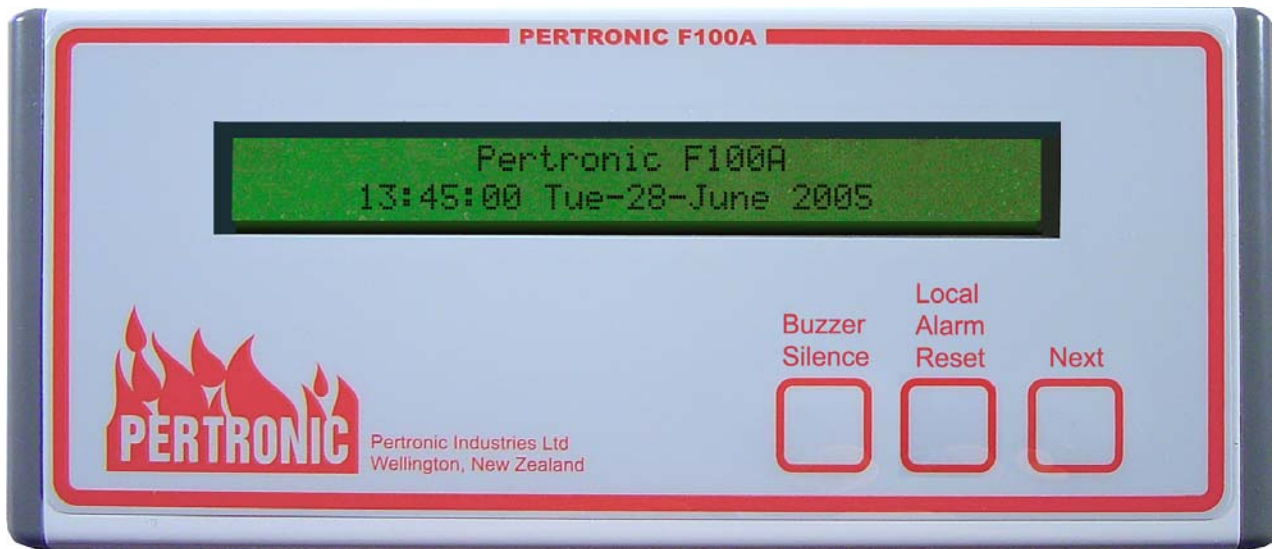


Figure 1.1 LCD Mini-Mimic

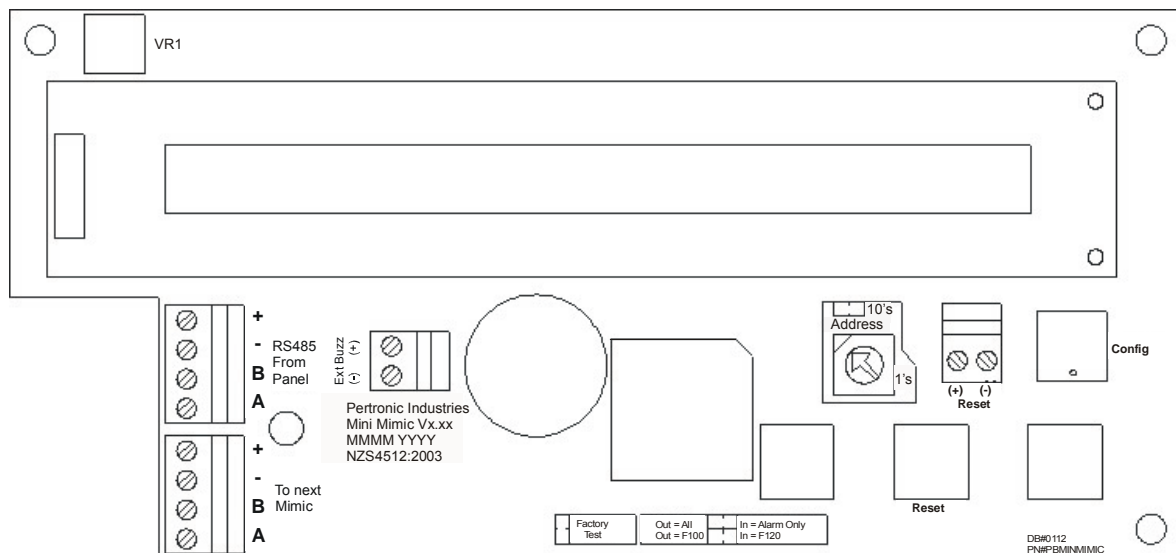


Figure 1.2 Mini-Mimic PCB Layout



1.2 Functional Description

The **Pertronic Mini-Mimic** allows **F100A** and **F120A** Fire Alarm messages to be displayed at locations remote from the Fire Panel.

There are currently five (5) configurations of **Mini-Mimic** available:

Standard Features:

LCD MINI-MIMIC NZS4512:1997: F100AMM

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- May be configured to display all messages, or 'Alarm'(s) only.
- Local buzzer with extension buzzer (100mA maximum) output.
- 'Buzzer Silence' switch: cancels the in-built buzzer.
- Low Power Consumption.

Optional Features:

LCD MINI-MIMIC NZS4512:2003: F100AMM-3

- 'Next' switch: allows selection of queued messages.
- Can connect to NDU Network card on a Pertronic network.

LCD MINI-MIMIC with ALARM RESET NZS4512:1997: F100AMMR - as for F100AMM, plus;

- 'Local Alarm Reset' switch: resets 'Non-Brigade Calling' detectors.
- 'Next' switch: allows selection of queued messages.

LCD MINI-MIMIC with ALARM RESET NZS4512:2003: F100AMMR-3 - similar functions to F100AMM-3 with following differences:

- includes:
 - 'Local Alarm Reset' switch: resets 'Non-Brigade Calling' detectors.
- excludes:
 - able to connect to NDU Network card on a Pertronic network.

LCD MINI-MIMIC with ZONE ALARM NZS4512:2003: F100AMMRZ-3 - similar functions to F100AMM-3 with following differences:

- includes:
 - Zone Select: configured to operate in 'Alarm Only' mode in selected zone(s).
