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
E-mail rob.fenton
@pertronic.co.nz

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International Standards
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PERTRONIC
MINI-MIMIC
TECHNICAL MANUAL
NEW ZEALAND

Valid For:
PCB Hardware: v1.34.xx and greater
PCB Firmware: v2.26 and v3.00

Issue 2.3

Acronyms:

EOL	End of Line	End-of-line termination, normally a 470Ω Resistor, used to Impedance match the RS485 bus.

Glossary:

F100A	Pertronic F100A series Fire Alarm Panel
F120A	Pertronic F120A series Fire Alarm Panel

CONTENTS

FIGURES

1. INTRODUCTION

1.1 LCD Mini-Mimic

Figure 1.1 LCD Mini-Mimic

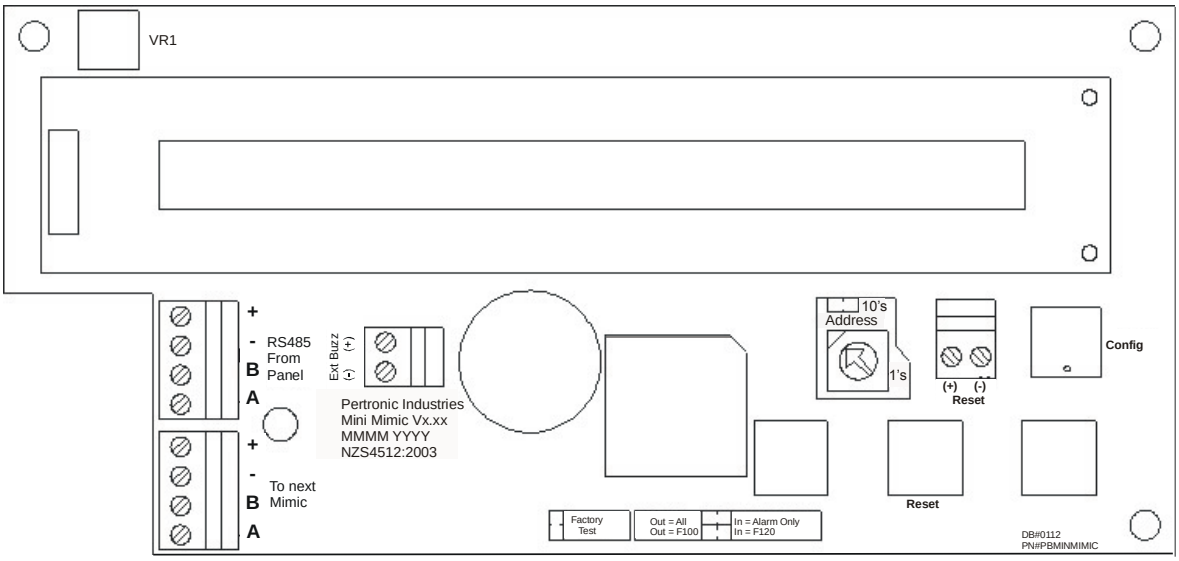


Figure 1.2 Mini-Mimic PCB Layout

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 the **Mini-Mimic** available.

Standard Features, applicable to all five, include the following**:**

- 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, in addition to the standard features above, apply to the models shown:

LCD MINI-MIMIC NZS4512:2003: F100AMM-3

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

LCD MINI-MIMIC with ALARM RESET NZS4512:1997: F100AMMR (Note 1)

- '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(Note 1)

Similar to F100AMM-3, but the following differences apply:

- 'Local Alarm Reset' switch, which resets 'Non-Brigade Calling' detectors.

LCD MINI-MIMIC with ZONE ALARM NZS4512:2003: F100AMMRZ-3(Note 1)

Similar to F100AMM-3, but the following differences apply:

- Zone Select, which is configured to operate in 'Alarm Only' mode in selected zone(s).
- Ability to display 30 'Alarms' simultaneously.
- Can be allocated any of Zones 1 to 255**(Note 2)**
- Compatible with F120 Zone number Offset feature

Note1–Cannot be connected to a Supervisory Network Card on a Pertronic Network

Note2–F100A supports up to 128 Zones.

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' 'Alarms Only'	Configurable: 'All' 'Alarms Only'	Configurable: 'All' Alarms Only'	Configurable: 'All' '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 an 'Alarm' indication is required only for selected Fire Zones. 'Alarm' indications for unrelated Fire Zones and 'Defect' (or other 'System') messages are unnecessary in this case—and such messages could simply create confusion. A typical use for this Mini-Mimic model 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

Figure 2.1 LCD Mini-Mimic with Zone Alarm

Features include:

- 2-line, 40-character, alpha-numeric LCD display.
- Back-lit LCD Display in 'Alarm' Condition.
- Displays up to 30 '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.

