Vigilon

Analogue Addressble Fire Detection and Alarm System

Commissioning Manual

VIG-MAN-COM Issue 1

September 1999

(with changes to include issue 1-1_12/99)

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Preface

The issue 1.1 incorporates an appendix H to include information on the new back plane. The first issue covers the Vigilon products that are compatible with version 3+ (BS5839:Part 4) and version 4.XX (EN54) panel software. The manual is a guide to be read in conjunction with the recommendations in *BS5839:Part 1:1988,* which is the *code of practice for Fire detection and alarm system for buildings.* Where appropriate the site specific project specification should also be read.

Associated Documents

VIG-MAN-OPS-V3+	Operating Manual for Vigilon V3+ System
VIG-MAN-OPS	Operating Manual for Vigilon EN54 System
VIG-MAN-APP	Applications manual for Vigilon System
VIG-MAN-INS	Installation Manual for Vigilon System
SUP-MAN-OPS	Supervisor 3 Operators Manual

Conventions

NOTE: *A note highlights important text that is normally hidden in the main text.*

CAUTION: *A caution is given to prevent damage to equipment.*

WARNING: *A warning is given to advise of dangerous conditions that may result in injury or death.*

Issue Record

Section	Issue	Date	Comments
Prelims	1	9/99	
1 to 14	1	9/99	This first issue covers Commissioning of a Vigilon system.
App: A, B,C,D,E	1	9/99	
&F	1	9/99	Issue 1.1 incorporates an appendix H to include information on the new back plane
App H	1.1	12/99	
Parts	1	12/99	
Phone	1	9/99	

Customer feedback

If you have any comments on this manual, then please provide them below. Post completed sheet to the address overleaf or pass on to your area sales representative.

Thanks

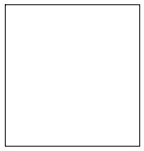
Your name:_____

Address:_____

_____

_____

Manual number and title_____



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Pre-visit checks

Preparation

- ❑ Ensure accurate *as fitted wiring drawings* are available, (2 copies).
- ❑ Any damaged equipment on site has been noted for replacement.
- ❑ Ensure access will be provided to system equipment.
- ❑ The installer *electrical contractor* will be in attendance until the installation is proved.
- ❑ Site contact or representative will be available during the visit.
- ❑ See also:
  - Beam sensor preparation
  - Commissioning Tools preparation
  - Mimic configurer preparation
  - Supervisor 3 preparation
  - Service Request Interface, see Appendix F.
- ❑ Carry spares such as:
  - MCP glasses
  - MCP test key
  - equipment door keys
  - and printer paper.

Pre-commissioning

- ❑ Check the installation of fire alarm equipment with reference to the most recent *as fitted wiring drawings.*
- ❑ Get the feel of the operating condition of areas on site and..
  - action the installer to carry out any rectification work plus
  - report discrepancies for administration purposes.
- ❑ Where the operating condition of an area is not right for the equipment installed, then an appropriate replacement action must be taken.
- ❑ Ensure the equipment is installed in accordance with the appropriate standards, see project specification.

Points worth remembering

> ***WARNING:*** *Take appropriate action to guard against the risk of equipment having exposed live mains supply. Hazardous voltage remains even after operation of protection fuse.*

EMC & LVD guidelines

- ❑ See installation manual

Mains supply

- ❑ The mains supply to the fire alarm control and indicating equipment must be via an *unswitched fused spur unit*.
- ❑ Ensure that the mains supply cable enters any mains powered equipment through a dedicated cable entry, located adjacent to the mains terminal block and is also segregated from any loop wiring.
- ❑ Each fire alarm equipment' fused spur units must be from a *dedicated switch or protective device* at the local mains supply *distribution board*, which should be clearly labelled FIRE ALARM - DO NOT SWITCH OFF.

Earth leads

- ❑ All *earth leads* supplied with the system equipment must be securely fitted to maintain earth continuity.

Parts for later installation

- ❑ All unused parts should be retained in their respective container for safe keeping until required.

Loop wiring

- ❑ The loop cable should have been connected to the appropriate terminals at each device, as shown in the installation manual in accordance with the *as fitted wiring drawings.* The final loop End connections to the control panel are made during commissioning.

Enclosure

- ❑ Access into equipment enclosure is usually by means of opening an outer door and in some cases an inner door.

Unattended equipment

- ❑ Where an equipment is to be left unattended, then it is important to secure its door and cover for safety.

Copper fingers

- ❑ Copper fingers are conductive spring like strips fitted in-between two metal assemblies, for example in-between door and backbox. This is done to shield against electromagnetic and radio frequency interferences.
- ❑ Ensure the copper finger strips are intact and no damage has occurred. Damaged fingers will re-introduce the gap to let in/out interferences.

Static precaution

- ❑ Anti-static procedures should be followed when handling *static sensitive boards.*

> ***WARNING:*** *The discharge of static electricity can damage or degrade sensitive electronic components on printed circuit board. Anti-static procedures should* ***not*** *be carried out on live equipment.*

Removal and disconnection

- ❑ Any disconnection of cables or removal of parts of an assembly must be replaced and restored.

Battery

- ❑ To prevent damage to battery and equipment, the terminals of the battery must not simultaneously touch any conductive part of the equipment enclosure.
- ❑ When powering-up an equipment always connect the mains supply before the battery supply. The power-down should be done in the reverse order.

> ***NOTE:*** *A small arcing may occur when the battery circuit is connected to the control and indicating equipment.*

Warning Buzzer

- ❑ During the commissioning of the system it may be necessary to switch *Off* the warning buzzer in the control panel.

> ***NOTE:*** *It is important to ensure that the buzzer is switched On for normal operation after commissioning.*

- ❑ The buzzer can be switched using the **[Test Eng]** menu in the *engineering mode.*

Fire plan

- ❑ The system should be tested in accordance with the project specification.

Sensor cover

- ❑ Each fire sensor should have been fitted with a *dust cover* during installation. The cover should be removed from each sensor after the panel loops have been satisfactorily powered-up and allocated.

Site specific installation

- ❑ Plant equipment interfaced to the system should be tested to the project specification.

Commissioning mode

- ❑ The control panels engineering facility will allow the system to operate in the commissioning mode. It is important to switch *Off* the mode after commissioning is over, to ensure the system operates normally.

Software version

- ❑ The products refereed to in this document are compatible with version 3+ and version 4.XX (EN54) software. It is important to check the appropriate card and chips show the correct software version.

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Control panel assembly & power-up

Preparation

- ❑ It is important to make *responsible persons* on site aware that the system is being commissioned.

Checking the parts supplied

- ❑ The first fix package VIG-1ST-FIX which includes the back box, temporary door and battery box should have already been installed.
- ❑ Check the content of the second fix Vigilon Control panel package.

	Vigilon V3+ Control panel for use in BS5839 system		**Vigilon EN54 Control panel for use in EN54 system**	
Part	**VIGn-V3+**	**VIGn-NET-V3+**	**VIGn**	**VIGn-NET**
Loop card	n	n	n	n
Power supply unit	1	1	1	1
Input output card	1	1	1	1
Inner door assembly	1	1	1	1
RAM Card	1	1	1	1
Outer door assembly	1	1	1	1
Local controller card	1	1	1	1
Spares pack	1	1	1	
Battery Pack (4-per pack of 12V 12Ah	1	1	1	1
Network card	-	1	-	1

n = 1, 2, 3 or 4 depending on the loop capacity of the control panel.

> ***NOTE:*** *The installation of the network card is usually done before powering up a network of Vigilon systems.*

Preparing the Power supply unit (PSU)

Ensure the links P7, P8 and P9 on the PSU board are configured for correct operation of *Master alarms, Battery charger and Temperature monitoring* circuits.

PSU Link settings

- ❑ For Vigilon V3+ Control Panel the links should be configured for BS5839:Part 4:1988 operation.
- ❑ For Vigilon EN54 Control Panel the links should be configured for EN54:Part 4 operation.

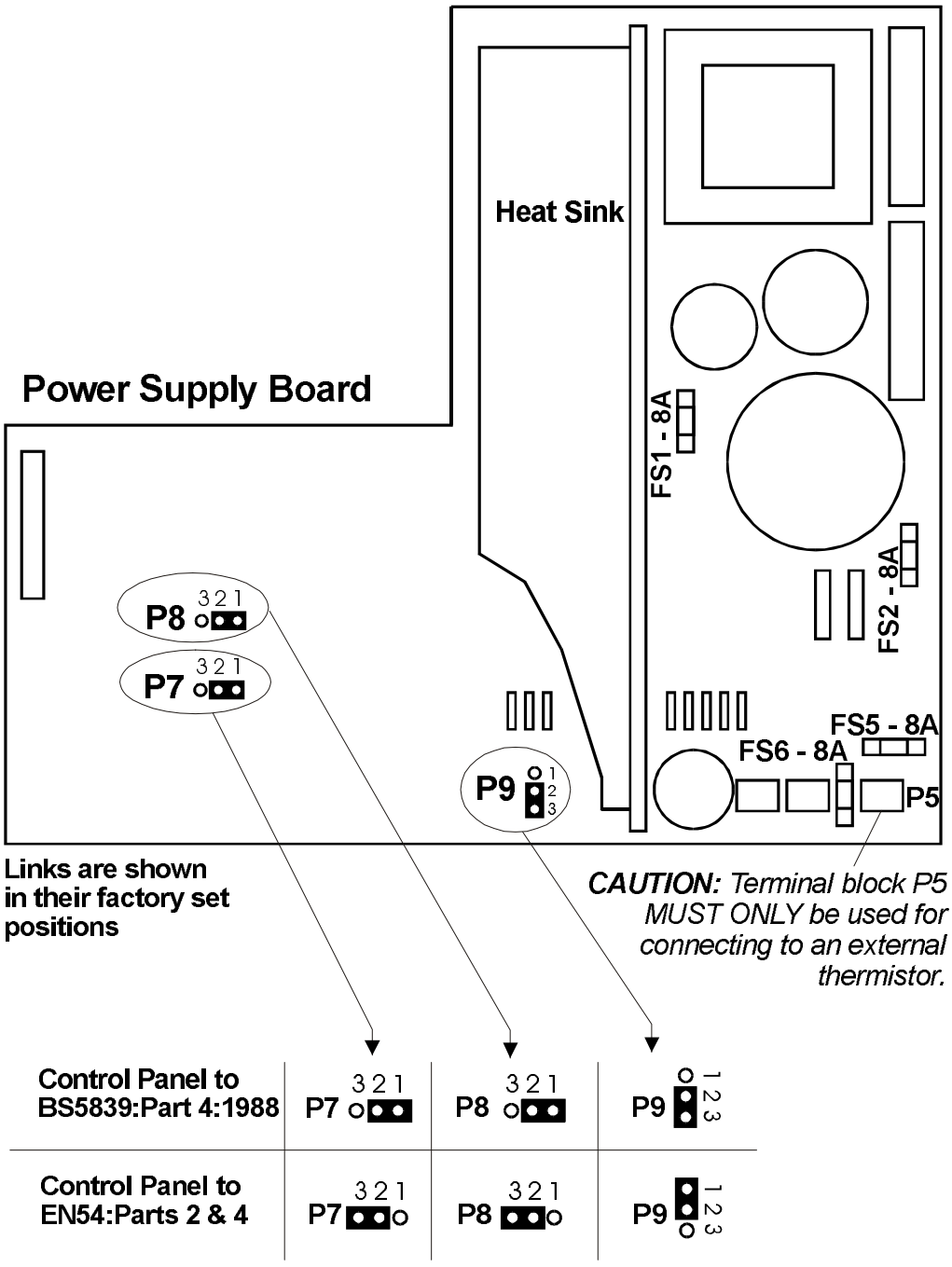

Figure 2-1 PSU link settings for V3+ and EN54 Control Panels

cd8m155

Installing the PSU, doors and printer

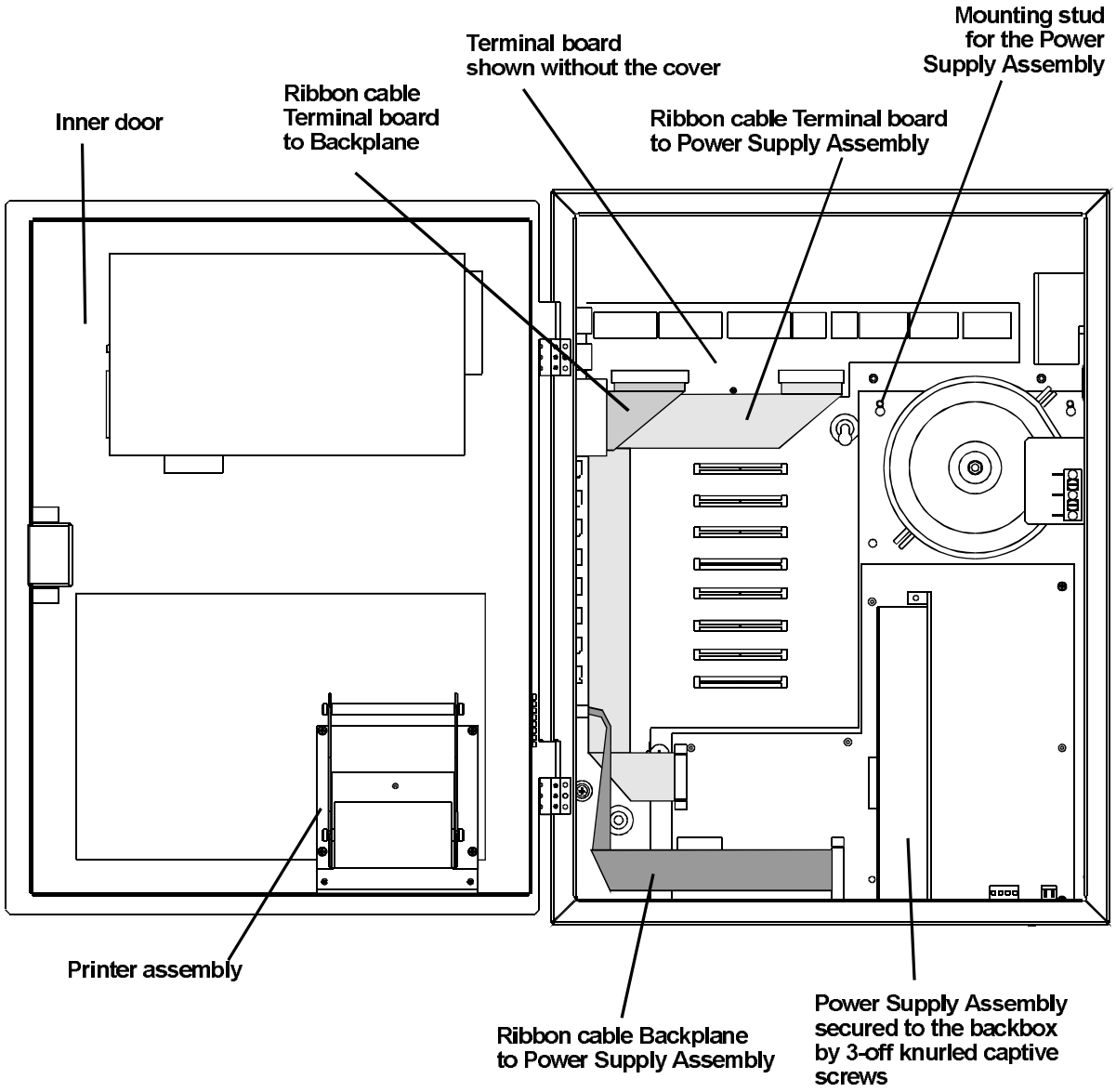

Figure 2-2 Panel (1-4 Loop) shown with power supply unit installed
cd8m121

Assuming the Control panel backbox and external cables are already installed:

- ❑ Remove the *protective temporary door* from the *backbox*, *use the allen key supplied to open the door*.
- ❑ Remove the *Terminal board* metal cover, to do this loosen the 7-off captive screws and remove the cover, keep it in a safe place until required.
- ❑ Install the Power Supply assembly by slotting the chassis onto the two mounting studs and then secure the assembly in place using the three knurled captive screws.
- ❑ Fit the inner door to the repeat panel enclosure, remembering to connect earth lead to door and then fit the outer moulded plastic door.

Mains cable

- ❑ Connect the mains cable from the filter to the terminals of the transformer as shown.

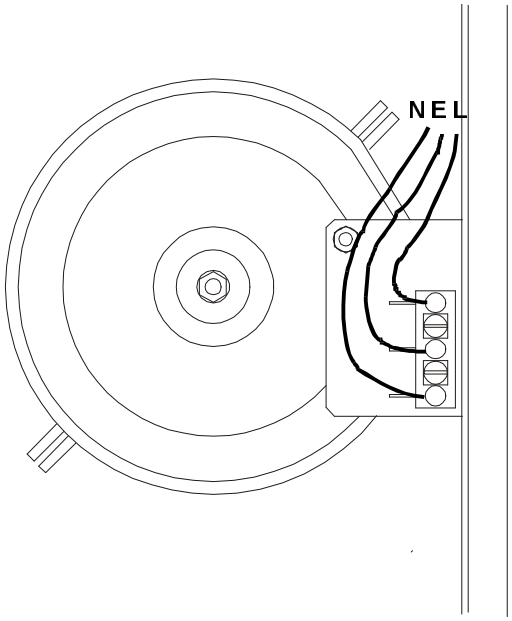

Figure 2-3 Connecting mains to the power supply

cdn428

Ribbon cable

- ❑ Connect the ribbon cables from the power supply unit to the terminal board and terminal board to backplane as shown:

Printer paper

The paper roll should be fitted on the panel door in the manner shown:

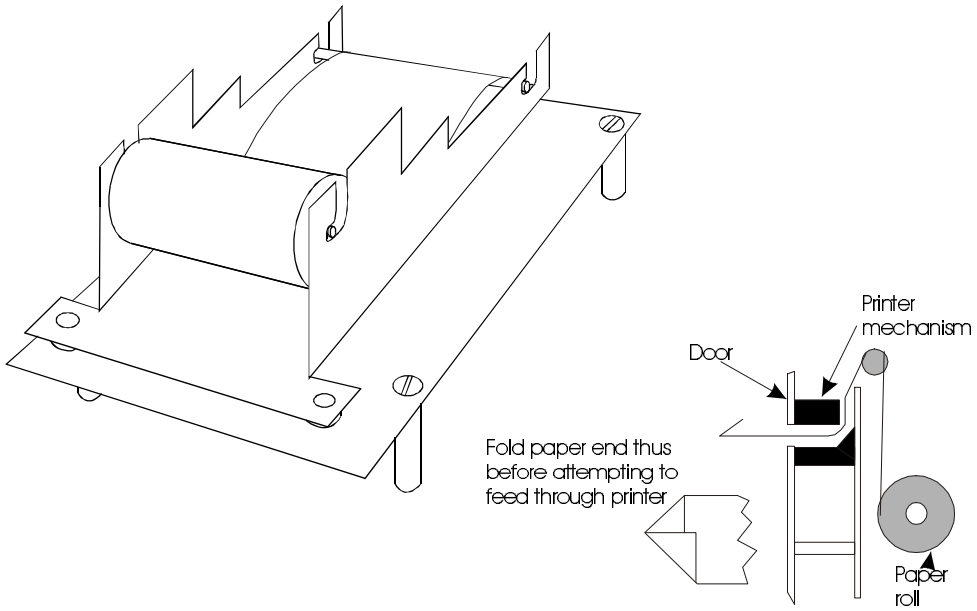

Figure 2-4 How to fit a printer paper roll

cdn304

***CAUTION:** Do not turn the paper feed knob in an upwards direction as this may damage the integral printer.*

- ❑ Upon completion of all commissioning work a new paper roll should be fitted.

Card Slot & Socket Position

The cards are fitted into the sockets of the backplane inside the Control panel.

CAUTION: *Completely power-down the control panel before removal and refitting of cards inside the panel.*

CAUTION: *Always power-down the battery supply before the mains supply. The power-up should be done in reverse order.*

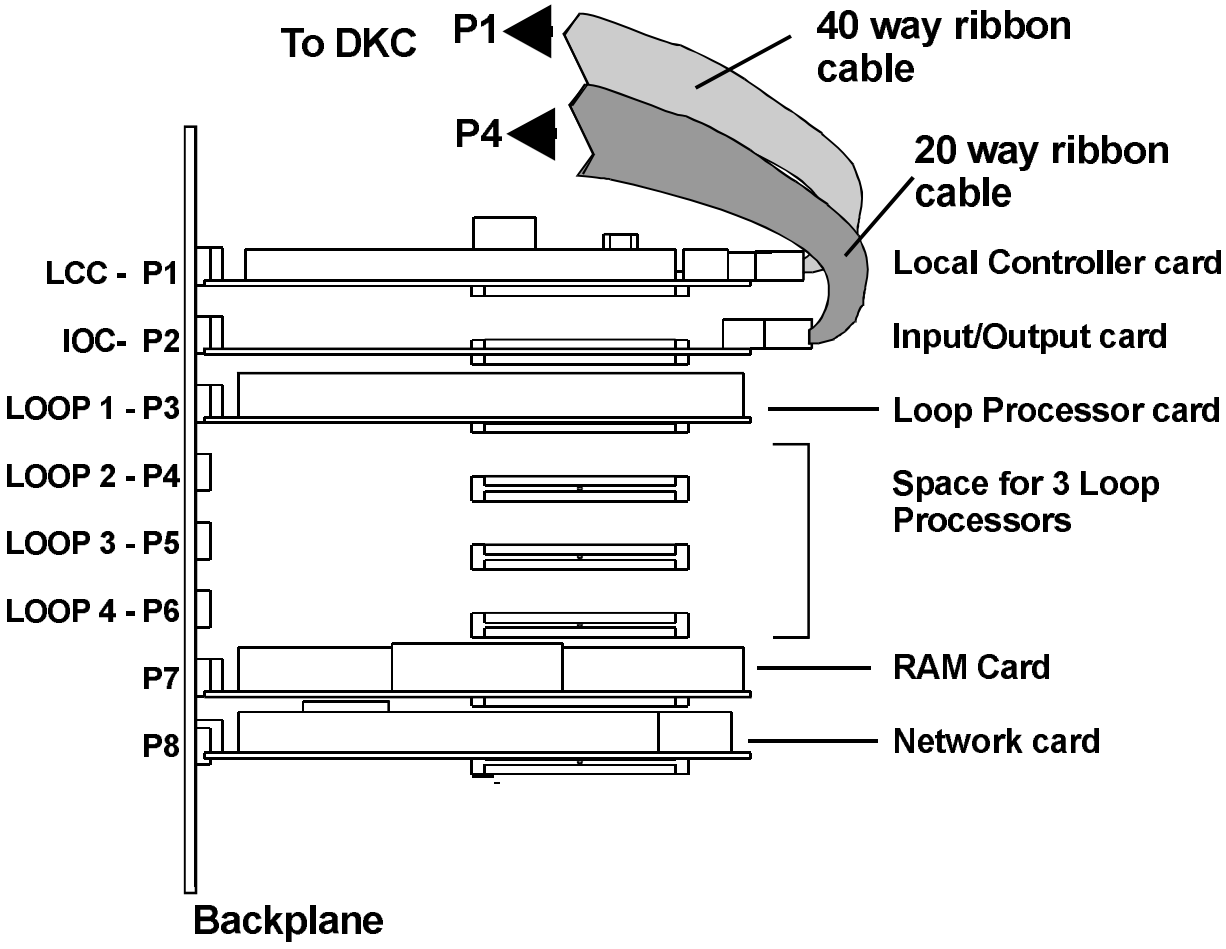

Figure 2-5 Card positions and connections
cd8m 122

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CAUTION: *When installing the cards into a backplane, always use anti-static work procedures.*

WARNING: *Do not use anti-static procedures on live equipment.*

- ❑ Ensure all cards are firmly seated into their respective socket.

Location of card installation

Card type	Control panel backplane		
	Socket label	**Socket No**	**Card or slot No**
Local controller card (LCC) only	LCC	P1	0
Input Output card (IOC) the standard one only	IOC	P2	15
Loop processor card (LPC) only	LOOP	P3-6	1-4
Network card (or any card except LCC & LPC	-	P7	5
Random access memory card (RAM Card or Memory card)	-	P8	6

Ribbon cable installation

- ❑ Connect the ribbon cables from the DKC to the Local Controller and Input/Output card.

Local controller card (LCC)

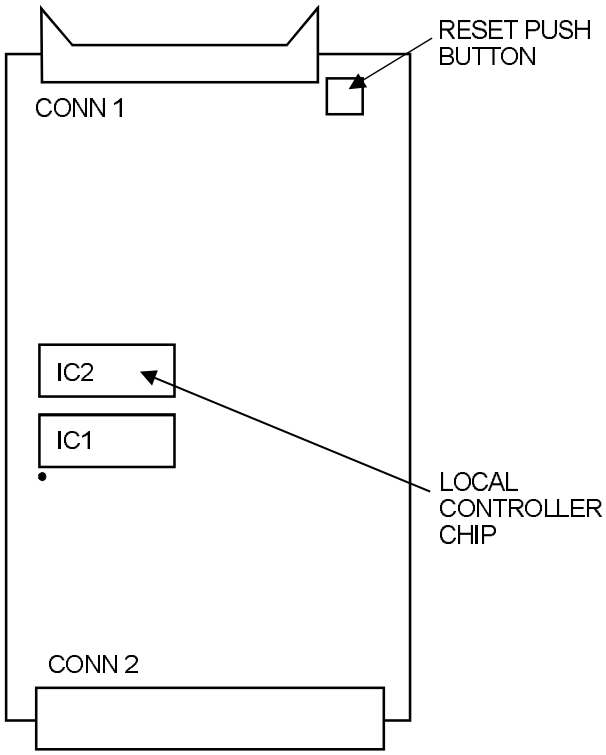

Figure 2-6 LCC card main components

cd8m081

Panel type	Vigilon V3+ Control Panel	Vigilon EN54 Control panel
Local Controller Card (Part number) and software version	VIG-LCC-V3+ V3.6x	VIG-LCC V4.x

- ❑ Ensure IC2 holds the correct version of *local controller* software.
- ❑ Ensure the card is firmly seated into the respective socket.
- ❑ Connect the 40-way ribbon cable to the Local Controller Card (at connector CONN 1) and Display key Card - DKC (at connector P1).

The *reset push* button SW1 provides a *warm reset* to all the cards in a control panel.

Input Output cards (IOC)

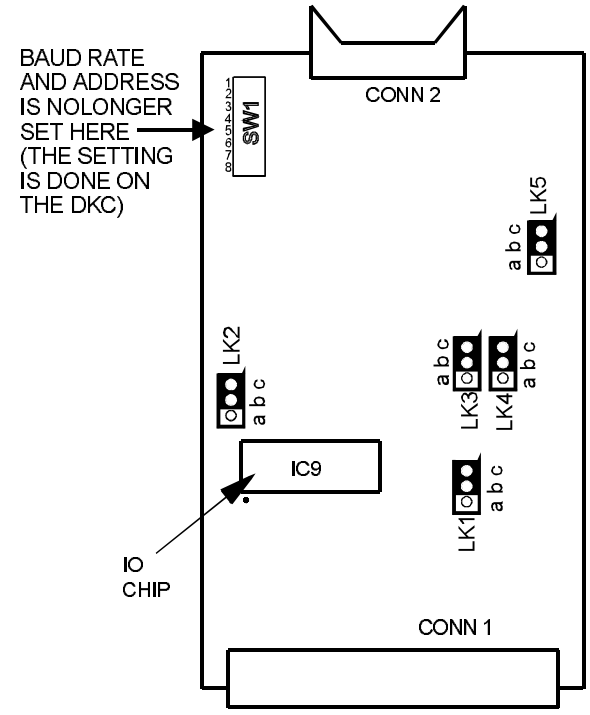

Figure 2-7 LPC card main components

cdm12

IO Card	fitted in	To facilitate connection of	Card part number **Vigilon V3+ control panel**	Card part number **Vigilon En54 Control panel**
Standard	Control panel/ Terminal node	GENT Supervisor/ Commissioning computer	VIG-IOC-V3+	VIG-IOC
Domain Bridge	Control panel/ Terminal node	two Vigilon networks	VIG-IOC-DOM-V3+	VIG-IOC-DOM
Printer	Control panel/ Terminal node	Remote printer	VIG-IOC-PRT-V3+	VIG-IOC-PRT
Universal comms	Control panel/ Terminal node	a non Gent (3rd party) system (ieTrend BMS system)	VIG-IOC-UNI-V3+	VIG-IOC-UNI
Universal Comms (Full duplex)	Control panel/ Terminal node	as per universal comms card but with a RESET input into the Vigilon system	VIG-IOC-UFD-V3+	VIG-IOC-UFD
Slave Input/Output	Terminal node		VIG-IOC-SLV-V3+	-

The standard IO Card is normally fitted in slot 15 with additional IO Cards in the spare slots.

> ***NOTE:*** *The DIL switches on the IOC are not used to set up the address or baud rate. The switches on the DKC perform this function.*

- ❑ Ensure IC9 holds the correct version of *input output* software.
- ❑ Connect the 20-way ribbon cable to the Input/Output Card (at connector CONN 2) and Display key Card - DKC (at connector P4).
- ❑ Only **one** optional IOC can be fitted into a spare slot of the panel.

Link settings

- The IOC is factory set with all links in position **b-c.**

Link	Position	Meaning
LK1	a-b b-c	End station non end station
LK2	a-b b-c	8K EPROM 32K EPROM
LK3 LK4 LK5	a-b b-c	RS485 RS232

DKC Dual-in-line switch settings

The DIL switches on the IOC are not used to set up the domain(EN54) and node(V3+) address and baud rate. The switches which perform this function are located on the left hand edge of the DKC as you look at it with the door open.

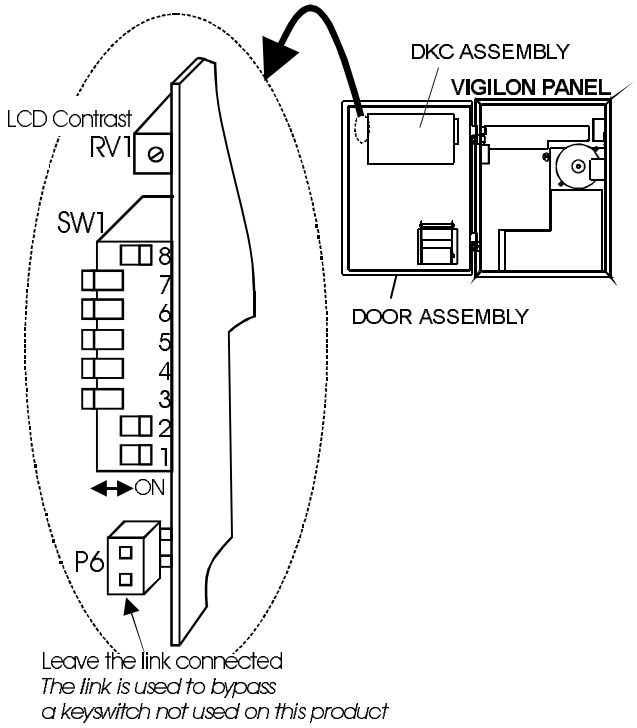

Figure 2-8 DKC Switch settings
cd8m118

Switches 1-2 Baud Rate		
2	**1**	**Value**
Off	Off	1200 baud
On	Off	2400 baud
Off	On	9600 baud
On	On	19200 baud
Factory set address 1 and 19200 baud		

Switches 3-8 Address						
3	**4**	**5**	**6**	**7**	**8**	**Value**
Off	Off	Off	Off	Off	Off	64
Off	Off	Off	Off	Off	On	1
Off	Off	Off	Off	On	Off	2
etc						
On	On	On	On	On	Off	62
On	On	On	On	On	On	63

Loop processor card (LPC)

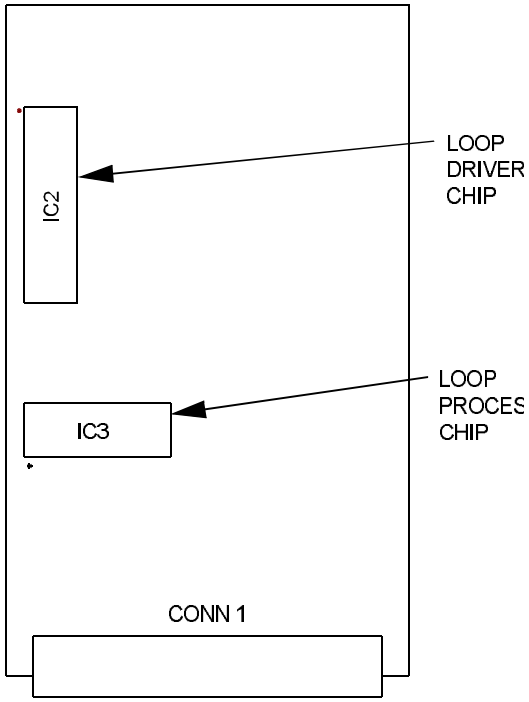

Figure 2-9 LPC card main components

cdm12

Panel type	Vigilon V3+ Control Panel	Vigilon EN54 Control panel
Local Controller Card (Part number) and software version	VIG-LPC-V3+ V3.6x	VIG-LPC V4.x

- ❑ Ensure IC2 and IC3 holds the correct version of *loop driver and loop processor* software.
- ❑ Ensure the card is firmly seated into the respective socket.

Random access memory card

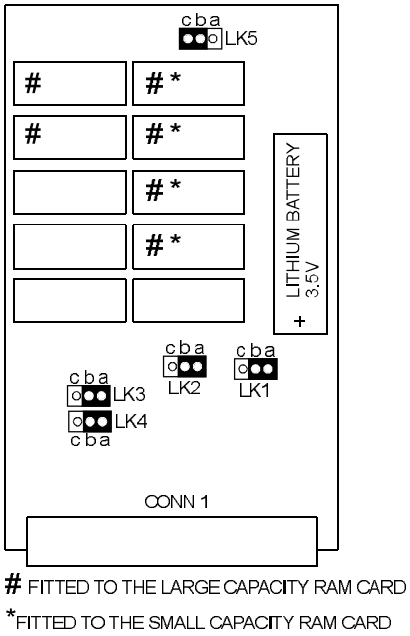

Figure 2-10 RAM card components

cdm13

Card & storage capacity

- Also referred to as RAM card or Memory card or Non Volatile Memory Card (NVMC), it has a storage capacity of 128K Bytes.

> ***WARNING:*** *There is a risk of exploding the lithium battery if its terminals are shorted.*

Battery connection

- Connect the lithium battery by placing the link LK5 into position a-b. The information stored on the RAM card will be retained in the event of power failure to the control panel.

Link settings

Link	position	meaning
LK1	a-b b-c	RAM EPROM
LK2	a-b b-c	RAM EPROM
LK3	a-b b-c	RAM EPROM
LK4	a-b b-c	RAM EPROM
LK5	a-b b-c	Lithium battery connected Lithium battery disconnected

Network Card (NC)

See the Network power-up part of this manual.

- Ensure IC4 and IC6 holds the correct version of network software.
- The network card should be set to have the same address as that set on the DKC of the panel.

Checks before panel power-up

> ***NOTE:*** *All loop cables are best left unconnected at this stage of commissioning.*

- ❑ Ensure the following circuits have been disconnected:
  - all loop circuits
  - clean contacts
  - auxiliary circuits
  - master alarms (the end-of-line resistor (22K ohm) may be fitted to inhibit a master alarm circuit fault indication)
  - RS232/RS485 (note a network is commissioned after individual systems are fully commissioned).
- ❑ Ensure all cards and appropriate cables have been securely fitted.

Panel battery and connection details

- ❑ Install the batteries in the external battery box.

Battery box connection

- ❑ Control panel connection to a battery box installed in a remote location.

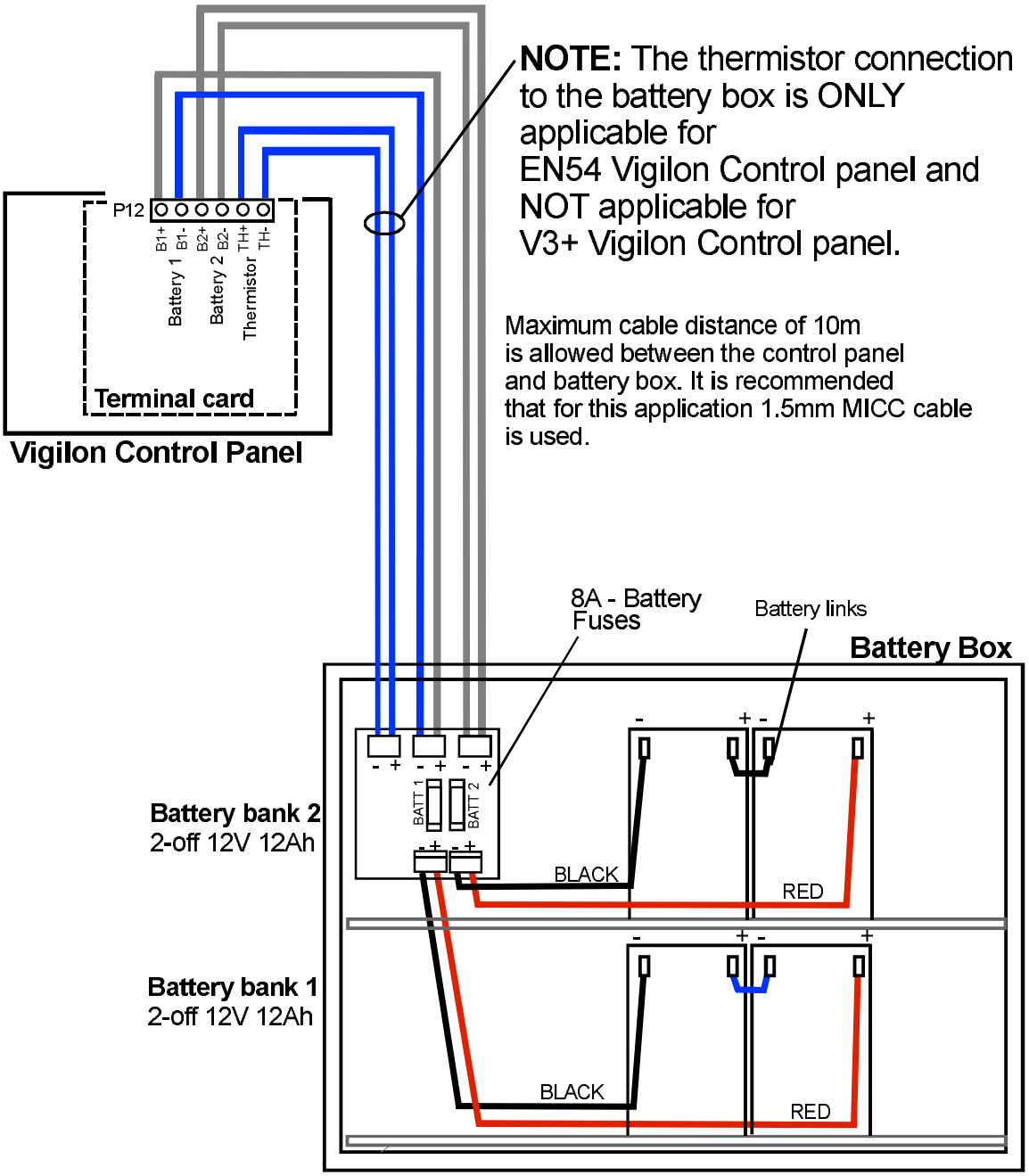

Figure 2-11 Battery box installed up to 10m away from the control panel
cd8m119

- ❑ Where the battery box is installed in a remote location from the control panel then the recommended cable type for interconnection are:

MICC 1.5mm^2	10m max.
MICC 2.5mm^2	15m max.

NOTE: *To maintain earth continuity an earth lead (not supplied) is required to be fitted between an earth point in the control panel and battery box.*

❑ Check to ensure the battery cables are fitted, however the battery circuit is left disconnected at this stage.

NOTE: ***Do not*** *make the final connection to the battery circuit until the mains supply is first powered-up.*

Battery box connection

❑ Control panel connection to a battery box fitted close beneath the panel.

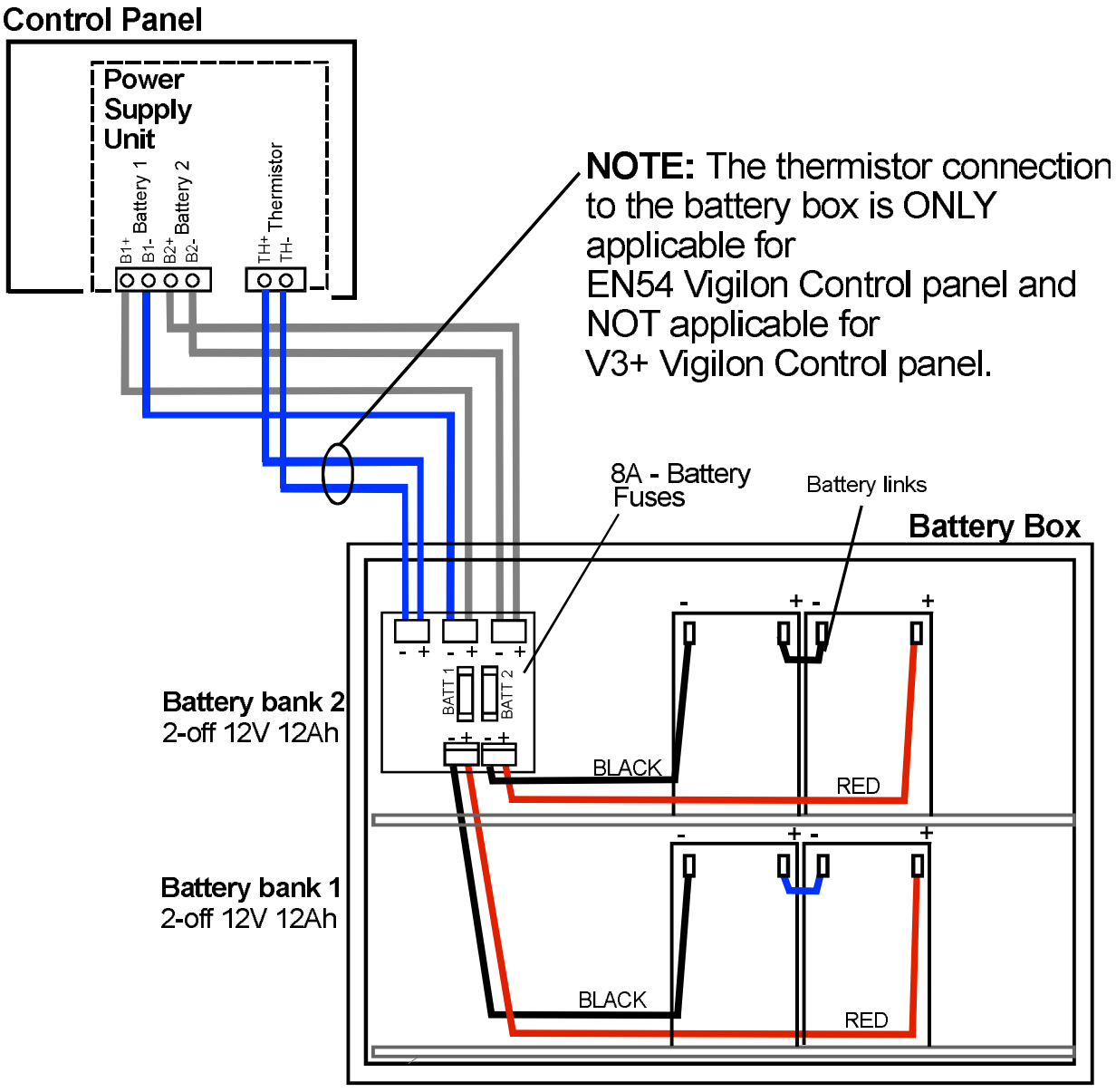

Figure 2-12 Battery box fitted close beneath the control panel
cd8m120

Other connections to the control panel

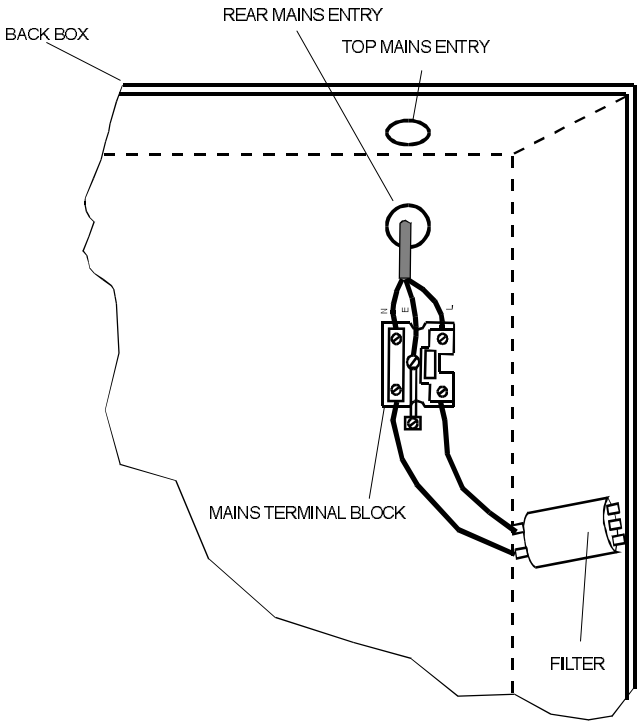

Figure 2-13 Panel mains connection

cdn429

Mains supply

- Remove the cover over the mains terminal block and connect (if not already connected) the mains cable. Refit cover.