 - Displays up to 40 'Alarms' simultaneously
 - Can be allocated any of Zones 1 to 255 (Note: the F100A supports up to 128 zones)
 - Local Alarm Reset' switch: resets 'Non-Brigade Calling' detectors in the selected zone(s).
- excludes:
 - able to connect to NDU Network card on a Pertronic network.



Summary of Mini-Mimic Features:

Feature	F100AMM	F100AMM-3	F100AMMR	F100AMMR-3	F100AMMRZ-3
2-line, 40-character, alpha-numeric LCD display	Yes	Yes	Yes	Yes	Yes
Backlit LCD Display in 'Alarm' State	Yes	Yes	Yes	Yes	Yes
Messages Displayed	Configurable: 'All' or 'Alarms Only'	Configurable: 'All' or 'Alarms Only'	Configurable: 'All' or 'Alarms Only'	Configurable: 'All' or 'Alarms Only'	'Alarms Only'
Local Buzzer	Yes	Yes	Yes	Yes	Yes
Extension Buzzer Output	Yes	Yes	Yes	Yes	Yes
'Buzzer Silence' Switch	Yes	Yes	Yes	Yes	Yes
'Local Alarm Reset' Switch	No	No	Yes	Yes	Yes
'Next' Switch	No	Yes	Yes	Yes	Yes
Zones Displayed	All	All	All	All	Configurable
Network Compatibility	No	Yes	No	No	No

1.3 Specification

Dimensions: H x W x D mm 105 x 236 x 31

Power Supply: Quiescent: 5mA
Alarm: 46mA @ 27Vdc
52mA @ 20Vdc

Mimic Communications: RS-485 Serial Link
+ +24Vdc
- 0V
A Data 'A' Leg
B Data 'B' Leg

The **LCD MINI-MIMIC with ZONE ALARM** is designed for use in situations where 'Alarm' indication is required for selected Fire Zones only. In such situations, 'Alarm' indications in unrelated Fire Zones or 'Defect' or other 'System' messages are unnecessary and simply create confusion: a typical use is at Nurse Stations.