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

Figure 2.2 LCD Mini-Mimic with Reset (2003)

Features include:

- 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.

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

Figure 2.3 LCD Mini-Mimic with Next (2003)

Features include:

- 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.

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

Figure 2.4 LCD Mini-Mimic with Reset (1997)

Features include:

- 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.

2.5 MINI-MIMIC NZS4512:1997: F100AMM

Figure 2.5 LCD Mini-Mimic (1997)

Features include:

- 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.

3. COMMISSIONING

3.1 Configurable Settings (see fig 3.1)

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

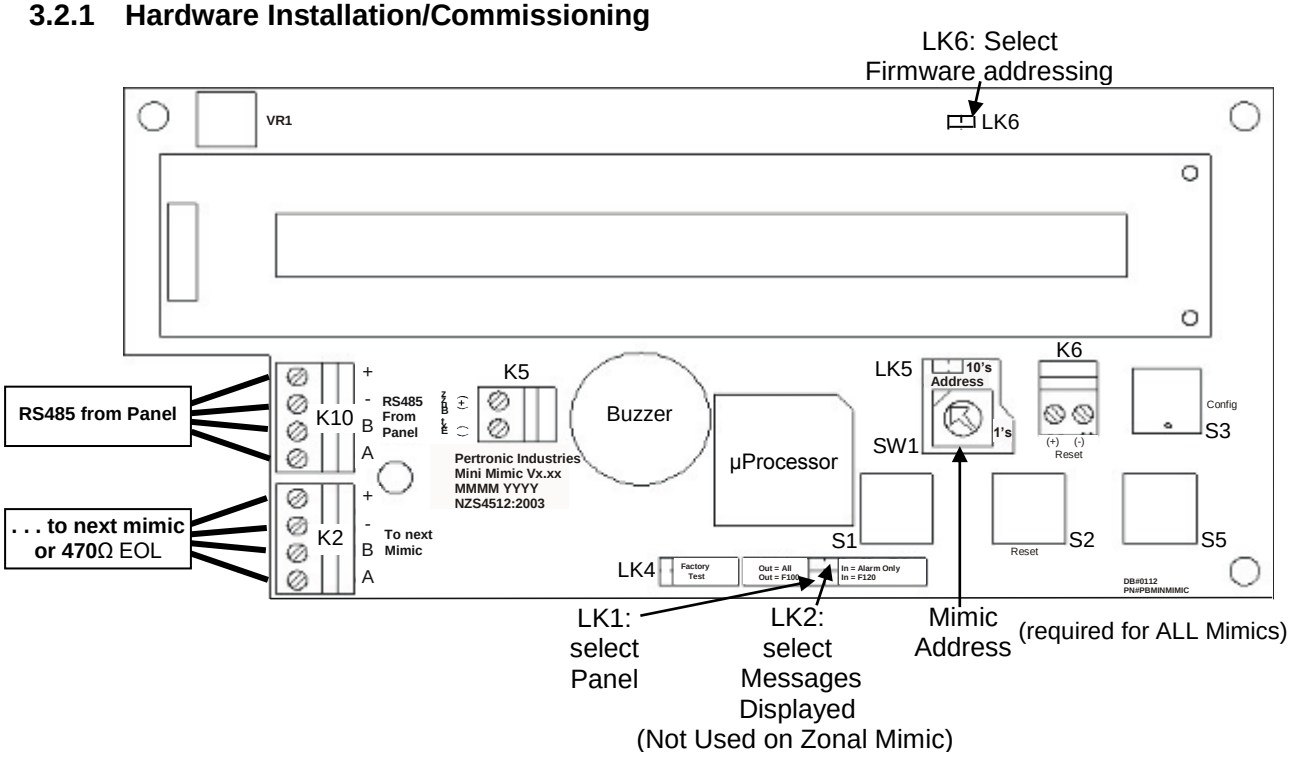


Figure 3.1 Mini-Mimic Configuration

Refer to the diagram above, and follow the steps below to install the Mini-Mimic:

1. Wire the 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 on the last device (LCD or LED Mimic) to provide impedance matching.
3. Set the 'Address.' Three methods are used for setting the address:
    a. **Hardware Address Selection** from the Mini-Mimic's circuit board.
        - Use Link 5 (LK 5) to set the 10s digit.
        - Use Switch 1 (SW1) to select the units digit.
    b. **Enhanced (Firmware) Address Selection**, which applies only to Mimics with PCB v1.35 or later and with firmware v2.24 or later.
    c. **Network Applications**—see section 3.2.3 on the next page.