External fire system circuits

- All external fire system circuits are left disconnected on first powering up the control panel. At the appropriate stage of commissioning the cables are reconnected.

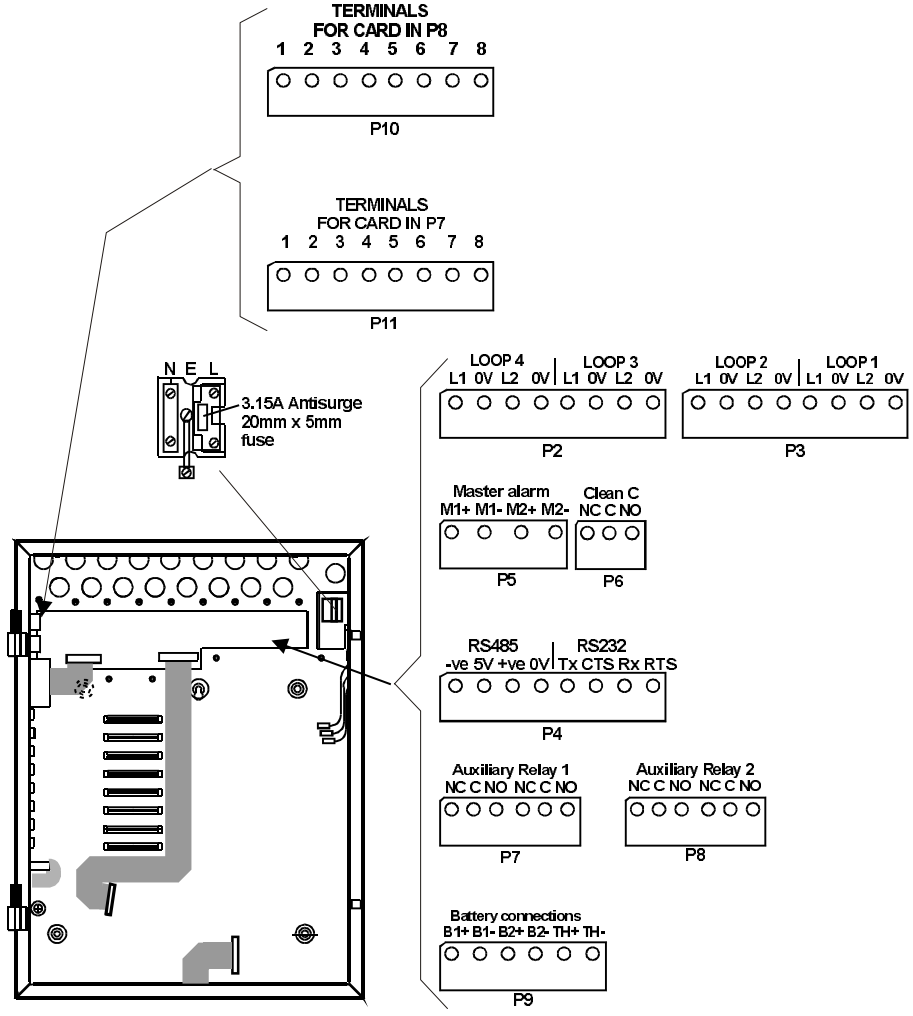

Figure 2-14 Terminals for fire system circuits

cdm255

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Indications on powering up the Control panel

- ❑ Switch *On* the mains supply to the panel
- ❑ Connect the battery supply to the panel
- ❑ Notice:
  - the printer performs a line feed
  - the local buzzer sounds and thereafter beeps until power-up is complete
  - all lights on the facia remain lit for a short duration
  - a message is displayed

```
Powering up - please wait
```

  - the warning/disablement light flashes and after a short duration the warning/disablement light changes to steady indication..
  - the display provides the following messages like:

```
Time not set
Panel power up
Card found at Card 15 x.xx aa/bb/cc      IOC software version & date
Full keyboard fitted
Baud Rate 9600 at Card 15          the baud rate set at IO card is 9600
New Address 6 at Card 15           panel address set at IO card is 6
Card found at Card 1 x.xx aa/bb/cc       LPC software version & date
Allocating Loop n                  allocation has started at loop n
Printer Fitted at Card 15          Printer identified
RAM Card Found at Card 6           RAM card identified
RAM Card being initialised
Initialised RAM Card XXK Bytes found     RAM card capacity
RAM Card not protected                   RAM card is not protected
Allocation: OK at Card X : Allocated Y   devices allocated at card x
Starting Loop n
Loop started OK at Card X:Started Y      allocation is complete
```

- ❑ The warning buzzer will sound intermittently as the RAM Card is unprotected.

> ***NOTE:*** *In practice there may be system hardware and wiring faults during the allocation stage, which will bring up messages on the panel screen, for further information on what to do see Appendix B - Message action.*

- ❑ Enable controls and then press 'Cancel Fault Buzzer' button to stop the local buzzer from sounding.

Menu Maps

- ❑ Appendix A shows the menu maps of commands available at a V3+ and EN54 Control panels, Repeat panels and Terminal nodes.

Initial control panel tests

Display

- ❑ To test the display from the main menu select **[Test/Eng]** -> **[Disp Test]. This will cause all the lights and buzzer (including Backlight) to remain on for a short duration.**

Clock

- ❑ To set up the time and date from the main menu select **[SetUp]**-> **[Set Clock].** This will allow the setting of the time and date of the entire system.

Printer

- ❑ To test the printer from the main menu select **[Control]** -> **[Printer]**. This will allow access to functions to carry out a printer test.

Power

- ❑ Test the panel's mains and battery supply by carrying out temporary disconnection and reconnection, to give an indication of the events.

Master alarms

- ❑ Check that indications are given of master alarm open and short circuit tests.

How to set up password access

See also Appendix A - Menu maps

There are three levels of access to the controls and indications at the control panel and terminal node, the access levels are defined in BS5839:Part 4:1988.

> ***NOTE:*** *There can be up to 15 characters used for a password.*

To set up an Engineering password

- ❑ From the top level menu select **[Test/Eng] -> [UserCode] -> [NewPass]** and then type a password and press the **Enter** key**.**

  The engineering password is used by trained servicing personnel to allow access to control and indications at Access level 3.

To set up a Customer password

- ❑ From the top level menu select **[Test/Eng] -> [UserCode]** ***type*** **'2'-> [Enter] [NewPass]** and then type a password and press the **Enter** key**.**

  The customer password is used by authorised operators to allow them access to controls and indications at access level 2.

> ***NOTE:*** *There is another password for use by servicing organisation that changes daily, it provides access to controls and indications at access level 3. This password is normally used when the pre-programmed passwords are not known.*

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Interface and panel outstations

It is important to prepare the *interface units, mimic and repeat panels* on a loop circuit to be powered up. This is necessary in order to minimise the number of fault events being flagged up.

VIG-INT-MAINS - Mains powered interface

> ***NOTE:*** *Always power-up this* ***interface unit*** *before powering-up the* ***control panel.***

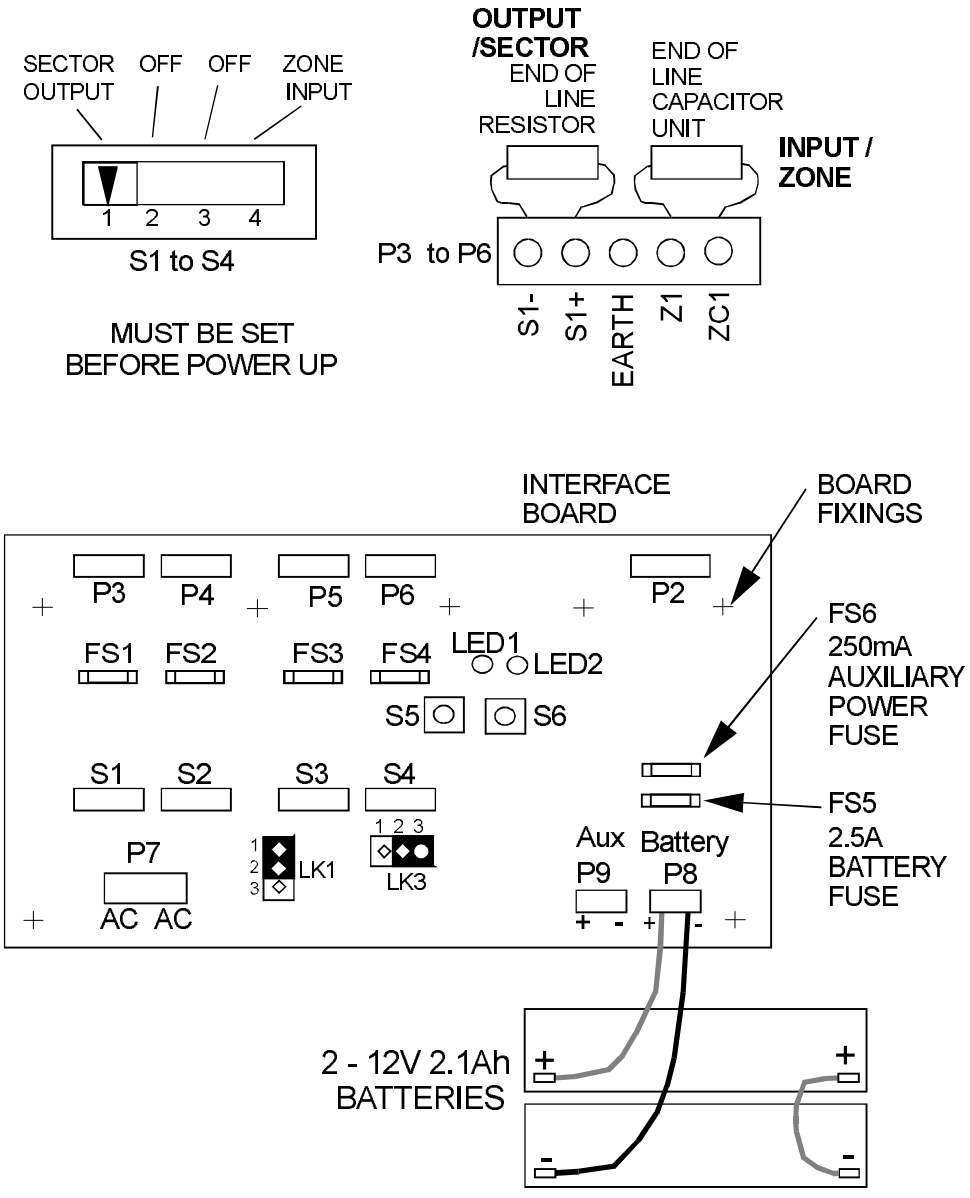


Figure 3-1 Interface board connections

cdn34

Ratings

Zone (input)	24V nominal 2mA maximum
Sector (output)	24V nominal 500mA maximum (500mA total for all sectors)
Auxiliary power output	24V nominal 250mA maximum
LED1 (green)	When lit it indicates local mains power is healthy
LED2 (yellow)	When lit it indicates communication with loop circuit has failed

Link	**Position**	**Meaning**
LK1	1 - 2 #	Normal zone voltage
LK1	2 - 3	Low zone voltage 'Reduces the zone voltage by 4V for Thorn detectors'
LK3	1 - 2#	Fail safe **disable**
LK3	2 - 3	Fail safe **enable**

- factory setting

S5 - rotary switch	0 - GENT detectors #
S6	Reset push button (fail safe)

Fail safe mode

In this mode if there is a **loop communication failure** lasting over *1 minute* duration, then all the outputs of the unit are **activated**, switched On. The outputs deactivate on restoration of communication.

If there are **three communication failures** over *10 minutes* duration then the outputs will be **latched On**, in this case the unit must be powered down and powered up again to unlatch and restore normal operation.

Dual-in-line switches

- ❑ Set the dual-in-line switches S1-S4 for *input, output or not used* (off) position.

End-of-line units

- ❑ Connect the end-of-line EOL units to IO lines to allow fault free IO lines to be seen for the allocation of addresses.

Links

- ❑ Set the links LK1 and LK3 plus the rotary switch on the interface board, as necessary.

> ***NOTE:*** *The mains terminals are located behind a metal cover inside the interface unit enclosure.*

- ❑ Connect the mains supply and power-up the unit, notice that LED1 (green) and LED2 (yellow) are lit.
- ❑ Connect the battery and fit the battery restraint bracket.

Rotary switch

The rotary switch can be set to any one of its 16 positions, from 0 to F.

- ❑ Normally the rotary switch is factory set for *conventional GENT detectors* connected to input lines. Other settings are available to allow detectors from other manufacturers.

NOTE: *All input circuits must have a* ***GENT End-of-line units*** *fitted, irrespective of manufacture of detector.*

Rotary switch (S5) setting	detector manufacturer	detector range	comment	link LK1 on interface board	type of detectors tested
0	Gent	XEN-DET-XXXrange		1-2	whole range
1	Hochiki or Apollo	CD range Series 20		1-2	optical and heat
2	Menvier	Series 700		1-2	optical
3	Nittan	NH-G Series		1-2	Heat
4	Notifier	EC range	**Without** resistor fitted to detector base	1-2	Heat
5	Thorn	Series 300		2-3	Optical
6	Gent	XEN-DET-XXX range		1-2	whole range
7	Gent	XEN-DET-XXX range		1-2	whole range
8	Gent	XEN-DET-XXX range		1-2	whole range
9	Gent	XEN-DET-XXX range		1-2	whole range
A	Gent	XEN-DET-XXX range		1-2	whole range
B	Gent	XEN-DET-XXX range		1-2	whole range
C	Gent	XEN-DET-XXX range		1-2	whole range
D	Gent	XEN-DET-XXX range		1-2	whole range
E	Gent	XEN-DET-XXX range		1-2	whole range
F	Gent	XEN-DET-XXX range		1-2	whole range

NOTE: *On changing the rotary switch setting, the interface unit must be completely powered-down, both mains and battery supply, and then powered-up again.*
Also the loop on which the unit resides must be reallocated.

Other manufacturers MCP

- ❑ Where an input circuit is required to have other manufacturers manual call points, then a ***3.9V zener diode*** should be fitted in series with the ***contacts*** of the call point. There should be no other components fitted to the call point contacts.

NOTE: *Where NITTAN detectors and manual call point are installed on input circuit, the Vigilon system will not be able to differentiate between a fire from a call point or detector.*

IO Line tests

- ❑ Test the IO line as per project specification. The tests should be based on the type of equipment interfaced, for example the interface may control air conditioning system, escalator, fire door release or sprinkler system.

VIG-INT-LOOP - Loop powered interface

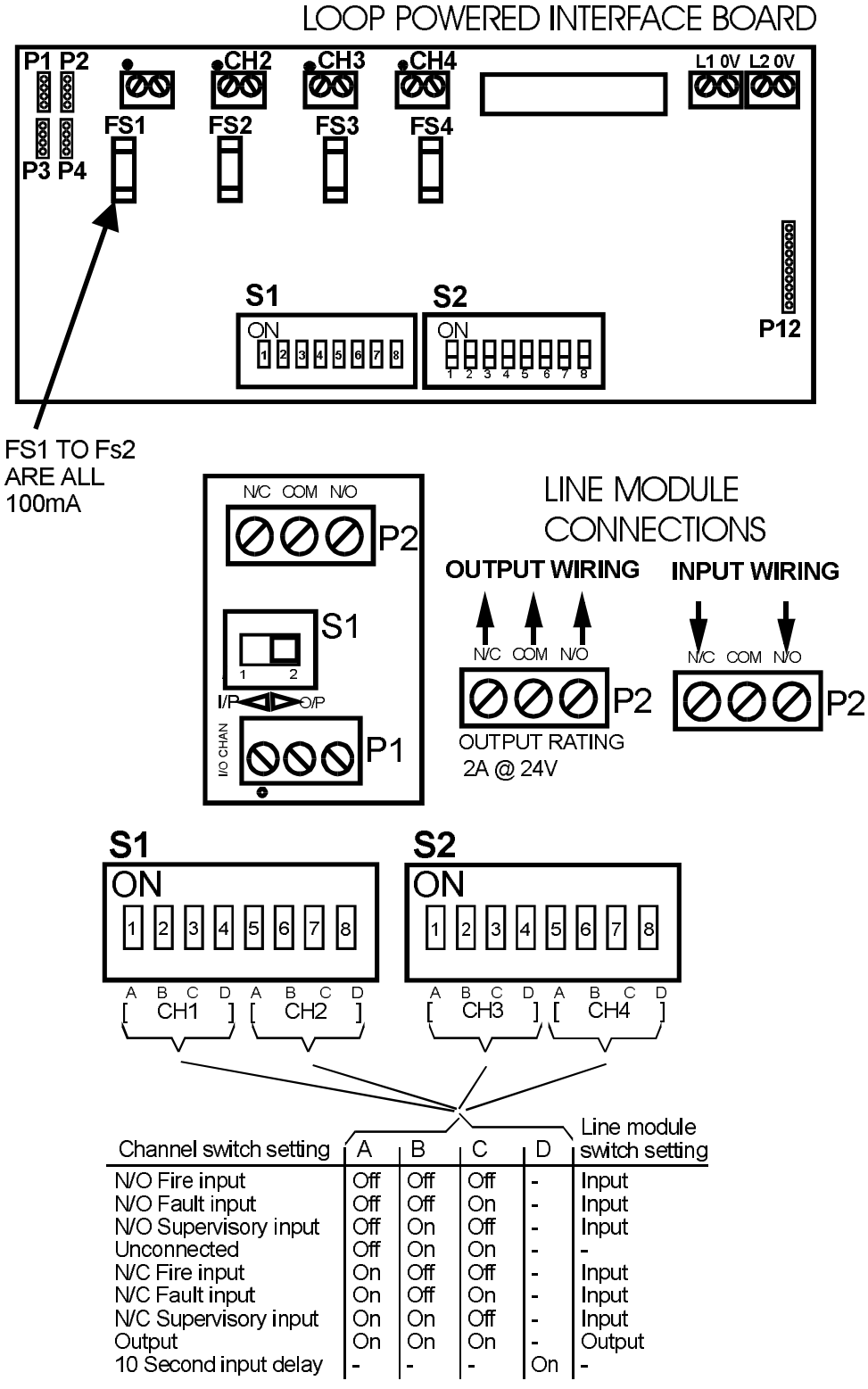


Figure 3-2
Mains interface & line-module boards

cd8m083

Channel switch setting	A	B	C	D	Line module switch setting
N/O Fire input	Off	Off	Off	-	Input
N/O Fault input	Off	Off	On	-	Input
N/O Supervisory input	Off	On	Off	-	Input
Unconnected	Off	On	On	-	-
N/C Fire input	On	Off	Off	-	Input
N/C Fault input	On	Off	On	-	Input
N/C Supervisory input	On	On	Off	-	Input
Output	On	On	On	-	Output
10 Second input delay	-	-	-	On	-

- ❑ Ensure the **cable** connecting to the IO lines of the interface unit is **EMC compliant**.

Dual-in-line switches

- ❑ Set the dual-in-line switches S1 and S2 (on the interface board) for the required input or output on each channel.

NOTE: *The supervisory mode is a non fire input used to trigger a command build.*

NOTE: *On changing the setting of switches S1 and S2 the loop must be reallocated.*

Keyswitch application

- ❑ Where keyswitches are being used, they must be connected to connectors P1 (for channel 1), P2 (for channel 2), P3 (for channel 3) and P4 (for channel 4).
- ❑ Fit the keyswitch door to the interface unit. The door can accommodate 4 off 2-way keyswitches or 2 off 3-way keyswitches, see keyswitch door option.

NOTE: *A line module must not be used on a channel that has a keyswitch connected to connectors P1, P2, P3 and P4.*

- ❑ For keyswitch input, the interface board *dual-in-line switches S1/S2* must be set to a **normally open input**.

Line module

- ❑ If a line module is used, set its switch S1 to the same, input or output, setting as the interface channel to which it is connected.
- ❑ The line module may be installed in a remote location up to **100m** cable distance away.

NOTE: *A maximum of **1Km** cable usage per loop is allowed for the connection of line modules installed in remote locations and 19245-06 power supply input output lines.*

IO line test

- ❑ Test the IO line as per project specification. The tests should be based on the type of equipment interfaced, for example equipment such as air conditioning system, escalator, fire door release or sprinkler system.

19245-06 Power supply unit (with relay)

❑ Connect wires from the interface to power supply unit.

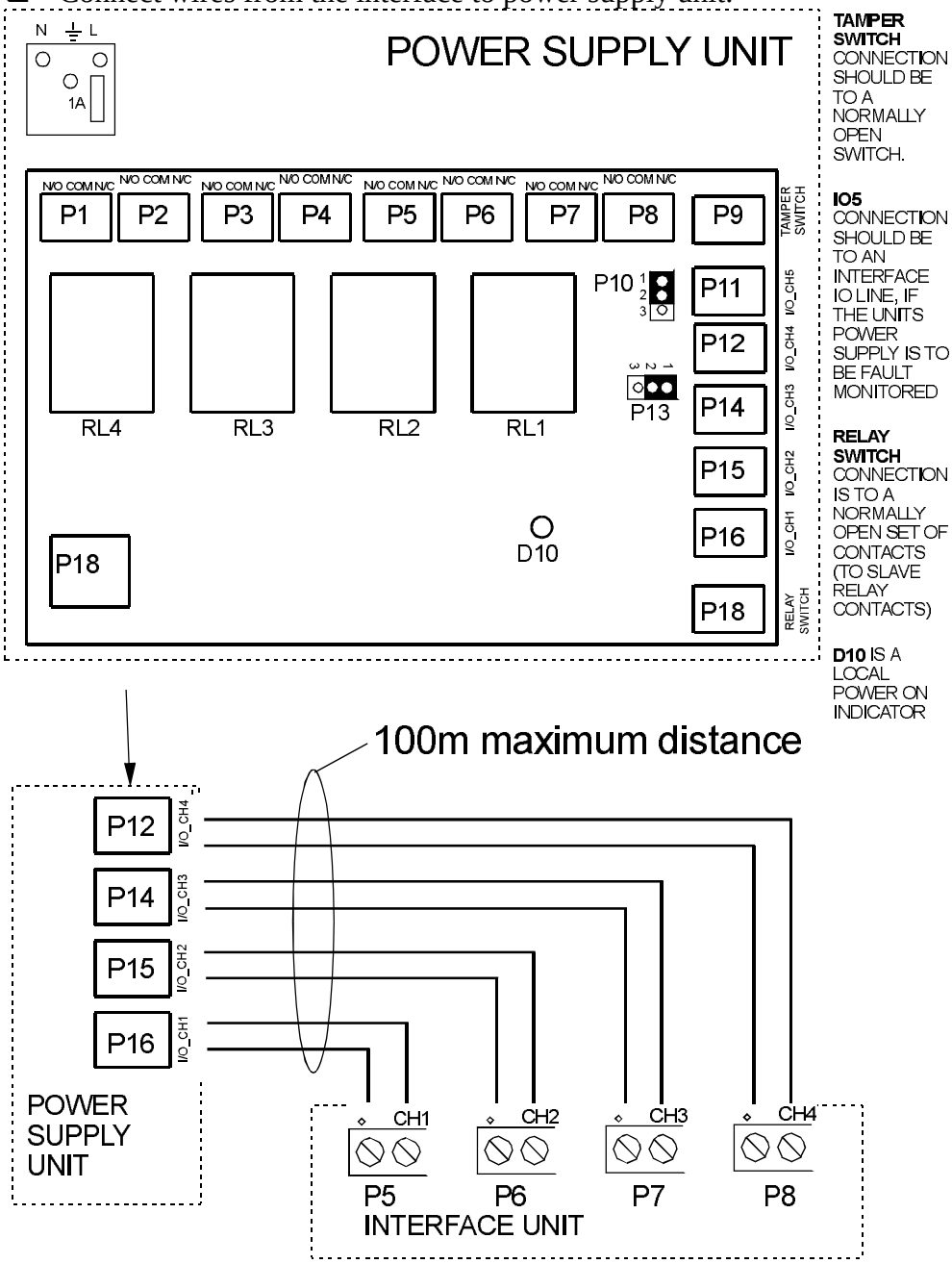


Figure 3-3 Interface to PSU board connections

cdm15

PSU - interface connections

Interface unit		Power supply unit		
Channel	terminals	Incoming	Relay	Outgoing
1	P5	P16	RL1	P7 & P8
2	P6	P15	RL2	P5 & P6
3	P7	P14	RL3	P3 & P4
4	P8	P12	RL4	P1 & P2

Relays

- Remove the relays from the power supply board to disconnect the output circuits connected to the relay contacts. The output circuits should be tested as per project specification following the address allocation stage.

Link settings

- Configuring the links P10 and P13

Link	Position	Function
P13	1-2	This setting allows a *mains fault* on the *power supply unit* to be monitored via I/O_CH4 channel 4. If all IO lines are being used, then channel 4 will monitor two faults, mains failure of *power supply unit* as well as IO line failure.
P10 plus P13	2-3 plus 2-3	With these link settings the local power supply unit can be fault monitored via I/O-CH5 terminals
P10	1-2	With this setting a normally open tamper switch can be monitored via I/O-CH5. The I/O-CH5 must therefore be connected to an input channel of the Interface Unit.

- A normally open contact can be monitored on external equipment via the RELAY SWITCH contacts to operate I/O-CH1.

Keyswitch door option

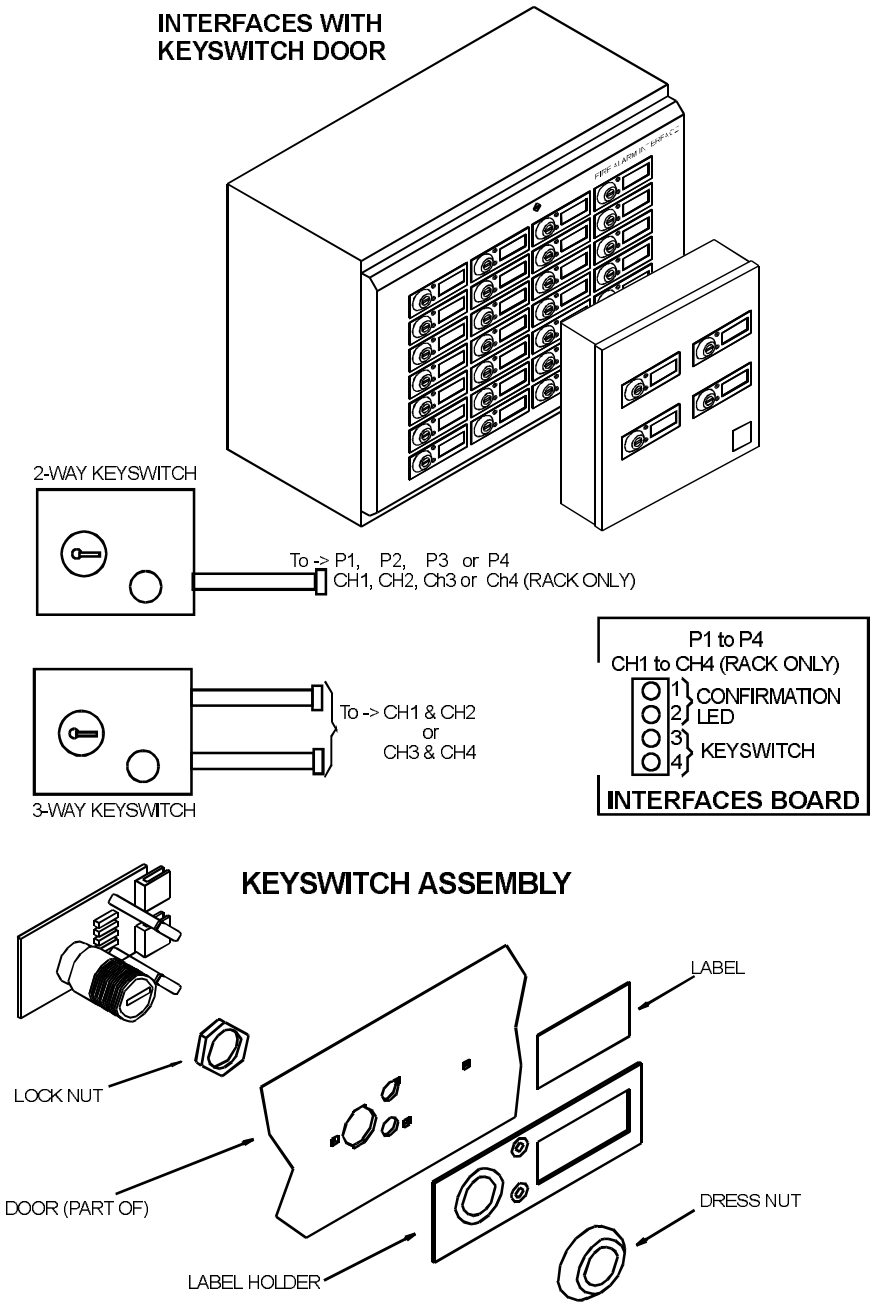


Figure 3-4 Keyswitch interface doors
cd8m084

Assuming a *keyswitch door* is to be fitted to a *loop powered interface unit* or the *rack interface*:

- ❑ Remove the appropriate *blanking plate* from the door.
- ❑ Fit onto the *keyswitch* door the *keyswitch, lock nut, label holder and dress-nut.*
- ❑ Replace the original *interface door* with a *keyswitch door.*
- ❑ Fit the wires from keyswitches to connectors P1 - P4 or CH1-CH4 (Rack only) on the interface board.

VIG-RACK Interface rack unit

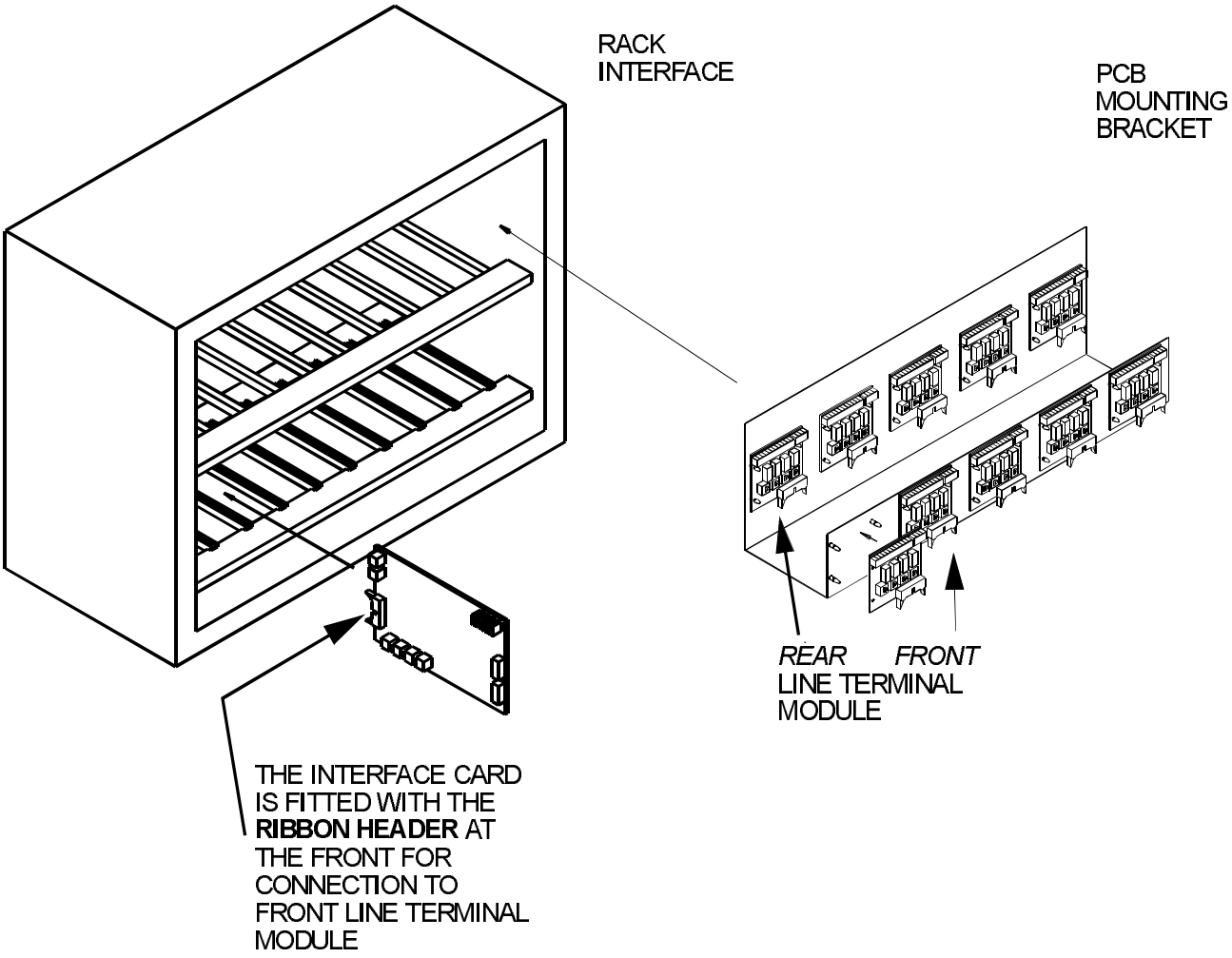
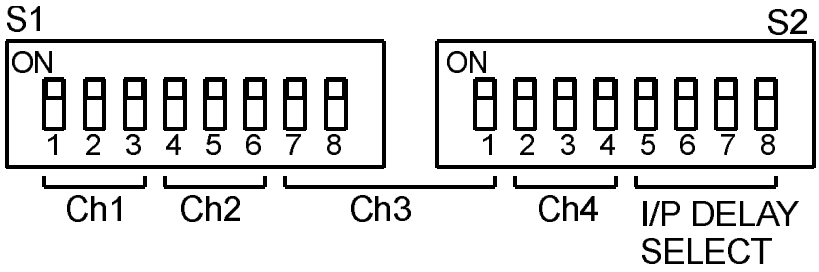


Figure 3-5 Rack interface board assembly
cd8m085

- ❑ Remove the *PCB mounting bracket* from the rack unit.
- ❑ Clip-fit the *line-terminal modules* to the PCB mounting bracket, a maximum of up to 10 modules can be fitted. Connect the loop circuit cable. Note each line-terminal module has 4 - line module circuits.
- ❑ Configure the four switches on each line-terminal module. Each switch is used to set the adjacent channel for input or output.
- ❑ Fit the PCB mounting bracket to the rack ensuring cables are clear from fixtures and fittings.
- ❑ Set the switches S1 and S2 located on the interface board. Note these switches are not the same as those on the interface card fitted in the loop powered interface unit.

Figure 3-6 DIL switch settings for rack interface board

cd8m086



	<——— Switch S1—--><Switch S2->				
Channel —> Switch No>	**CH1 1 2 3**	**CH2 4 5 6**	**CH3 7 8 1**	**CH4 2 3 4**	**Mode**
1 = On 0 = Off	0 0 0	0 0 0	0 0 0	0 0 0	Fire (normally open)
	0 0 1	0 0 1	0 0 1	0 0 1	Fault (normally open)
	0 1 0	0 1 0	0 1 0	0 1 0	Supervisory (normally open)
	0 1 1	0 1 1	0 1 1	0 1 1	Not in use (channel not set up)
	1 0 0	1 0 0	1 0 0	1 0 0	Fire (normally closed)
	1 0 1	1 0 1	1 0 1	1 0 1	Fault (normally closed)
	1 1 0	1 1 0	1 1 0	1 1 0	Supervisory (normally closed)
	1 1 1	1 1 1	1 1 1	1 1 1	Output

NOTE: The supervisory mode is a non fire input used to trigger a command build.

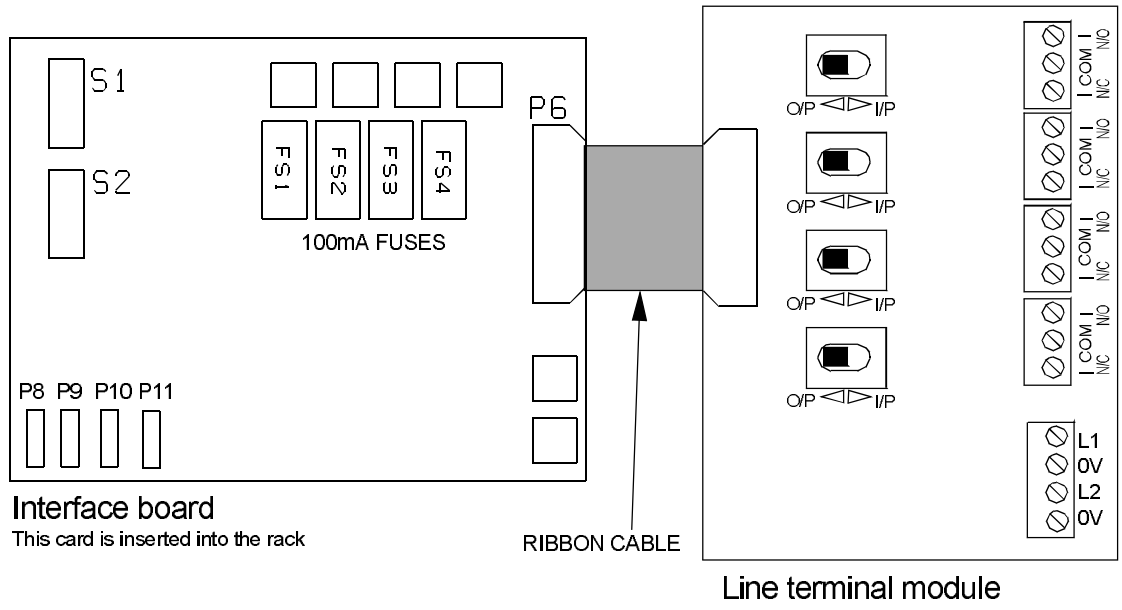
Switch S2 No—>	5 6 7 8	**Channel No**	**Delay**
	0 0 0 0	All	No delay
	0 0 0 1	CH1	10 seconds
	0 0 1 0	CH2	10 seconds
	0 1 0 0	CH3	10 seconds
	1 0 0 0	CH4	10 seconds

- ❑ Partially slide each card into the respective socket. The rack unit can accommodate up to 10 cards.

> ***NOTE:*** *The* ***interface cards*** *must be installed with ribbon header at the front for connection to the front* ***line terminal modules.***

- ❑ Connect each interface card to **either** the respective *line-terminal module or keyswitch.* Then fully slide the interface card into the rack and ensure it is fully seated into its socket.

> ***NOTE:*** *A keyswitch door option can be fitted to this rack unit. The door can accommodate up to 28 off 2-way keyswitches or 20 off 3-way keyswitches, limited by 40 inputs, see keyswitch door option.*



Line module loop connections

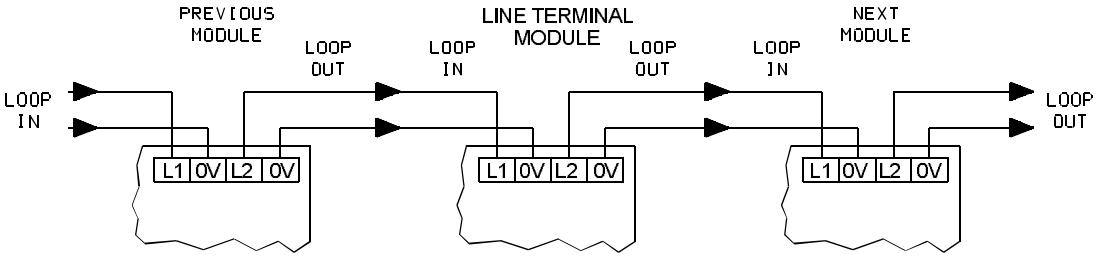


Figure 3-7 Rack interface and line terminal module
cdm16

Tests

Interfaced equipment test

- ❑ Test the external input / output circuits connected via the *line terminal modules.* The test should be as per project specification.

Keyswitch Tests

- ❑ Test each keyswitch as per project specification. The tests should be based on the type of action that should result from operating the respective switch. Ensure also that the appropriate LED indicator is lit on operating the switch.

VIG-INT-FE Loop powered interface unit - Fixed extinguishing

Product not available at the time of issuing this manual.

> ***CAUTION:*** *The input and output circuits of this interface* ***must not*** *be connected at this stage of commissioning. If connections are made and tests conducted, then valuable extinguishant may be inadvertently released.*

- ❑ Set the dual-in-line switches S1 and S2 on the interface board, settings TBA.
- ❑ Set the two position switch on the line module. The switch may be set for input or output.
- ❑ Fit the 'RELEASE OF EXTINGUISHANT GAS' warning label to the fire alarm control panel facia plate.

> ***WARNING:*** *Take precautions to prevent the release of the extinguishant gas during the commissioning and test of the Extinguishant system.*

Fixed extinguishing system

- ❑ The commissioning of the fixed extinguishant system **must** be carried out by an **experienced and trained engineer**.
- ❑ After the allocation and configuration stage the extinguishant system should be connected and tested. To do this follow the extinguishant control panel procedures and take appropriate precautions to prevent the release of extinguishant gas.

Figure 3-8 Interface to extinguishant panel connection

TBA

Repeat panel

Panel type	Vigilon V3+ System	Vigilon EN54 System
Repeat panel (Part number)	VIG-RPT-V3+	VIG-RPT

Check the content of the second fix Vigilon Repeat panel package. The first fix package VIG-RPT-1ST-FIX which includes the back box, temporary door should have already been installed.

Repeat panel 2nd fix part	Quantity
Outer door assembly	1
Inner door assembly	1
Master Repeat Card	1
40 Way ribbon cable	1
Spares pack (includes battery leads)	1

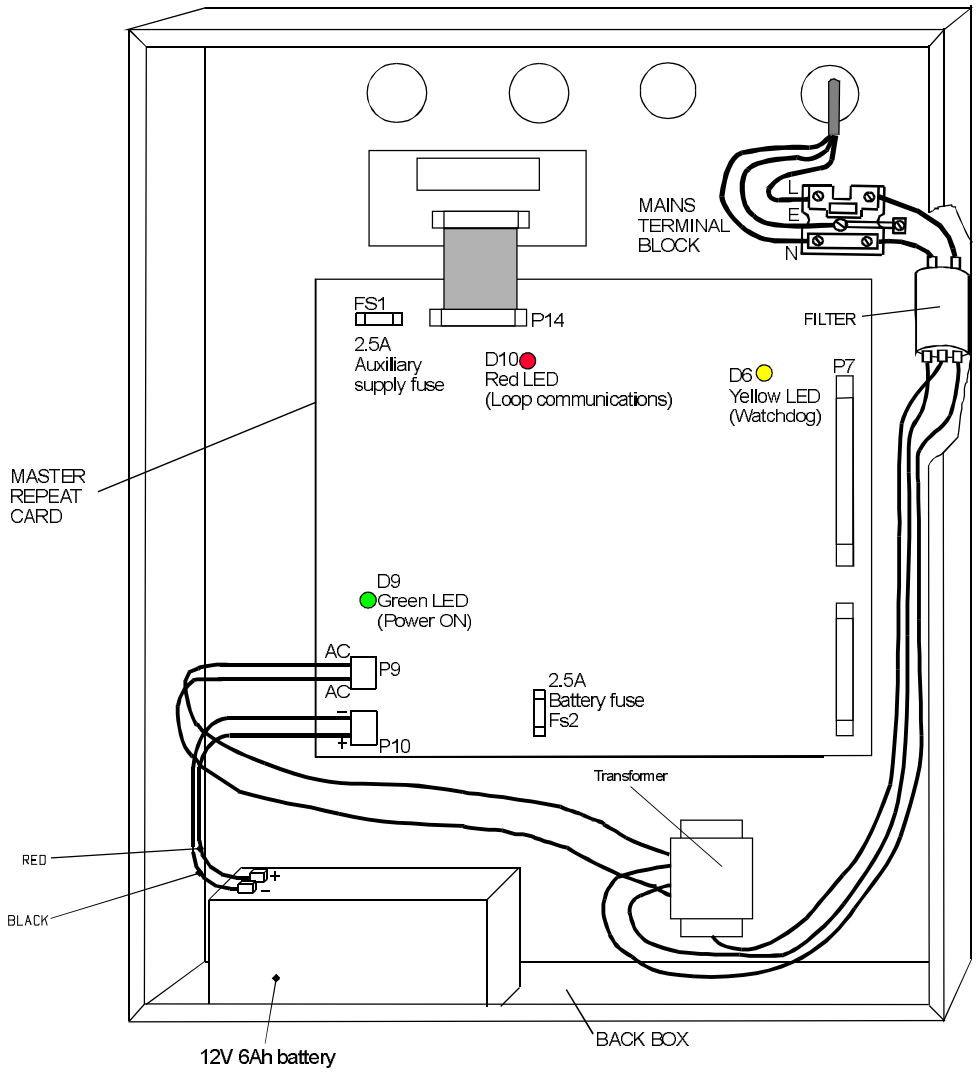


Figure 3-9 Repeat panel connections

cd8m123

- ❑ Remove the *protective temporary door* from the *backbox*, use the *allen key* supplied to open the door.