The mimic can be programmed to display 'Alarms' in Zones 1 to 255. The Zones are configured directly at the Mimic and are stored in non-volatile memory.

The Mimic may be connected in either 'Polled' or 'Slave' mode. In Polled mode, the connection to the Mimic is monitored by the Fire Alarm Panel. For operation in Non-Brigade RESET mode, a Polled connection is required .

2. MODELS

2.1 MINI-MIMIC with ZONE ALARM (NZS4512:2003): F100AMMRZ-3

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- Displays up to 40 'Alarms' simultaneously
- Can be allocated any of Zones 1 to 255 (Note: the F100A supports up to 128 zones)
- Local buzzer with extension buzzer output.
- 'Buzzer Silence' switch: cancels the in-built buzzer.
- 'Local Alarm Reset' switch: resets 'Non-Brigade Calling' detectors in the selected zone(s).
- 'Next' switch: allows selection of queued messages.
- Zone Select: configured to operate in 'Alarm Only' mode in selected zone(s).
- Low Power Consumption.



Figure 2.1 LCD Mini-Mimic with Zone Alarm

2.2 MINI-MIMIC with LOCAL ALARM RESET (NZS4512:2003): F100AMMR-3

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- Displays up to 40 'Alarms' simultaneously
- May be configured to display 'Alarm Only' or 'All' messages, includes 'Defect' and 'System' messages.
- Local buzzer with extension buzzer output.
- 'Buzzer Silence' switch: cancels the in-built buzzer.
- 'Local Alarm Reset' switch: resets 'Non-Brigade Calling' detectors.
- 'Next' switch: allows selection of queued messages.
- Low Power Consumption.



Figure 2.2 LCD Mini-Mimic with Reset (2003)

2.3 MINI-MIMIC with NEXT (NZS4512:2003): F100AMM-3

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- Displays up to 40 'Alarms' simultaneously
- May be configured to display 'Alarm Only' or 'All' messages, includes 'Defect' and 'System' messages.
- May be configured as a Network Display Unit on a Pertronic network.
- Local buzzer with extension buzzer output.
- 'Buzzer Silence' switch: cancels the in-built buzzer.
- 'Next' switch: allows selection of queued messages.
- Low Power Consumption.



Figure 2.3 LCD Mini-Mimic with Next (2003)

2.4 MINI-MIMIC with LOCAL ALARM RESET (NZS4512:1997): F100AMMR

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- Displays up to 40 'Alarms' simultaneously
- May be configured to display 'Alarm Only' or 'All' messages, includes 'Defect' and 'System' messages.
- Local buzzer with extension buzzer output.
- 'Buzzer Silence' switch: cancels the in-built buzzer.
- 'Local Alarm Reset' switch: resets 'Non-Brigade Calling' detectors.
- Low Power Consumption.



Figure 2.4 LCD Mini-Mimic with Reset (1997)

2.5 MINI-MIMIC NZS4512:1997: F100AMM

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- Displays up to 40 'Alarms' simultaneously
- May be configured to display 'Alarm Only' or 'All' messages, includes 'Defect' and 'System' messages.
- Local buzzer with extension buzzer output.
- 'Buzzer Silence' switch: cancels the in-built buzzer.
- Low Power Consumption.



Figure 2.5 LCD Mini-Mimic (1997)

3. COMMISSIONING

3.1 Configurable Settings

3.1.1 Switches

Five switches are provided:

Switch	Description	Function
SW1	Decade switch	Selects the RS485 address units (1s) digit.
S1	Momentary switch	Silences the Buzzer.
S2	Momentary switch	Resets 'Non-Brigade Calling' alarms.
S3	Momentary switch	Configures the Mini-Mimic.
S4	Not Used	
S5	Momentary switch	Selects the Next item on the queue displayed.