[The final two installation steps apply to 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.

3.2.2 Extended Address Range/Network Mimics

The mimic can operate with an extended address range. The address range is extended beyond 19 for F120A and Network LCD Mini-Mimics by fitting link LK6. Link LK6 also configures the LCD Mini-Mimic as a Network mimic.

Note: Fitting Link LK6 is not a valid setting for an F100A Mini-Mimic.

The insertion of LK6 allows the RS485 address to be extended, overriding any physically selected address. The address range can be extended to 32; however, the F120 will only support up to 29 addresses.

Mimics on a network card may have addresses 0 to 7. (See 3.2.3, Network Application.)

Link LK6 provides two functions:

- It extends the addressable range beyond 19 for **F120A** and Network LCD Mini-Mimics.
- It 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 29 addresses, while a mimic on a network card may have addresses from 0 to 7. The network function is described below in section 3.2.3.

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. To set an address, follow these steps:

1. **I**nsert LK6, and then press **Config** (S3) briefly to enable programming mode. The LCD shows the address currently stored.
2. Press **Next** (S5) to increase the address by one, or press **Reset** (S2), if fitted, to clear the address back to 0.
3. Repeatedly press **Next** to scroll up through all addresses from 0 to 32, and then back to 0.
4. 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
F**120A**	1 to 29
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 it is used if Link LK6 is restored.

3.2.3 Network Application (F100AMM-3 only)

This applies when LCD Mini-Mimics are 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 3.2.3 for Network application.
Address 1 to 8	1 to 19 Hard Addresses; 20 to 29 Firm Addresses.	Firm Address 0 to 7 (F100AMM-3 only)	Polled LCD Mini-Mimics - allows "missing device" notification
Address 9+	Firm Address 30+	Firm Address 8+ (F100AMM-3 only)	Non-Polled LCD Mini-Mimics

3.3 Firmware Configuration:

Configuration of firmware is required ONLY for the LCD MINI-MIMIC with ZONE ALARM NZS4512:2003: F100AMMRZ-3.

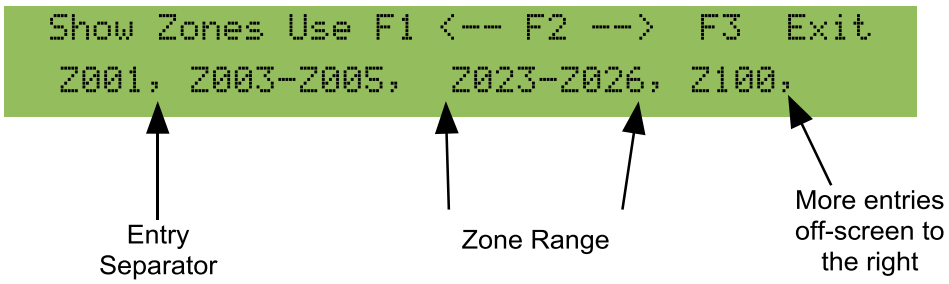
3.3.1 Zone Allocation Configuration:

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 will look as shown below.

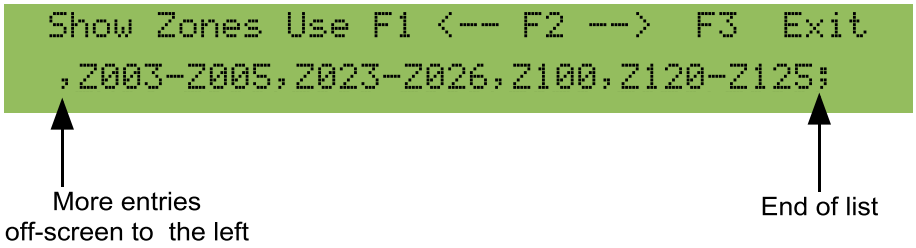
Press: F1 to enter the Show Zone menu
F2 to enter the Edit Zone menu
F3 or Config to exit.

3.3.1.1 Show Zone Menu



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.