- ❑ Fit the inner door to the repeat panel enclosure, remembering to connect the earth lead to door and then fit the outer plastic door.

- ❑ Fit the Master Repeat Card into the backbox and:

  - connect the transformer wires to terminal block - P9.
  - connect battery wires supplied with the spares to terminal block P10 (note the red wire connects to the + and black wire to the - terminal respectively).
  - connect the ribbon cable from the terminal card to connector - P14.
  - connect the 40 way ribbon cable supplied with the spares to Master Repeat Card connector P7 and Display Key Card connector - P1.

- ❑ Power-up the panel by connecting the mains supply and then the battery supply, and note:

  - the *green* and *amber* LEDs on the Master repeat card are lit
  - all lights on the panel facia are lit for a short duration
  - a reset message appears on the display
  - the local *buzzer* sounds for a short duration
  - a battery disconnected message appears
  - the display shows:

  ```
  MAIN PANEL OFF LINE
  ```

- ❑ See Appendix A for the Repeat panel menu maps.

> ***NOTE:*** *The full repeat panel menu map will only be accessible following the allocation of the loop on which the panel resides.*

VIG-MIM/ZONE Mimic or Zonal panel

See also **Mimic configurer** part of this manual.

❑ Unhook the front cover.

Zonal panel

> ***NOTE:*** *The zonal panel is supplied with the pre-programmed EPROM and the* ***zone designation*** *plan fitted.*

Mimic panel

❑ A ***custom site plan*** must be fitted in-between the two translucent sheets of the panel *front cover*. Also a custom EPROM must be fitted on the *master repeat card*, see Mimic configurer part of this manual.

> ***NOTE:*** *Ensure the custom site plan is fitted to the panel to coincide with the LED matrix.*

❑ Open the *hinged inner door*.

❑ Connect the mains supply and power-up the panel.

- the *green* and *amber* LEDs on the master repeat card are lit
- the local buzzer sounds for a short duration
- after a short duration a message will appear on the mimic panel:

```
OFF LINE
```

❑ Operate the keyswitch on the panel, this will:

- cancel the local buzzer
- and carry out lamp test.

❑ Connect the battery supply.

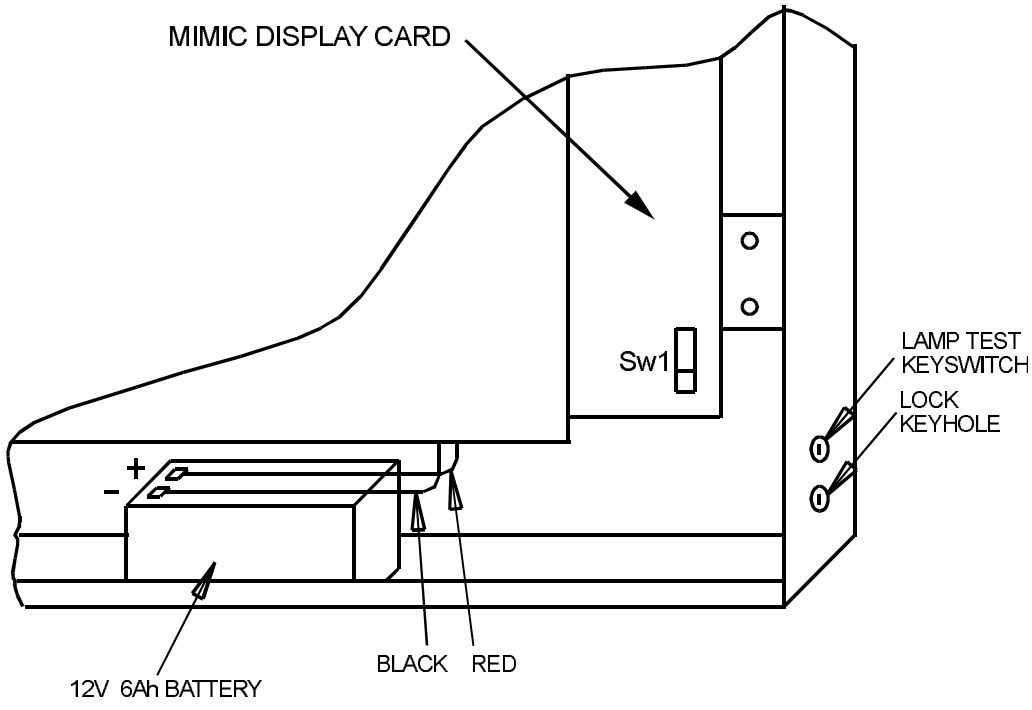


Figure 3-1 Mimic panel battery connection

cd8m087

VIG-MIM-A4 A4 Mimic panel

See also **Mimic configurer** part of this manual.

The A4 Mimic panel set consists of:

- ❑ A4 Mimic display unit - which requires:
  - *Site plan kit* to make it into an A4 Mimic panel
  - or *Zonal kit* to convert to an A4 Zonal panel
- ❑ A4 Mimic control unit

A4 Mimic display unit

This unit requires a **custom site plan** or a **zonal plan** to be fitted to the *LED housing*.

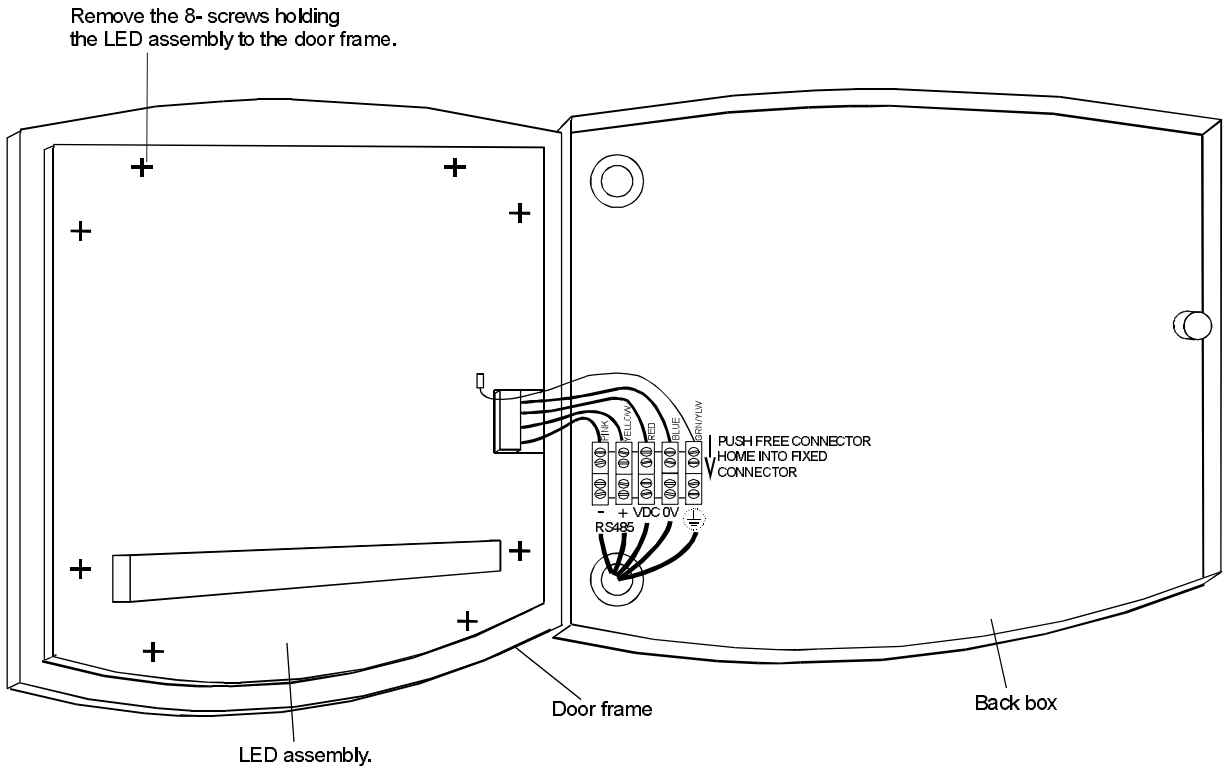


Figure 3-2 A4 Mimic panel with the door open
cdm18

To fit the site plan

a) Remove the *protective cover* fitted to the *mimic display unit* and open the door.

b) Remove the *8-screws* that secure the *LED housing* to the *door frame*. The *LED housing* may be hinged back into the *backbox* and allowed to rest on the **foam block** to ease installation of the **A4 site plan**.

c) Remove the backing from one side of an **A5 adhesive sheet**. Apply to the reverse side of the printed **A4 site plan or zonal plan sheet**, so that when attached to the LED blocks it will be in the position shown by the dotted line, see Figure 3-3. Press the adhesive sheet down firmly.

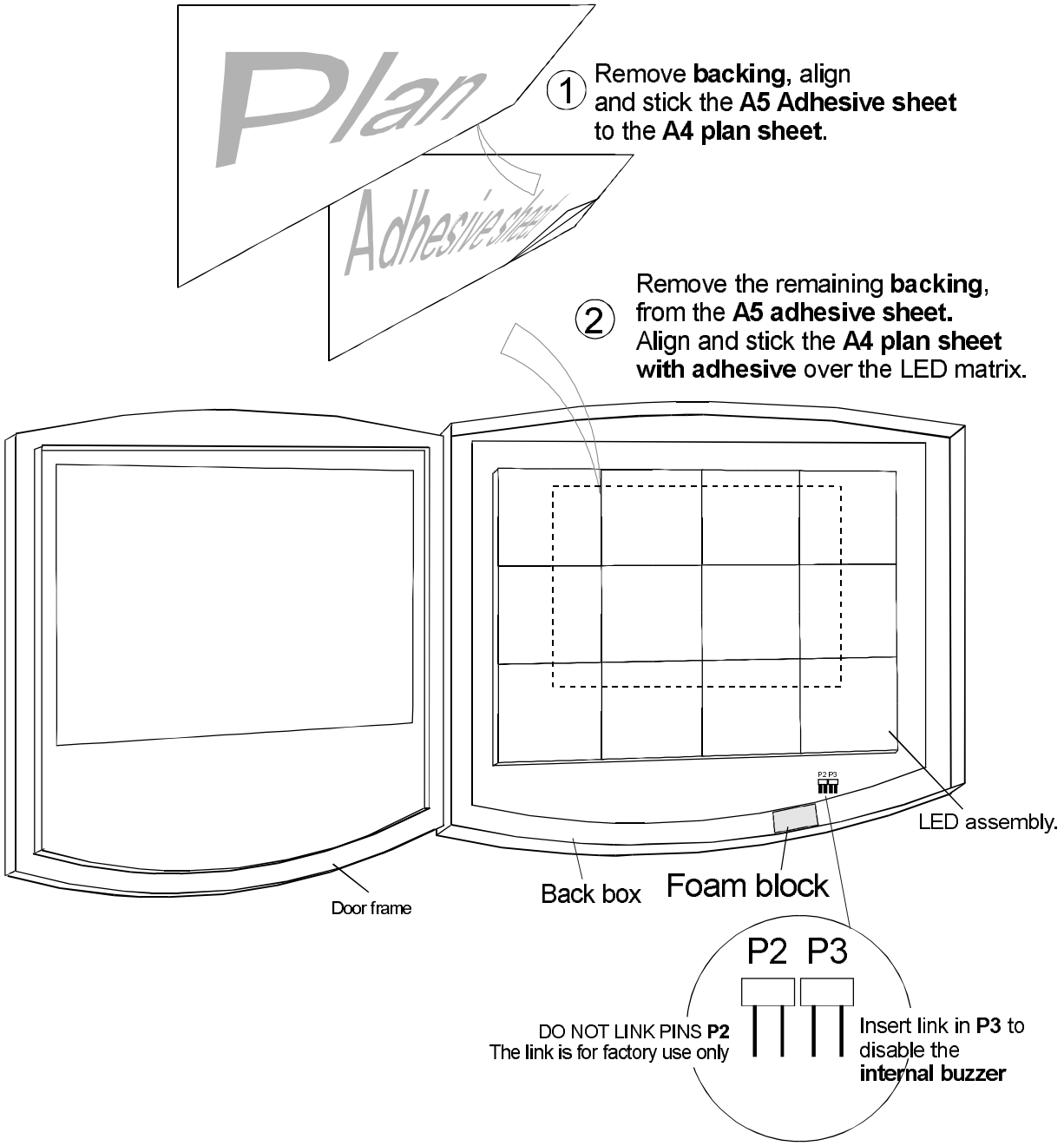


Figure 3-3 A4 Mimic plan and buzzer configuration
cdm20

.

d) Remove the remaining backing from the **adhesive sheet** attached to the **pla**n **sheet**.

e) Align and fit the **plan sheet** to the **LED blocks** and smooth out any air bubbles.

NOTE: *If slight repositioning is required, the low-tack adhesive sheet allows the plan sheet to be removed and replaced as required.*

Local buzzer disable

f) If required, insert a link to short pins **P3** on the *mimic display PCB* to disable the local buzzer.

NOTE: *With the buzzer disabled there will be no local buzzer indication in the event of a* ***fire or fault*** *condition.*

g) Refit the *LED housing* to the door frame using screws previously removed.

h) Ensure the cable connections from the *Mimic control unit* are made at the *Mimic display unit*.

NOTE: *Ensure the cable screen is earthed to both the control unit and display unit.*

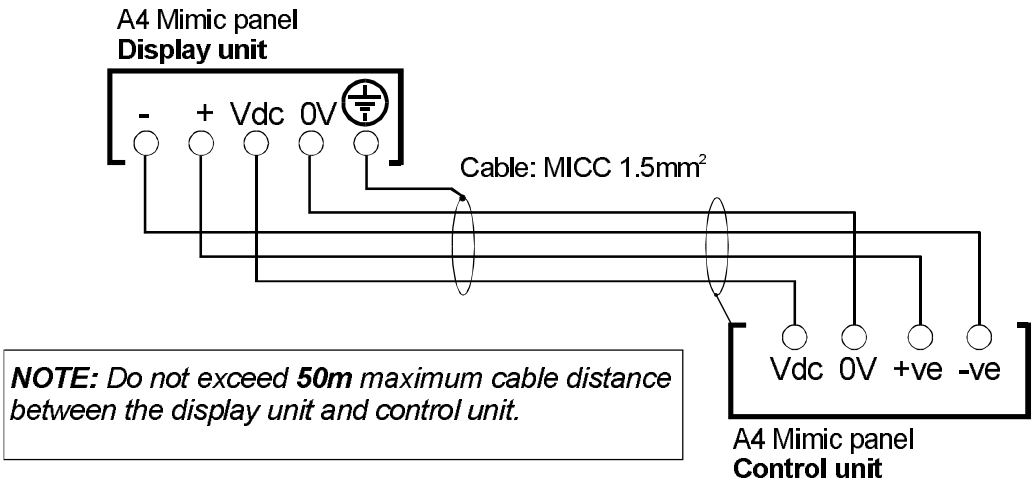


Figure 3-4 Mimic display to Control unit connections

cdm19

i) Close and lock the door.

A4 Mimic Control unit

This unit requires *a custom EPROM* to be fitted to the *master repeat card*, in the *mimic control unit*, see also the *Mimic configurer* part of this manual.

- ❑ Open the *mimic control unit* door.
- ❑ Make the cable connections between the *A4 Mimic display unit* and the *mimic control unit*. Connect also the loop and mains supply cables.
- ❑ Check all internal connections are secure.

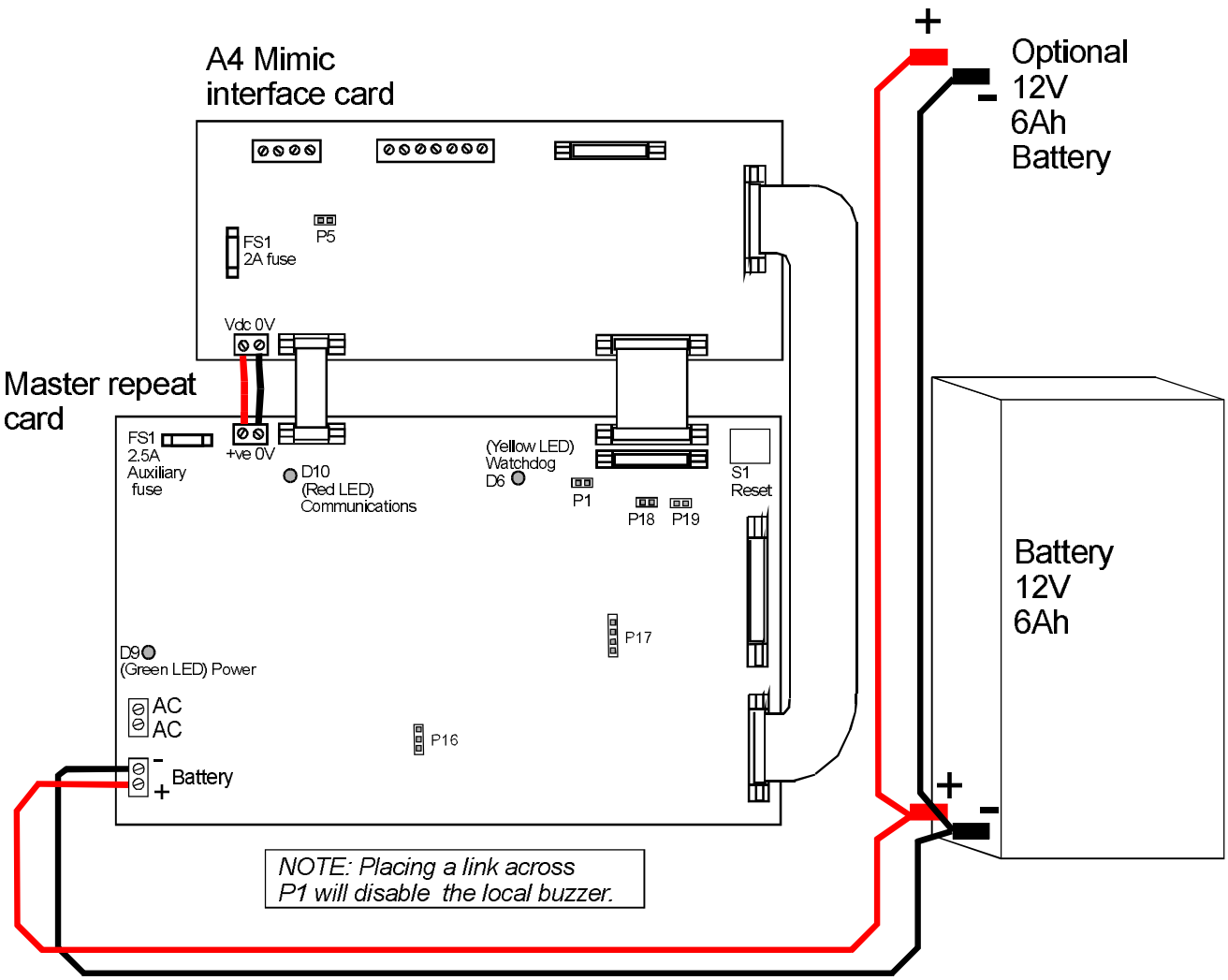


Figure 3-5 Components and battery connection
cdm21

Local buzzer disable

- ❑ If required, insert a link to short pins P1 on the *master repeat card PCB* to disable the local buzzer.

> ***NOTE:*** *Under mains fail condition, that is with only the green* ***power*** *and* ***yellow*** *fault LEDs* ***On,*** *the optional battery if installed will provide a standby supply to the unit for up to* ***72 hours plus 0.5 hour alarm load.***

> ***NOTE:*** *If the local buzzer is* ***enabled,*** *then there is no means of locally cancelling the buzzer during local fault condition. The buzzer is automatically cancelled when the main panel buzzer is cancelled.*

Power-up

❑ Connect the mains supply and power-up the panel.
Indications given on the master repeat card:

- *green* (power on) LED will be lit
- *amber* (watchdog) LED will be lit momentarily
- *red* (loop communication failed) LED will be lit
- the *local buzzer* will sound for a short duration, if enabled
- after a short duration a message will appear on the mimic panel:

```
OFF LINE
```

❑ Connect the battery supply.

Fault messages

Message	Meaning	Possible cause
Comms fault	Communications failure between mimic display and mimic control units	There is a wiring fault between mimic display unit and mimic control unit
Disp Ack Fault	The mimic display fails to acknowledge communications from the mimic control unit	There is a communication failure between display board (display unit) and small interface board in the (control unit)
MRC I/F fault	The A4 mimic interface card in the control unit has detected a fault with the master repeat card	Bad ribbon cable connection or the master repeat card is faulty
System error #1	Mimic display unit ROM fault	Faulty micro processor in the display unit
System error #2	Mimic display unit RAM fault	
System error #3	Hardware fault	
System error #4	Spurious interrupt	These faults are normally transient and infrequent. Regular occurrence of such faults should be reported.
System error #5	Data corruption	
System error #6	Task stalled	

❑ Close the door on the unit and lock it.

VIG-INT-1CH Single channel interface

- ❑ Open the front cover and make the cable connections to the loop circuit.

> ***NOTE:*** *The loop and input line cable screens must be earthed.*

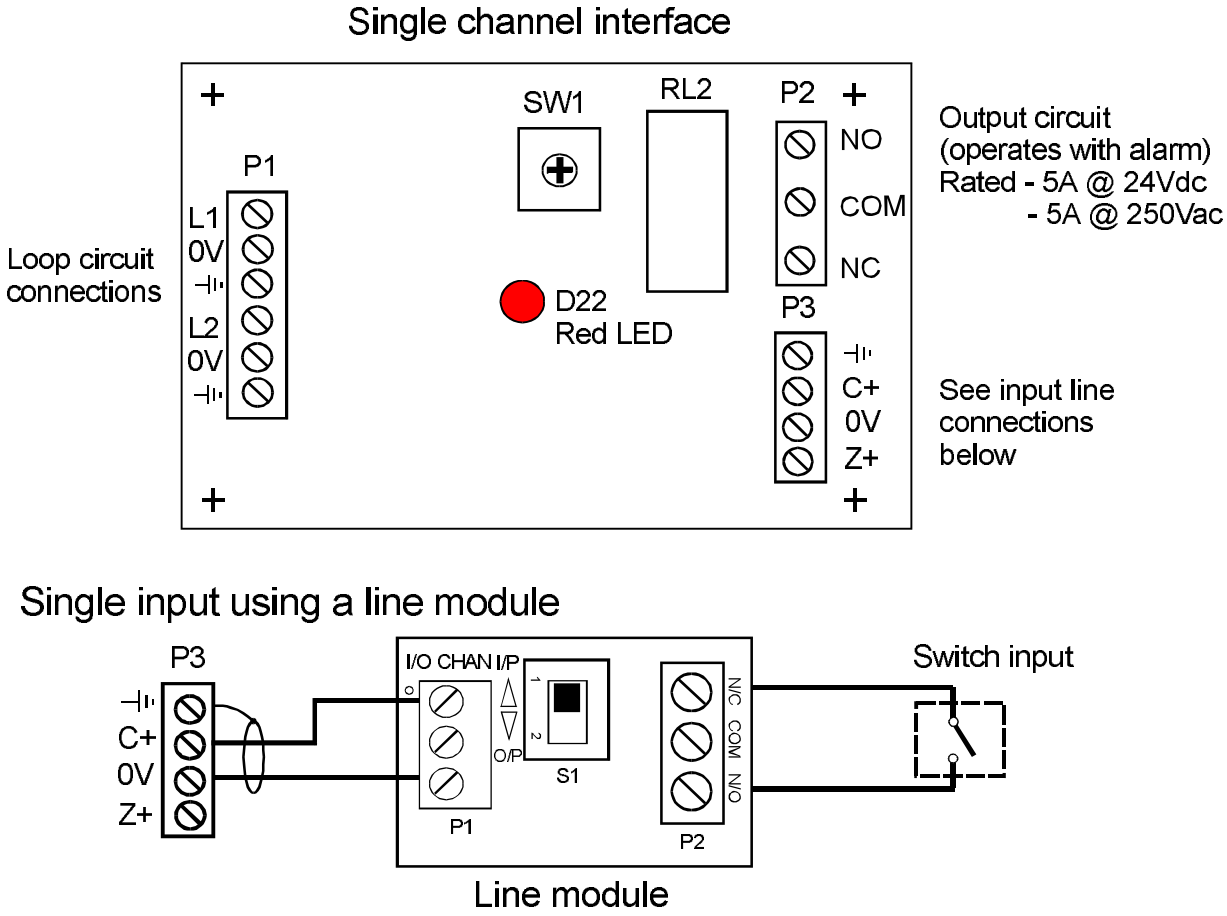


Figure 3-6 Single channel interface board
cdm21

Rotary switch

- ❑ Set the rotary switch SW1 (on the interface board) for the required input.

Rotary Switch (SW1) position	Input circuit function. To monitor:	mode of input circuit operation	normal status of the input signal	delay (seconds) before signal is accepted
0	Off			
1	Off			
2	Multiple inputs	Fire	N/O	0s
3	Multiple inputs	Fire	N/O	30s
4	Single input	Fire	N/O	0s
5	Single input	Fire	N/O	30s
6	Single input	Fire	N/C	0s
7	Single input	Fire	N/C	30s
8	Single input	Fault	N/O	0s
9	Single input	Fault	N/O	30s
A	Single input	Fault	N/C	0s
B	Single input	Fault	N/C	30s
C	Single input	Supervisory	N/O	0s
D	Single input	Supervisory	N/O	30s
E	Single input	Supervisory	N/C	0s
F	Single input	Supervisory	N/C	30s

N/O = Normally open N/C = Normally closed

> ***NOTE:*** *An input circuit is monitored for both open or short circuit fault.*

Configurations

The *single channel interface unit* can be configured to operate:

- ❑ Single input
- ❑ or Multiple input
- ❑ with Output signal via relay change over contacts

Input/Output line test

At an appropriate stage of commissioning the interface input and output circuits must be tested as per project specification. The tests are based on the type of equipment interfaced.

Single input

> ***NOTE:*** *When the single channel interface unit is configured to accept single input then a* ***line module*** *must be used.*

Line module switch

- ❑ The line module may be installed in a remote location up to **100m** cable distance away. Its two position switch must be set to input.

Multiple inputs

NOTE: *When the single channel interface unit is configured for multiple inputs then an end-of-line capacitor unit must be used.*

NOTE: *The multiple inputs may be from manual call points with an in line 470 ohms resistor connected.*

Output circuit

The *single channel interface unit* output operation is via a relay. The relay contacts are voltage free and rated:

- 5A at 24Vdc

NOTE: *The relay output of the interface will operate with a sector. Therefore the single channel interface outstation will need to be configured to a sector.*

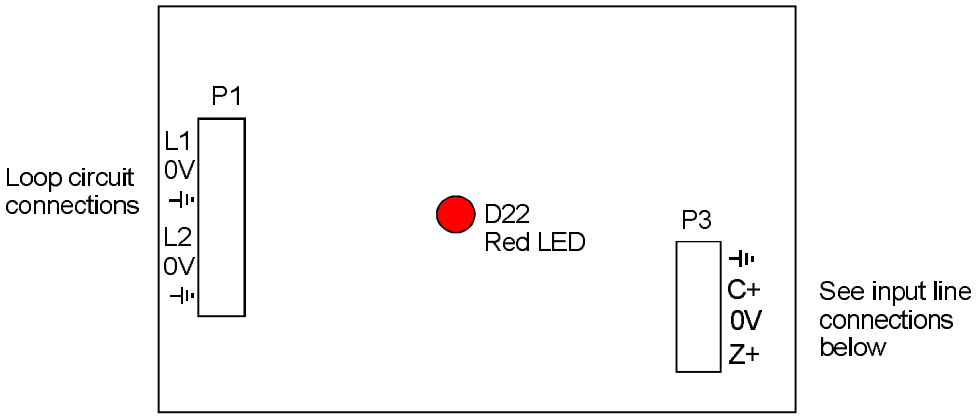
NOTE: *A local switching facility to select the input/output mode of operation is not provided. The single channel interface unit operates both* ***input*** *and* ***output*** *circuits.*

VIG-INT-ZONE Loop powered zone module

- ❑ Open the front cover.
- ❑ Make the cable connections to the loop circuit.

> ***NOTE:*** *The loop and input line cable screens must be earthed.*

> ***NOTE:*** *An end-of-line capacitor unit must be connected to the end of the detection (zone) circuit.*



Detection (zone) circuit

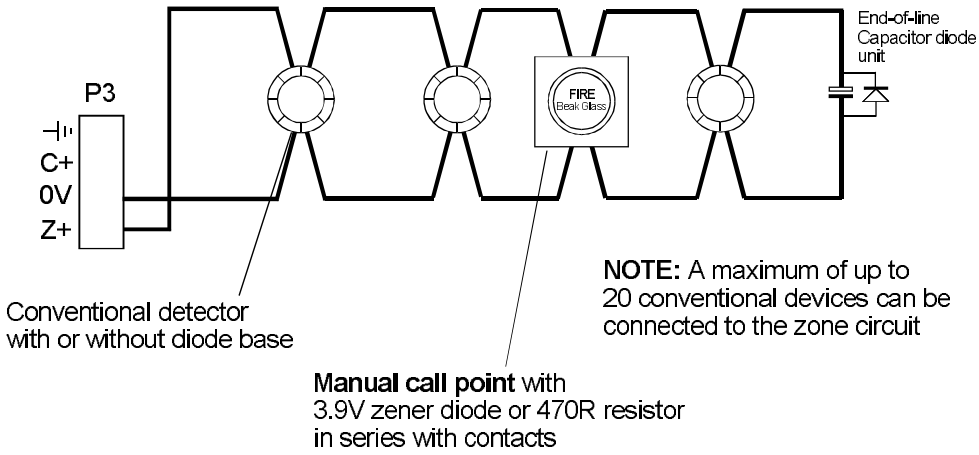


Figure 3-7 Loop powered zone module
cdm40

> ***NOTE:*** *The Vigilon system is unable to distinguish between a* ***fire input*** *from* ***manual call points and detectors*** *connected to the zone circuit of the loop powered zone module.*

Zone circuit

The zone circuit can accept up to **20 conventional devices**, *such as GENT XEN-DET-XXX range of conventional fire detectors and manual call points* (the latter fitted with 3.9V zener or 470 R resistor in series with its contact).

Address allocation

CAUTION: *Completely power-down the control panel before removal and refitting of cards inside the panel.*

CAUTION: *Always power-down the battery supply before the mains supply. The power-up should be in the reverse order.*

Loop preparation

Main loop

- ❑ On initial soft allocation of any loop, End-2 must be disconnected.

Sub loops

- ❑ Ensure the far end of the main loop is disconnected, as seen from End-1.
- ❑ Normally, a loop circuit is powered automatically when the control panel is powered-up.

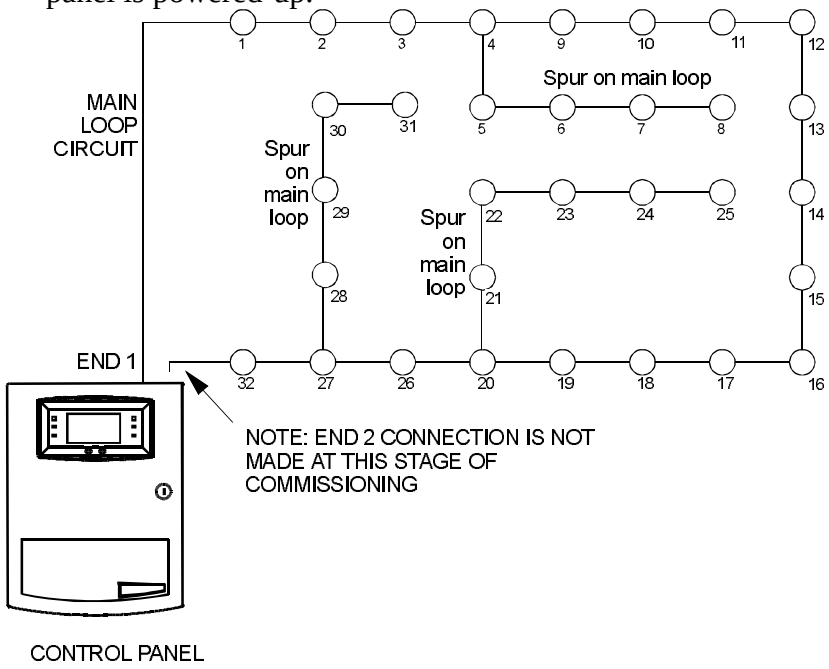


Figure 4-1 Address allocation

cd8m139

How to power a loop

A loop circuit must be powered down before working on the loop wiring.

To power down a loop

- ❑ Carry out a *reset card* n using the **[Test/Eng]** menu and then immediately press the *Other controls* button.

To power up a loop

- ❑ Carry out a *reset card n* using the **[Test/Eng]** menu, note the loop is automatically allocated.

How soft addresses are allocated

See Appendix B.

Soft addressing

- This is the address given to an outstation/device during address allocation stage. Soft addresses are allocated on a numerically lowest unused value basis.

During allocation

- The allocation of addresses start from End-1 of a loop circuit in a numerical order. On reaching a T-breaker the circuit off is allocated addresses. On completion the process continues along the main loop.
- The loop circuit is powered-down to allow all loop breakers to open. Then the first outstation is given an address and asked to provide its:
  - digital status, to determine its input/output
  - ident, to determine family of device
  - serial status, to determine loop breaker status
- On closing the loop breaker of an allocated device the process is repeated on the next device.
- The allocated loop is then mapped and short circuit delays are set up. A short circuit delay is required to close the second loop breaker of a T-breaker device.

> ***NOTE:*** *The new map is checked against the last map on the RAM, if found to be different then a* ***warning*** *indication is given.*

Allocation Faults

- The device with a hardware fault may have its LED lit.

```
Short at Card X
Short Circuit at OS X Loop Y
Allocation : HW Fault at OS X Loop Y
Allocation : Tx Fault at OS X Loop Y
Allocation : Double Allocated at OS X Loop Y
Allocation : Map Error at OS X Loop Y
```

- An allocation fault that has been rectified will not be recognised until after reallocation of the loop.
- A loop with allocation faults will not be able to distinguish between a point type sensor and a call point.
- When a short circuit fault is found, the loop re-allocates to the device before the short circuit. The device loop breaker remain open and the device LED is lit and the loop is active up to that point.

During start up

- A loop is started after allocation. Each device is set up to start operating normally based on its type, when analogue channels are read.

Starter faults

```
ASCII Outstation is Faulty, OS X Loop Y  (ASCII - Repeat/Mimic panel)
TX Fault on OS X Loop Y
```

Checking an outstation status

- List the status of all the outstation on the allocated loop at the Control Panel top level menu: Select **[Info]->[Status]->[Outstation/Device]**.

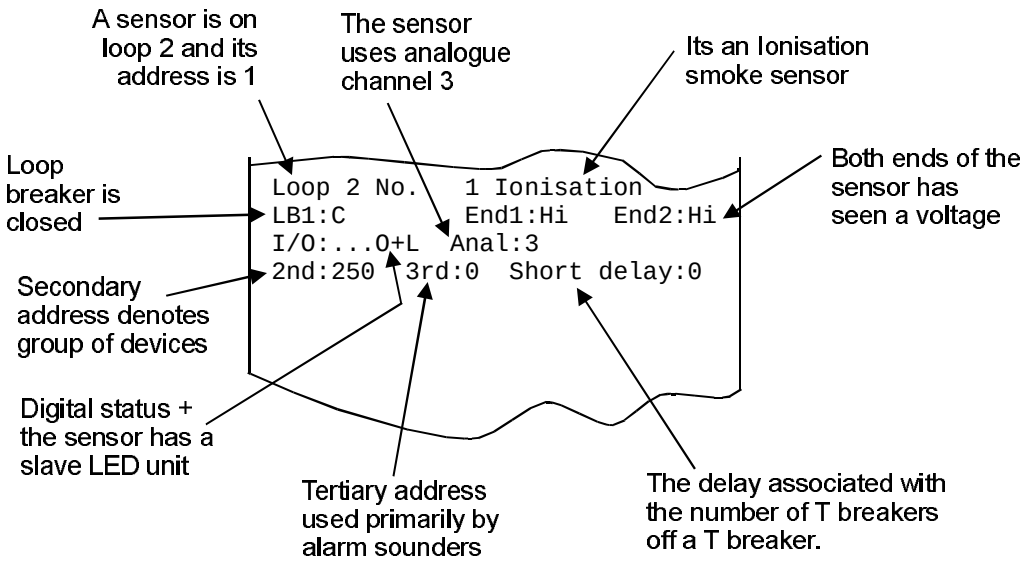


Figure 4-2 Outstation status printout

cd8m089

Outstation	digital	channels
Sounder	.00.	
Repeat sounder	.00.	
Interface unit mains powered)	all possible	1,2,3,4,5,6
Extinguishant interface (mains powered)	all possible	1,2,3,4,5,6
Optical heat	...0	1,2
Heat	...0	4
Ionisation	...0	3
Beam transmitter	...0	2
Beam receiver	...0	1,2
System MCP	...0	6
Repeat panel	...0	-
Mimic panel (standard A2 and A4 size)	...0	-
Zonal mimic	...0	-
Loop interface	all possible	1,2,3,4,5
FE loop interface	all possible	1,2,3,4,5
Single channel interface unit	10.0	1,2,5
Loop powered zone module	1..0	1,5
Optical/Heat Sounder	.000	1,2
T-breaker O/S	...0	
Audio Control Unit		
Distributed Amplifier Unit	I00I	

NOTE: *The correct device type may not be displayed if the loop circuit has allocation faults.*

- ❑ Check that the outstation (device) is of the correct type and is suitable for the area in which it is installed.
- ❑ Check the digital status of all devices.

Successful allocation

- ❑ Will have total number of devices/outstations equal to amount installed. Also there will be a loop voltage on the unconnected end of the cable.

End-2 connection

- ❑ Power-down the loop before making any changes to the wiring.
- ❑ Connect the loop cable at End-2 and reallocate to check the allocation from end to end.
- ❑ Connect the sub-loop cable ends and reallocate to accept the circuit as a complete loop.

> ***NOTE:*** *A warning may be displayed to indicate that the loop map has changed. Use* ***[Test/Eng]*** *menu and* ***[Clear]*** *facility to remove the warning indication.*

- ❑ Check that the loop has started and is complete by viewing **[Info]**-> **[CardStat]** menu.
- ❑ Repeat the procedure for other loops, one at a time.

How to Safe address devices/outstations

SAFE Addressing

This is the address given to an outstation/device during commissioning, the value of which is stored in the non volatile memory within the electronics module of the outstation/device, the Safe address is therefore carried with the device.

Safe address can be given to any device/outstation on loop circuit:

- ❑ Individually
- ❑ in a consecutive range
- ❑ or an entire loop can be safe addressed

To do this select **[Test/Eng] -> [SAFE]** option and enter the *soft address* of device(s)/outstation(s) which are required to be safe addressed and then enter the *Safe address* to be assigned to the device(s)/ outstation(s). The address entry can be a range of outstations/devices.

> ***NOTE:*** *It is efficient to safe address devices/outstations using the commissioning tool.*

To convert a device from safe to soft address

If for any reason the safe address given to a device/outstation is not required and the device/outstation needs to be converted for soft addressing, then:

- ❑ Select from the top level menu **[Test/Eng] -> [SAFE]** and enter the *safe address* of the device/outstation and then *enter 0* to convert the device /outstation back to soft addressing mode.

Checking loop map

- ❑ A *loop map* is checked against the *as fitted wiring drawings.* This will confirm the exact location of each system device and its address.

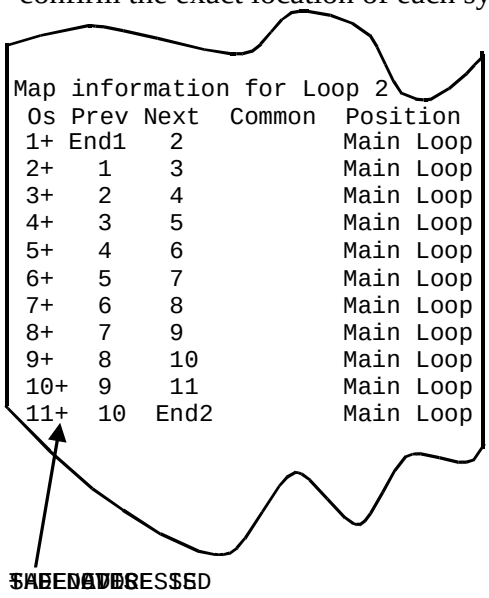


Figure 4-3 Loop map printout

cd8m090

- ❑ The following tools will help when checking outstation/devices on a loop circuit.

- two way radio for communication
- *as fitted wiring drawings* (2- copies) marked with device numbers

- ❑ a printout of the loop map obtained using **[Info]->[Print] [Loop Map].**

- ❑ Check the operation of any remote LED indicators if used.

- ❑ Check the suitability of each device for the area in which it is installed and the location of installation with reference to as fitted drawings.

Back up and recovery to RAM card

Back up of loop

- A fully allocated loop should be backed up onto the system RAM card select from the main menu **[SetUp]** -> **[Back up]** option and enter the number/range of the card to be backed up**.**

Recovery of loop

- On power-up the information stored on the RAM card is automatically recovered to Local Controller and Loop Processor cards
- If there are loop map conflicts the display shows

```
Recovery failure          i.e. such as channel conflicts
```

> ***NOTE:*** *A warning will be displayed if a loop map is different to that previously backed up to the RAM card.*

The configuration held by the cards

Local controller card

- Holds the status or configuration of:
  - printer state - On Off
  - usercode - the user entry password
  - timeslots and time blocks
  - delay blocks
  - sounder configuration for all three Signals plus IO line
  - auxiliary relay
  - action/deaction #
  - assign/remove #
  - setup #

  # - the exceptions are held on the *loop processor card*

Loop processor card

- Holds the status or configuration of outstations:
  - labels
  - gain
  - assign/remove to sectors
- setup of states and timeblock.

Loop tests

Check loop resistance and capacitance

- ❑ Power down and disconnect both ends of the *loop 0V* wiring at the control panel, whose resistance and capacitance are to be measured.

Resistance

- ❑ Using a *multimeter* measure: check the resistance between the *loop 0V* (End 1) and *0V line* (End 2). In practice this should not be greater than **18 ohms.**

Capacitance

- ❑ Check the capacitance between the *loop 0V* and *cable screen*. The capacitance should not be greater than **1.0uF.** In practice, the cable end-1 and end-2 should read the same value.

Find outstations

- ❑ Devices on each loop can be made to indicate to allow their location to be traced, select **[Test/Eng]** -> **[Find OS] and enter the** device/outstation number**.**

- ❑ While one person operate the keys at the control panel, the other person will follow the loop wiring and confirm receiving an indication at each device.

- ❑ It is usual for the person confirming the loop map to mark his copy of the *as fitted wiring drawings* with the actual device address.

Sensors and MCP

- ❑ a *fire sensor* or system *manual call point* will operate its LED for 0.5 second *On* and 0.5 second *Off* repeated. It does this for a period of 2 minutes.

Sounders

- ❑ each system *alarm sounder* will provide an audible sound for 0.5 second *On* and 0.5 second *Off* repeated. It does this for a period of 2 minutes.

interface units

- ❑ each *interface output* will in turn be activated for 0.5 second *On* and 0.5 second *Off* repeated. It does this for a period of 2 minutes.

> ***NOTE:*** *The* ***loop powered zone module*** *and* ***single channel interface*** *will provide an indication by switching on the* ***red LED (D22)*** *on the interface board.*

Outstation panels

- ❑ a *mimic and repeat panel* will display an outstation number.