3.1.2 Connectors

Four connectors are provided:

Connector	Description	Function
K2	four-pin plug	provides connection to the RS485 bus input.
K5	two-pin plug	provides an Extension Buzzer - 100mA maximum.
K6	two-pin plug	extends the Reset switch for remote operation.
K10	four-pin plug	provides connection to the RS485 bus output.

3.1.3 Jumper Links

Five jumper Links are provided:

Jumper	Function
LK1	Selects whether the Mini-Mimic is compatible with an F100A or F120A Fire Panel.
Absent	F100 Panel or Network Mimic (Network available with F100AMM-3 only).
Fitted	F120 Panel mimic.
LK2	Selects whether the Mini-Mimic displays all messages, or Alarm messages only.
Absent	All messages, including Defect and System messages displayed.
Fitted	Alarm messages only displayed.
LK3	Not Used.
LK4	Selects Factory Test: Do NOT fit on site.
Absent	System use.
Fitted	Factory Test.
LK5	Selects the RS485 address 10s digit.
Absent	Units (1s).
Fitted	Tens (10s).
LK6	Selects the Address mode in use.
Absent	Standard Hardware Address mode.
Fitted	Enhanced Firmware Address mode.

3.1.4 Variable Potentiometer

One pot (VR1) is provided:

Variable Pot	Function
VR1	Adjusts the LCD contrast.