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

3.3.1.2 Edit Zone Menu

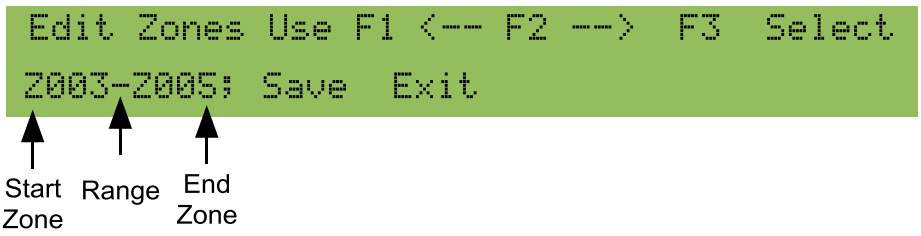
The 'Edit Zone' menu displayed is similar in format to the 'Show Zone' display, with a cursor flashing at the zone or function currently selected.
A typical display is shown below:

This screen illustrates that Zone 1 is selected.

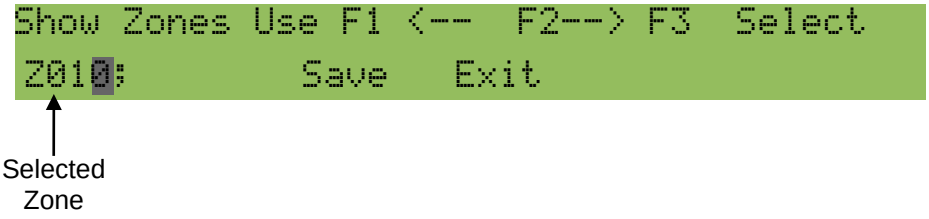
Press F2 to scroll the display right selecting the next zone,

This screen illustrates that Zones 3 to 5 are selected.

Press F3 to change the selected zone.
The LCD will then show the following:



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.



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, and 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 the same as 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.

3.3.2 Selecting Zones that use Zone Offset numbering (F120 only)

If the Zonal Mimic is connected to an F120 panel that is configured to use the Zone Offset feature then the zone numbers to be used to configure the mimic are set as follows:

Displayed Zone # (From F120) – Zone Offset

Some examples are shown in the table below.

F120 Zone Range	Offset	Zonal Mimic Zone Range
1–255	0	1–255
256-510	255	1–255
511-765	510	1–255
50–305	50	1–255

3.3.3 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 Zonal Mimic

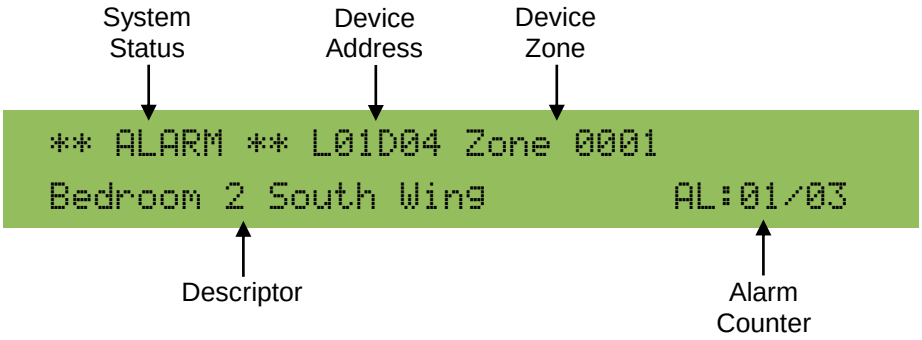
4.1.1 Normal Mode

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

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

4.1.2 Alarm

When an ‘Alarm’ occurs, the Mimic’s buzzer will sound and typically display:



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.