Loop short circuit test

A loop short circuit isolation test should be carried out during commissioning. To do this:

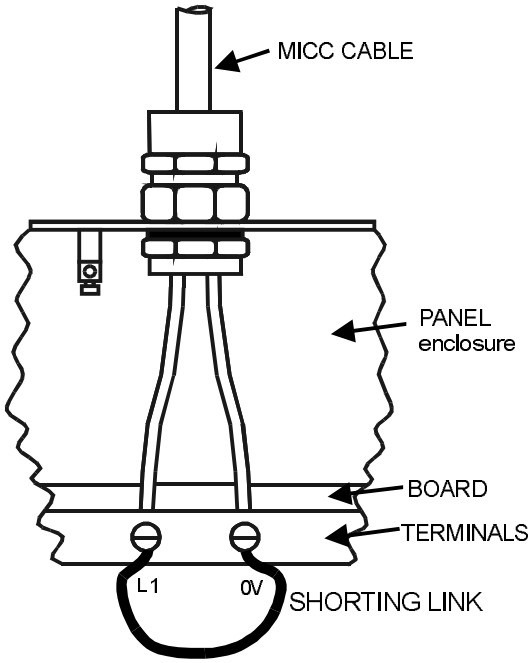


Figure 5-1 Shorting link

cd8m090

End 1 Short test

- ❑ Short circuit the pair of loop terminals at End-1. There should be no loss of any part of the system. The display shows

```
Wiring changed - short
Wiring changed - loop split
```

- ❑ After rectification action, a re-allocation of the loop circuit is required to clear the fault indication.

End 2 and Mid circuit Short test

- ❑ The short circuit test should then be repeated for **End-2** and again at **mid point** of the loop.

> ***NOTE:*** *A Vigilon system with outstations/devices will need short circuit test to be performed at mid point of each loop circuit.*

Short circuit isolation

When a short circuit is introduced on a loop circuit, the control panel will:

- power down the loop causing all the devices to open their *loop breakers.*
- the *loop processor* will close the *loop breakers* in each device in turn starting from End-1.
- if a device closes its *loop breaker* and the line signal dips, then a short circuit is assumed to be beyond that point on the cable.
- the particular device will re-open its *loop breaker*, thereby isolating the cable from End-1.
- the process is repeated from End-2 thus isolating the defective cable.
- the isolation process takes approximately one second depending on the size of the loop circuit.

Ground break test

A ground break test should be carried out during commissioning. To do this:

- ❑ Disconnect the *0V line* from End-1 of a loop circuit.

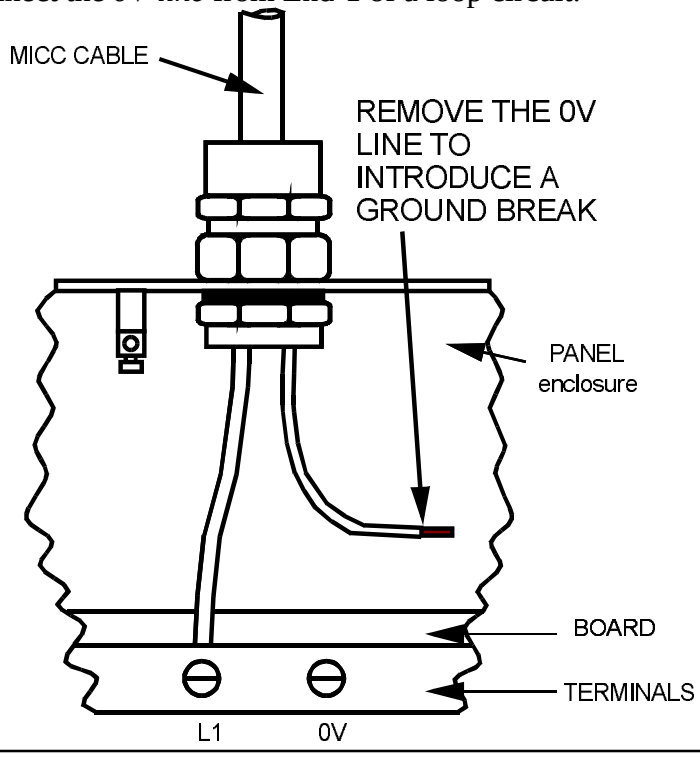


Figure 5-2 Removal of 0V line connection

cd8m092

NOTE: *A single 0V line break should not cause the loss of any part of the system.*

End 1 break test

- ❑ This may have to be sustained for up to a minute. The display shows:

```
Wiring changed - ground break
```

- ❑ To clear the fault, the *0V line* should be reconnected and then the loop should be re-allocated.

End 2 & Mid loop break test

- ❑ The ground break test should be repeated at the other end of the loop circuit, End-2.

Ground break monitoring

The control panel automatically carries out a *ground break test* on each loop every minute. It does this by:

- temporary disconnection of *OV line* at End-2
- the loop processor then checks to see if the loop signal is still present on the incoming cables of End-2.
- if the signal is present then this indicates the *OV line* is intact. Otherwise a fault is indicated.

NOTE: *The exact location of a ground break is not known. The loop will run as normal until after the defective cable is repaired and the loop is re-allocated.*

Earth fault test

Earth fault tests should be carried on a loop circuit during commissioning. To do this:

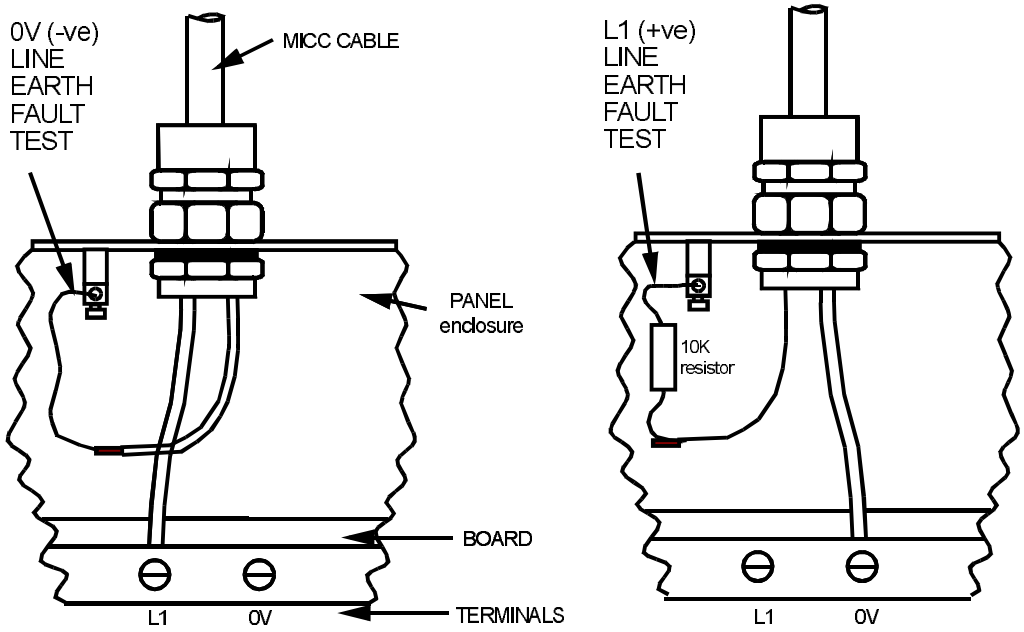


Figure 5-3 Simulating earth faults

cd8m093

0V-line earth fault test

- ❑ Connect the *0V line* to the earth of the control panel enclosure. This may have to be sustained for up to 1 minute for the fault to be detected.

```
Earth Fault
```

- ❑ Restore normal conditions. The display show:

```
Earth Fault cleared
```

+ve line earth fault test

- ❑ Now connect the *+ve line* to earth via a **10K ohm** resistor. This may have to be sustained for up to 1 minute for the fault to be detected. The display shows an Earth fault message:

- ❑ Restore normal conditions. The display show:

```
Earth Fault cleared
```

> ***NOTE:*** *If the resistance between Earth and Loop +ve is in the order of a few ohms then this will be registered as a 'short circuit'.*

Type of earth fault

Interrogate the **[PSU]** readings in the [**Test/Eng]** menu to establish the type of Earth fault.

Type of Earth fault	Earth (Ear) reading
No earth fault	around 60
+ve line and earth	greater than 75
-ve line and earth	less than 40

Earth fault monitoring

There is a connection at the control panel between the *+ve line*, *0V line* and the panel earth. This connection is disconnected momentarily during which an earth fault test is done, which happens once every minute.

Positive line break test

A positive line break test should be carried out during commissioning. To do this:

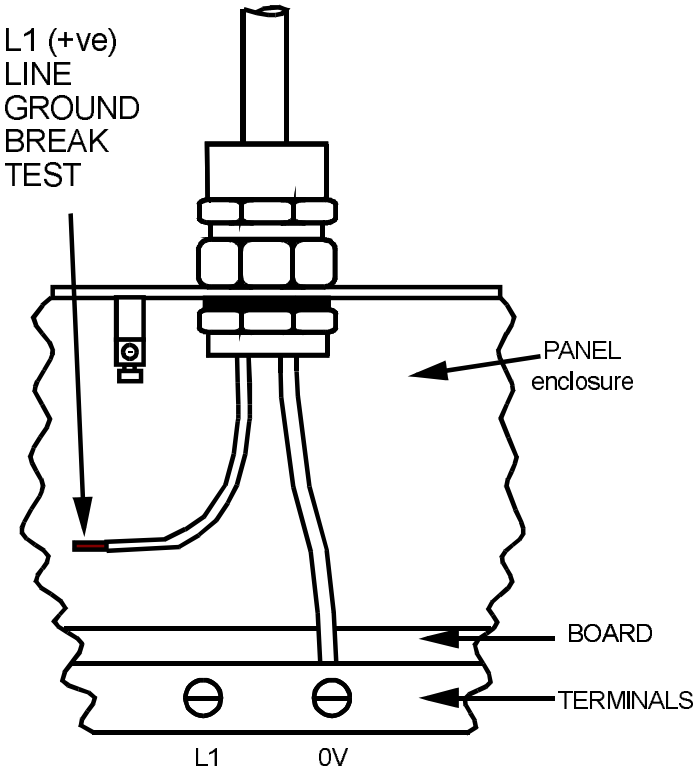


Figure 5-4 Removal of the +ve line wire

cd8m094

- ❑ Disconnect the *+ve loop* connection at one End of a loop circuit, the display shows:

```
Wiring changed - split'
```

> ***NOTE:*** *A single +ve line break should not cause the loss of any part of the system.*

- ❑ Reconnect *+ve line* to clear the fault.

> ***NOTE:*** *There may be a short delay before restoration and clearance of the fault.*

Positive line break monitoring

Each device on a loop sends information about itself to the respective loop processor. Using the serial information the Loop Processor can establish whether the device is communicating to both ends of the loop circuit. If the device is only communicating to one side of the loop then this is recognised as a fault.

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VIG-BEAM Beam sensor

Preparation

To commission the beam sensor pair check the following:

- ❑ The control panel *Loop processor* and *Local controller* cards have software version 3.4x or later.

> ***NOTE:*** *The VIG-BEAM Beam sensor is a Type 3 sensor and it is SAFE compatible.*

- ❑ The beam *transmitter* and *receiver* heads are installed on the same loop circuit.
- ❑ A two way radio is available for communication, while one person aligns the beam sensor head, another person operates the controls and read measurements given at the control panel.

The terms ‘head, device and outstation’ are used interchangeably.

These procedures assume the heads are mounted on the angle brackets. Similar procedures are applicable for the IP rated and parallel brackets.

Identification

- ❑ The beam sensor heads each has a **black plastic circular label** surrounding the lens for identification.
- ❑ The 2-way base has is a **black plastic cover** fitted over the electronics.

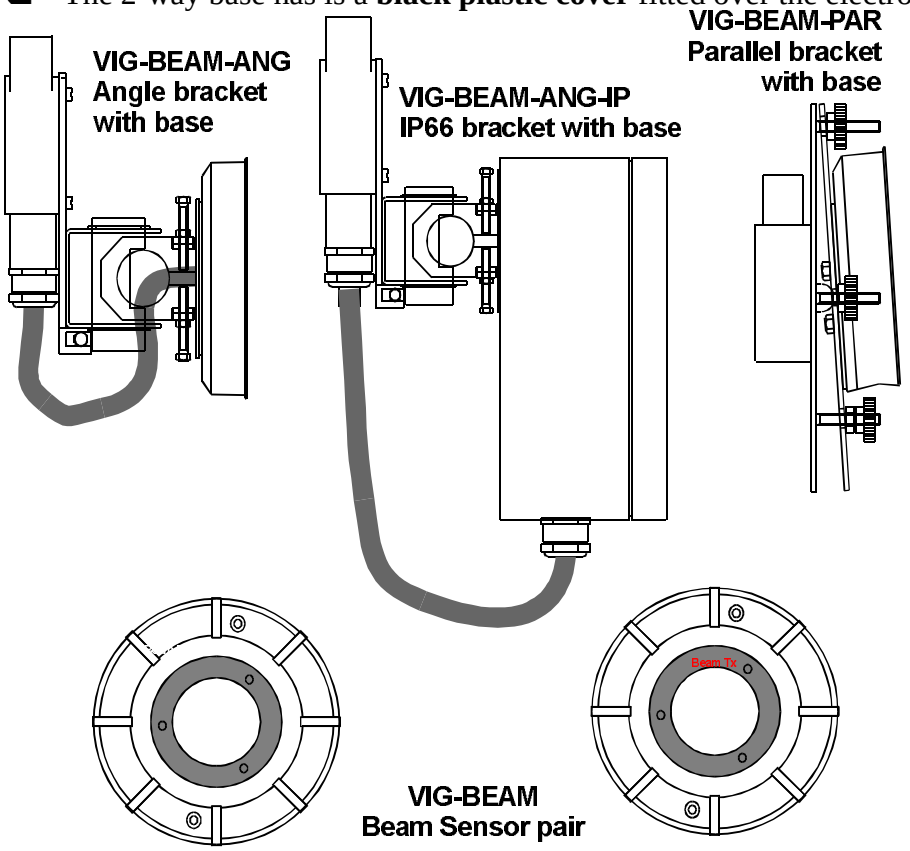

Figure 6-1 Beam sensor pair and brackets

cdn473

Beam sensor alignment

> ***NOTE:*** *Before aligning the sensor heads check to ensure all* ***bracket*** *and* ***base*** *fixing screws are securely fitted. After alignment ensure the pivot pins and adjusters are secure.*

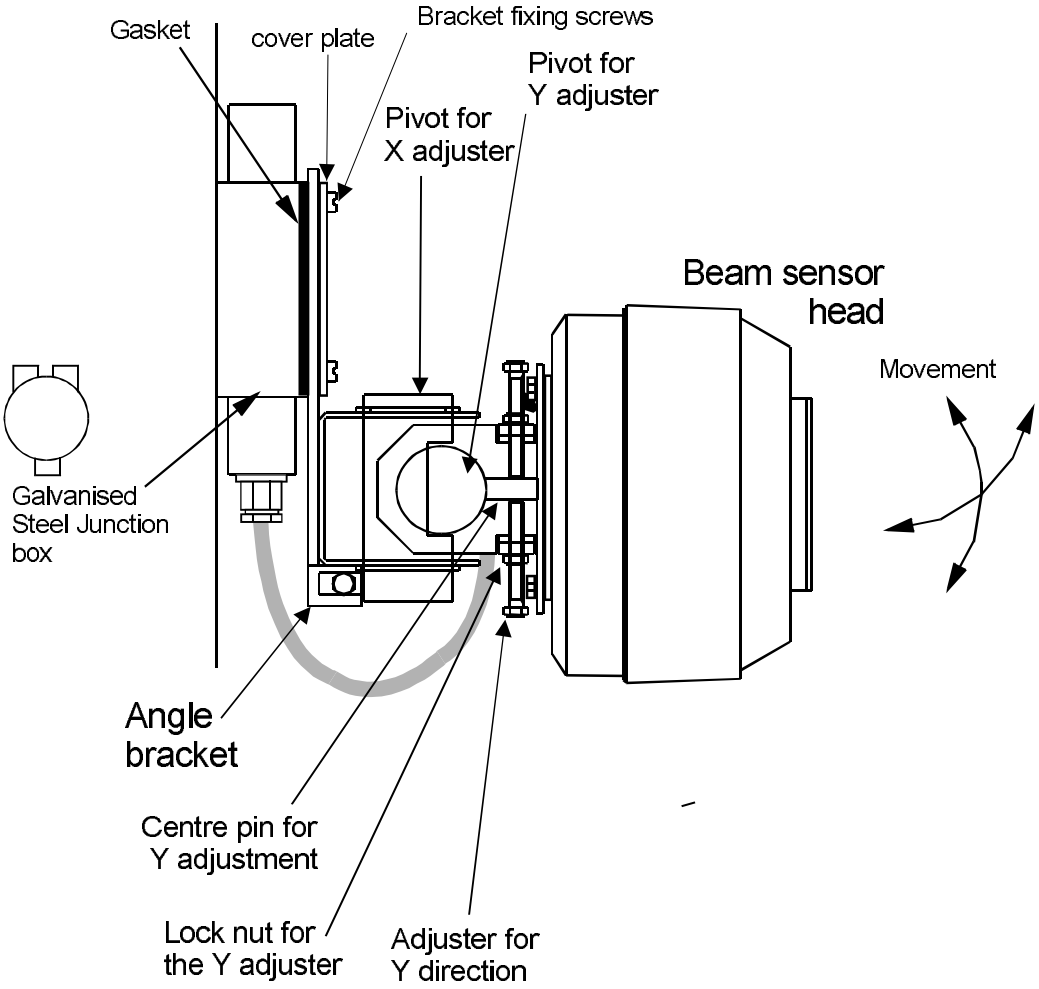

Figure 6-2 Beam sensor with bracket assembly
cdm44

Initial alignment

a) Using the adjuster on the bracket, roughly align one head to face the other head. To do this:

- slacken the locknuts to unscrew the Y- adjusters
- to make a large adjustment remove the centre pin of the Y pivot
- align the head in the Y-axis to face the opposite head
- secure the centre pin into the appropriate Y-pivot, to enable adjustment
- turn the adjusters to meet the centre pin and lock the axis adjusted using the lock nuts.
- repeat procedure for the X-adjusters
- repeat the whole procedure for the opposite head.

Select Gain

b) Select a gain from the table for the required path. Set the gain of the receiver head, select **[Test/Eng]** -> **[Gain]** and enter gain value.

> ***CAUTION:*** *On changing the gain of the beam receiver,* ***do not:***
> ❑ *power-down the control panel*
> ❑ *or reset the local controller card*
> ❑ *or reallocate or reset the loop having beam sensors*
> *until* ***gain changed acknowledge*** *followed by the* ***gain number*** *is display. Otherwise a 'Memory corrupt' message will appear on the display.*

Gain	Distance
6-9	2m
29-33	10m
56-60	100m

Course adjustment

c) Use the **[Align]** function in the **[Test/Eng]** menu and enter the two sensor head addresses. Note the LEDs on the heads will flash once every 2 seconds:

- a 1.9 seconds LED flash will be seen for a large signal
- a 100mS LED flash will be seen for a small signal.

d) Adjust the transmitter head in X and Y directions to obtain a long LED flash signal, allow at least 3 seconds for the flash rate to change. Then lock the adjusters using the lock nuts.

e) Repeat d) for the receiver head, to obtain a maximum flash length.

Time averages

f) Using the **[Info]** menu, read the time averages on **channel 2** of the receiver head, this should be between **140-170**. After each adjustment wait for 5 seconds for a change in the reading.

> ***NOTE:*** *For time average reading above 200 bits, carry out an* ***[Autogain]*** *using the* ***[Test Eng]*** *menu. This will minimise the fine adjustment.*

> ***CAUTION:*** *Never [Autogain] a range of outstations.*

Fine adjustment

g) Unlock the lock nuts to allow Y axis adjustment and using the adjusters move the transmitter head in a Y direction, then:

- stop on reaching a time average reading 5 bits below the peak value
- while counting the number of turns, adjust in the opposite direction to reach 5 bits below the peak value
- finally turn the adjuster half the number of counted turns, towards the peak and then stop
- secure the axis adjusted using the lock nuts

h) Repeat g) for adjustment in the X direction.

i) Repeat g) and h) at the receiver head.

l) Carry out a final **[Autogain]**. Then recheck the time average reading is within **140 to 170** band.

m) Back up the appropriate loop processor card LPC (which holds the gain data) to the RAM using **[Back Up]** command in the **[Set Up]** menu.

Device/Outstations checks

Check the outstation status

- From the main menu select **[Info]** -> **[Status]** and enter (device) outstation **[No]**.

Device/ outstation type	**Digital channel**	**Analogue channel**	**Time average** Tnew
Optical Heat	4 **...0** 4 **...0**	1 - optical 2 - heat	200 - 235 180 - 210
Ionisation	4 **...0**	3	160 -180
Heat	4 **...0**	4	180 - 210
Sounder	3 - low frequency 2 - on/off **.00.**	-	-
MCP	4 **...0**	6	-
Interface Loop and mains powered	Configurable I = input 0 = output **....**	1 - channel 1 2 - channel 2 3 - channel 3 4 - channel 4 5 - battery 6 - mains	- - - - - -
Single channel interface unit	**I0.0**	1, 2 & 5	
Loop powered zone module	**I..0**	1, 5	
Mimic (A2 and A4), Zonal plus Repeat	4 **...0**	-	-
Beam Transmit	4 **...0**	2	0
Beam Receive	4 **...0**	1 - raw data 2 - average data	150 - 170 150 - 170

Checking the time averages

The device/outstation environment may change time average readings. Use the **[Info]** menu and select -> **[Time Av]** -> channel **[No.]** -> and device/ outstation **[No]**.

	Foreground (fast) time average readings					**Background (slow) time average readings**					
Tnew	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
On demand	80mS	320mS	1.28S	5.12S	20.48S	1.36min	5.46min	21.84min	1.45hr	5.82hr	23.3hr
	Normally reads 252, unless there is a threshold.										

Checking the sensor condition codes

What is a condition code

A condition code provides information about a sensor device. A code indicates small changes in the environmental condition, sensor mechanism and how the sensor performs in the system.

To ensure that the sensor condition codes are meaningful, all existing codes must be cleared and the system must be left undisturbed for at least 24 hours.

Code definition

There are ten different conditions possible for each sensor type, although not all of them are defined. Each condition code has a range of **0**-**3**.

Condition Code	Meaning
0	This condition is OK. This code is not displayed unless another non zero code exists.
1 or 2	Suggests preventive maintenance is required, where necessary, to avoid possible false alarms.
3	The sensor is faulty. A fault condition indication is given at the control panel. A message reading 'Sensor Out of Specification' is displayed.

***NOTE:** A sensor having **code 3** is automatically disabled by the system to prevent false alarms.*

Sensor condition code (sub fault) analysis

- Print the condition codes of device/outstation; select **[Info]** -> **[SubFaults] (for V3+ system) or [Exceptions] (for EN54 system)** and enter the outstation/device number**.**

Condition codes	Meaning	Action
1 0 0 0 0 0 0 0 0 0 **or** 0 1 0 0 0 0 0 0 0 0 **or** 1 1 0 0 0 0 0 0 0 0	This is the *sub-fire* band and if set should be taken as showing that the sensor is at its optimum sensitivity for its location.	No action need be taken.
2 0 0 0 0 0 0 0 0 0 **or** 0 2 0 0 0 0 0 0 0 0 **or** 2 2 0 0 0 0 0 0 0 0	A *sub-fire* has been generated which would suggest that the sensor was either too sensitive for its environment or that the sensor type may be incorrect for the location.	Action should be to check location and alter sensor state or type as required. This should only be done with the knowledge of the customer. Remember to re-backup all changes to states onto the RAM Card.
0 0 1 0 0 0 0 0 0 0 **or** 0 0 2 0 0 0 0 0 0 0	These codes indicate that the sensor is in a *windy location.* This will cause the chamber voltage to drop. Code Level 1 shows one drop only, Level 2 shows greater than one drop.	The location should be checked and a change in siting made, if required. Note: Wind will not cause the sensor to false alarm.
0 0 0 0 1 0 0 0 0 0 **or** 0 0 0 0 2 0 0 0 0 0 **or** 0 0 0 0 0 1 0 0 0 0 **or** 0 0 0 0 0 2 0 0 0 0	This shows that the sensor time averages are close to acceptable limits.	On commissioning the sensor should be replaced. A sensor with code 2 is worse than code 1. On maintenance sensors with code 2 should be replaced.
0 0 0 0 0 0 1 0 0 0 **or** 0 0 0 0 0 0 2 0 0 0 **or** 0 0 0 0 0 0 0 1 0 0 **or** 0 0 0 0 0 0 0 2 0 0	This shows that high frequency noise events have been detected by the system. A code 1 shows one event and a code 2 shows more than one event.	The outstation should be replaced. On maintenance, sensor with code 2 should be replaced. If it reoccurs then check the environment.
0 0 0 0 0 0 0 0 1 0 **or** 0 0 0 0 0 0 0 0 2 0	This shows outstation hardware faults. One for a code 1 and more than 1 for a code 2.	The sensor should be replaced.
0 0 0 0 0 0 0 0 0 1 **or** 0 0 0 0 0 0 0 0 0 2	This shows that transmission faults are being noted. Level 2 is worse than Level 1.	The outstation should be replaced. If it reoccurs then check the environment.

How to clear a condition code

This can be done by:

- Removal and replacement of the *sensor chamber*.
- by re-allocation of the loop having the sensor.
- or select **[Test/Eng]** -> **[Clear]-> [SubFault] /[Exception]**.

> ***NOTE:*** *Cleared codes will return if the conditions are still true.*

Codes for Optical (heat) (sounder) sensor

> ***NOTE:*** *For the* ***Heat sounder*** *product* ***ignore*** *the* ***Optical codes****.*

Gen type	Pos No.	Description	Condition codes: normal band 0	sub fault band 1	sub fault band 2	fault band 3
ENVIORNMENT	1st	Optical subfire	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	2nd	Heat subfire	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	3rd		-			
	4th		-			
SENSOR	5th	Optical channel drift or out of range	OK		Close to acceptable limit **Low T_{11}<175** **High T_8>240** [clean]	Out of limits **Low T_{11}<165** **High T_8>245** [Clean/replace]
	6th	Heat channel drift or out of range	OK		Close to acceptable limit [Clean]	Out of limits **Low T_9>250** **High T_{11}<20** [Clean/replace]
	7th	Optical channel noisy (High freq)	OK	Single HF noise event detected	Multiple HF noise seen (check location and report)	
	8th	Heat channel noisy (High frequency)	OK	Single HF noise event detected	Multiple HF noise seen (check location and report)	
OUTSTATION	9th	Outstation firmware	OK	Isolated fault [Note/report]	Repetitive fault [Note/report/ replace]	Total failure [Replace]
	10th	Outstation transmission	OK	Low error rate	Medium error rate [Report]	High error rate [Replace]

Codes for Heat sensor

Gen type	Pos No.	Description	Condition codes: normal band 0	sub fault band 1	sub fault band 2	fault band 3
ENVIORNMENT	1st	Subfire background	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	2nd	Subfire foreground	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	3rd					
	4th					
SENSOR	5th	Drift out of range high	OK			Above upper limit **T9>250** [Replace]
	6th	Heat channel drift or out of range	OK			Below lower limit **T11<20** [Replace]
	7th	Noisy (High frequency)	OK	Single HF noise event detected	Multiple HF noise seen	
	8th					
OUTSTATION	9th	Outstation firmware	OK	Isolated fault [Note/report]	Repetitive Fault [Note/report/ replace]	Total Failure [Replace]
	10th	Outstation transmission	OK	Low error rate	Medium error rate [Report]	High error rate [Replace]

Codes for Ionisation sensor

Gen type	Pos No.	Description	Condition codes: normal band 0	sub fault band 1	sub fault band 2	fault band 3
ENVIORNMENT	1st	Subfire background	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	2nd	Subfire foreground	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	3rd	Windy location	OK	One deviation away from normal [Check location, state & type]	More than one deviation away form normal [Check location, state & type]	
	4th					
SENSOR	5th	Drift out of range	OK		Close to acceptable limit **Low T_{11}<100 High T_8>235** [Clean]	Out of limits low T_{11}<80 **High T_8>245** [Clean/replace]
	6th	Deviation from quiescent	OK	Sensed one deviation FET faulty [check]	2 Deviations [Note/report/ repair]	
	7th	Noisy (High frequency)	OK	Single HF noise event detected	Multiple HF noise seen	
	8th					
OUTSTATION	9th	Outstation firmware	OK	Isolated fault [Note/report]	Repetitive fault [Note/report/ replace]	Total failure [Replace]
	10th	Outstation transmission	OK	Low error rate	Medium error rate [Report]	High error rate [Replace]

Codes for Beam sensor

Gen type	Pos No.	Description	Condition codes: normal band 0	sub fault band 1	sub fault band 2	fault band 3
ENVIORNMENT	1st	Subfire background	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	2nd	Subfire foreground	None	Small signal sensed [Check location, state & type]	Subfire [Check location, state & type]	
	3rd					
	4th	Total beam obscuration	OK			Obscured for >1 minute or Tx failed [Replace]
SENSOR	5th	Drift out of range high	OK			Gain not set correctly [Check gain /replace]
	6th	Drift out of range low	OK		Out of Specification. [Clean/check gain repair]	Below lower limit [Clean/check gain/replace]
	7th	Noisy (High frequency)	OK	Single HF fall seen	Multiple HF fall seen	
	8th					
OUTSTATION	9th	Outstation firmware	OK	Isolated fault [Note/report]	Repetitive fault [Note/report/ replace]	Total failure [Replace]
	10th	Outstation transmission	OK	Low error rate	Medium error rate [Report]	High error rate [Replace]

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Sensors and interface input States

Loss Prevention Council approved states

- The **fire sensors** used in the system are under **test** at **Loss Prevention Council (LPC)**, there may be one or more of the fire sensor **states** under **approval**.
- If a sensor is configured to operate a non LPC approved state, then this will contravene the LPC approval.

> ***NOTE:*** *All the LPC states applicable to Fire Sensors are configured from the Control Panel.*

Device	LPC approved STATE	Meaning
Optical heat sensor	State 0	Medium smoke sensitivity with Grade 2 heat
	State 8	Smoke sensing with delay + Grade 2 heat
	State 12	Grade 1 heat only
	State 13	Grade 2 heat only
Heat sensor	State 0	Default sensitivity
	State 1	Grade 1
Heat sounder	Stare 0	Grade 2 heat
	State 12	Grade 1 heat
Ionisation sensor	State 0	Default sensitivity
Beam sensor	State 2	Path length up to 30m
	State 0	Path length greater than 30m

On power-up the system selects **state 0** for all devices.

Definitions

Condition	meaning..	..and for State 0 it implies
PreFire	Fire detection is at a **higher sensitivity** than the selected *state.*	Fire detection that will **easily pass** the respective **British Standard test.**
Fire	Fire detection **at the sensitivity** of the selected *state* .	Fire detection that is **referenced** to the respective **British Standard test**.
SuperFire	Fire detection at **lower sensitivity** than the selected *state.*	Fire detection that will **not pass** the **British Standard test.**

Non defined states

If a non defined state is selected during commissioning then the control panel will revert to State 15.

Optical heat (sounder) sensor states

These states cover the following sensors:

- ❑ Optical heat sensor
- ❑ Optical heat sounder
- ❑ Heat sounder

> ***NOTE:*** *For the* ***Heat sounder*** *product ignore the* ***Optical states****.*

State	Definition	Application
State 0 **(LPC approved)**	Medium sensitivity Heat Grade 2 Optical smoke normal sensitivity	Suitable for most applications. Provides smoke detection to meet BS5445:Part 7 and provides heat detection to meet Grade 2 as defined in BS5445:Part 5.
State 1	High sensitivity optical or Grade 2 heat	Used in areas or situations where airborne smoke or dust is unlikely to occur and therefore a more sensitive detection is available.
State 5	Medium sensitivity optical only	Where high ambient temperature of greater than 40^{o}C are expected in the detection area
State 8 **(LPC approved)**	Medium sensitivity optical with 20 seconds time constant or Grade 2 heat	This state is useful in hotel bedrooms where low levels of signal could occur for short durations. If smoke and heat occur simultaneously the time delay is effectively overridden to provide fast detection.
State 10	Medium sensitivity optical with time delay (20 second time constant) or Grade 2 heat	Suitable performance to state 8 without the time delay overridden. Useful in hotel bedrooms and loading bays where low levels of signal may occur.
State 11	Low sensitivity optical or Grade 3 heat	Used for smoke detection in areas where airborne particles or smoke are normally present, or high temperatures (up to 40^{o}C) can be normally attained.
State 12 **(LPC approved)**	Grade 1 heat only	No optical smoke detection. Can be used where airborne particles or smoke could occur briefly or at specific times. Optical detection can be used in conjunction with time blocks/slots to enable/disable sensor depending on application.
State 13 **(LPC approved)**	Grade 2 heat only	
State 14	Grade 3 heat only	
State 15	No detection	This state can be used to provide total disablement on a timed or temporary basis.

Heat sensor states

State	Definition	Application
State 0 **(LPC approved)**	(Default) Grade 2, rate of rise and fixed temperature	Suitable for general use in ambient temperatures up to 40^{o}C. Provides detection to Grade 2 performance as defined in BS5445 : Part 5.
State 1 **(LPC approved)**	Grade 1, faster rate of temperature rise as well as fixed temperature	Applicable for areas with normally very steady low ambient temperatures. A faster rate of rise can signal a fire below the normal set temperature at 58^{o}C.
State 2	Grade 1, limited rate of rise	Applicable for normal ambient temperature where temperature variations are expected up to 40^{o}C but faster response than grade 2 is required e.g. hotel bedroom.
State 5	High temperature **with** rate of rise	Provides detection as specified by **Range 1 BS5445:Part 8 .**
State 6	High temperature **with no** rate of rise	Provides detection as specified by **Range 1 in BS5445:Part 8**.
State 15	No detection	No detection. This is a total disablement of the sensor.

Ionisation sensor states

State	Definition	Application
State 0 **(LPC approved)**	Default detection Medium sensitivity	Detection in this state is at a sensitivity which will meet the requirements of BS5445:Part 7.
State 3	Medium sensitivity with 20 seconds time constant	Where fast transients are required to be ignored.
State 5	Medium sensitivity with no background detection	Same as state 0 but ignores smouldering fires, taking greater than 20 minutes to reach alarm levels. Used when mixed with optical smoke/heat sensors or in normally smoky environments.
State 10	Low sensitivity with 5 seconds time constant	Lower sensitivity than state 0. Can be used where low levels of airborne smoke or dust are likely to occur.
State 12	Slow and Low sensitivity with 20 seconds time constant	A lower sensitivity state than State 10, but ignores faster transients.
State 15	No detection	No detection, total sensor disablement.

Beam sensor states

Beam sensor	Path length	State
Short path	2-30m	State 2/3
Long path	>30-100m	State 0/1

State	Definition	Application
State 0 **(LPC approved)**	Default detection	A **fire** is detected when there is a 50% (3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1second and is maintained for 40 seconds, then a **fault** is registered. This allows the Control panel to differentiate between a fire and a fault signal caused by accidental obscuration.
State 1	Normal sensitivity	A **fire** is detected when there is a 50% (3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a **fire** is registered.
State 2 **(LPC approved)**	Medium Sensitivity	A **fire** is detected when there is a 25% (1.3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a **fault** is registered.
State 3	Medium Sensitivity	A **fire** is detected when there is a 25% (1.3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a **fire** is registered.
State 4	High Sensitivity	A **fire** is detected when there is a 10% (0.5dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a **fault** is registered.
State 5	High Sensitivity	A **fire** is detected when there is a 10% (0.5dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a **fire** is also registered.
State 15	No detection.	This is a total disablement of the sensor.

Interface input states

4 - channel interface input states

These include the mains and loop powered, standard and extinguishant interfaces.

State	Definition	Applications
State 0	Default - all Inputs enabled	Normal use
State 1	Input 1 disabled	Selective disablement and enablement of interface input circuits NOTE: Where an input circuit is used for fire detection application, the call points on the circuits will remain operational on disablement of the circuit.
State 2	Input 2 disabled	
State 3	Inputs 1 and 2 disabled	
State 4	Input 3 disabled	
State 5	Inputs 1 and 3 disabled	
State 6	Inputs 2 and 3 disabled	
State 7	Inputs 1, 2 and 3 disabled	
State 8	Input 4 disabled	
State 9	Inputs 1 and 4 disabled	
State 10	Inputs 2 and 4 disabled	
State 11	Input 1, 2 and 4 disabled	
State 12	Inputs 3 and 4 disabled	
State 13	Inputs 1, 3 and 4 disabled	
State 14	Inputs 2, 3 and 4 disabled	
State 15	All inputs disabled	interface input disablement

Single channel interface

These include loop powered **single channel interface** and **loop powered zone module**.

State	Definition	Applications
State 0	Default - all Inputs enabled	Normal use
State 1	Input 1 disabled	Selective disablement and enablement of interface input circuits NOTE: Where an input circuit is used for fire detection application, the call points on the circuits will **NOT** remain operational on disablement of the circuit.
State 15	All inputs disabled	Interface input disablement

Commissioning Tool

See also:

- **Appendix C & D** Guidelines for **Standalone** and **Network** system functions.

Preparation

It is essential to have the following:

- the commissioning computer
- leads to connect the computer to:
  - control panel
  - printer
  - mains supply
- printer- *to print labels and configuration information*
- commissioning software is assumed to be loaded on computer
- as fitted wiring drawings - *showing devices (outstations) on loops*
- site labels information - *customer agreed labels to identify site areas*
- configuration information - *customer agreed site specific fire plan*

> ***NOTE:*** *Before connecting the commissioning computer and retrieving the system configuration to the computer it is important to ensure all loops have been fully allocated and there are no faults on the loop circuits.*

Connecting the computer to control panel

By connecting the commissioning computer to the control panel it is possible to download the fire system configuration held in the control panel.

The commissioning computer can be connected to the following panels:

- Vigilon EN54 or V3+ Control panel
- 3404/8 Control panel
- 3300 control panel

Connecting computer to Vigilon panel

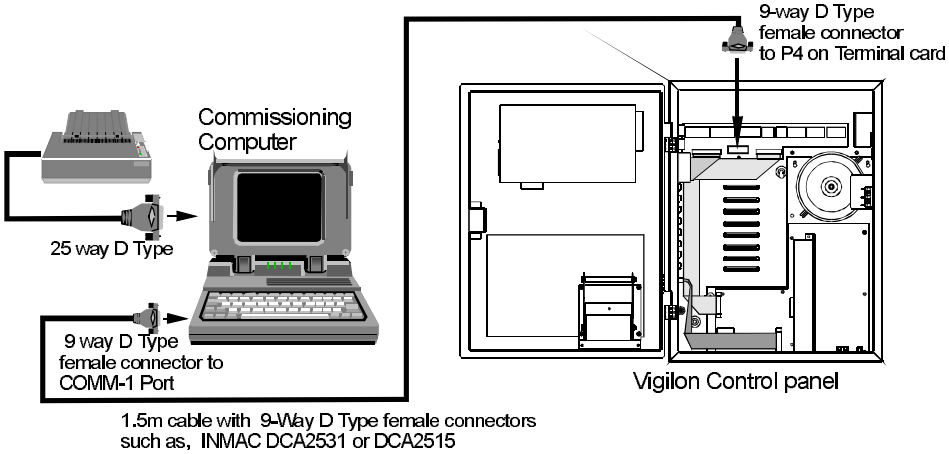


Figure 9-1 Connecting the commissioning computer to the control panel
cd8m124

Connecting computer to 3404/3300 panel

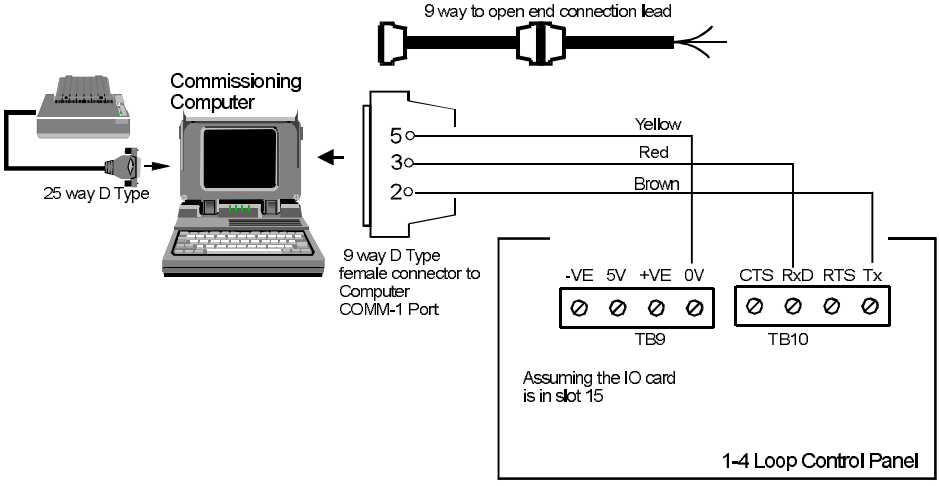


Figure 9-2 Computer to 1-4 loop panel connection
cd8m125

Connecting the computer to 3408 panel

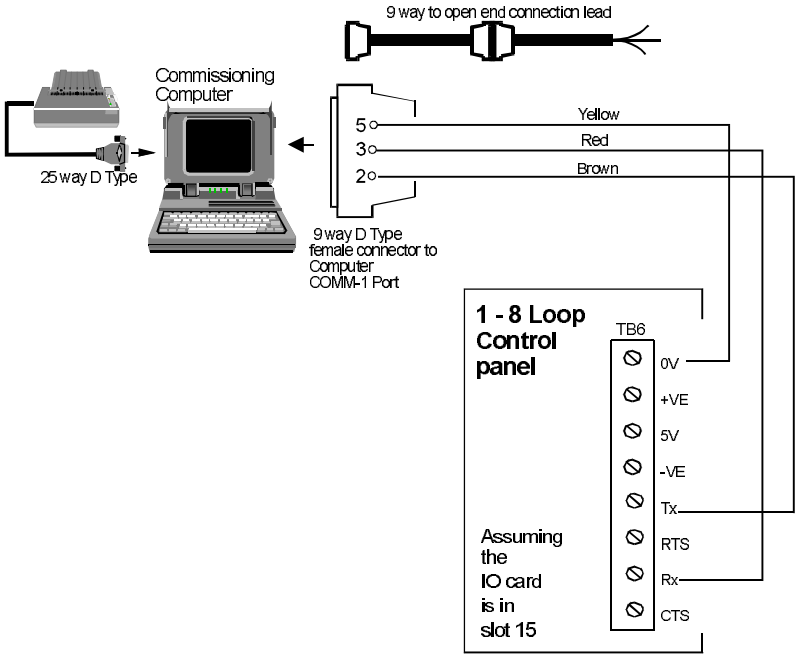


Figure 9-3 Computer to 1-8 loop panel connection

cd8m127

Running the commissioning software

The commissioning software runs under Windows by double clicking on the *Commissioning Tools* icon, which brings up the top level page.