3.2 Installation

3.2.1 Hardware Installation/Commissioning

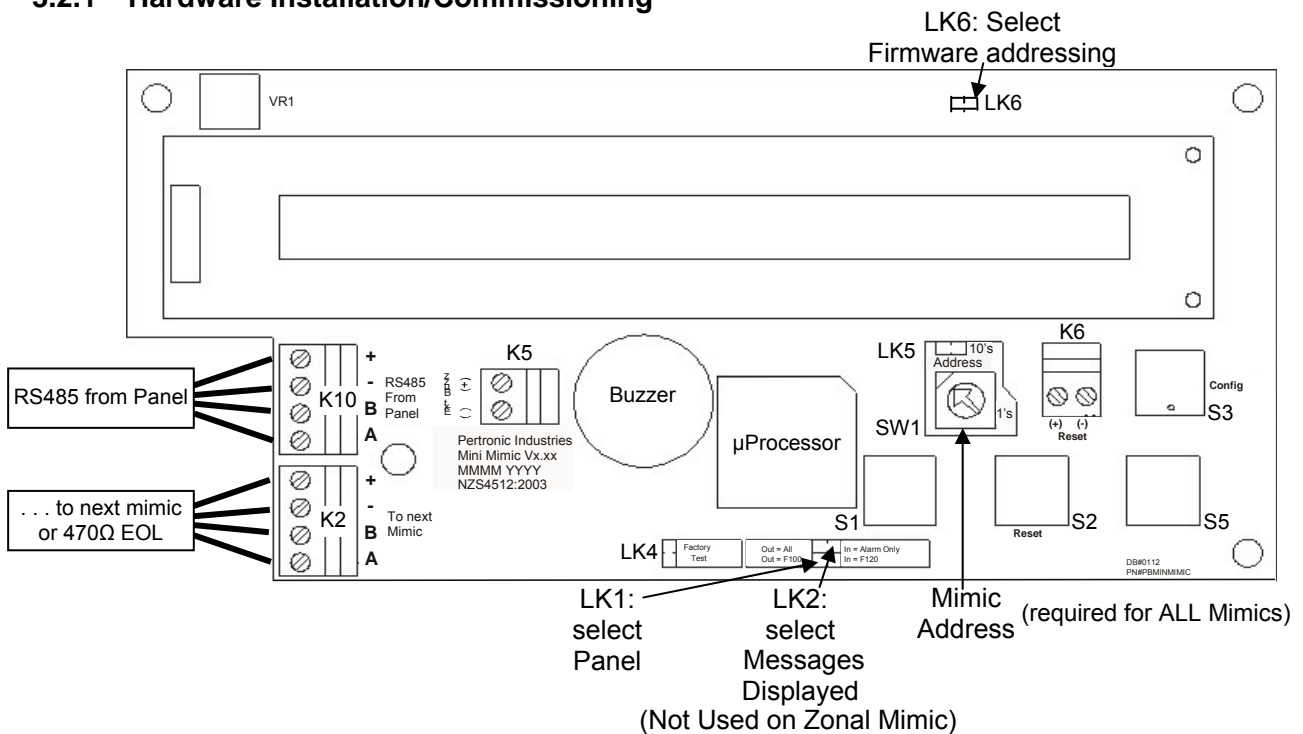


Figure 3.1 Mini-Mimic Configuration

1. Wire SGD Cable (DC Supply and RS-485 twisted pair) from the Pertronic Fire Panel to the Mini-Mimic connector K10 and wire from connector K2 to the next RS485 Mimic device.
2. Connect a 470Ω resistor into the A and B terminals of K2 to provide End-of-Line termination on the last device (LCD or LED Mimic).
3. Set the 'Address'. three methods are available:
 - a) Hardware Address Selection:
 - Link 5 (LK5) sets the 10s digit.
 - Switch 1 (SW1) selects the units digit.
 - b) Enhanced (Firmware) Address Selection:
 - applies only to Mimics with PCB v1.35 or later, and with firmware v2.24 or later.

Link LK6 provides two functions:

- (i) extends the addressable range beyond 19 for **F120A** and Network LCD Mini-Mimics.
- (ii) configures an LCD Mini-Mimic as a Network mimic

Fitting Link LK6 is not a valid setting for a **F100A** mimic.

Insert Link LK6 to program the RS485 address, overriding the physically selected address. This allows the address range to be extended to 32. Currently the F120 supports up to 19 addresses, while a mimic on a network card may have addresses 0 to 7. The network function is described below in c).



Set the Address: The LCD addresses must be contiguous and start from 1 for **F100A** and **F120A** panels (the panel display is Address 0) and start from 0 for Network LCD Mimics.

Insert LK6, then press **Config** (S3) briefly to enable programming mode. The LCD shows the address currently stored.

Press **Next** (S5) to increase the address by one or press **Reset** (S2) (if fitted) to clear the address back to 0.

Repeatedly press **Next** to scroll up through all addresses from 0 to 32 and then back to 0. Once the required address is displayed, press **Config** again to store the selected address in EEPROM and reset the Mimic.

Valid Address values for a polled mimic are:

- F100A** 1 to 8
- F120A** 1 to 19
- Network 0 to 7

- a maximum of 32 devices may be connected to the External RS485 port.

Notes: - if Link LK6 is removed while the Mimic is operating (power connected), the address automatically reverts to the hardware address set by switch SW1 and Link LK5 - as described above. However, the soft address is stored and is used if and when Link LK6 is restored.

c) **Network Application:** (F100AMM-3 only):

LCD Mini-Mimics may be connected to the network using Network Supervisor cards configured as NDU. LCD Mimi-Mimics are connected to each Network 'NDU' board using addresses 0 to 7. The maximum number of Network Display Units (NDU) and Mini-Mimics which can be connected to each Network 'NDU' board is eight (8).

Network LCD Mini-Mimics include the 'Buzzer Silence' and 'Next' buttons, but not the 'Local Alarm Reset' button.

To address an LCD Mini-Mimic for a network, the following links must also be set:

- Link 1 (LK1): selects the Mini-Mimic as compatible with an **F100A** or Network 'NDU' board.
- Link 6 (LK6): identifies the mimic is a network device – fitting LK6 has no valid function on a mimic connected to an **F100A** panel.