4.1.3 Evacuate

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

```
EVACUATE !!
```

4.1.4 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 !!
```

4.1.5 Communication Error

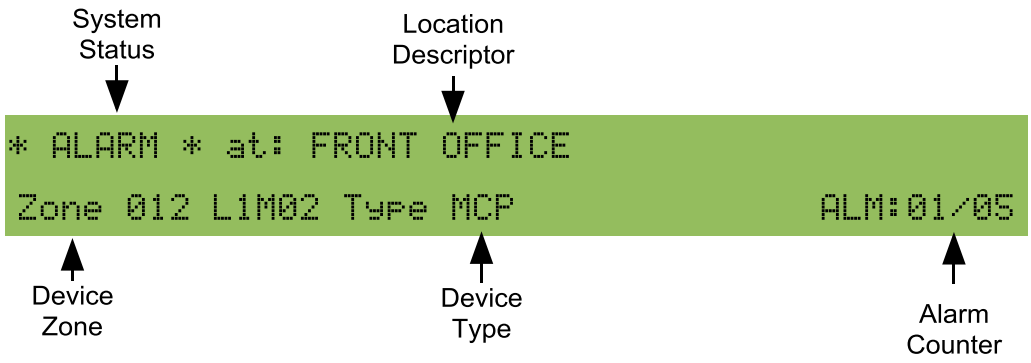
If communication is lost between the Mimic and the Fire Alarm Panel, the Mimic's buzzer sounds and typically displays:

4.2 F100 / F120 Mode (Except Zonal mimic)

The F100 panel displays information on a two-line 40 character display and the F120 uses a four-line 40 character display.
The information from the F100 is displayed on the Mini-Mimic as it appears on the panel whereas only selected information appearing on the F120 panel display appears on the mimic display.

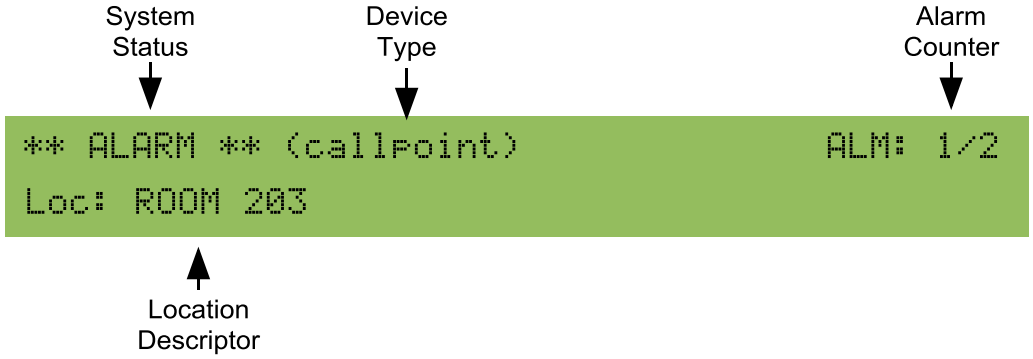
4.2.1 F100 Alarm Display

An example of a typical F100 Alarm display is shown below



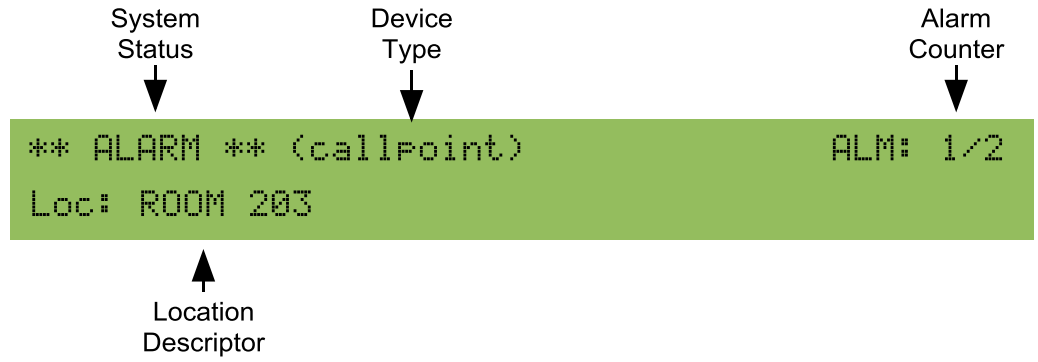
4.2.2 F120 Alarm Display (S/W Versions V2.26)

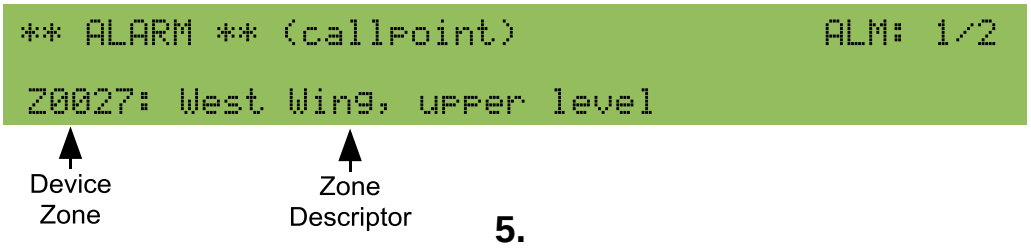
An example of a typical F120 Alarm display is shown below:



4.2.3 F120 Alarm Display (S/W Versions V3.0 or greater)

Version 3.0 software introduced alternating display of the **Alarm location descriptor** and the **Alarm Zone descriptor** on the second line of the display.
An example is shown below:





5.

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
Draft 2.1	May 2008	Terminating Resistor	Section 3.2.1	GeoffT
Issue 2.2	July 2010	Zonal Mimic update	Sections 1.2 and 2.1	SimonE
Issue 2.3	Apr 2013	CN 1456, CN1611	Section 4- Inclusion of F120 alternating line display Added F120 Zone Offset for Zonal mimic.	RDB