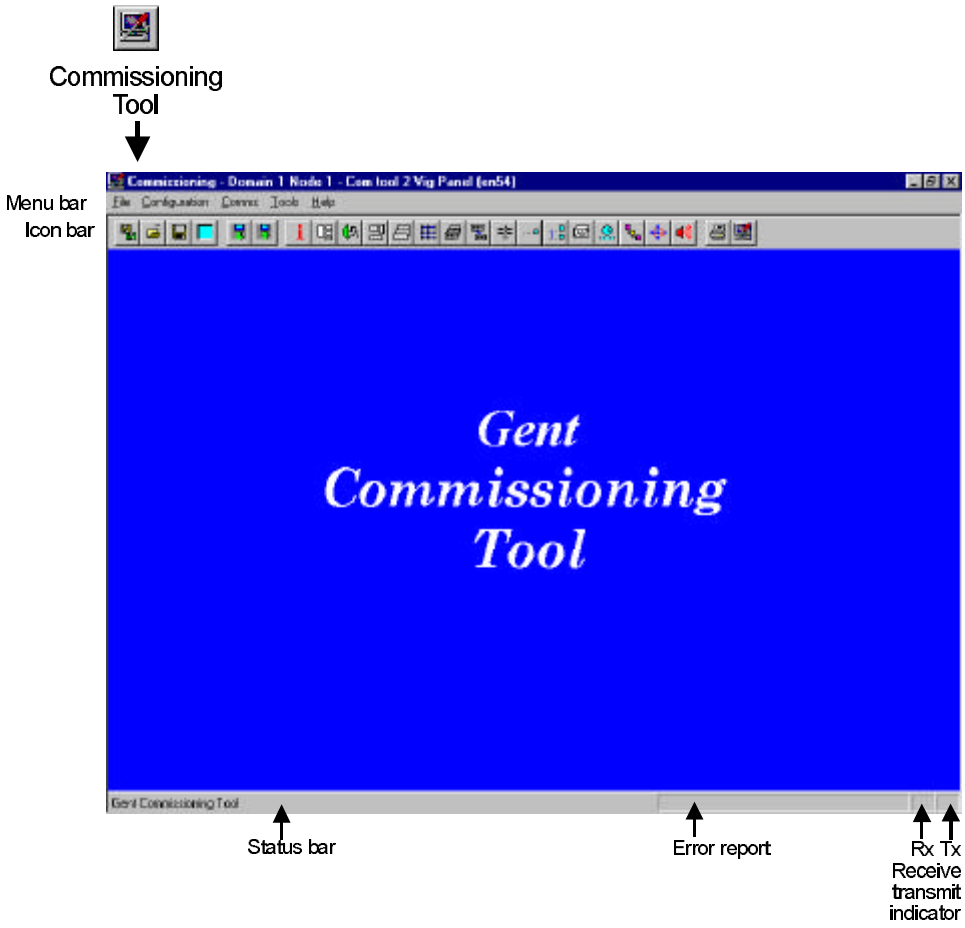


Figure 9-4 Commissioning tool top level screen

cd8m128

Commissioning menu map

There are five drop down menus on the menu bar, *File, Configuration, Comms, Tools* and *Help.*

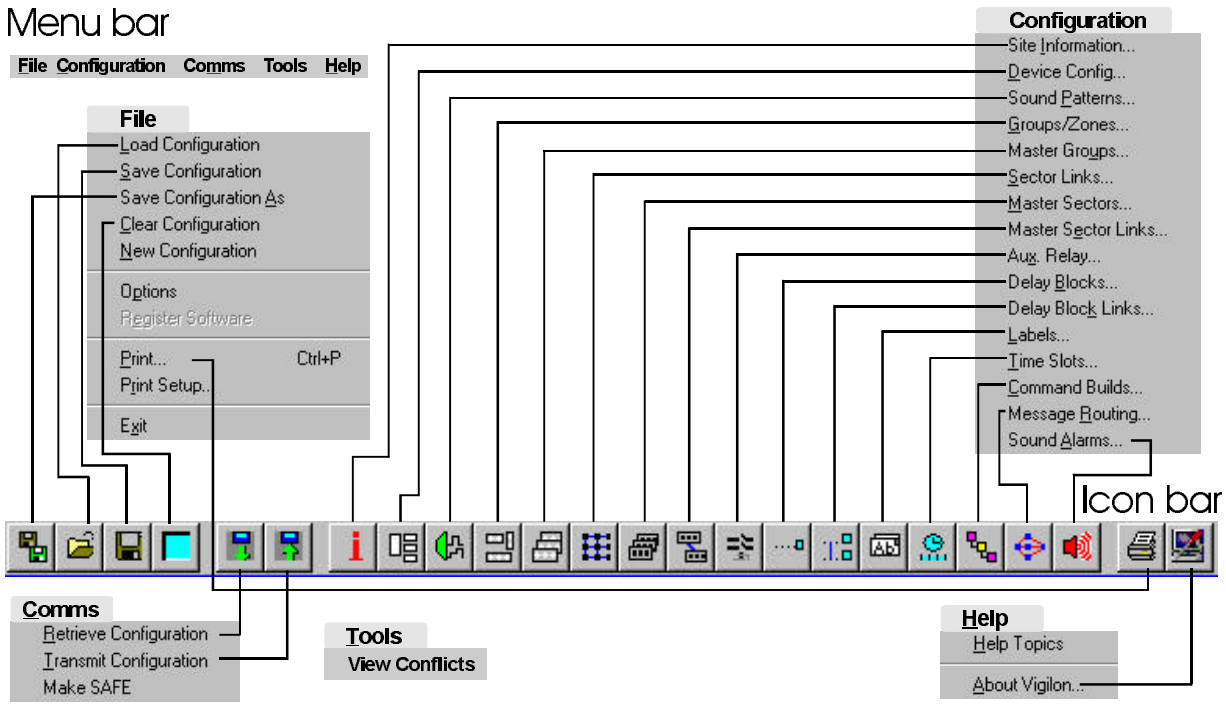


Figure 9-5 Commissioning menu map
cd8m077

Application of Menu options

The following options have restricted use:

- **Groups** and **Zones** are not applicable for V3 3400, 3300 and Senator systems.
- **Master Groups** are not applicable for V3 3400, 3300 and Senator systems
- **Command Builds** are not applicable for V3 3400, 3300 and Senator systems.
- **Long labels** are only applicable for V3+ 3400, V3+ Vigilon and EN54 Vigilon systems.
- **SAFE addressing** is only applicable for V3+ 3400, V3+ Vigilon and EN54 Vigilon systems.

How to use the Commissioning software

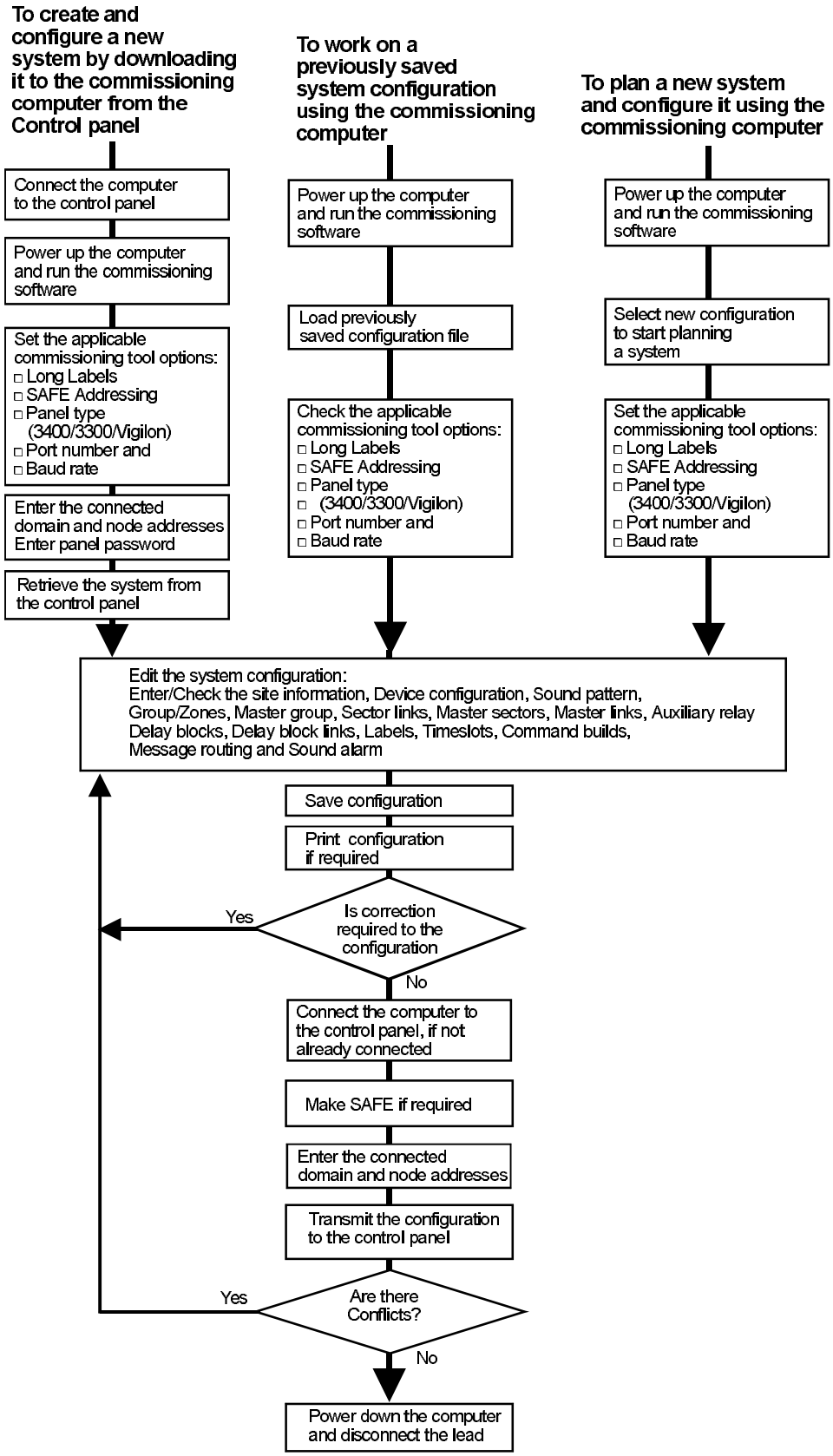


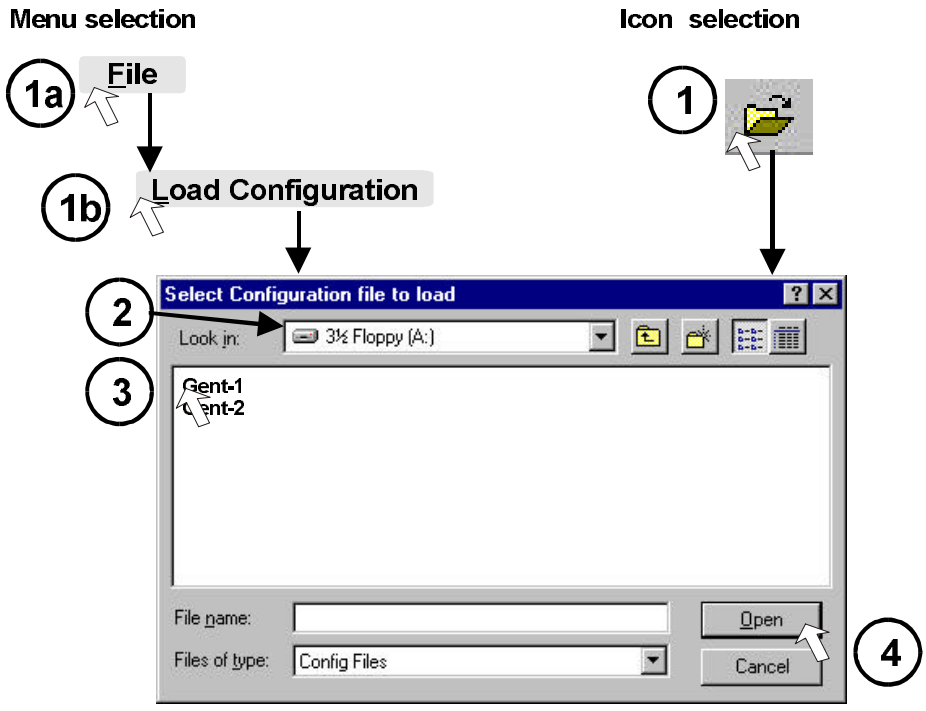
Figure 9-6 Chart showing how to use the commissioning tool
cd8m126

Commissioning tool Menu and Command

Load Configuration

Menu and Commands	You can use this command to..	Comments
File Menu		
Load Configuration	..load or open an existing site file held on the computer hard disk or on floppy disk.	The site file to be opened must have previously been saved to the computer hard disk or floppy disk using this commissioning tool. Note: The default location of for all site file is c:\Site_files.

Operation

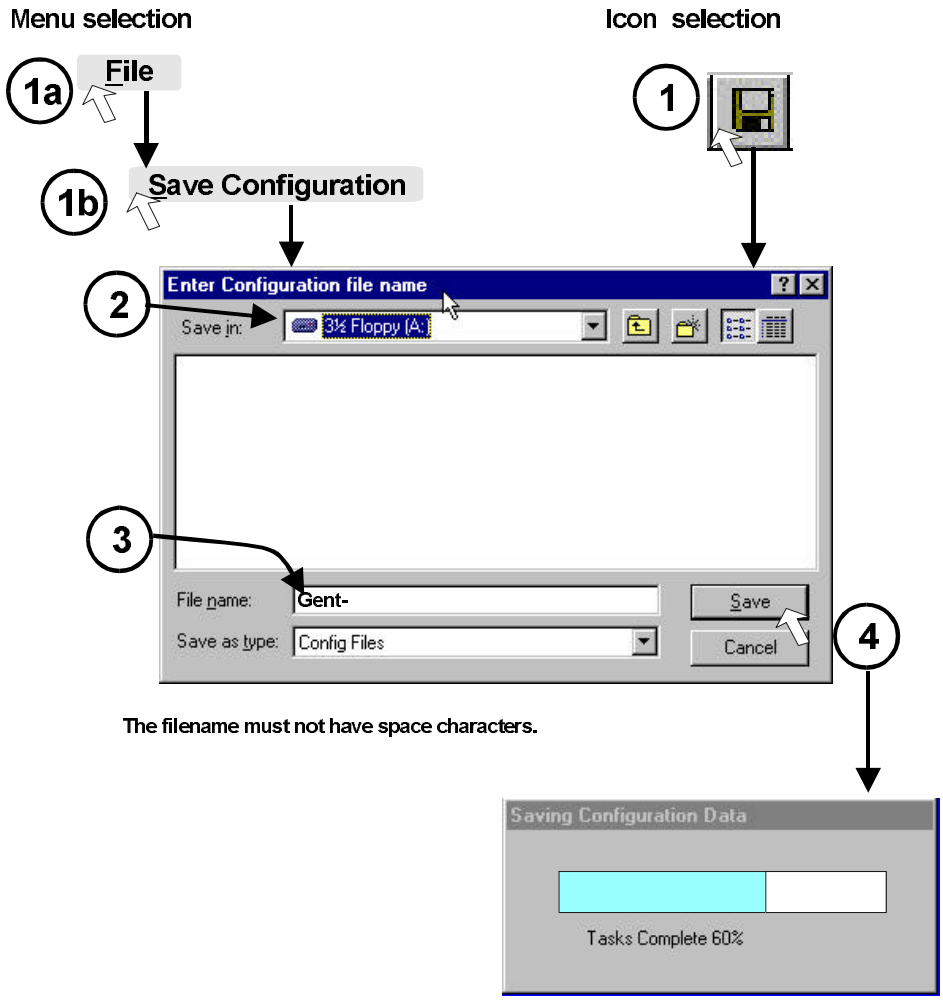


C d8m048

Save Configuration

Menu and Commands	You can use this command to..	Comments
File Menu		
Save Configuration	..save the configuration work done on the commissioning tool to the file on the computer hard disk or floppy disk.	It is a good idea to save any work done to the file every 15 - 30 minutes. The filename must not contain spaces.

Operation

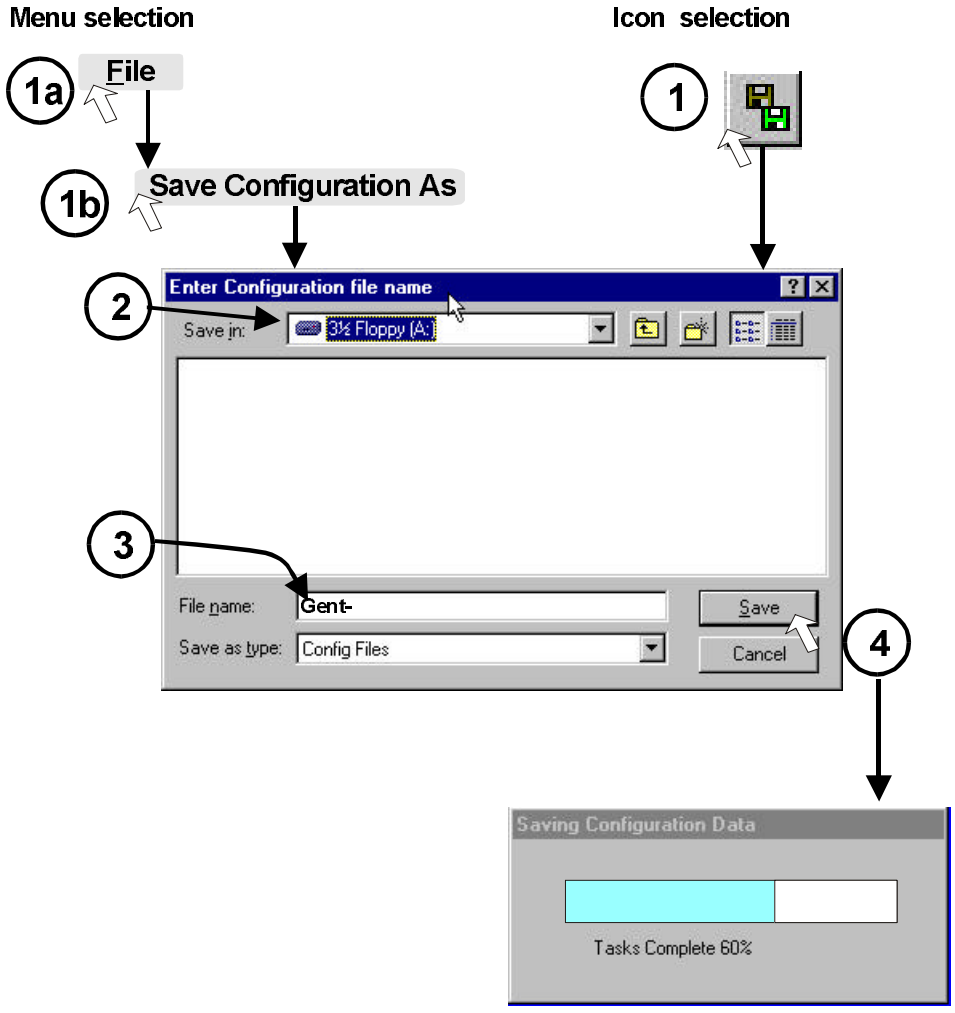


cd8m049

Save Configuration As

Menu and Commands	You can use this command to..	Comments
File Menu		
Save Configuration As	..save the configuration file under another name.	This is done to avoid losing original file information, it is a good idea to save the working file under another name. The filename must not contain spaces.

Operation

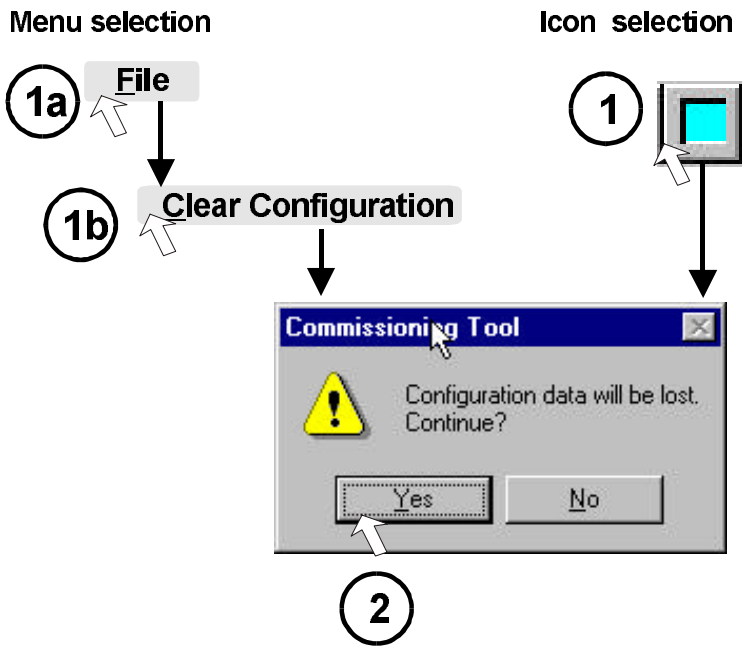


cd8m050

Clear configuration

Menu and Commands	You can use this command to..	Comments
File Menu		
Clear configuration	..clears all configuration held in a file but leaves the addresses and label information intact.	If for any reason the configuration entered is incorrect and starting again would make sense, then use this command.

Operation



cd8m051

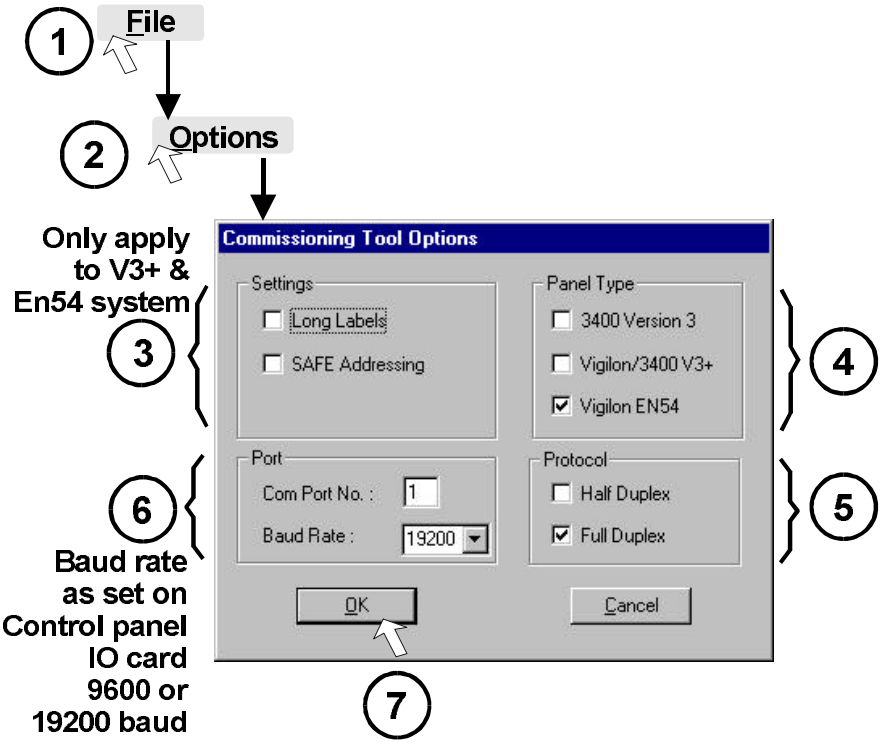
New Configuration

Menu and Commands	You can use this command to..	Comments
File Menu		
New Configuration	Completely delete all configuration information including labels and addresses.	This command should be used before starting work on a planned system, ie where a system is entirely planned and configured using the commissioning tool.

Options

Menu	You can use this command to..	Comments
File Menu		
Options	..tell the computer about the panel type it is commissioning and if long labels and SAFE addressing are being used in the system. Also there is communication settings to allow data to be transmitted and received from the control panel.	The control panel type can be Vigilon/3400/34000/3300 or Senator. Use the **[Information]** menu at the control panel to check if long labels and safe addressing are being used in the system. The baud rate set here must be the same as that set on the DKC in the Control Panel, use the information menu to view the IO Card status to check the baud rate. **Long labels** ③ Long Labels are only applicable to V3+ - 3400, 34000 and Vigilon (V3+ and EN54) systems. **Safe addressing** ③ SAFE addressing is only applicable to V3+ - 3400, 34000 and Vigilon (V3+ and EN54) systems. **Comm Port numbe**r ⑥ Communication port number is the connection point at the computer to which the control panel is connected.

Operation



cd8m052

Menu	You can use this command to..	Comments
File Menu		
Options continue..		**Panel type** ④ The control panel is determined by the type of system the computer is connected to, for example Vigilon, 3400, 3300 or senator. **Protocol** ⑤ The protocol is determined by the type of IO card installed in the control panel: If a Vigilon panel has a **standard IO card** installed in slot 15 then the protocol should be set to **half duplex, however** if a **Domain bridge IO Card** is installed in slot 15 the protocol should be set to **full duplex.** For **all other type of panels** the protocol should be set to **half duplex.**

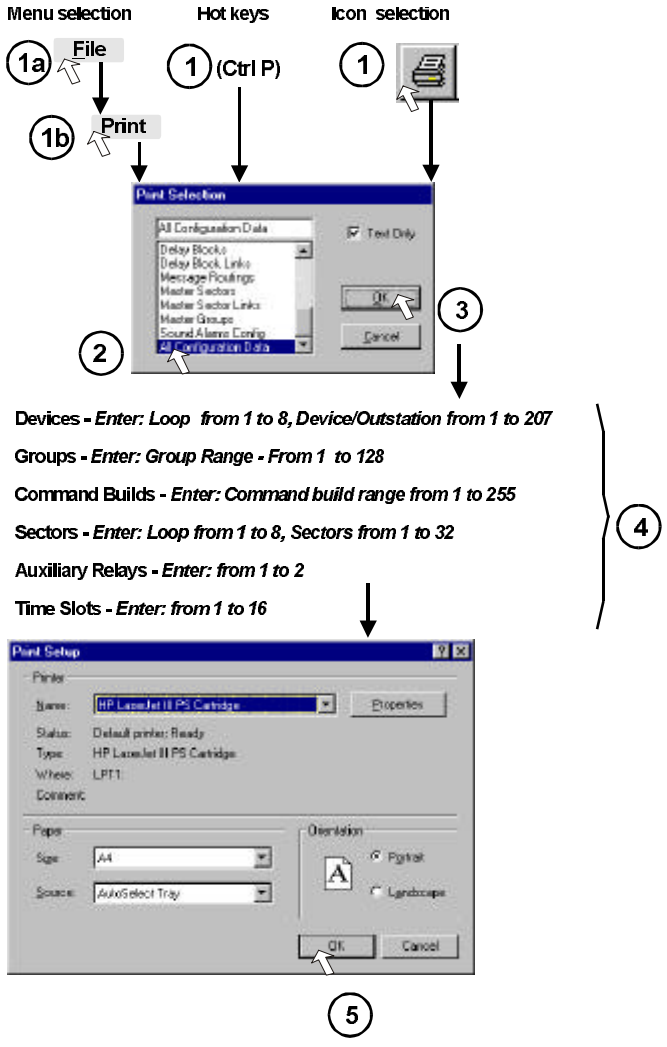
Register Software

Menu	You can use this command to..	Comments
File Menu		
Register Software	Register the commissioning software the first time it is loaded onto the computer.	After installation of software on to the computer the command is greyed out as the registry information has already been correctly entered.

Print

Menu and Commands	You can use this command to..	Comments
File Menu		
Print	..selectively print site configuration data to the attached printer. The printout can be of ④ devices, groups, Command builds, sectors, auxiliary relays and timeslots.	Ensure the printer has been set up correctly. If the Text only check box is selected then the printout will not show lines and boxes.

Operation

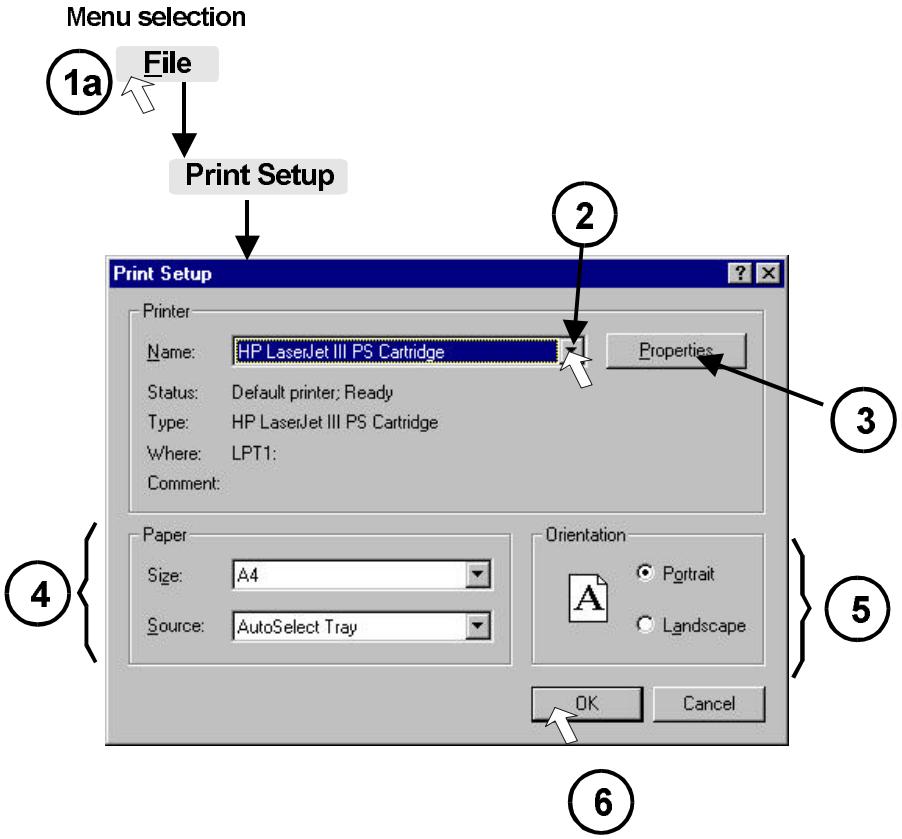


cd8m053

Print setup

Menu and Commands	You can use this command to..	Comments
File Menu		
Print Setup	..set up the computer to print to the attached printer.	Check the printer name is correct and its properties ③ are correctly set up.

Operation

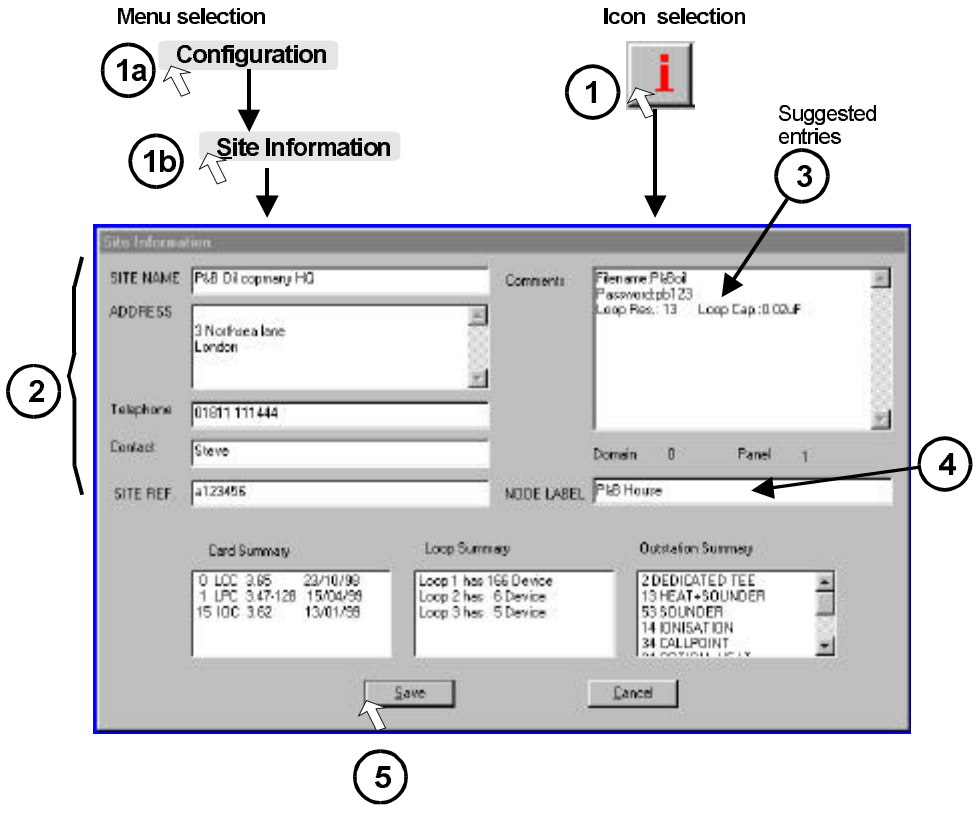


cd8m054

Site information

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Site Information	..to record the site information which include fields for entry of, ② s*ite name, address, telephone number, contact, site reference,* ③ *textual comments and node label.*	It is a good idea to ensure information is entered in consistent manner in the comments field ③. This window contains summary of Cards, Loops and Outstations/devices. NOTE: The essential fields site name, address, site ref and node label must be entered.

Operation

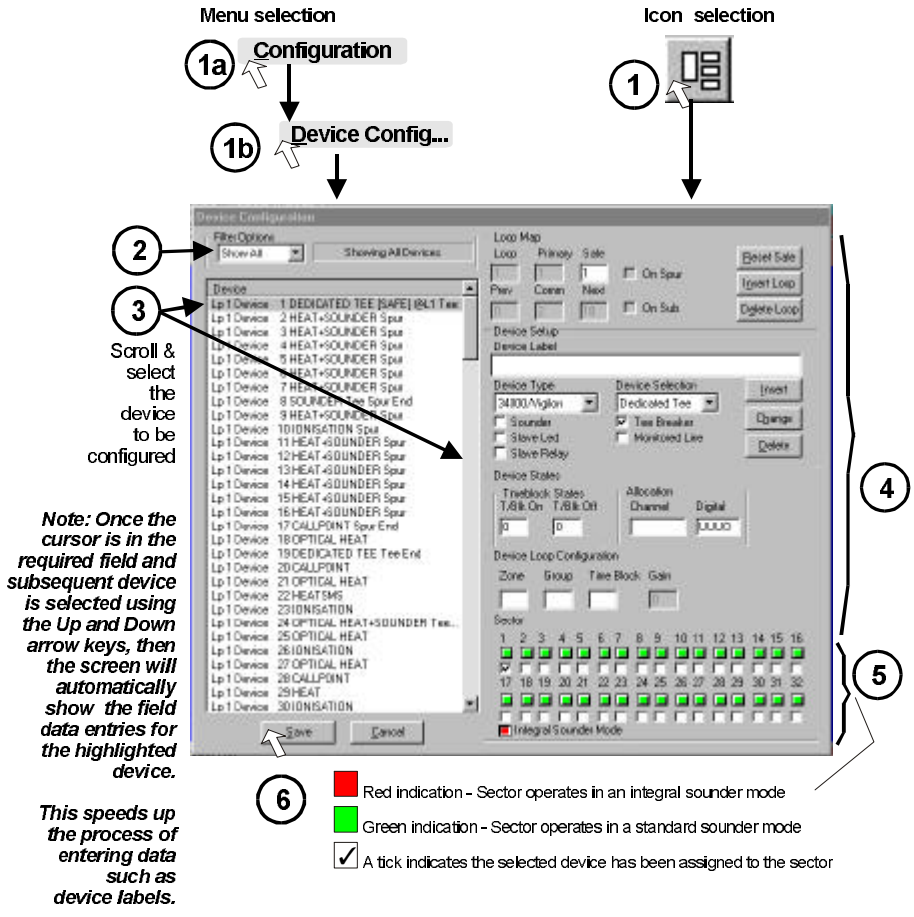


cd8m055

Device Configuration

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Device Configuration	..display and edit the configuration of devices ③, like fire sensors, MCP, alarm sounders and interface input/outputs on loop circuits. Each device can be given a ④ label and configured to operate with *Sector, Group and Timeblock.* Sectors can be configured to operate in ⑤ *integral mode.* New devices can be inserted and existing devices can be deleted from loop circuits. Where systems are required to be pre-planned new loops can be added to the system.	***CAUTION:** The **insertion** and **deletion** of device is not permitted using the commissioning tool where a loop has one or more **Sub loop** off a main loop circuit.* *The solution is to ensure the devices are **physically inserted or removed** from the loop circuit and made **safe** at the control panel. The loop needs to be reallocated before the commissioning tool is used to retrieve the edited system.*

Operation

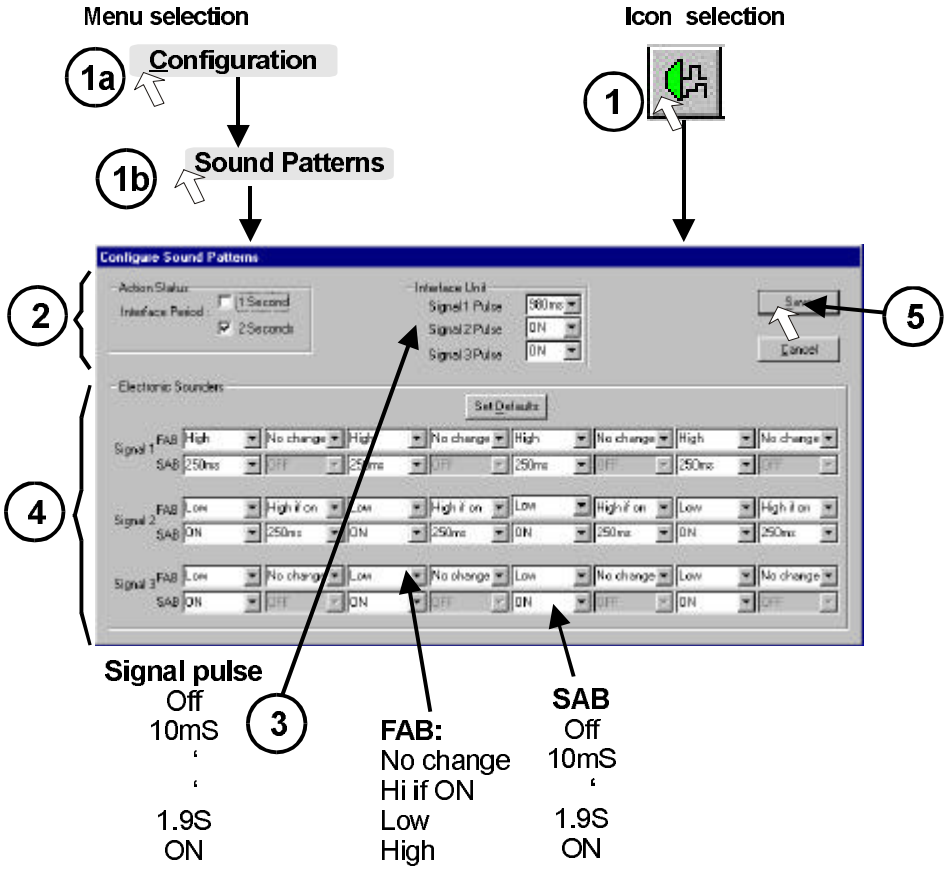


cd8m056

Sound Patterns

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Sound Patterns	..set up the sound output for *signals 1, 2 and 3* for output to ③ interface units and ④ alarm sounders in the local system.	These settings affect all interfaces and system alarm sounders in the local fire system.

Operation

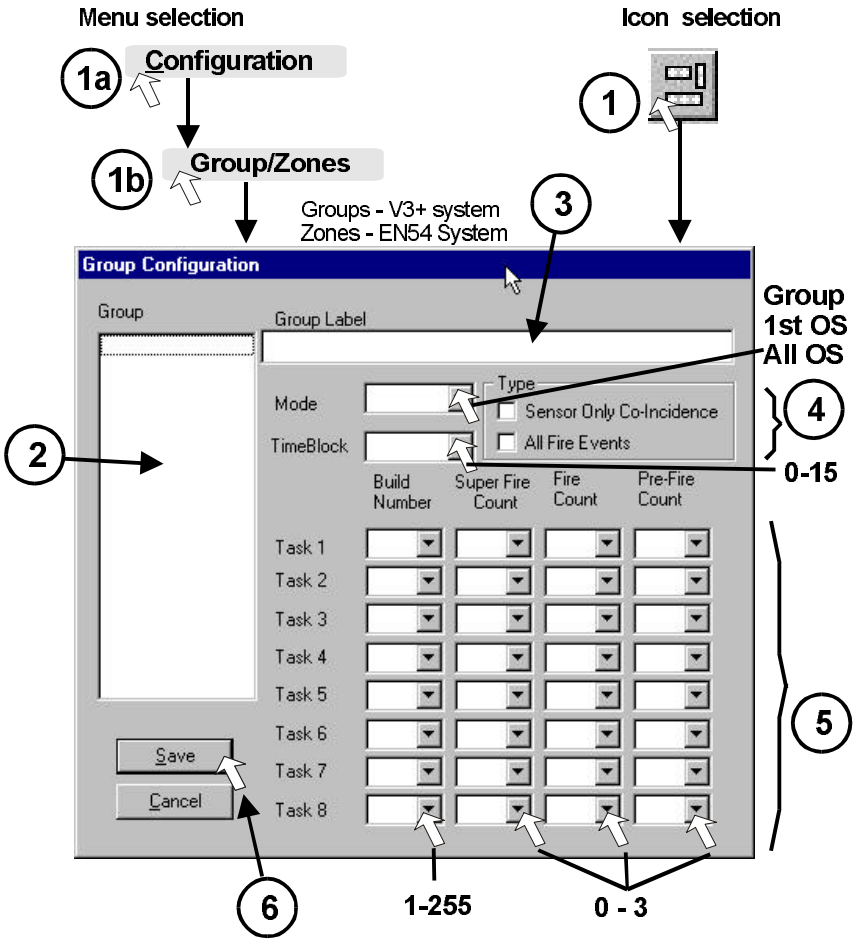


cd8m057

Group / Zone configuration

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Group/Zone (V3+ - Group) (EN54 - Zone)	..sets up to 128 Groups/Zones ② per panel with each assigned a label ③ and consists of a number of devices. A group can be used to route messages for display in the local system at repeat/mimic panels or via master group to display messages in the networked systems. A group can be configured to have up to 8 permutations of fire detection via tasks ⑤ to trigger command builds, which can work with timeblocks ④. The permutation of fire detection can be used for coincidence detection.	These commands are only applicable for V3+ and EN54 systems. The name Group is applicable for V3+ systems and Zone is applicable for EN54 systems.

Operation

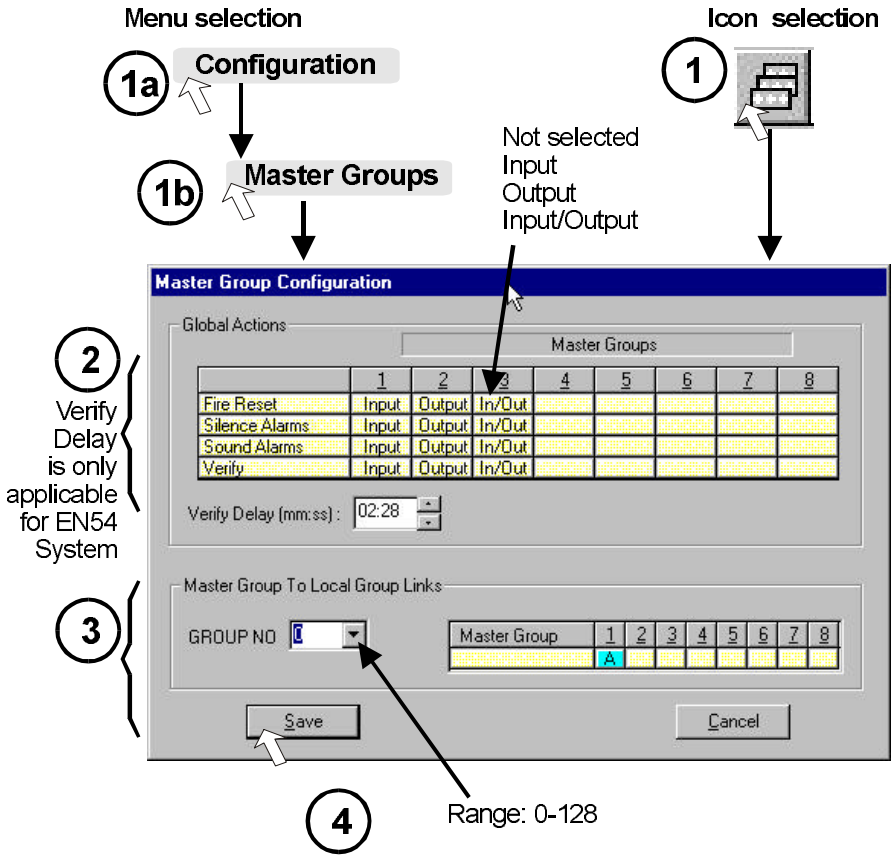


cd8m058

Master Groups

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Master Groups	..set up to 8 Master groups to allow routing of fire and non fire event messages (see message routing), plus ② global controls input / output (Silence alarms, Sound Alarms or Reset) to the local system and to other networked systems.	This command is only applicable for V3+ and EN54 systems.