The default message on a Network Mini-Mimic is: 'System Normal'

The default display message on a **F100A** Mini-Mimic is: 'F100 System Normal'

The default display message on a **F120A** Mini-Mimic is: 'F120 System Normal'

F100 (use Hardware addressing)	F120 (use Hardware or Firmware addressing)	Network NDU (use Firmware addressing)	Function
Address 0	Hard Address 0		Slave LCD Mini-Mimics - Display only! See 3c for Network application.
Address 1 to 8	Address 1 to 19	Firm Address 0 to 7 (F100AMM-3 only)	Polled LCD Mini-Mimics - allows "missing device" notification
Address 9+	Firm Address 20+	Firm Address 8+ (F100AMM-3 only)	Non-Polled LCD Mini-Mimics

For all Mini-Mimics except the **Zonal Alarm Mimic**:

4 Set the 'Panel' link:

Link 1 (LK1): OUT for the **F100A** panel or Network.

Link 1 (LK1): IN for the **F120A** panel.

5. Set the 'Messages Displayed' link:

Link 2 (LK2): OUT to display ALL messages, including Defect and System.

Link 2 (LK2): IN to display ALARM messages only.

3.3 Firmware Configuration:

Required ONLY for the LCD MINI-MIMIC with ZONE ALARM NZS4512:2003: F100AMMRZ-3.

3.3.1 Zone Allocation Configuration:

the Zone Allocation selects which zone(s) the Mimic will report. With no zone allocation configured, the Mimic displays Alarms in all zones by default.

To configure the Mimic to respond to specific zones, enter the configuration menu by pressing the 'Config' Button on the Mimic PCB.

The LCD Display is :

```

Select Function F1 Show Zones
                    F2 Edit Zones
  
```

Press: F1 to enter the Show Zone menu
 F2 to enter the Edit Zone menu
 F3 or Config to exit.

3.3.1.1 Show Zone Menu

```

Show Zones Use F1 <-- F2--> F3 Exit
Z001,Z003-Z005,Z023-Z026,Z100,
  
```

↑ Entry Separator ↑ Zone Range ← More entries off-screen to the right

The LCD shows the following information:

- Zone 1 selected
- Zone 3 to 5 selected.
- Zone 23 to 26 selected
- Zone 100 selected

Each Zone Number is separated by:

- a comma - indicates a single entry
- a dash - indicates a range of entries
- a semi-colon - indicates the end of the list.

Use the F1 or F2 keys to scroll the list left or right.

```

Show Zones Use F1 <-- F2--> F3 Exit
,Z003-Z005,Z023-Z026,Z100,Z120-125;
  
```

← More entries off-screen to the left ↑ End of List

Press F2 to reveal more zonal configuration data.
 Press F3 to Exit when complete.

3.3.1.2 Edit Zone Menu

The 'Edit Zone' menu displayed is similar in format to the 'Show Zone' display, with a cursor flashing at the zone or function currently selected.

A typical display is shown below:

```

Edit Zones Use F1 <-- F2--> F3 Select
Z001,Z003-Z005: Add Exit
  
```

- this screen illustrates Zone 1 is selected.

Press F2 to scroll the display right selecting the next zone,

```

Edit Zones Use F1 <-- F2--> F3 Select
Z003-Z005: Add Exit
  
```

- this screen illustrates Zones 3 to 5 are selected.

Press F3 to change the selected zone.

The LCD will then show:

```

Edit Zones Use F1 <-- F2--> F3 Select
Z003-Z005: Save Exit
  
```

↑ ↑ ↑
 Start Range End
 Zone Zone

The Cursor can be scrolled over the digits of the start and end zones, over the range selection and through the 'Save' and 'Exit' options.

With the cursor over the required zone, use F3 to increment the zone number. A single zone or range of zones can be selected by moving the cursor until it is over the range identifier and pressing F3. The example below shows a single zone selection.

```

Show Zones Use F1 <-- F2--> F3 Select
Z010: Save Exit
  
```

↑
 Selected
 Zone

The cursor can be moved over the digits of the selected zone, range, 'Save' and 'Exit' options. Press F3 to select the required zone, range mode.

To Save the changes move the cursor over the 'Save' option and press F3 - the new zone configuration will be saved, the display will then return to the main 'Zone Edit' display.