Operation

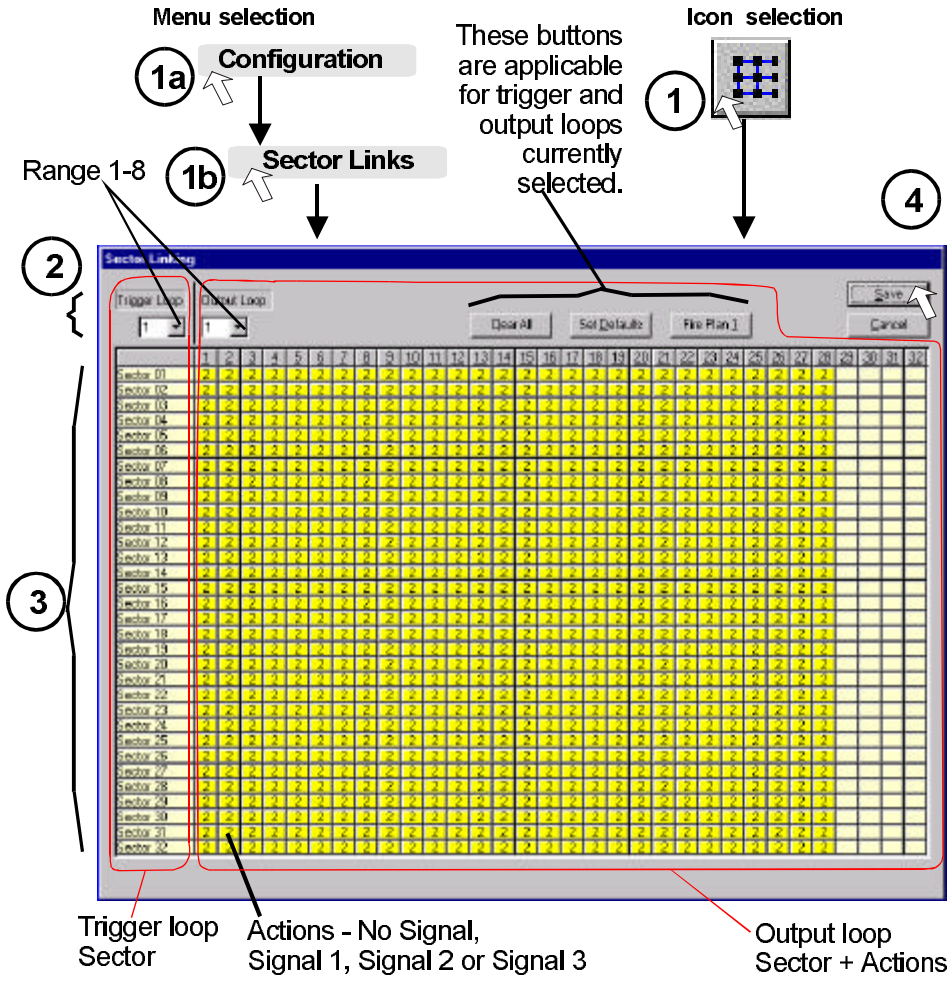


cd8m059

Sector Links

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Sector Links	..set up the trigger action of sectors on loop circuit to action signal 1, 2, 3 or OFF on the initiating sector and other sectors of the local system.	Sector linking is applicable to local system. Sectors of other panels in a network can be linked using Master Sectors, see Master sector commands.

Operation

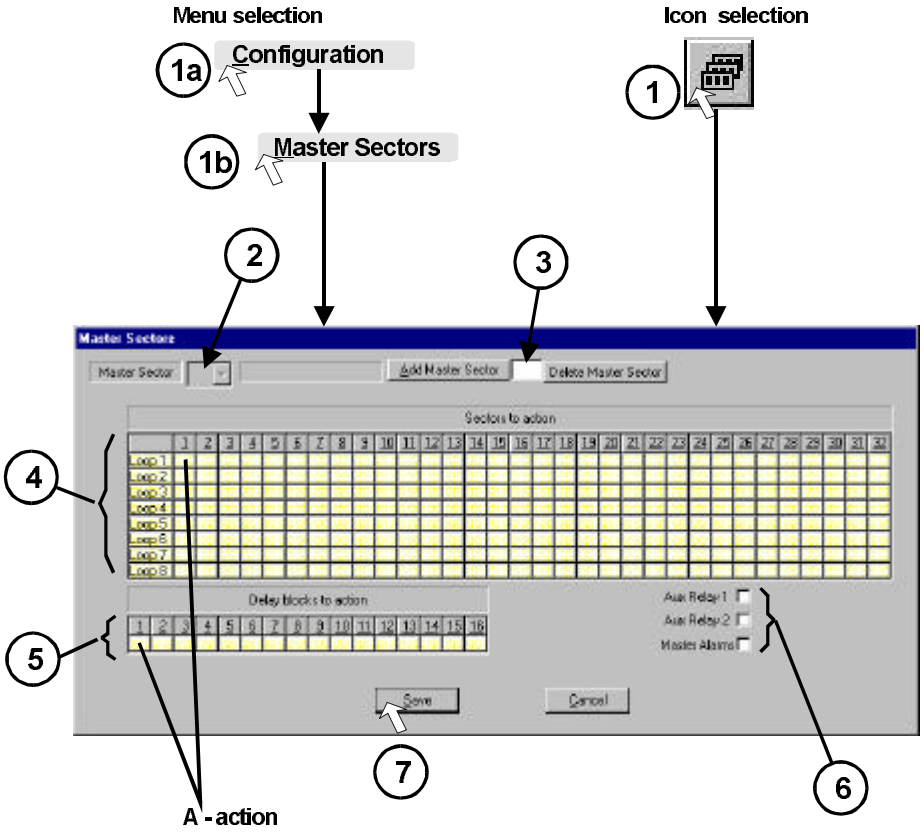


cd8m060

Master Sectors

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Master Sectors	..set up to 64 master sectors per panel (255 per network). Master sectors at individual panel are assigned one or more Sectors ④, Delay Blocks ⑤, Master Alarms and Auxiliary Relays. A Master Sector action is to signal 1, 2, 3 or OFF, see master sector links. Master Sectors are actioned by sectors. Globally Master Sector having the same number at other panels in a network will action their local assignments.	The local assignment will operate in the following manner: **Sectors** if actioned will output :- signal 1, 2, 3 or OFF. **Delay block:**- if selected will be activated **Master alarms** :- if selected will be activated **Auxiliary relays** :- if selected will be activated. Note a Master Sector can be trigger by a command build.

Operation

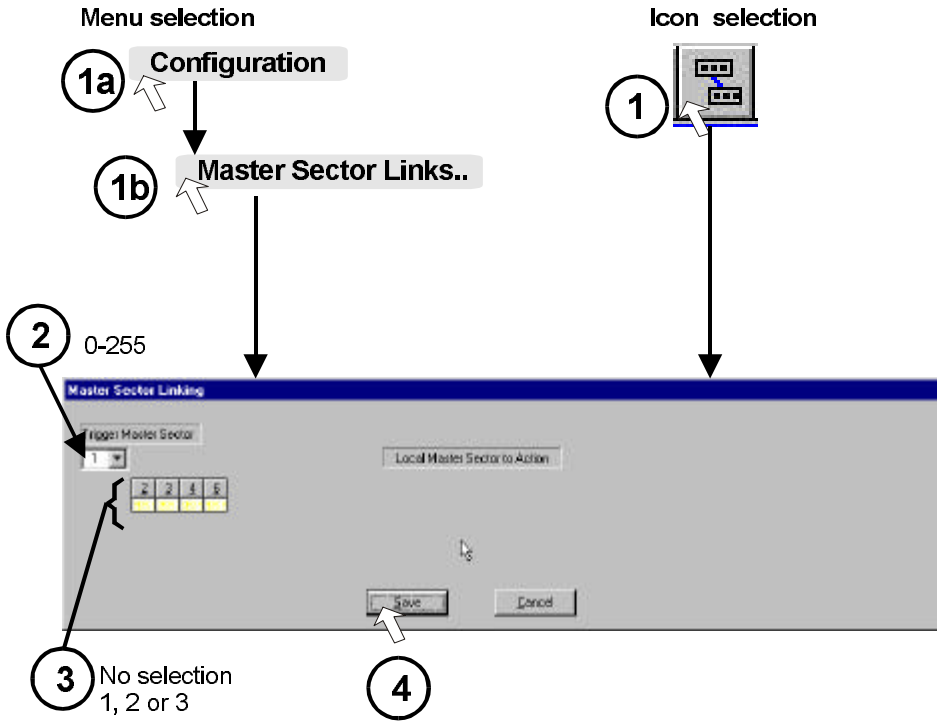


cd8m061

Master Sector Links

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Master Sector Links	..set up Master Sector local actions ③ to signal 1, 2, 3 or OFF.	Each panel has its own Master Sector local action.

Operation

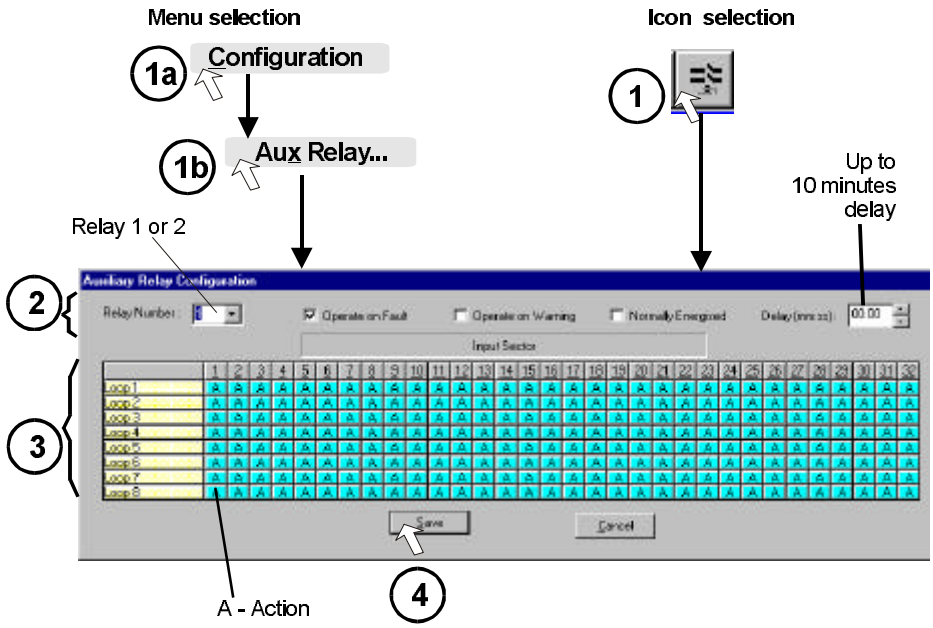


cd8m062

Auxiliary Relay

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Auxiliary Relay	..set up the operation of the 2 Auxiliary relays with sectors, fault events and disablements. The operation can be delayed On (energise) or Off (de-energise) with up to 10 minutes delay.	Each Auxiliary relay can be individually set up. Default setting: EN54 : Aux relay 1 action is on fire by all sectors and Aux relay 2 action is on fault and normally engergised , no sectors BS5839: Aux relay 1 action on fire by all sectors and Aux relay 2 action on fire by all sectors

Operation

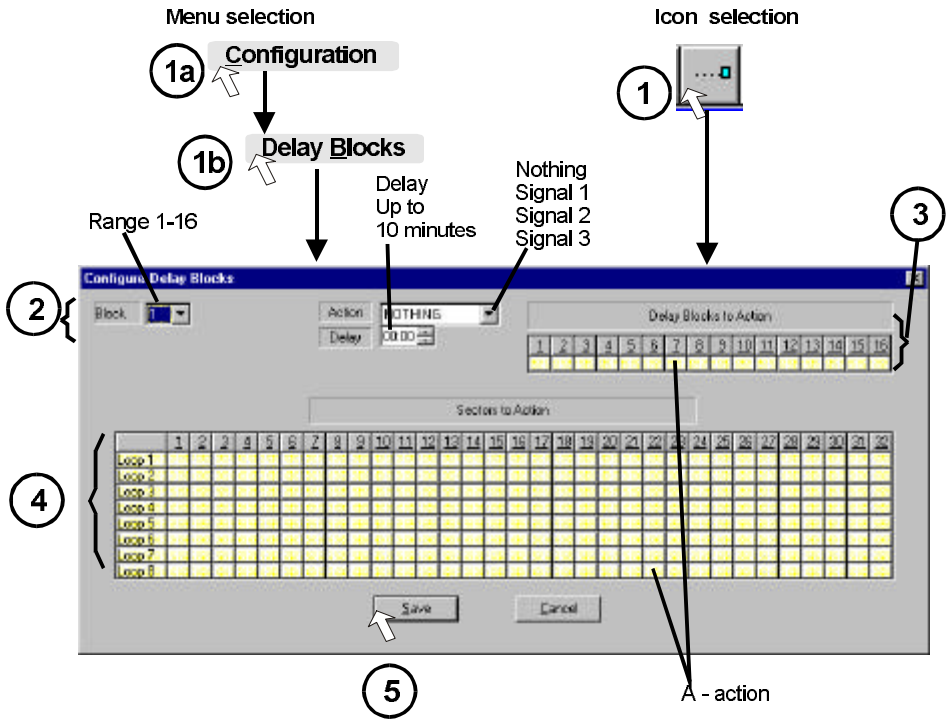


cd8m063

Delay Blocks

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Delay Blocks	..set up the action of up to 16-Delay Blocks to output signals - 1,2,3, OFF or No action, with delays of up to 10 minutes. A Delay block can directly action Sectors④ or other Delay block ③ of the panel.	

Operation

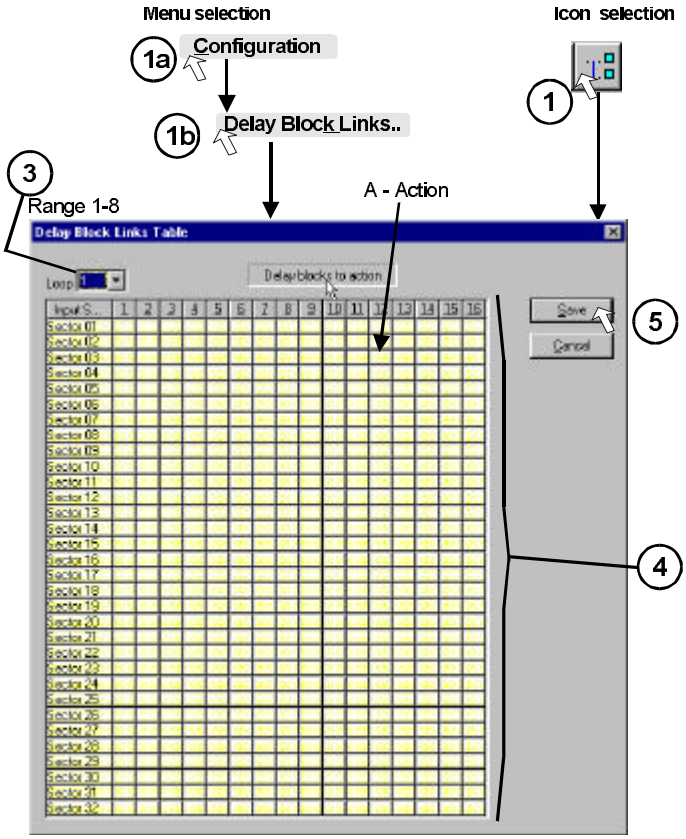


cd8m064

Delay block Links

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Delay block Links	..set up delay block ③ actions on sectors ④.	The delay blocks shown here have no action set up.

Operation



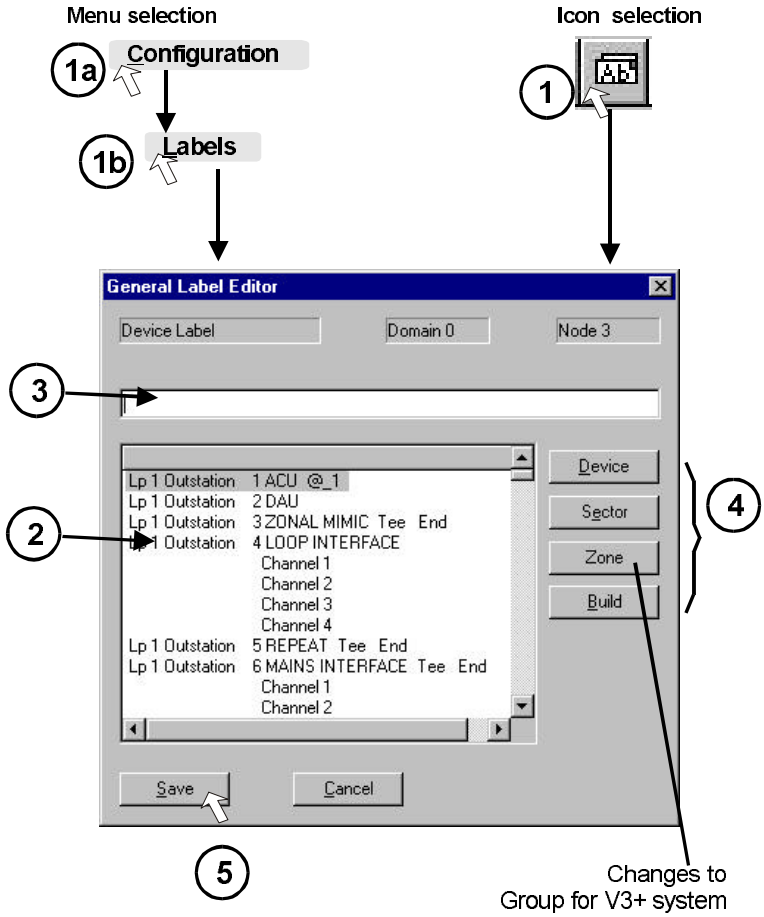
c

d8m070

Labels

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Labels	..set up labels given to ④ devices, groups/zones, command builds and sectors. Sectors can be labeled for information only and are not transmitted to the control panel.	64 character tokenised Long labels are only applicable for V3+ and EN54 systems. All tokenised labels are displayed ③ in Upper case. Device and command build labels can also be tokenised

Operation



cd8m065

Long labels

Long labels having up to 64 characters can be given to devices and command builds. This is achieved by replacing commonly used words with token values (special codes).

Tokenised labels

When tokens are decoded, a trailing space is automatically added to the decoded word. Likewise when a label is being tokenised, the **word must have a space following it,** or be at the end of a line. Therefore a token word cannot be followed with a comma, dash or other such character.

> ***NOTE:*** *All tokenised labels are displayed in Upper case.*

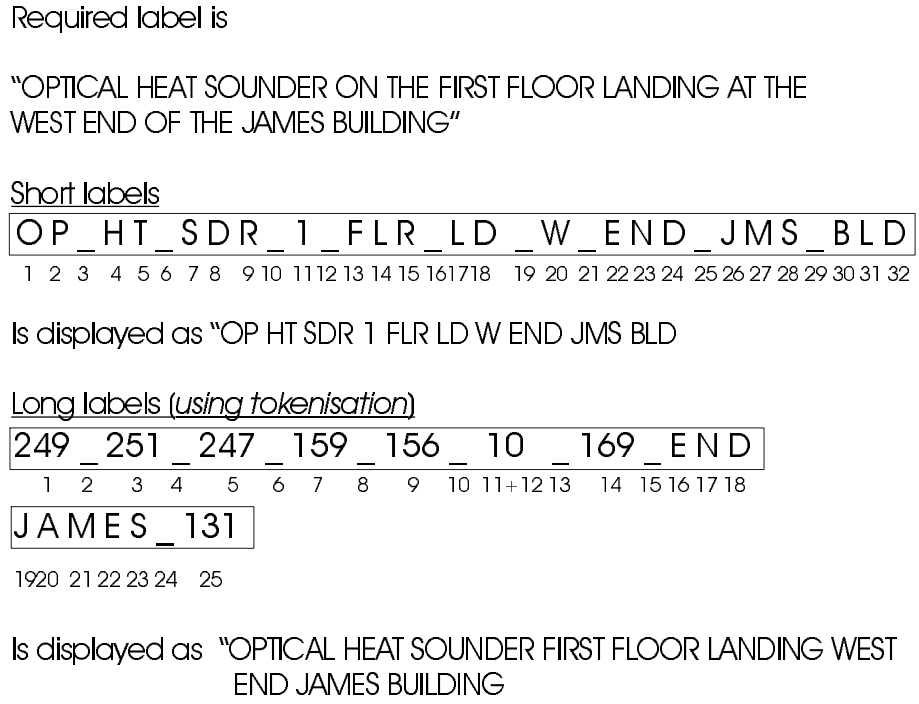


Figure 9-1Long labels

cd8n_16

Tokenised labels

Bank 0 and 1 show the list of tokens used by the software to reduce the character label to 32 characters or less.

Bank 0 - General Building Features

128	AREA	129	ANNEXE	130	BLOCK	131	BUILDING
132	CORE	133	CORRIDOR	134	DOOR	135	DUCT
136	ENTRANCE	137	ESCALATOR	138	EXIT	139	EXTENSION
140	FLAT	141	HALL	142	HOUSE	143	LIFT
144	LOBBY	145	RISER	146	ROOM	147	ROUTE
148	STAIRS	149	TOWER	150	UNIT	151	VENTILATION
152	VOID	153	ZONE				

Vertical Location

154	LEVEL	155	MEZZANINE	156	FLOOR	157	BASEMENT
158	GROUND	159	FIRST	160	SECOND	161	THIRD
162	FOURTH	163	CEILING	164	ROOF	165	ATRIUM

Geographic Location

166	NORTH	167	SOUTH	168	EAST	169	WEST

Positions

170	NEAR	171	OUTSIDE	172	ABOVE	173	UPPER
174	CENTRE	175	LOWER	176	LEFT	177	RIGHT
178	FRONT	179	REAR				

Building Usage

180	ACCOMMODATION	182	ADMIN	182	BEDROOM	183	BOILER
184	CENTRAL	185	CHANGING	186	COMPUTER	187	CONTROL
188	CUPBOARD	189	ELECTRICAL	190	ENGINEERING	191	EXTERNAL
192	GALLERY	193	GARAGE	194	GENERAL	195	HOUSING
196	KITCHEN	197	LAUNDRY	198	LOUNGE	199	OFFICE
200	PLANT	201	RECEPTION	202	RESTAURANT	203	SERVICE
204	SERVICES	205	SHOP	206	STAFF	207	STORE
208	STORES	209	SWITCH	210	SYSTEM	211	TOILET
212	WORKSHOP	213	WARD	214	WAREHOUSE		

Airport Tokens

215	AIRSIDE	216	ARRIVALS	217	BAGGAGE	218	BRIDGE
219	BUREAU DE CHANGE	220	CUSTOMS	221	CONCOURSE	222	DEPARTURES
223	DUTY FREE	224	EXCHANGE	225	GATE	226	HANDLING
227	IMMIGRATION	228	LANDSIDE	229	LUGGAGE	230	MALL
231	PASSENGER	232	RETAIL	233	SECURITY	234	STATION
235	TERMINAL	236	TRANSFER				

Medical Tokens

237	MEDICAL	238	THEATRE	239	X-RAY	240	CLINIC
241	PATIENT	242	PHYSIOTHERAPY	243	GERIATRICS	244	PEDIATRICS
245	RECORDS	246	HEALTH				

Components of the Fire System

247	SOUNDER	248	DETECTOR	249	OPTICAL	250	IONISATION
251	HEAT	252	INTERFACE	253	BEAM	254	REPEAT
255	SPRINKLER						

Bank 1 - General Building Features

1	CHAMBER	2	FOYER	3	SHAFT	4	STAIRCASE
5	STAIRWELL						

Vertical Location

6	FIFTH	7	SIXTH	8	ATTIC	9	BALCONY
10	LANDING	11	PASSAGE	12	SUBWAY	13	TUNNEL

Positions

14	ADJACENT	15	BOTTOM

Building Usage

16	CATERING	17	COLLEGE	18	CONFERENCE	19	DEPARTMENT
20	DISPATCH	21	EMERGENCY	22	EQUIPMENT	23	ESCAPE
24	MANAGER	25	MEETING	26	PACKING	27	PHYSICS
28	POINT	29	PREPARATION	30	SHOPPING	31	SITING
32	STATIONARY	33	SUITE	34	SUPPLY	35	TELEPHONE
36	TRANSFORMER						

Airport Tokens

37	AIRLINES	38	BONDED	39	CHECK-IN	40	CLORIFIER
41	CONVEYOR	42	CUL-DE-SAC	43	DOMESTIC	44	FORECOURT
45	INFORMATION	46	INTERCONNECTOR	47	INTERNATIONAL	48	RECLAIMS
49	SCREENING	50	SECRET SIGN	51	TRAVOLATOR	52	TRUCKING

Medical Tokens

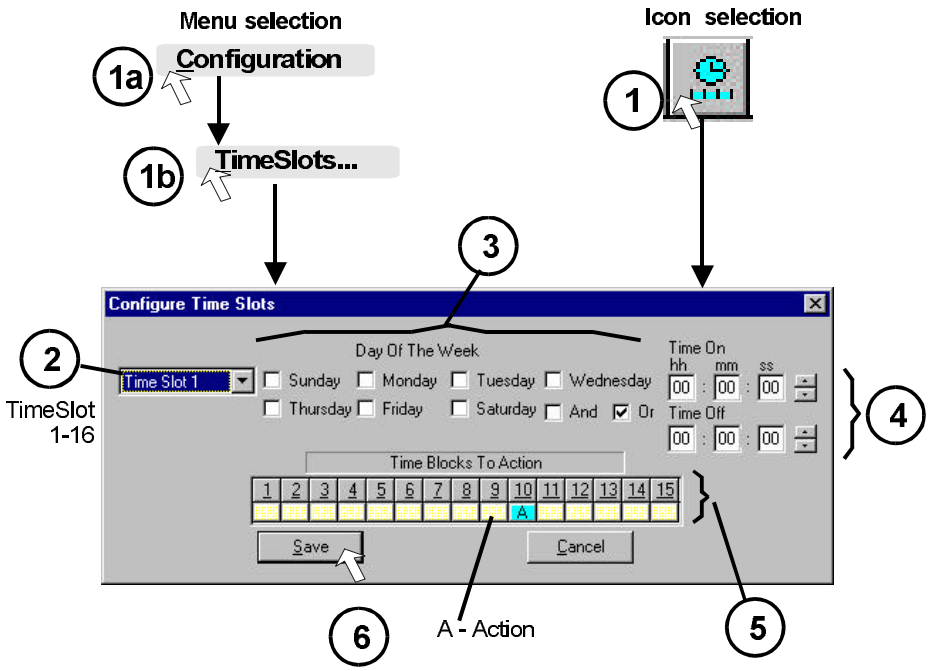
53	DISPENSARY

Components of the Fire System

54	ASPIRATING	55	INPUT	56	OUTPUT	57	PRESSURE
58	SHUTTER						

Time Slots

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Time Slots	..set up to 16 Time slot ② programs, each set up to switch ④ On (enable) and (Off) disable at specified time on selected days of the week. One or more timeslot programs can be applied to timeblock ⑤. Any timeblock can have any number of timeslots, which can then be applied to switch sensor states, see device configuration.	Each timeslot must be ANDed / ORed to the days of the week. When a timeslot is ANDed with selected days it will only operate on the selected days. When a timeslot is ORed with selected days it will be enabled during selected time and throughout the days selected.
Operation		

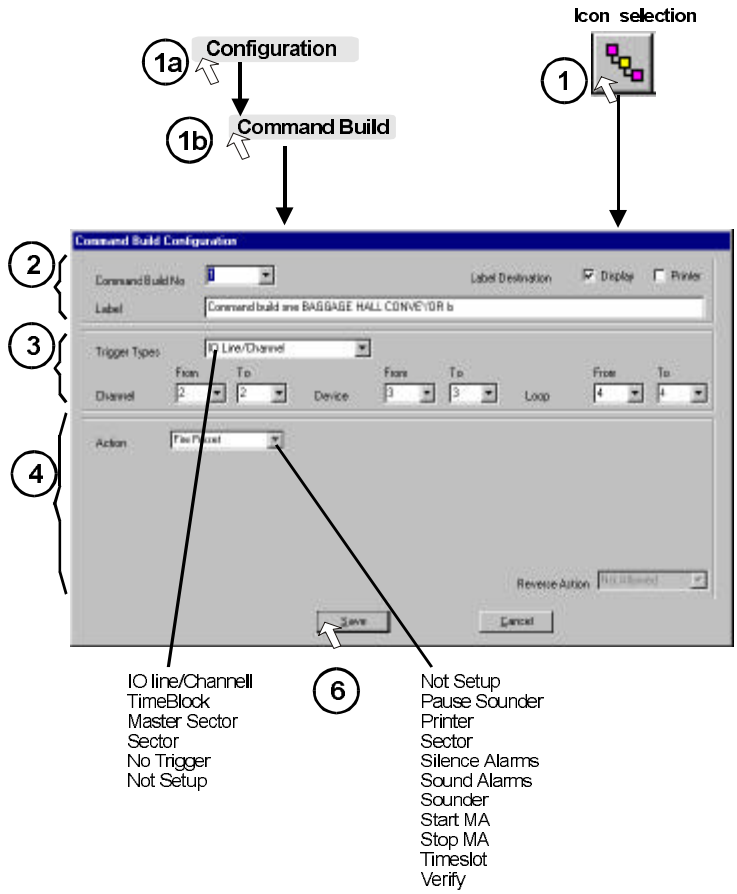


cd8m066

Command Builds

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Command Builds	..set up to 255 *Command Builds* ②, each can be given a 40 character label or a tokenised 64 character label for display or print. A *Command build* can be triggered by ③ *Interface Input channel , Timeblock, Master Sector, Sector* or can be set up *without a trigger*. The action ④ of a *Command build* can be set up to control and switch status of functions of the system such as: pause sounder, printer, sector, silence alarm, sound alarm, sector, master alarm, timeblock, verify or no action.	

Operation

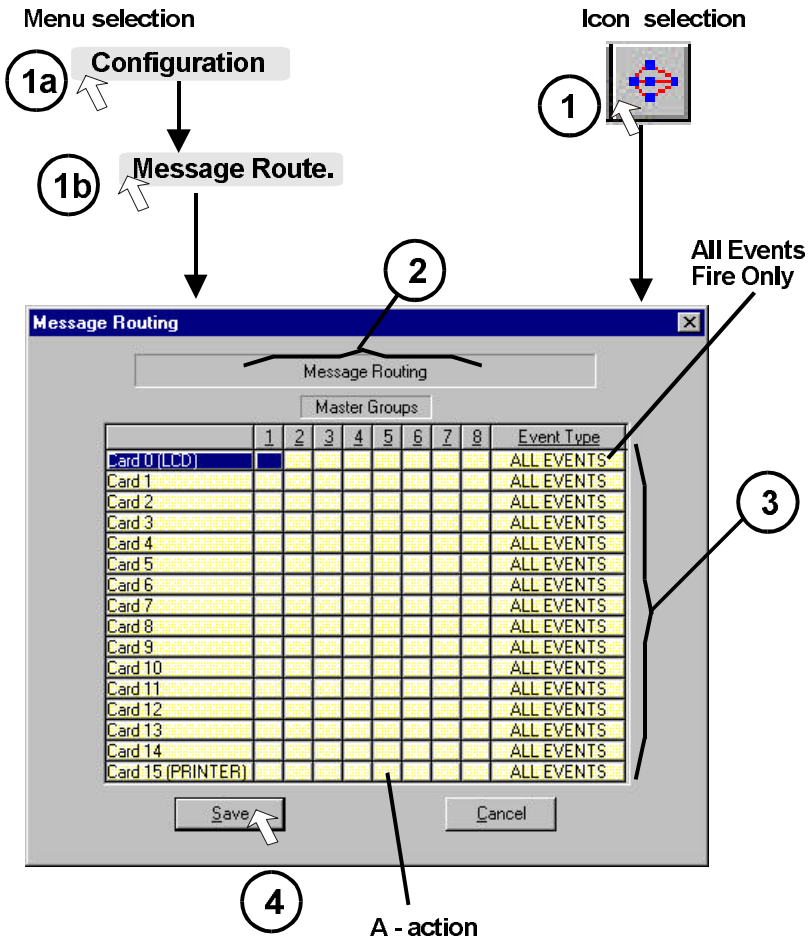


Cd8m067

Message Routing

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Message Routing	..set up to 8 master groups configured to route selective Fire Event or All Event messages on a card by card basis within the control panel and around a network, by putting the network card in the respective group. Events may be routed for display by putting the local controller card in the respective group (Card 0 LCD) and printed by putting the IO Card (Card 15) in the respective group.	For example if all cards of two control panels in a network are set up to route all events and are assigned to master group 1, then events of both systems are displayed and printed on both panels.

Operation

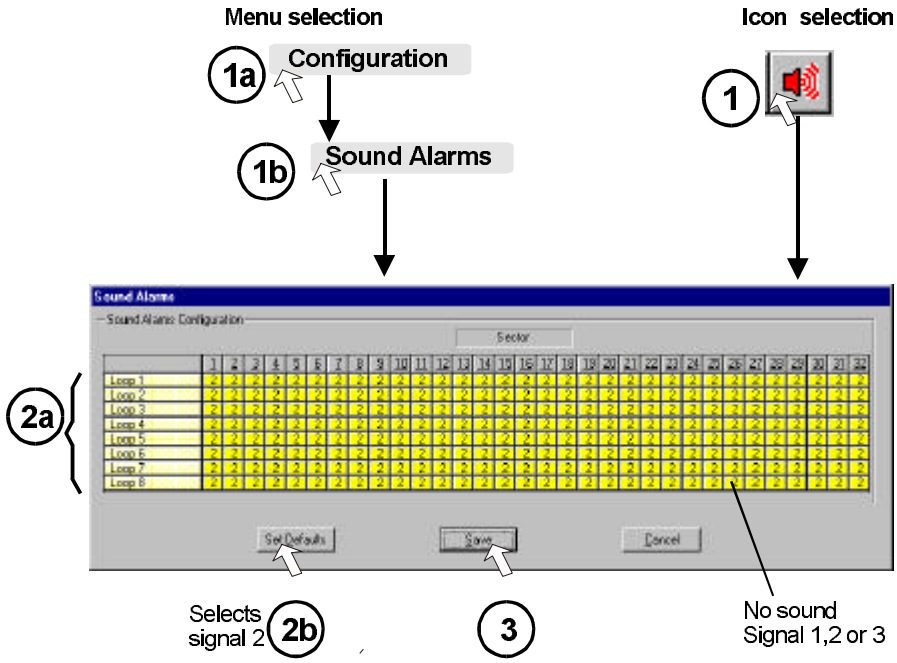


cd8m068

Sound Alarms

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Sound Alarms	..set up the panel Sector sound signal 1, 2 or 3, this is the output action of sectors.	On selecting `Set Default' button all sound alarm configuration for all the sectors on all the loops will sound signal 2.

Operation

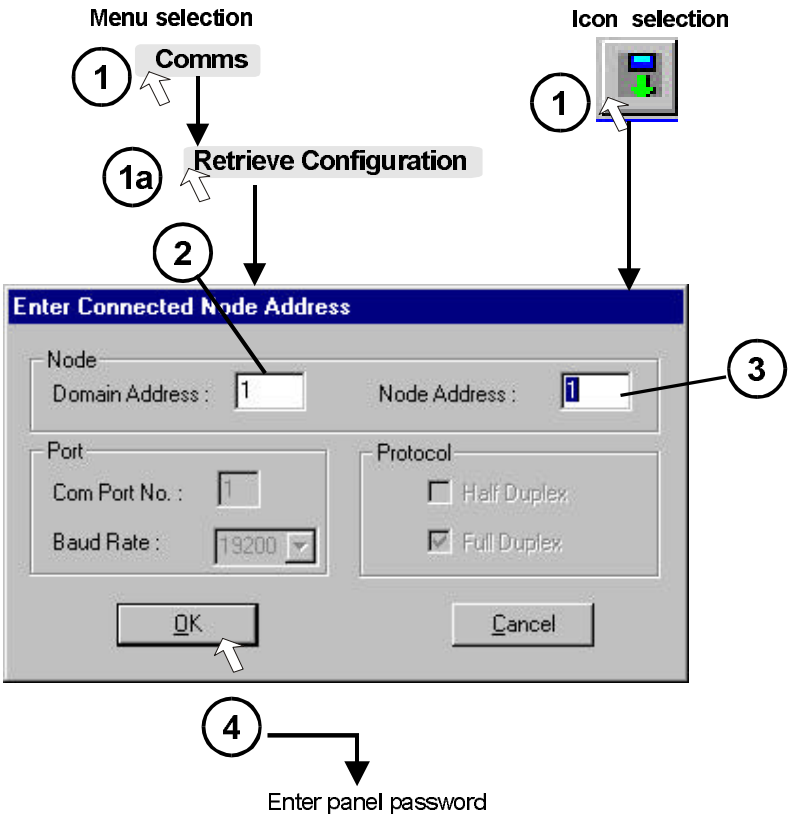


Cd8m069

Retrieve Configuration

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Retrieve Configuration	..retrieve the system configuration from the control panel. The retrieval will bring with it loop device addresses and system configurations. Before retrieval ensure the computer is connected to the control panel and the `Options' are set: ie panel type, port and baud, SAFE and Long labels.	***CAUTION:*** *It is important to ensure all loop circuits have been fully allocated and that there are no fault indication at the panel. The commissioning tool will not accept loop circuit faults such as split loop.* **Domain address ②** **Bridged network:** Assuming the control panel to be configured is in a secure network and the network is bridged to another network. In this case the **Domain Address** is the address that is set on the **Domain Bridge IO card** installed in the bridging control panel or Terminal node of that network. The address can be from **1 to 50**. **Non bridged network**: Assuming the control panel to be configured is in a secure network without bridge to another network, the domain bridge address is always **0**. **Node address ③** The **Node address** is the address of the Control panel or terminal node, which is as set on the **DKC** of Vigilon panels or **IOC** of 3404/8, 3300 and Senator panels.

Operation

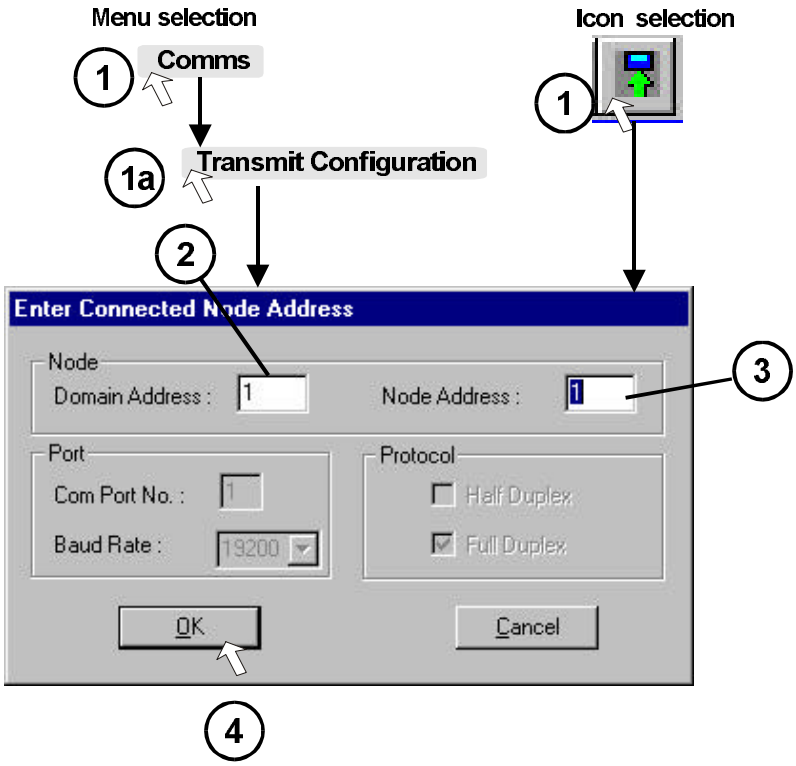


cd8m073

Transmit Configuration

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Transmit Configuration	..transmit the system configuration held at the commissioning computer to the control panel.	Before transmitting ensure the computer is connected to the control panel and the Options, such as the panel type, port and baud, SAFE and Long labels have been set up.

Operation

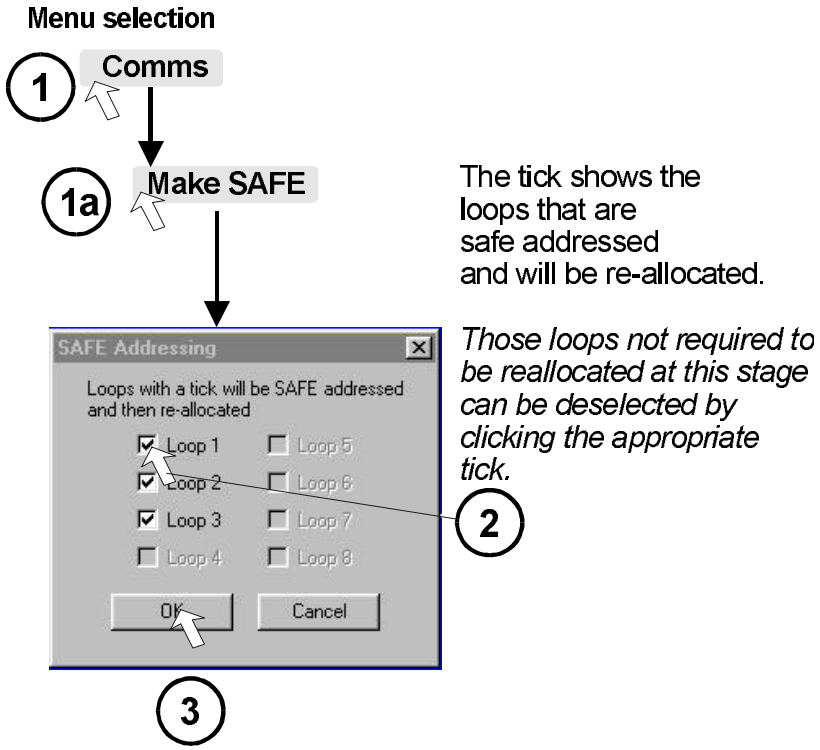


cd8m074

Make SAFE

Menu and Commands	You can use this command to..	Comments
Configuration Menu		
Make SAFE	..if changes to SAFE addresses are made using the commissioning tool then this command sends the changed safe addresses from the commissioning tool to the control panel. A dialogue box appears to select by check box the loops to be re-allocated.	Transmission of configuration and labels can only take place following Make SAFE, where safe addresses were changed at the commissioning tool. This is done to ensure the loop map in the commissioning computer is identical to that on the control panel.

Operation



cd8m075

View Conflicts

Menu and Commands	You can use this command to..	Comments
Tools menu		

View Conflicts	..to find out if there were any conflicts discovered during transmission of the system configuration.	The conflicts are displayed in Notepad, conflicts like:
		`OS Count Conflict on Loop 3`
		`Card Version Conflict at Card 1`
		`Card Issue Conflict at Card 1`

Help Topics

Menu and Commands	You can use this command to..	Comments
Help menu		
Help Topics	-	-
About Commissioning tool	..find out the commissioning tool software release number.	-

Mimic Configurer

See Appendix E

The mimic configurer is a software that runs on engineer PC. The mimic configurer is used to configure the illumination of LEDs on the following panels:

- ❑ Mimic panel (custom configured, covered in this section)
- ❑ A4 Mimic panel (custom configured, covered in this section)
- ❑ Zonal mimic panel (off-the-shelf pre-configured panel)

Preparation

The following is required:

- ❑ Access to the **mimic repeat panel** and main **control panel**
- ❑ commissioning computer with mimic configurer software loaded
- ❑ leads to connect computer, control panel, printer and dataman
- ❑ dataman programmer + leads to connect to MRC (optional)
- ❑ light pen module + three leads (optional)
- ❑ printer- *to print mimic configuration information*
- ❑ as fitted wiring drawings - *showing devices (outstations) on loop*
- ❑ information on required **LED illumination**

Tip: On setting up actions

- ❑ Set zone actions on LED set blocks and assigning outstations to zones. This will make any future alteration easier to carry out.

Mimic EPROM Chip removal

> ***NOTE:*** *Before working on the Mimic panel, power-down the loop on which the panel resides.*

- ❑ Ensure the Mimic panels' local mains and battery supplies are disconnected, before removal or insertion of the EPROM chip or Dataman plug from the Master repeat card.