To Cancel any changes made, move the cursor over the Exit option and press F3 - the display will return to the main 'Zone Edit' display.

To Configure a new zone, move the cursor over the 'Add' Option and press F3 - the entry method is as per the 'Zone Edit' function above.

When Editing is complete, move the cursor over the 'Exit' option and press F3.

A Single Zone entry can be deleted by editing the zone and pushing 'Save' – F3.

3.3.1.3 Default Configuration State.

The Zonal Mimic is supplied without any zones selected - in this state the mimic displays 'Alarms' for ALL Zones.

To restore the mimic to the default state, apply power to the PCB with the 'Config' Key pressed. After the configuration has been cleared the Mimic will enter the configuration menu above.

4. OPERATION

4.1 Normal Mode

In 'Normal' operation with no 'Alarm's or 'Fault's on the system, the Mimic displays:

```
Pertronic Industries
F100 Zonal Alarm Mimic
```

4.2 Alarm

When an 'Alarm' occurs the Mimic's buzzer will sound and typically display:

```

System Status      Device Address      Device Zone
  ↓                ↓                ↓
** ALARM ** L01D04 Zone 001
Bedroom 2 South Wing                               AL:01/03
  ↑                ↑
Descriptor      Alarm Counter

```

Press the Buzzer Silence button to mute the buzzer - this mutes the local mimic buzzer only. If there is more than one 'Alarm' message, the 'Next' button scrolls through the 'Alarm' messages. The Mimic automatically scrolls through all 'Alarm' messages after a period of no activity. Press the Reset button to reset any 'Non-Brigade' calling devices, which are in 'Alarm' Note: this also resets activated ('Alarm') devices in zones that are not configured to be displayed by this Mimic.

4.3 Evacuate

When the Fire Alarm Panel is in 'Evacuate' mode, the Mimic's buzzer sounds and typically displays:

```
EVACUATE !!
```

4.4 Sprinkler Operation

When the Fire Alarm Panel's 'Local Sprinkler' input or a module configured to generate a Sprinkler system event has activated, the Mimic's buzzer sounds and typically displays:

```
SPRINKLER OPERATED !!
```

4.5 Communication Error

If communication is lost between the Mimic and the Fire Alarm Panel, the Mimic's buzzer sounds and typically displays:

```
RS485 FAILURE !!
```

5. PRODUCT CODES

Description	Code
F100A LCD Mini Mimic - NZS 4512:2003	F100AMM-3
F100A LCD Mini Mimic with Alarm Reset - NZS 4512:2003	F100AMMR-3
F100A LCD Mini Mimic c/w Reset & Zone Select - NZS 4512:2003	F100AMMRZ-3
F100A LCD Mini Mimic - NZS 4512:1997	F100AMM
F100A LCD Mini Mimic with ALA Reset - NZS 4512:1997	F100AMMR
F100 LCD Mini Mimic Flush Mounting Escutcheon	F100AMME
Network Card - F100/F120 Panels/LED Mimics	NETCARD
Network Card for Network Control / Display Unit	NETCD-NCU
SGD Cable Internal: Twisted Pair @ 0.5mm ² ; 2 Core @ 0.8mm ² ; 250m Drum	SGDCI
SGD Cable External: Twisted Pair @ 0.5mm ² ; 2 Core @ 1.13mm ² ; 500m Drum	SGDCE
SGD Cable Internal (Fire Rated): Twisted Pair @ 16/0.2mm ² , 2 Core @ 16/0.2mm ² , 100m Drum	SGDCIFR

Document Change History

Issue Number	Date	Reason for Update	Description of Changes	Author
Issue 1:	February 2006	First full release.		GeoffT
Issue 1.1:	June 2006	Minor cosmetic changes	Section: 1.2: Remove reference to F16e and change bullet format. Section: 2: Change bullet format	
Issue 2	May 2007	Buzzer Extension Adapt to Network requirements	Section: 1.2 and 3.1.2: add maximum current. Section: 3: Network facilities added	GeoffT AlbertvV