Connecting the computer to panel

MIMIC PANEL / PC / DATAMAN and MAIN PANEL CONNECTIONS

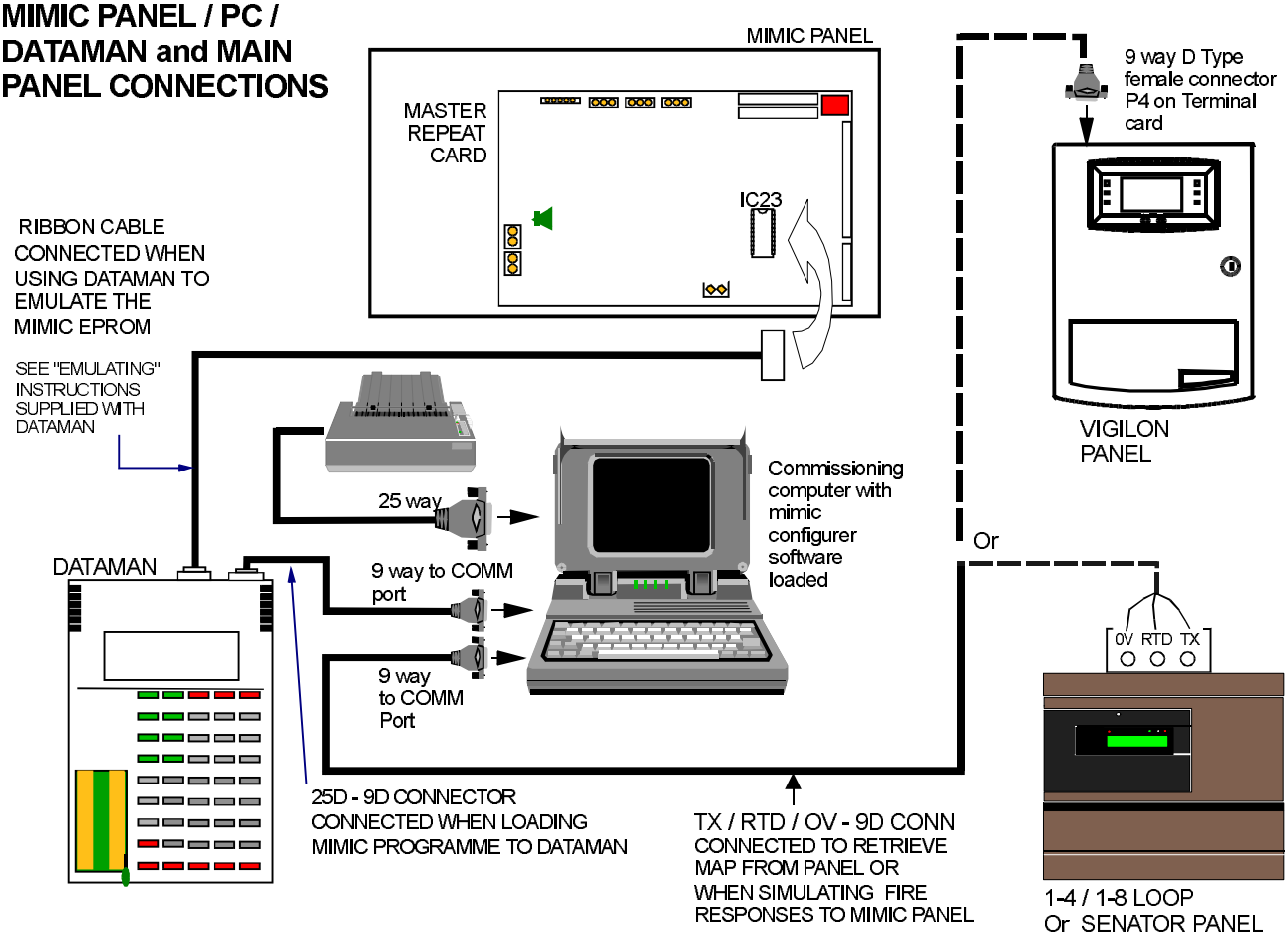


Figure 10-1 Mimic, dataman, computer and control panel
cd8m129

Powering-up the computer

- ❑ On powering-up the computer select: **Mimic Configurer.** Notice the status information is displayed on the bottom of the screen.

Default line

- ❑ Press **<<CTRL>><<D>> keys** and set the default line
  Local Controller number - should be the same as the panel/node address
  Loop Processor number - should be the loop to be configured first.

> ***NOTE:*** *The function keys F1 - F10 are used to select menu options.*

Connecting the light pen (optional

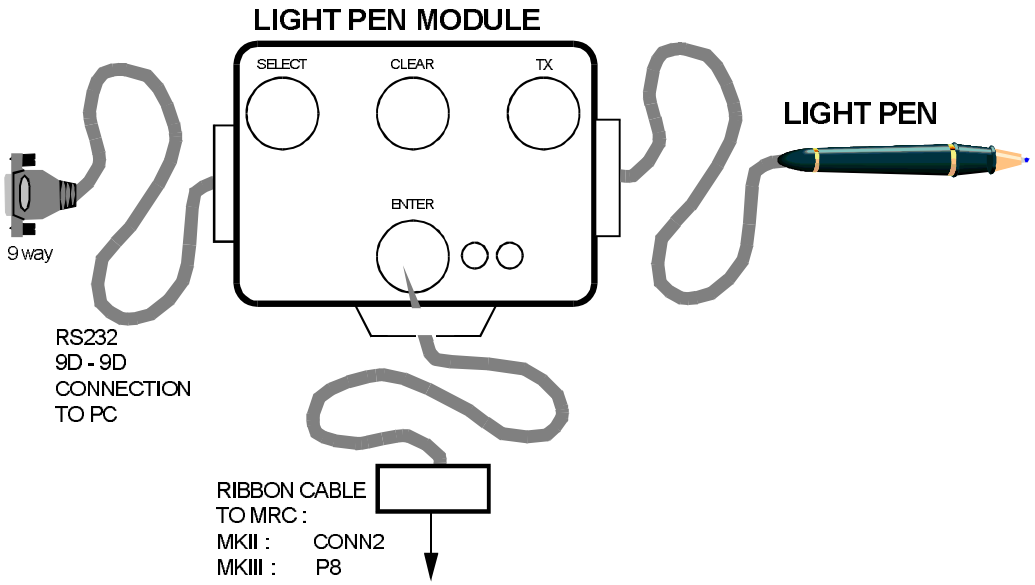


Figure 10-2 Light pen module

cd8m130

)

> ***NOTE:*** *The light pen option* ***cannot*** *be used in the process of configuring the A4 Mimic panel..*

a) Connect the 20 -way ribbon cable from the light pen to CONN2/P8 of MRC board. The board is located inside the Mimic panel.

b) Connect the light pen to the commissioning computer - RS232 serial port.

c) Power-up the mimic panel and the commissioning computer, run the light pen software on the computer.

d) Press the red reset button on the MRC.

e) When the light pen program is running the mimic will *scan* the LED's (each LED will be switched on in turn) - after each scan the currently selected LED's are displayed.

> ***NOTE:*** *If the light pen program does not run (the LED's are not scanned), check that the mimic EPROM is* ***version 3.01 or later.***

Buttons

The light pen has four control buttons and two LED indicators:

- The **clear button** turns *Off* all currently selected LED's.

  If the test pattern is still displayed press the CLEAR button on the light pen.

- The **select button** is used when setting up a *Light Pen Group* for *LED display state* (i.e. steady, in-phase, anti-phase).
  The current *display state* is indicated on the LED's as follows:

- both On - Steady
- flashing together - in phase flashing
- flashing alternately - antiphase flashing
- both Off - turn off selected LED

- The **enter button** is used to select the LED currently being pointed at by the pen. It also transmits the co-ordinates of that LED to the commissioning computer if the light pen is being used in *single co-ordinate mode*.

- The **TX button** is used when setting up a light pen group to transmit the co-ordinates of all the selected LED's.

How to use the light pen

a) Point the light pen at the *required LED*. When the mimic has seen the LED it will remain illuminated between scans.

b) If this is not the required LED, then move light pen at a *different LED* location until it is seen.

c) When the required LED has been seen pressing the ENTER button will select it and it will remain illuminated between scans.

d) To view all the currently selected LED's - point the light pen away from the mimic and press-hold the ENTER button. This halts the scanning until the ENTER button is released.

e) To delete a selected LED, keep pressing the SELECT button until both the LED's on the *light pen* are OFF - then select the LED as normal.

f) The light pen can be used to *Set Action and Light Pen Group.*

Set Actions (single Co-ordinate Mode)

Actions such as - *single LED, diagonal line, filled or hollow square, text block - ask for a single co-ordinate.*

When prompted for first co-ordinate - select the LED in the position asked for (e.g.. bottom-left corner of the shape). The co-ordinates of the LED should then be displayed on the commissioning computer.

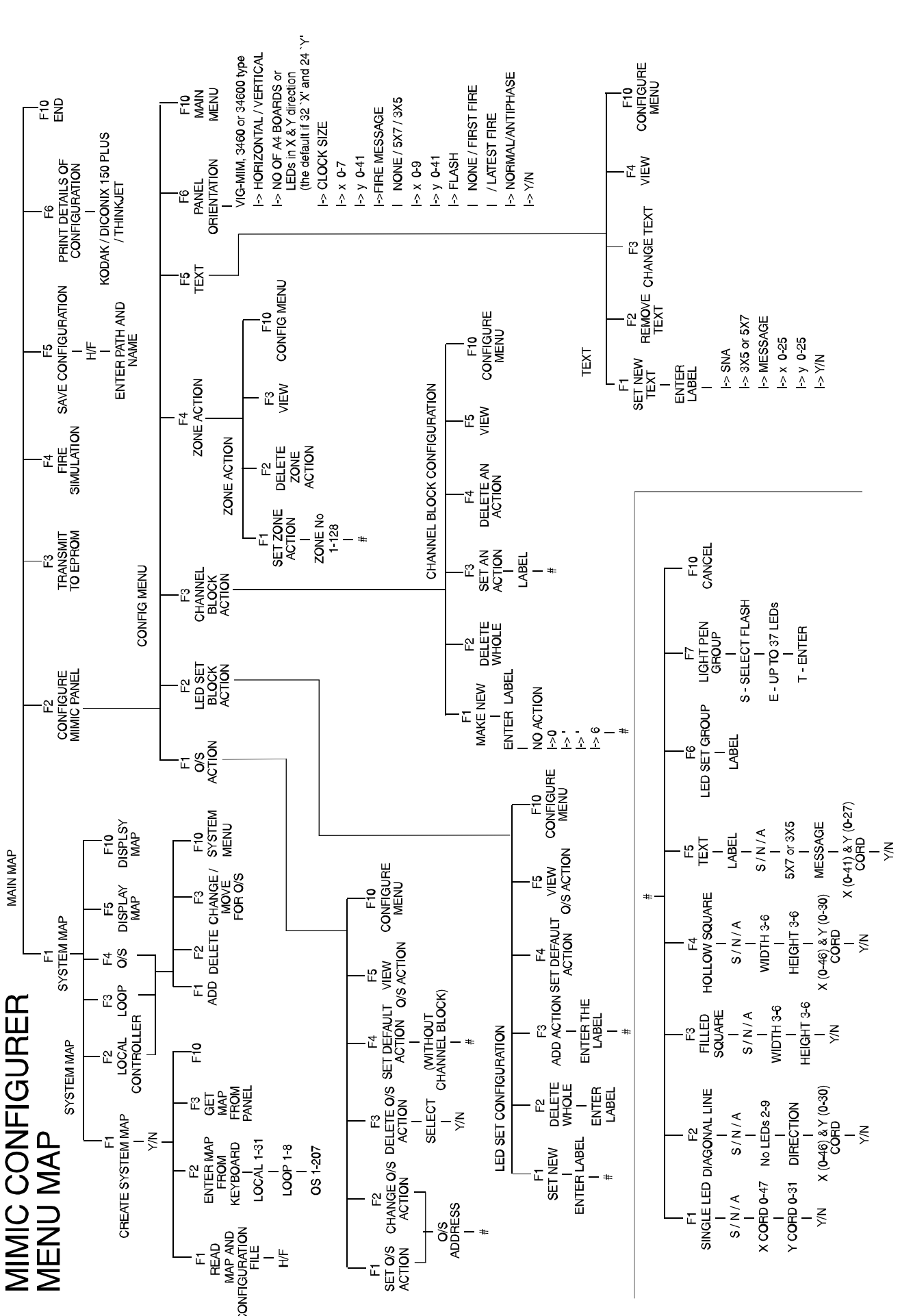
Press the CLEAR button to turn *Off* the selected LED, for the next action.

> ***NOTE:*** *In this mode the LED display state is set by the commissioning computer. The display state shown on the light pen is not used.*

Menu map of the Mimic configurer

The following page shows the mimic configurer menu maps.

MIMIC CONFIGURER MENU MAP



Tip: Regularly save the Mimic Configuration

It is important to store work done regularly. Upon selecting this option the computer automatically clears the menu prompts until store is complete.

How to create system map

This file will hold the mimic system map information. Select :

a) F1 - System map

b) F1 - Create system map

c) F3 - Get map from panel. *This selection will retrieve the system map from the control panel*
or
F2 - Enter from keyboard. *This is a new file where a map is created manually by entering the loop & outstation information,*
or
F1 - Read map and configuration file. *This is an existing file which was previously saved.*

How to alter system map

Once a system map has been created, it may be altered at anytime. It is possible to add, delete and change/(move - for outstation only), Select:

a) F1 - System map

b) Select and set
F2 - local processor address
F3 - loop number
F4 - outstations

How to set the mimic panel orientation

Select:

a) F2 - Configure mimic panel

b) F6 - Panel orientation etc. VIG-MIM, 3460, 34600 panel type?

- Select Vertical (portrait) or Horizontal (landscape).
- Select type of mimic panel
- number of A4 LED boards *Mimic display card* (3460 panel) / LEDs in X&Y direction (default 32 & 24 respectively for 34600 panel)
- Maximum number of characters for *3x5 size* is 8 and *5x7 size* is 5.

- **clock** - none or character size 3x5 or 5x7. The X and Y position of the lowest-left most LED required.
- **FIRE** - none or character size 3x5 or 5x7. The X and Y position of the lowest-left most LED. Display the state of first fire, latest fire or neither to show flashing or steady indication.

Light Pen Group **(free-hand draw mode)**

Instead of choosing set shape the light pen can be used to define a random selection of up to 32 LED's to be displayed together. This is done by choosing *Light Pen Group* as the required action.

a) Setup the required LED display state using the SELECT button (Note - all LED's in a light pen group must have the same display state).

b) Define the required shape by selecting all the LED's in the shape.

c) When the required shape is displayed press the TX button to transmit the co-ordinates of all the LED's to the commissioning computer.

d) The commissioning computer then creates an *LED Set Block* to display that shape. At this point a label entry will be required for the set block. This is an ordinary set block and may be re-used as required.

e) Press the CLEAR button to turn *Off* the selected LEDs.

How to set outstation actions

The outstation action is used to define the *shapes of illumination* on the mimic panel when sensors go into fire condition. From the config menu select:

a) F1 - Outstation action, and then

b) F1 - Set outstation action

c) A number of selections are possible:

- F1 - Single LED, then enter:

  Outstation address or range
  illumination - *steady, normal or anti-phase flashing*
  X axis left co-ordinate
  Y axis lowest co-ordinate
  or

- F2- Diagonal Line , then enter:

  Outstation address or range
  illumination - *steady, normal or anti-phase flashing*
  X axis left co-ordinate
  Y axis lowest co-ordinate
  number of LEDs in diagonal line (9 LEDs maximum)
  Diagonal line direction:

Bottom left to top right
Bottom right to top left

or

- F3 - Filled block, then enter:

  Outstation address or range
  illumination *steady, normal flashing or anti-phase flashing*
  X axis left co-ordinate
  Y axis lowest co-ordinate
  number of LEDs in X and then Y direction
  smallest size1x1
  largest size 4x4

  or

- F4 - Hollow block, then enter:

  Outstation address or range
  illumination *steady, normal flashing or anti-phase flashing*
  X axis left co-ordinate
  Y axis lowest co-ordinate
  number of LEDs in X and then Y direction
  smallest size3x3
  largest size 6x6

  or

- F5 - Text Block, then enter:

  Outstation address or range
  Text block name a label for reference only
  illumination *steady, normal flashing or anti-phase flashing*
  size if character set 3x5 or 5x7.
  text message up to 8 or 12 characters (5 or 8 on A4 Mimic panel)
  X axis left co-ordinate
  Y axis lowest co-ordinate

  or

- F6 - LED Set Block, then enter:

  Outstation address or range
  label for the LED set block, for reference only
  press the <<E>> key, to link the set block to outstation action blocks. Repeat until all action blocks have been linked
  Press <<ENTER>> key to close the set.

  or

- F7 - Light Pen Group

  This is used to create a selection of up to 32 LED's at random using a light pen

  or

- F8 - Channel Block (outstation channel), then enter:

  Outstation address or range
  channel block name
  channel number

Change outstation action

To alter previously set outstation action, from the configuration select:

a) F1 - Outstation action, and then

b) F2 - Change outstation action

Enter outstation address and make the changes to the action

Delete outstation action

To delete a set outstation action, from the configuration select:

a) F1 - Outstation action, and then

b) F3 - Delete outstation action

Enter outstation address

Set default action

This is used when a common separate outstation action is required for ranges of outstations that already have different individual outstation actions e.g.; Floor level indication key.

> ***NOTE:*** *Each individual outstation action MUST be an LED set block.*

When all outstation actions have been set in *LED set blocks*, the range of outstations are entered for the default action and the default actions set. This automatically adds a link in all the *LED set block*s for those outstations to the default action.

View Outstation Action

Provides a display of all the current outstation actions.

Guidelines on actions

- The *LED set blocks* can be set up without a reference to what will trigger the actions. If many outstations/zones have some of their actions common - a set block can be set up to perform these common actions. This set block may then be used as a link in another Set block. It may be used as many times as required.
- A *channel block* cannot be triggered by a *LED set block*.
- A *Text block* and *Channel block* can be set up without a reference to what will action it.

- A *Text block* and *Channel block* that is common to a number of outstations to be set up once - and then used as many times as required.
- *LED set block* can trigger the *Text block* as one of its set links.

LED Set Block actions

An *LED set block* can have a maximum of 50 items, each defining an action. From the configuration menu select:

a) F2 - LED Set Block and then enter:

Outstation address or range
LED set block number or name, used for reference only
press the <<E>> key, to link the set block to outstation action block.
select the required action block to be linked to the LED set block
specify the co-ordinates for the outstation action block
repeat until all action blocks have been linked
Press <<Esc>> key to close the set.

b) F1 - Set new LED Set Block
Create an LED set block without any outstation reference.

c) F2 - Delete a whole LED Set Block (this is an edit facilities)

d) F3 - Add Action to LED Set Block (this was previously set)

e) F4 - Delete Action from LED Set Block (this is an edit facility)

f) F5 - View LED Set Block

Channel block actions

F1 - Make a new channel block (without any outstation reference)
Create a new channel block.
F2 - Delete a whole channel block
F3 - Add actions to channel block
F4 - Delete action from channel block
F5 - View a channel block

Zone actions

These are actions triggered by Zones (1-128) on the control panel with outstations assigned to them.

F1 - Set Zone Action
Create a zone action block.
F2 - Delete Zone Action (edit facilities)
F3 - View Zone Action

Text actions

F1 - Set New Text (without any outstation reference)
Create a new text block
F2 - Delete Text
F3 - Change Text
F4 - View Text

Printout of mimic configuration

This selection will provide a printout of all the mimic information entered in a *mimic file*. To print all entries the default line must be set with *loop processor* address zero, however specific loop mimic configuration can be printed by setting the appropriate Loop Processor address on the default line. Upon selection of this option the date (in format 01:09:99) is required to be entered.

Typical Mimic Configuration Printout

This printout shows the Mimic panels' essential information and the shapes of illumination.

```
*************************************   1:7:88                    Page1
*   MIMIC CONFIGURATION   *
*************************************   File: name
Local Controller 6                      Loop Processor 1          No of Outstations 10
```

Os No	Description	LED State	X Cord	Y Cord	LED's In Line	Line Dir	LEDs in X Dir	LEDs in Y Dir
1	Filled Square	Steady	5	6	-	-	3	3
2	Hollow Square	Steady	10	6	-	-	3	3
3	LED Set block 3	WAREHOUSE						
4	Single LED		11	6	-	-	-	-

Similar printout will be obtained for other loops

```
*************************************   1:7:88                    Page 1
*   MIMIC CONFIGURATION   *
*************************************   File: name
Mimic configurer version V3.04

Panel Orientation :                     Horizontal
Number of A4 LED boards Used :          4
Clock  x co-ordinate:                   5
       y co-ordinate:                   0
                    : 3x5
Fire message  x co-ordinate:            5
              y co-ordinate:            0
                    : 3x5
Latest fire flashing in phase
```

```
************************************  1:7:88                    Page1
*  MIMIC CONFIGURATION  *
************************************  File: name
```

Local Controller 6 Loop Processor 1 No of Outstations 10

Os No	Description	LED State	X Cord	Y Cord	LED's In Line	Line Dir	LEDs in X Dir	LEDs in Y Dir
1	Filled Square	Steady	5	6	-	-	3	3
2	Hollow Square	Steady	10	6	-	-	3	3
3	LED Set block 3	WAREHOUSE						
4	Single LED		11	6	-	-	-	-

Similar printout will be obtained for other loops

```
************************************  1:7:88                    Page 1
*  MIMIC CONFIGURATION  *
************************************  File: name
Mimic configurer version V3.04

Panel Orientation :                   Horizontal
Number of A4 LED boards Used :  4
Clock  x co-ordinate:                 5
       y co-ordinate:                 0
                    : 3x5
Fire message  x co-ordinate:          5
              y co-ordinate:          0
                    : 3x5
Latest fire flashing in phase
```

EPROM Chip

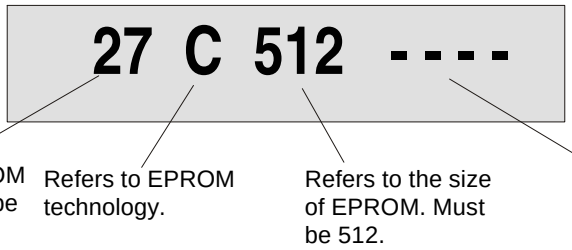


Figure 10-3 Identifying the EPROM chip

- ❑ Check the EPROM chip to ensure it is the correct type.

> ***CAUTION:*** *Anti-static precautions must be taken when handling an EPROM.*

- ❑ The EPROM to be programmed is normally inside the *Mimic Repeat Panel*. Unlock and remove the front cover of the panel and then remove the inner door retaining screws to hinge open the door. Take the EPROM out of its socket on the *master repeat card*.

Transmit configuration to EPROM programmer

Loading the Mimic configuration into the EPROM Programmer:

a) Insert the EPROM into the socket of the EPROM programmer. Ensure the chip is inserted in the correct pin orientation.

b) Connect the RS232 port of the computer to the EPROM programmer, using the 9 to 25 way D cable supplied.

c) Choose *Transmit to EPROM* option on the computer. The transmission of data will be made automatically with messages appearing on the status line.

d) Ensure EPROM programmer is recognised correctly. The programmer will make a series of beeps.

e) The end of the transmission is signalled by the configurer asking if you want to burn the EPROM.

```
Burn (Y/N)
```

If any other message is displayed then the transmission has been unsuccessful. Follow the instructions given by the configurer.

f) At this point the configuration resides in the memory of the EPROM programmer. The EPROM programmer may be used to:

- Burn the EPROM or
- Emulate the EPROM in order to test the configuration

Emulate the EPROM

The EPROM programmer can be made to act as if it were the EPROM that is to be programmed. This should be used to verify the configuration before the EPROM is burned.

To emulate the EPROM:

- ❑ Firstly transmit the configuration to the EPROM programmer.
- ❑ then load the Mimic configuration into the EPROM programmer.

Mimic software

Loading the Mimic configuration into the EPROM Programmer.

a) If not already done, insert the EPROM into the socket of the EPROM programmer.

b) If the **DATAMAN S3 EPROM programme**r is being used then press the **CONFIG** button. Check that the display reads:

```
2B 27512-FAST 12.5V
```

If this exact message is not displayed then use the left & right arrow keys to change the display until it is correct. Press **Esc** to go back to the > prompt.

c) Press **LOAD** & then the **ENTER** button to load the mimic program into the EPROM programmer.

> ***NOTE:*** *Check that the correct range of addresses are selected.*

Dataman S3:

```
LOAD xxxx                          EPROM type
SECTOR 00X7000,FFFF
```

Dataman S4:

```
LOAD xxxx                          EPROM type
00700-0FFFF#07000
```

If the correct message is not displayed then use the keypad on the programmer to make the correction and then press ENTER.

Emulate

> ***CAUTION:*** *It is important to press the* ***EMUL*** *button on the EPROM programmer before connecting the emulator lead to prevent possible damage to the MRC.*

b) Press the **EMUL** button on the EPROM programmer. The message:

```
EMULATE 27512
EMULATE 27C512
```

c) Connect the emulator lead (this is a ribbon cable with 34-way IDC connector on one end and a dummy IC on the other). Connect one end to the EPROM programmer and the other into the EPROM socket on the MRC.

The *mimic program* can now be tested either by *fire simulation* or by setting off outstations. If it is correct then follow procedures to burn the configuration permanently into the EPROM. If it is incorrect the configuration can be changed and checked again using the emulation facility without wasting the EPROM.

Burning the EPROM

This means permanently entering the configuration data into the EPROM for it to be fitted back in the mimic panel.

> ***CAUTION**: Do not burn the EPROM unless the data is correct, since once the EPROM has been burned it cannot be re-used.*

> ***NOTE:** It is best to re-transmit the configuration and BURN the EPROM from the PC.*

❑ Ensure the configuration has been transmitted to the EPROM programmer.

a) To the following question at the PC:

```
BURN (Y/N)?
```

Press the 'Y' key.

b) The following message is displayed on the PC:

```
EPROM blown successfully. Press the spacebar to continue.
```

If any other message is displayed then the BURN has been unsuccessful. In this case follow the instructions given by the configurer.

EPROM Chip

The EPROM chip with specific configuration should be inserted back into the Master repeat card.

Fire Simulation Test

The simulation

The simulation test facility on the computer provides dummy signals to the control panel to simulate an *outstation-fire and reset fire.* The signals are transmitted to the control panel for it to take simulation action on the loop connected Mimic Panel. This action results in the illumination of defined light emitting diodes on the Mimic Panel depending upon the mimic configuration set. Note you are therefore required to have a burned EPROM or programmer in emulation mode inserted in the Master Repeat Card.

Check connections

With the Mimic Panel connected to a loop circuit and the control panel connected to the computer, the tests can be carried out.

Fire reset

Each fire signal can be reset using the facilities available at the computer to remove the displayed information at the control panel. A reset will cause the mimic panel to give no indications. The simulation menu also allows a range of outstations to be entered for testing, this will remove the need to reset after each test.

Installed equipment tests

Preparation

- ❑ Check to ensure *access* will be provided to areas where installed equipment is to be tested, such as in locked or secure areas.
- ❑ Where *dust covers* are fitted on sensor heads, then these need to be removed.
- ❑ Tests may be made easier by having: smoke poles, smoke canister, heat gun, beam obscuration filter, sensor removal kit and MCP test key, plus keys to open system equipment.

Communication to site occupants

- ❑ Before undertaking any of these tests and to prevent unnecessary building evacuation, ensure:
  - all affected personal on site are informed via a responsible person that the fire alarm system is being commissioned.
  - where there is a link to a manned centre, the appropriate action should be taken to ensure they are informed that tests are being carried out on the system.

Deviations from standards

- ❑ The results of system *tests* carried out must be in accordance with the *relevant standards and project specification.*
- ❑ Any deviations must be documented and reported for approval.

Commissioning mode

- ❑ Set the main panel in to commissioning mode. The commissioning mode is accessible under the **[TestEng]** menu. This will control the sounders in the system to sound for a short duration as each fire sensor is tested.

> ***NOTE:*** *On leaving a fully commissioned site it is important to switch Off the commissioning mode.*

Auxiliary equipment

- ❑ Prior to any functional tests on the system, all auxiliary equipment should be isolated.

Tests

- ❑ Tests should be carried out following customer consent. It may also be necessary to obtain third party consent depending on the equipment connected to the auxiliary contacts.
- ❑ All these tests on auxiliary equipment should have been agreed during the project design stage.

Fire Sensors

> ***WARNING:*** *When testing heat sensors DO NOT operate the heat gun in a hazardous environment.*

> ***WARNING:*** *Recommended test equipment must be used to fire test flame sensors.*

> ***CAUTION:*** *When using a heat gun avoid spot heating as this may overheat and damage the sensor.*

> ***CAUTION:*** *When smoke testing fire sensors using artificial smoke, avoid excessive spray to prevent accumulation of sticky residue on sensor, see instructions on the smoke canister.*

> ***NOTE:*** *The beam sensors should be tested using obscuration filters to simulate smoke at default sensitivity.*

The BS5839:Part 1 Section 26.5 (b) recommends that all sensors are tested for correct operation.

- ❑ Unless otherwise instructed all sensors should be tested.
- ❑ Each sensor should also be checked for any physical obstacles that would inhibit the operation of the sensor in the event of a fire.
- ❑ Where practical, each *conventional flame detector* operating via an interface unit should be functionally tested.

Manual Call Points

- ❑ Each Call Point should be tested for correct initiation of a fire event.

Sounders

- ❑ With the *standard alarm sounder* it is possible to lower sound levels by shorting link P3 across pins 2-3 (adjust). This enables the sound output to be varied using RV3.

> ***NOTE:*** *The sensor sounder and repeat sounder outstations have no sound level adjustment.*

> ***NOTE:*** *The sensor sounder has a blue band running around the central outer moulding to ease identification.*

- ❑ Each sounder should be tested, for correct operation in the event of fire.
- ❑ The sound levels in the areas should be tested in accordance with the British standard requirements and to meet the site specific needs agreed with the customer.

Interface Units

> ***CAUTION:*** *In some instances it may not be possible to functionally test input/output circuits off interface units, such as when interfaced to plant and extinguishant systems.*

> ***CAUTION:*** *Ensure the contact rating of interface output circuits are adequate for the ancillary equipment load requirement.*

> ***NOTE:*** *Fit a mains voltage warning label where mains supply are being switched.*

Ancillary equipment

- ❑ Tests should be carried out following customer consent. It may also be necessary to obtain third party consent.
- ❑ All these tests on ancillary equipment should have been agreed during the project design stage.

> ***NOTE:*** *The loop powered single channel interface* ***output*** *is not fault monitored, in this case the output tests are not applicable.*

Tests

- ❑ Each interface should be tested for the following:
  - Battery disconnection*
  - Mains supply disconnection*
  - Input line open circuit
  - Input line short circuit
  - Input line detector fire*
  - Input line MCP fire*#
  - Output line open circuit ~
  - Output line short circuit ~
  - Output line operation ~

***** - not applicable for the **loop powered interface units**, but input tests are applicable to **loop powered zone module**.

\# - a fire from a **manual call point or detector** connected to a loop powered zone module input cannot be differentiated.

~ - the output of the **single channel interface** operates with **sector** and is a set of **voltage free contacts**. The contacts are therefore not fault monitored.

Interfaced equipment test

- ❑ The external equipment connected to the system via an interface unit should be tested as per project specification.

Keyswitches

- ❑ Where the interface unit has a keyswitch door fitted, then the keyswitches should be tested as per project specification.
- ❑ The operation of a keyswitch should also light the LED indicator.

Repeat Panel

Each *repeat panel* should be tested for the following:

- ❑ Sound Alarms

> ***NOTE:*** *Operating the SOUND ALARM button will activate the alarm sounders in the system.*

- ❑ Silence Alarms
- ❑ Reset
- ❑ Cancel Fault Buzzer
- ❑ Battery disconnection
- ❑ Mains supply disconnection

- ❑ Display of Fire events

> ***NOTE:*** *If there are two fires having same label, then only one fire label is displayed.*

- ❑ Display of Fault events

Mimic Panel

Each Mimic Indicator should be tested for the following:

- ❑ To confirm fires are indicated

> ***NOTE:*** *The power to an A4 mimic display is supplied from the connected A4 mimic control unit.*

> ***NOTE:*** *The fire/fault buzzer in an A4 mimic panel will not operate if it is disabled. However the panel does provide common lamp indication of fire and fault event.*

- ❑ Battery disconnection
- ❑ Mains supply disconnection

Lamp Test

- ❑ On an **A2 mimic panel** is performed by using a test key.
- ❑ On an **A4 mimic panel** is performed by inserting a 2mm pin like object (for example a small terminal screwdriver) into a hole located on the underside of the panel enclosure.

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Single Network

The connection of a network of control panels/terminal nodes is achieved via network card installed in each panel/node. On powering up a network checks and tests are performed to ensure the network map is correct and network commands, such as Master sectors and global alarms, can performed as per site requirement.

Preparation

- ❑ Each standalone system of a network should be commissioned individually.
- ❑ Check to ensure that twisted pair cables have been used, where applicable.

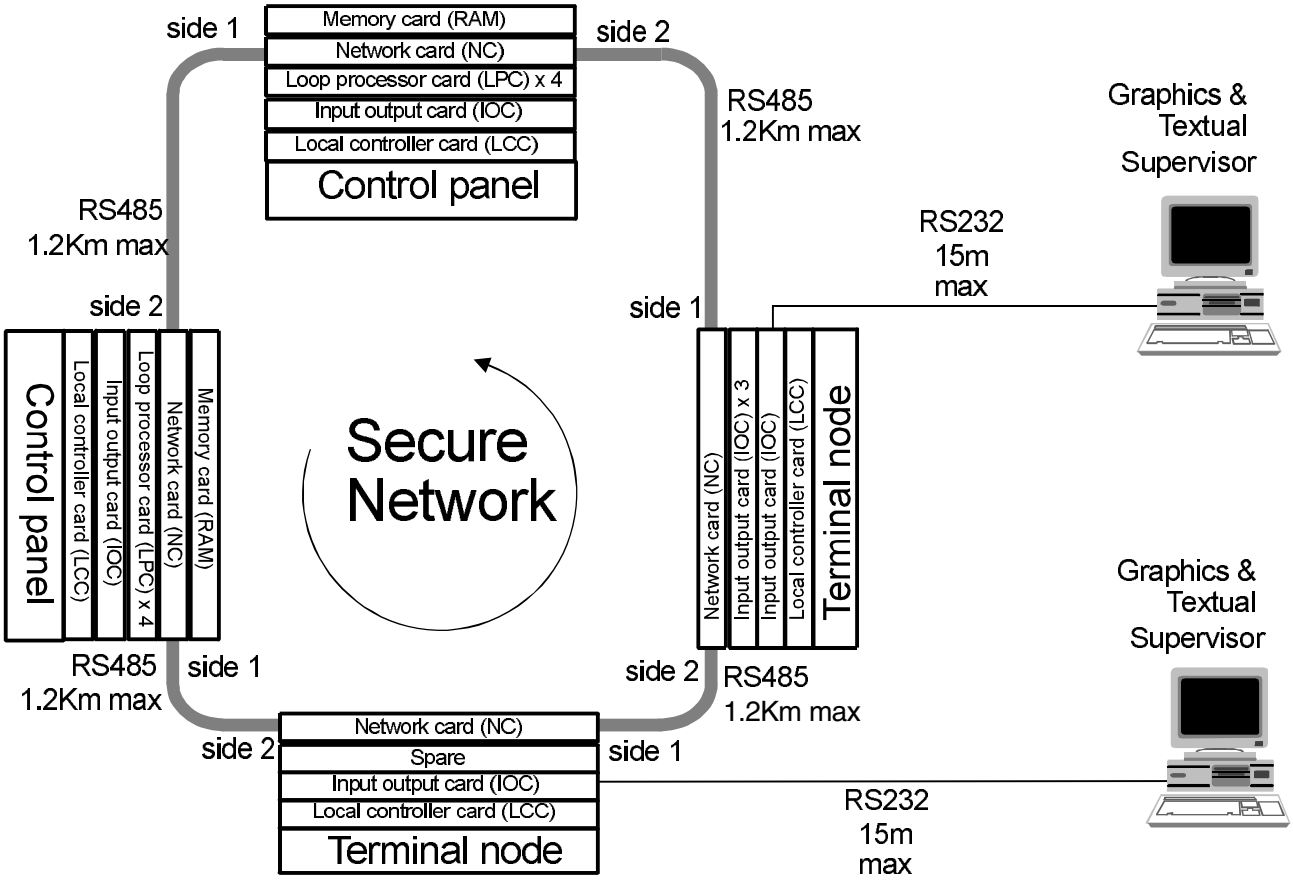

Figure 12-1 Secure network with Supervisor
cd8m132

Network connections

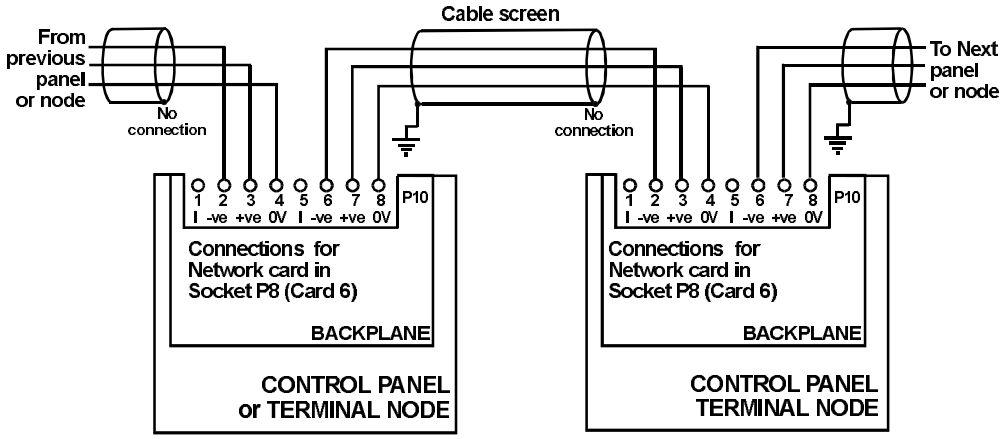

Figure 12-3 Network cable earth

cd8m080

How to setup the Network Card (NC)

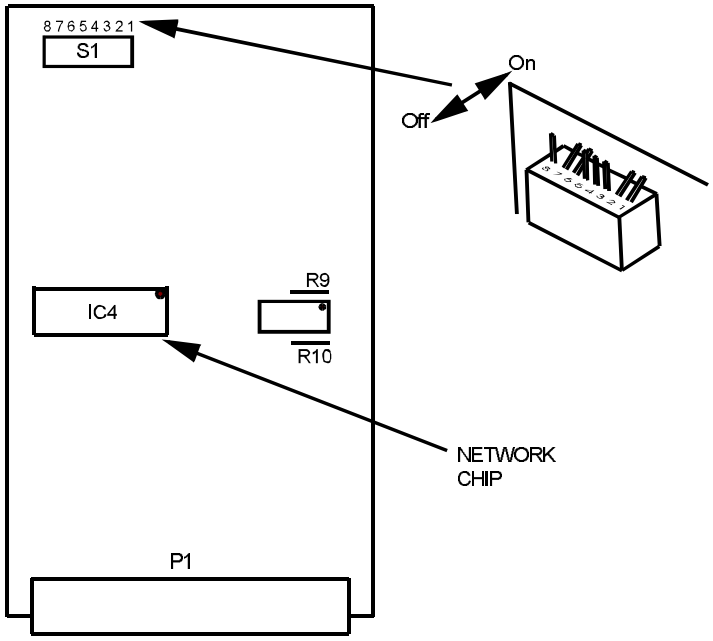

Figure 12-2 Network card

cd8m095

Setting the Node address and network baud rate

- The Network card is factory set for 38.4K baud with **node** address 4.

Node address	Switch Number						Switch Number		Baud rate
	8	7	6	5	4	3	2	1	
64	off	off	off	off	off	off	off	off	2400
1	on	off	off	off	off	off	on	off	9600
2	off	on	off	off	off	off	off	on	19.2K
3	on	on	off	off	off	off	on	on	38.4K
4	off	off	on	off	off	off	Factory set for 38.4K baud with **node** address 4.		
63	on	on	on	on	on	on			

- ❑ The lowest *node* address is given to the *network controller*, which is the control panel/terminal node normally connected to the Supervisor 3.
- ❑ The communication links should be set for RS485 format. The selectable *baud* rates are (4800, 9600,19200, 38400).

> ***NOTE:*** *All panels/nodes in a network must operate at the same baud rate. Normally 38.4K baud.*

- ❑ Ensure IC4 and IC6 holds the correct version of network software.

V3 + Single Network (without Domain bridge)

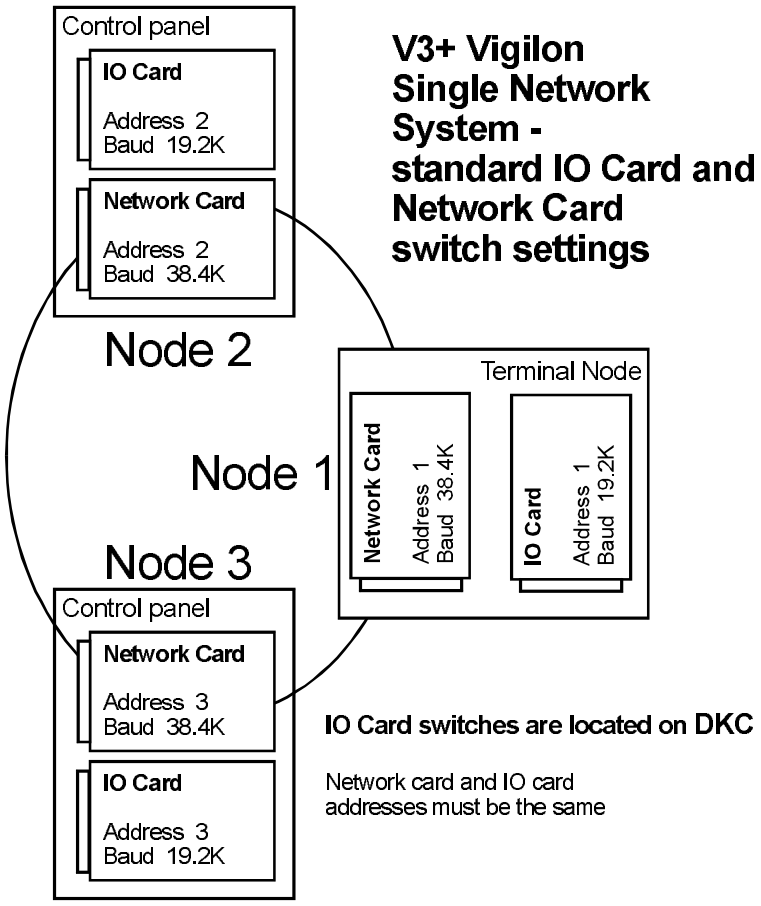

Figure 12-4 Single network, Network and IO card address and baud settings

cd8m143

Where to install the Network card (NC)

- ❑ The network card should be fitted inside each networked *control panels and terminal nodes.*
- ❑ The *network card* should be fitted in Socket 8 (slot or card no. 6) of a Vigilon control panel/Terminal Node.

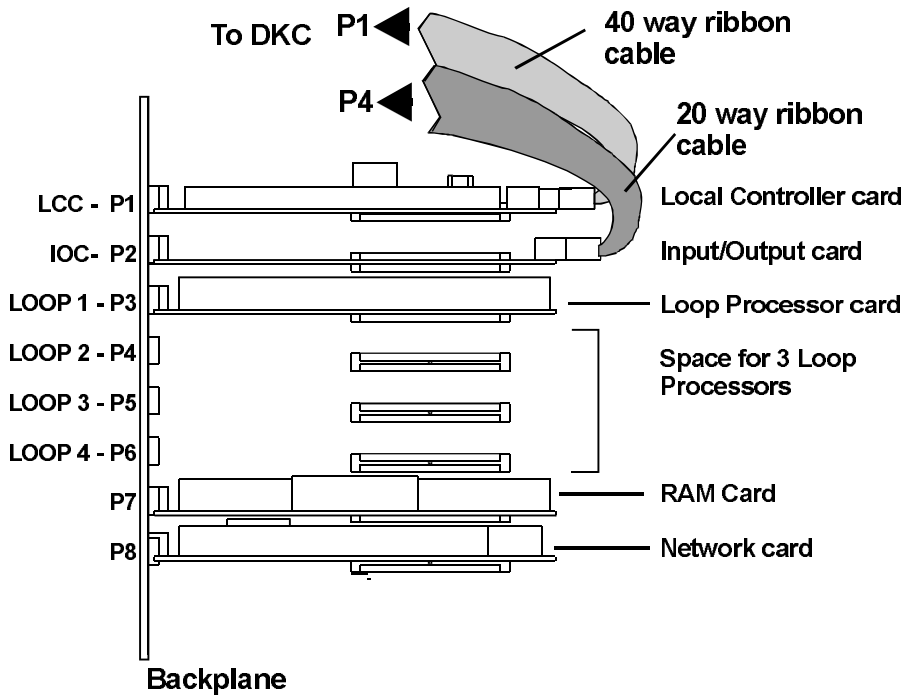

Figure 12-5 Terminal node backplane

cd8m122

NOTE: *The terminal node has no loop supporting capability and therefore requires no loop cards.*

Powering-up the Terminal node

- ❑ Refer to the Control Panel power up procedure..

Menu map

- ❑ For menu maps associated with the terminal node see Appendix A of this manual.

Powering-up the Network

NOTE: *It can take up to 1 minute for the system map to update.*

Adding panel/node

- ❑ Add one panel at a time starting from the *network controller* (the panel/node) at **side 1**.

- For each node/panel powered-up the *network controller* will automatically try to establish communication with the connected equipment.

- The *network controller* will display the status of the network as being started, secure or non-secure and from now on will monitor and control the network communications.

- Use *disable comms* to isolate a panel/node from the rest of the network, ie it operates at the network card in an echo mode, select **[Control] -> [Disable] -> [Comms]** and enter the Network Card number 6.

How to check a Network map

- Using the **[Info] -> [Map] -> [NetMap]** menu, enter the network card address, usually 6.

  - The display will provide a list in cabling order the addresses of panel/terminal nodes in the network.

- These are examples of different networks. The lowest address '1' is normally the network controller.

Nodes on side 1 of a SECURE NETWORK

1 10 4 24 3 6 2 22 7 23 1

Nodes on side 1 of a NON-SECURE NETWORK

1 10 4 24 3 6

Nodes on side 2 of non-secure network

1 23 7 22 2

How to check Network Card status

- Using the **[Info] -> [Cardstat]** menu enter the network card address. The display will confirm:
  - addresses of the network card
  - address of network controller
  - and a set of condition codes

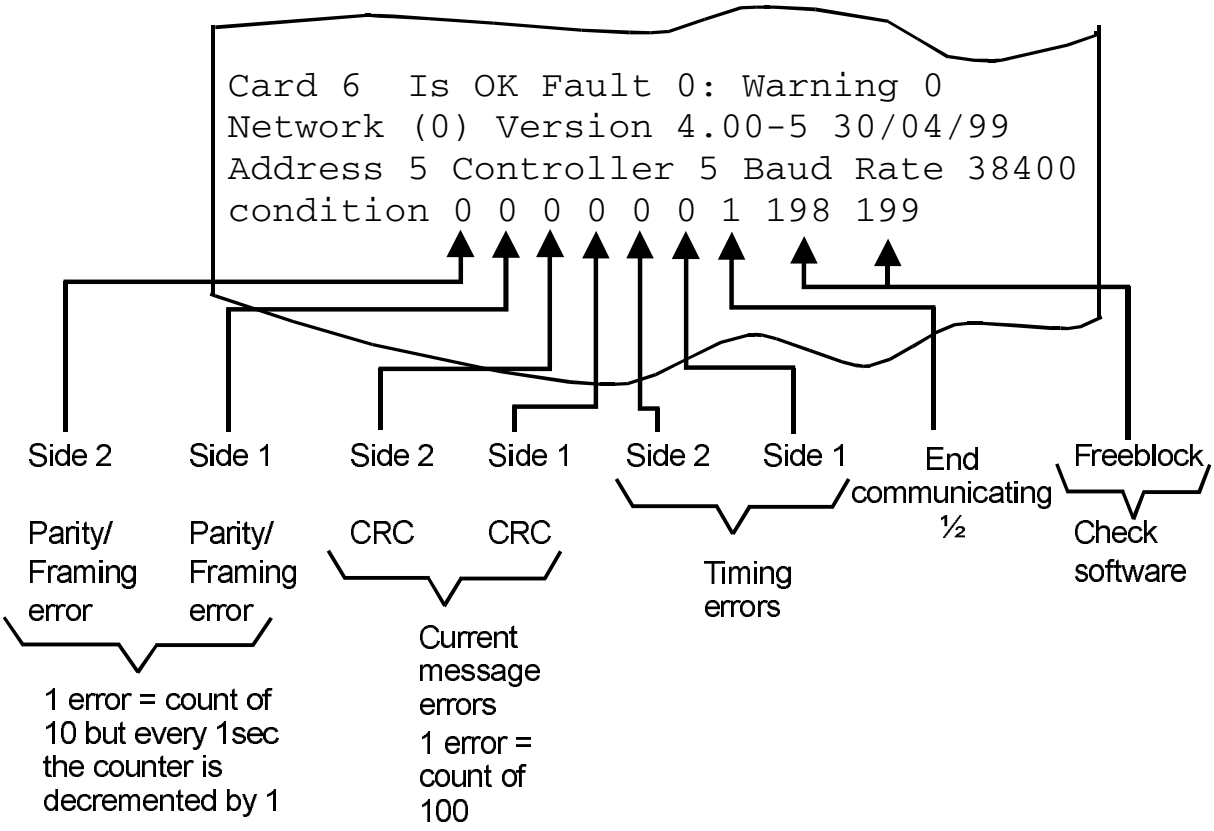

Figure 12-6 Network card status
cd8m157

:

Errors	meaning
Parity	Parity is incorrect, data corrupted.
Framing	8- bit transmitted incorrectly and the data line does not return to logic 1 at the end of the transmission.
CRC	Cyclic redundancy code. When a message consisting of a number of 8 bit transmissions is sent, a calculation is carried out to check that data corruption has not occurred.
Time out error	Where an 8 bit transmission block is not fully received, the network card will time out ready to receive the next message. Time out error will also be generated for each parity/ framing error.
Freeblock	Free memory blocks available to temporarily store messages waiting to be processed. The maximum number = 199, although it may drop as low as 175 - 180 on a highly populated network. A lower value may indicate a high error value and will require rectification.

Fault Finding

- ❑ The communication path in a secure network alternates between end 1 (side 1) and end 2 (side 2) every minute.
- ❑ The network will be non secure until the last panel/terminal node is connected and powered-up.

High errors:

- ❑ Check cable lengths and type used.
- ❑ Check wiring, connections and earthing arrangements.
- ❑ Replace network card at point of failure.
- ❑ Check the addresses and baud rates of the input output and network cards of the network panels/terminal nodes.
- ❑ Check the network cable is correctly earthed to the equipment.
- ❑ It may be necessary escalate an investigation to:
  - look at the noise voltage between conductors, screen and earth.

> ***NOTE:*** *Always reset the Network Card first when rechecking for errors, using [Test/Eng] -> [Reset] -> Network Card number, normally Card 6..*

Check the system configuration

Master Sector Action

- ❑ Check the master sector actions are to site specific requirements

Global actions

- ❑ Check the global actions are as per site specific requirements.

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Multiple Networks

Two or more Vigilon networks can be connected together using the domain bridge IO card to allow the display of events at any control panel or terminal node in the connected networks.

Domain bridge connections between networks

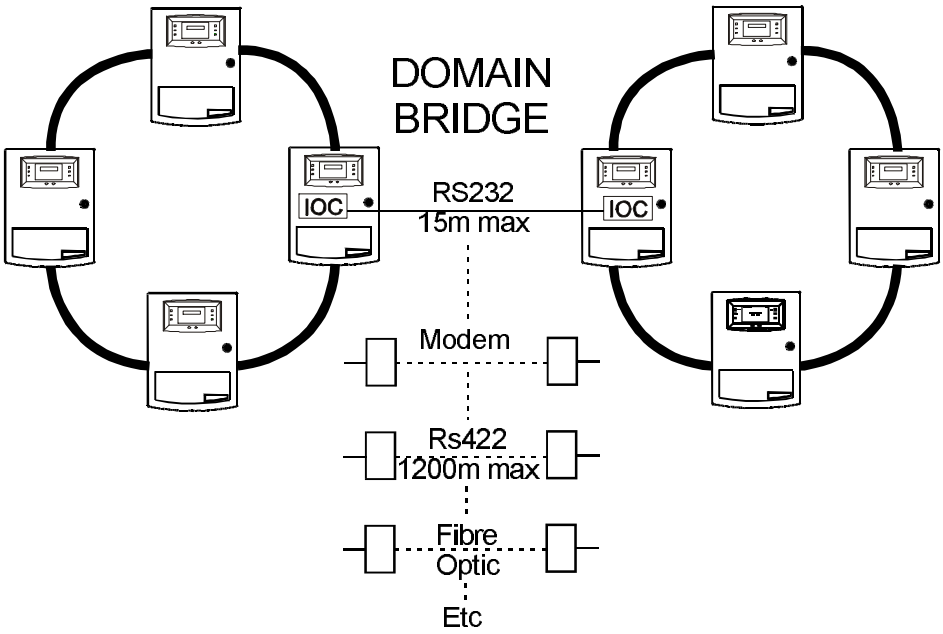

Figure 13-1 Domain bridge connections between networks

cd8n_4

Star connection

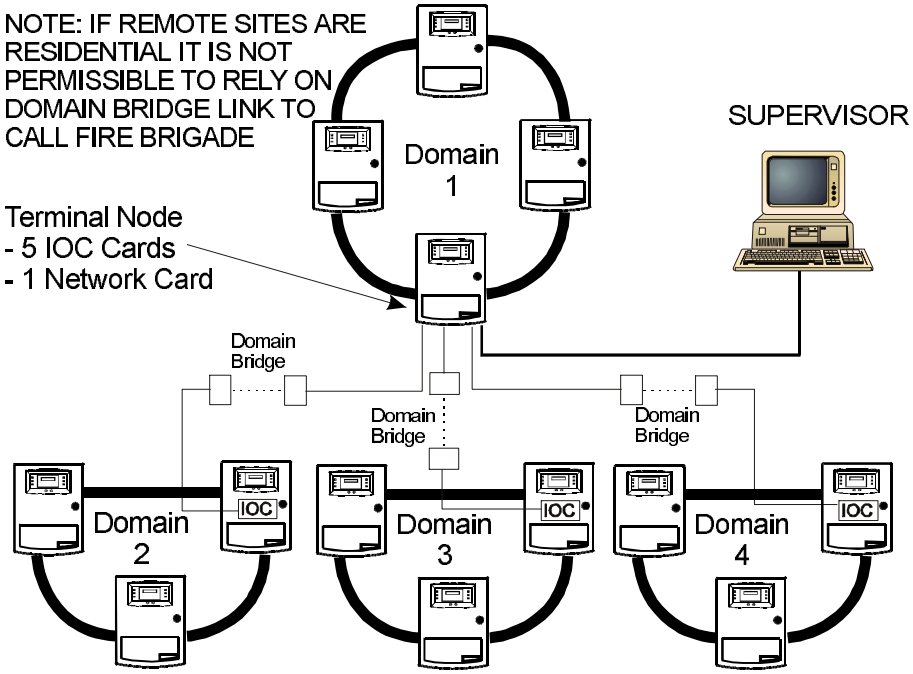

Figure 13-2 Connection of networks in star formation

cdn_6

Domain bridge RS232 connection

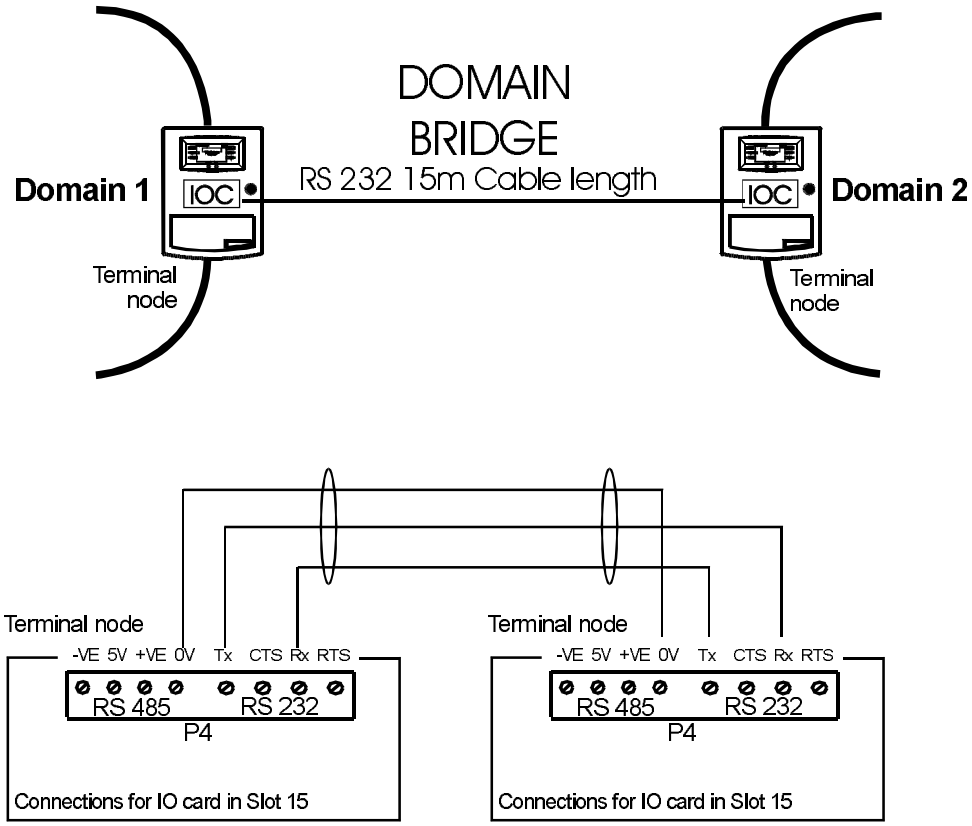

Figure 13-3 Domain bridge connection over RS 232, assuming domain IO card in socket P2 (Card15)

cd8m147

Domain bridge over Modem

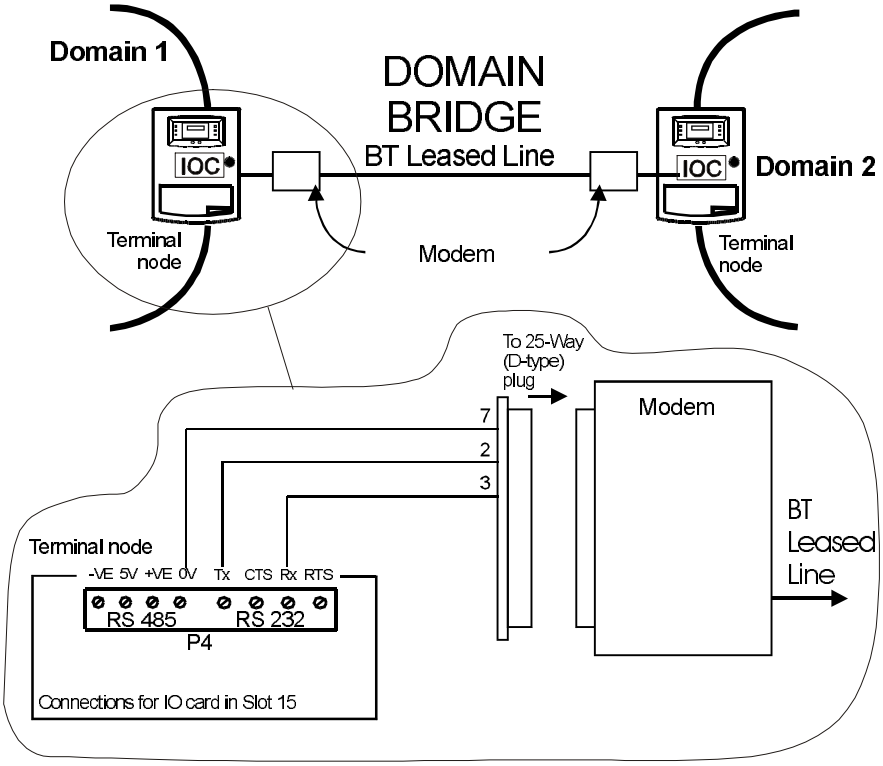

Figure 13-4 Domain bridge connection over Modem using RS 232, assuming domain IO card in socket P2 (Card15)

cd8m146

Domain bridge over RS422

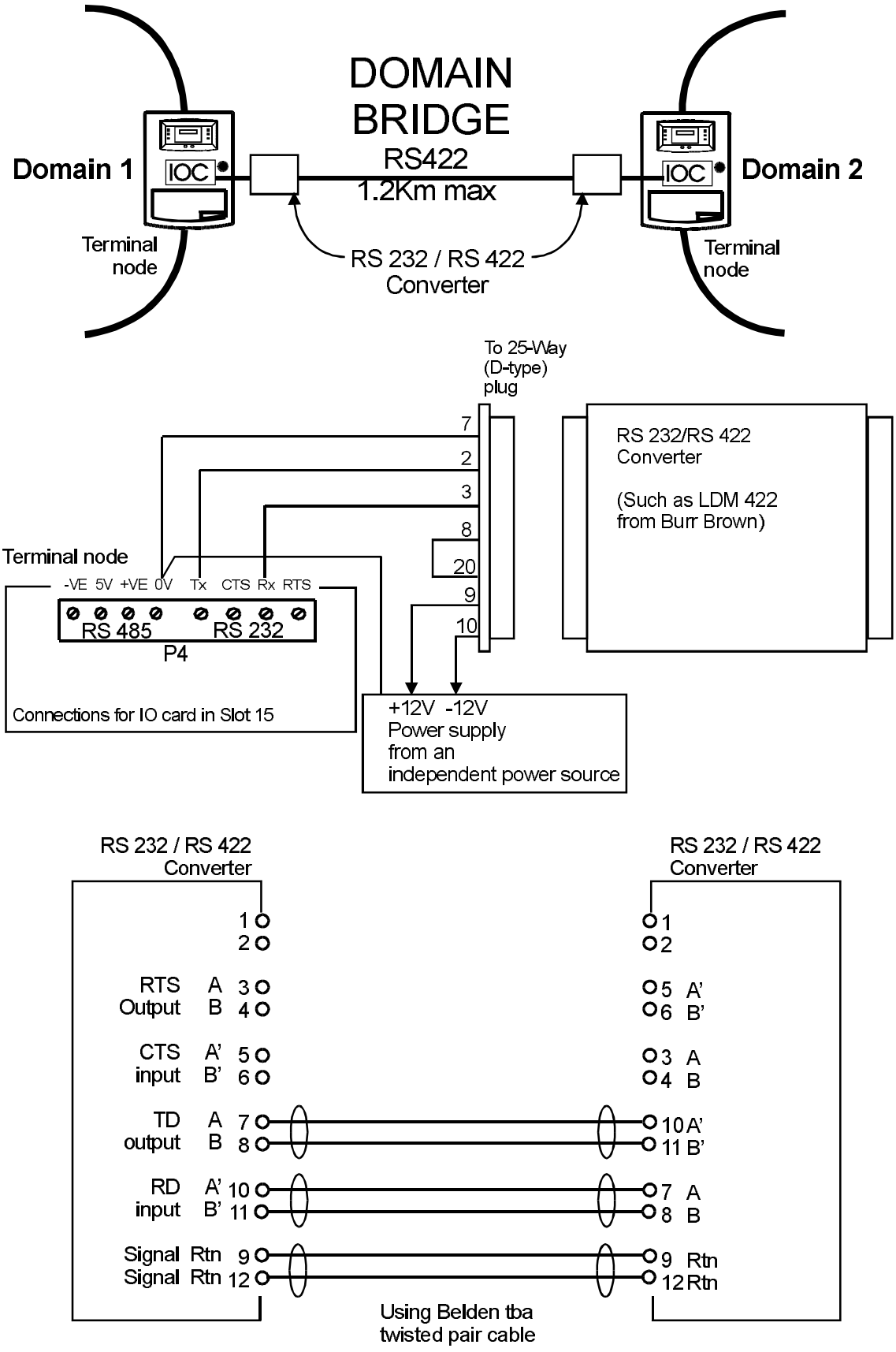

Figure 13-5 Domain bridge connection over RS 422, assuming domain IO card in socket P2 (Card15) and RS 232 / RS 422 converter is used, like Burr brown LDM422
cd8m144

Domain bridge over Fibre Optics

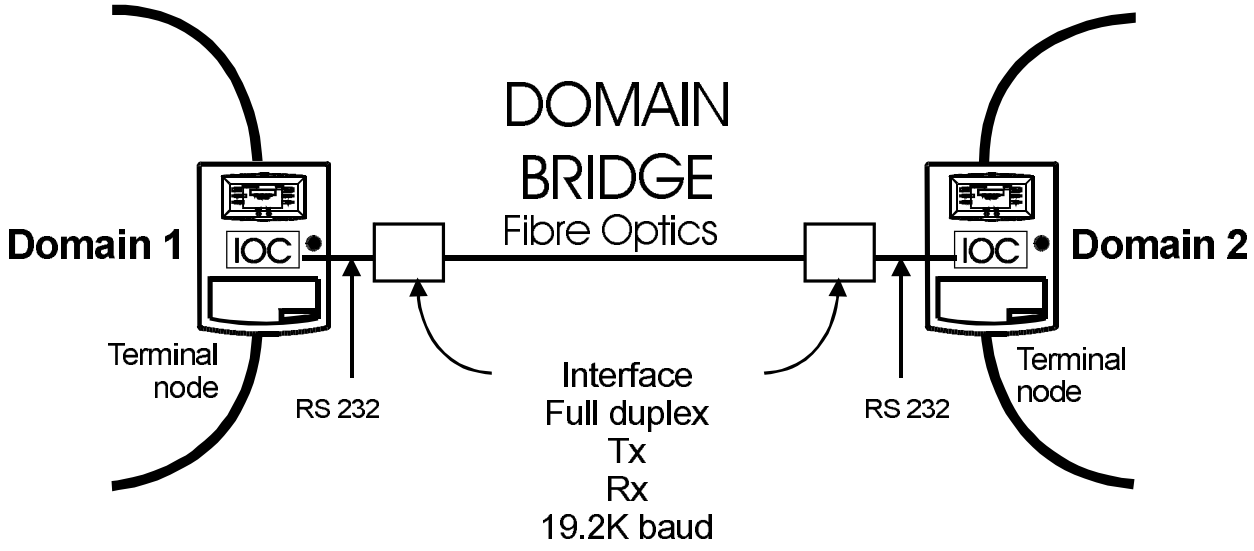

Figure13-6 Overview of domain bridge connection over fibre Optics

EN54 or V3+ Networks with Domain bridge

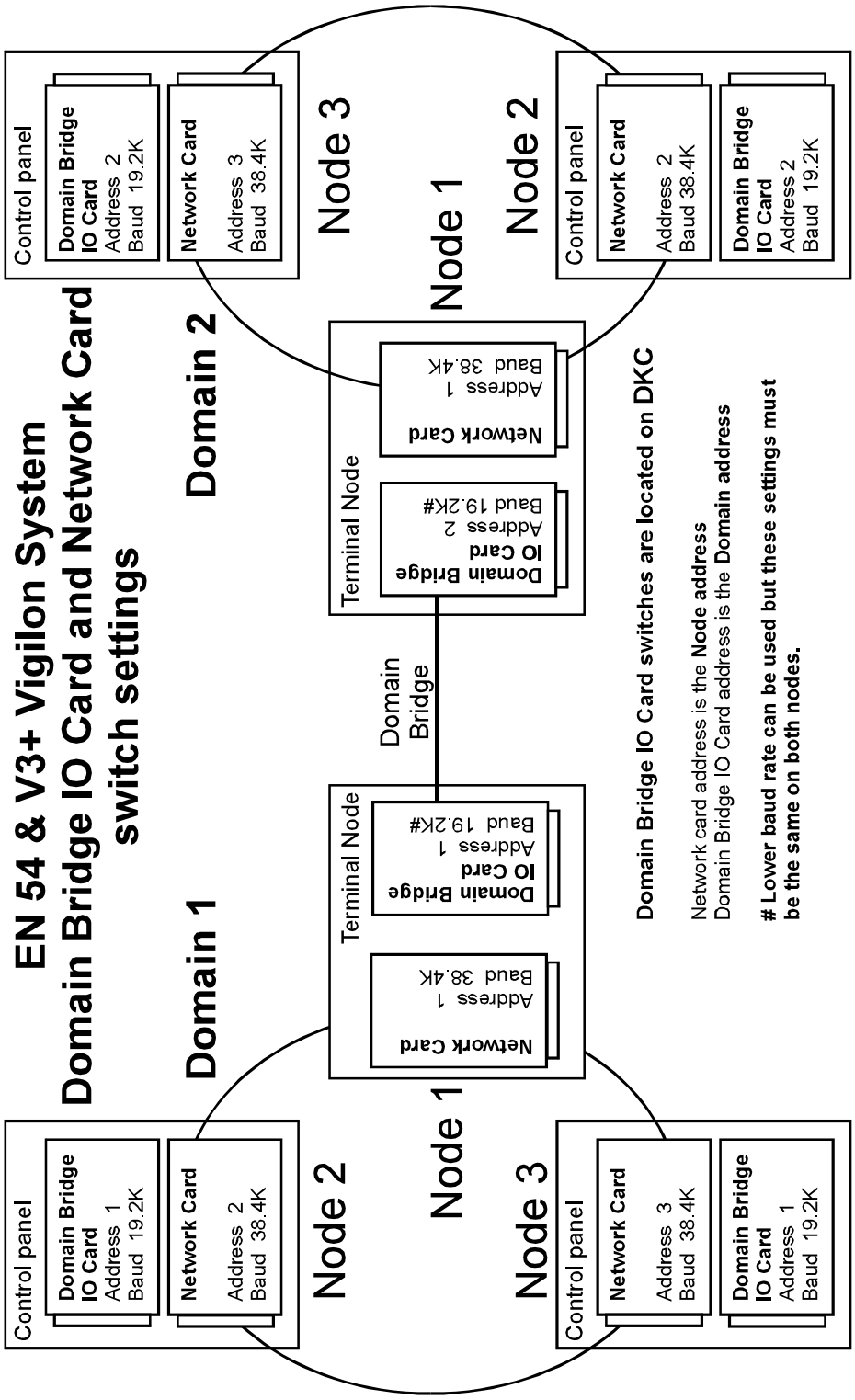

Figure 13-7 Example showing the IO (DKC) and Network card switch settings for EN54 system

cd8m142

Domain bridge message passing tests

To check the domain bridge connections and to ensure messages can be passed between networks the following must be done.

- ❑ Trigger an event in a network, such as a fault.
- ❑ Check the event is passed on to the connecting networks and is displayed at the networked control panels and terminal nodes.
- ❑ Repeat the test at each network to establish message passing between networks.
- ❑ Finally back up the cards of the panel/node including the *Network card* and *IO card* to the *Memory card.* This ensures the panels/nodes of each network knows the location of network controller, ie the domain bridge connection point.

To check message routing between domains

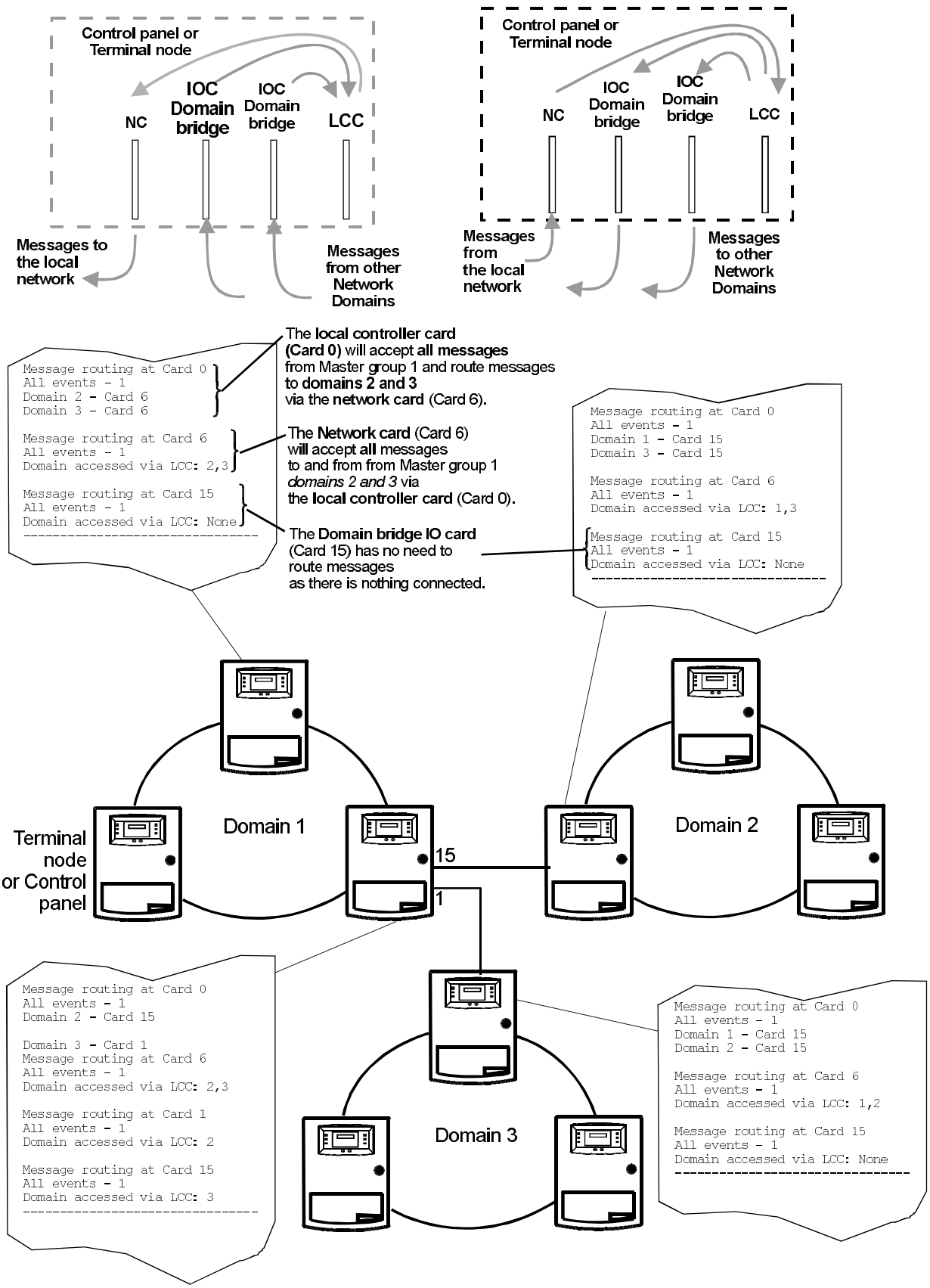

Figure 13-8 Message routing between domains

cd8m158

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Supervisor 3 for V3+ Vigilon system

Background Information

Supervisor 3 is the new PC based Control & Monitoring product – launched in May 1999. It is a complete replacement for the old Supervisor & Graphics 2 products and runs under the Windows NT 4 operating system.

The main new features of Supervisor 3 are:

- Completely new version of text and communications side of software.
- Text and Graphics can run together on one PC (though 2 PC operation is supported).
- Completely new user interface designed to be clearer and easier to read. All functions can be operated using touch-screen.
- A new type of event called “Emergency” has been created. An Emergency is essentially a special case of a Command Build .
- The “Windows Explorer style” System View (Tree view) allows the user to browse all the devices on the system and to select devices for disablement and for modifying labels and auxiliary text.
- The password system has been improved so that each user has his/her own user name and password with associated access rights.
- A software watchdog has been designed that runs in the background of the operating system. This together with the ability to support multiple serial ports means that the Convertor/Splitter is no longer required.
- A Custom Keyboard has been designed to make the product easier to operate. Most Supervisor 3 systems have this custom keyboard fitted.

For information on how to operate Supervisor 3, see Operator’s Manual, SUP-MAN-OPS Issue 1

Physical Connections

To correctly connect up a Supervisor 3 the following connections must be made:

Single PC System

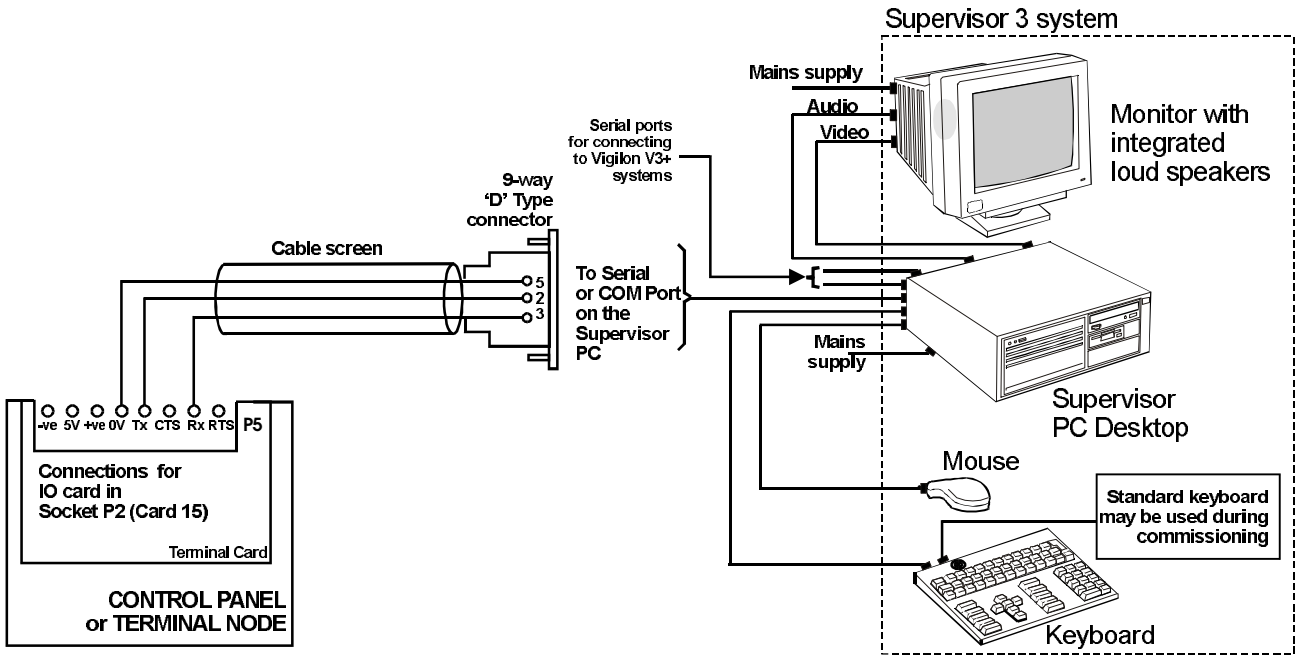


Figure 14-1 Supervisor 3 physical connections

cd8m133

a) Mains connections plugs into 3-way “kettle style” connectors on PC and Monitor. Two mains sockets are required.

b) Mouse plugs into mouse connector on base unit. This is a 6 pin mini-din connector.

c) Monitor video connector plugs into video connector on base unit. This is a 15 way D-type connector.

d) If the monitor has a touch screen fitted it will have an additional 9-way D-type connected fitted to it. The cable for this will go from this connector on the monitor to one of the serial ports on the PC base unit (probably Com 3).

e) Custom Keyboard plugs into keyboard connector on base unit. This is a 6 pin mini-din connector.

f) Audio lead (which is a stereo mini-jack which connector) from the *Speaker Out* socket on the base unit to the *Audio In* socket on the monitor. This is needed for the audible tone to sound in the event of a *Fire/Fault/Emergency*. It connects to the monitor because Supervisor 3 is normally supplied with a Multimedia monitor (i.e. one with integral loudspeakers).

g) Serial lead connects from the Serial (or Com) port on the base unit to the RS232 connections in the control panel or terminal node. If only one panel or node is connected then you would normally use Com 1.

> ***NOTE:*** *RS485 mode does not currently work with Supervisor 3 so we do not yet know what the solution for this will be.*

h) If there is a remote panel/network connected to the Supervisor 3 via a modem then the modem will most likely be connected to one of the other serial ports (Com 2, 3 or 4). The serial lead for this will have a 9-way D-type on one end (connected to the base unit) and a 25 way D-type on the other (connected to the modem).

Two Supervisor 3 PC System

Although most Supervisor 3 systems will only have 1 PC with either text only or text and graphics combined – some Supervisors will have a 2 PC setup. In this configuration the *textual information* will be displayed on one PC whilst the *graphical information* will be displayed on the other. If this configuration is used then the following connections must be made:

a) For the Text PC follow the instructions for the ***Single PC System*** **described above.**

b) For the Graphics PC follow instructions a)-d) for the ***Single PC System*** **described above (Note: the Graphics PC does not require a serial connection to the fire alarm system nor will it require a keyboard or loudspeakers).**

c) The connection between the two PCs for Supervisor 3 is made via an Ethernet card in each PC. Thus the Ethernet cable will need to be connected from the Ethernet card on the Text PC to the Ethernet card on the Graphics PC. This cable has an RJ45 (BT telephone style) connector on each end.

Multiple Supervisor Systems

If there is more than one Supervisor connected to a network the following rules apply:

a) No more than 3 Supervisors may be connected to a network.

b) All Supervisors must be connected to the network via a Terminal Node.

c) If the maximum of 3 Supervisors are connected to a network then:

- Two of the Supervisors must be connected to the Terminal Node that is the controller of the network.

***NOTE**: These restrictions apply only to Text or combined Text/Graphics supervisors. Graphics only supervisors in a 2 PC system do not count as one of the three.*

User Configuration

The current user must have Engineering access rights to gain access to this screen. It is accessed as shown on the right:

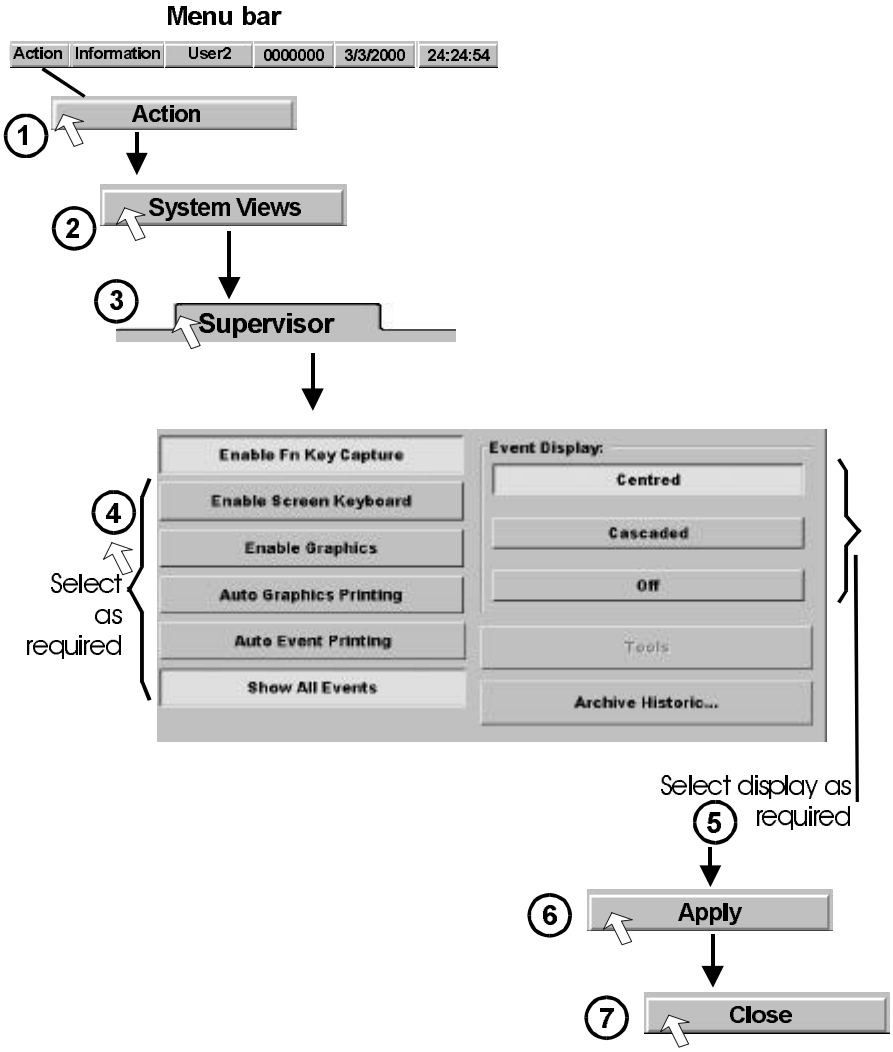


Figure 14-2 Supervisor System view

cd8m034

Description of Functions

Enable Fn Key Capture

Some commonly used functions have been assigned to the keyboard function (*Fn) keys. This selection is required for the custom keyboard to operate correctly.*

Enable Screen Keyboard

If selected this causes a keyboard to be displayed on the screen to allow users to edit labels and enter passwords. Is only required where the Supervisor is being used with a touch-screen only and has no keyboard fitted.

Enable Graphics

Causes the graphics program to be run on the same PC as the text display. Note: Should not be selected when operating a 2 PC system.

Auto Graphics Printing

If selected causes the appropriate graphics page to be automatically printed in the event of a Fire/Fault/Emergency.
Note: Should only be used if a graphics printer is connected to the PC running the graphics software.

Auto Event Printing Causes every event, as it occurs, to be printed on the text printer.

Show All Events If not selected it prevents low priority (grey) events from displaying in a pop-up window.

Event Display Controls the way in which the event pop-up window is displayed:

Centred – Multiple event windows all stack up in the centre of the screen.

Cascaded – Multiple event windows are cascaded down the screen allowing the user to see that there are multiple event windows to view.

Off – Event popup windows are not displayed at all. To view textual information the user will have to select the appropriate event type from the status bar.

Archive Historic Allows the user to copy the Historic Backup file to a floppy disk. Useful if the site want to keep a electronic copy of the historic log.

*Note: no changes are effected until the **Apply** button is selected.*

Gent Engineering Access

To gain access to the Commission screens it is necessary to log on at Gent Engineering level The password for this is:

Ctrl-Alt-Shift GENT

Note: If the custom keyboard is fitted then it will be necessary to first fit a standard keyboard to the PC. The standard keyboard can be most easily fitted by plugging in to the socket on the back of the custom keyboard.

Commission 2 Configuration

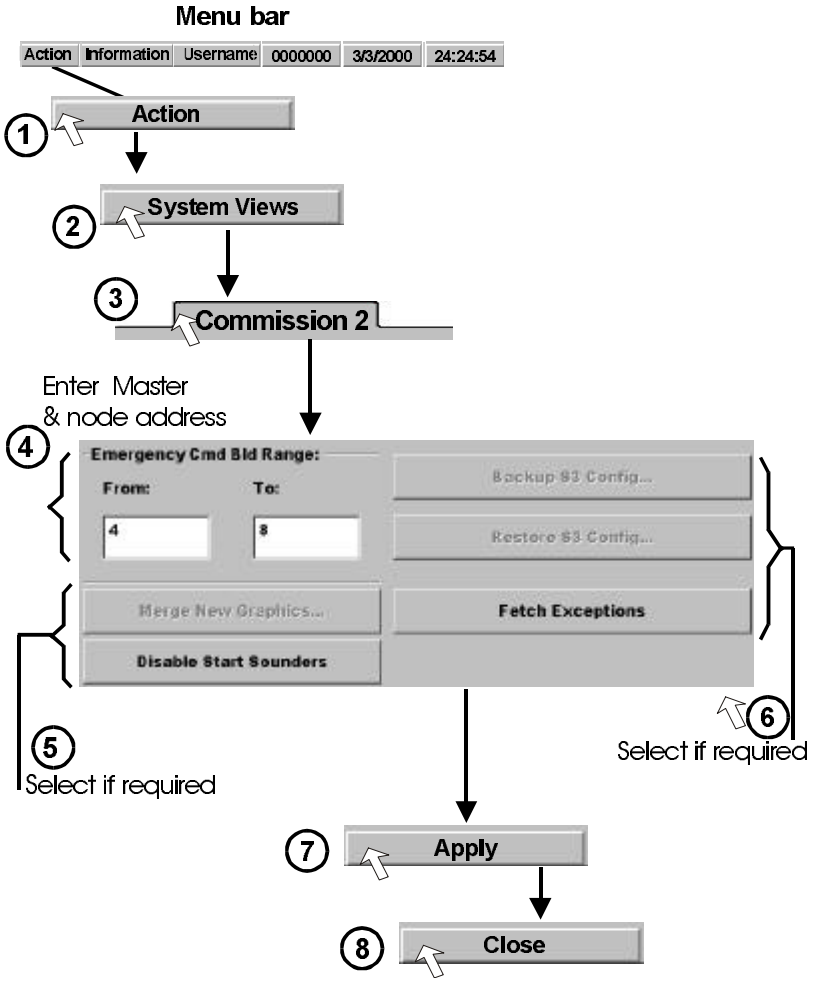


Figure 14-3
Commissioning 2
System view

cd8m138

Description of Functions

Emergency Cmd Bld Range

The Supervisor maybe configured to display certain Command Build activations as Emergency events. A Command Build will be treated as an Emergency if:

1. The first character of its label is an asterisk (ie. *)
2. The command build number is within the range specified in the **From: and To: boxes** in this commissioning screen.

Disable Start Sounders

If selected it prevents the user from being able to use the Start Sounders function.
Note: It does not disable the Start Sounders function when the Supervisor is in Gent Engineer mode.

Fetch Exceptions

If selected it causes Sub-faults (or Exceptions as they are to be known in the EN54 control panel) to be logged by the Supervisor.
Note: Due to the increased network traffic generated by this function it should only be enabled on one Supervisor on a network system.

> ***NOTE**: no changes are effected until the **Apply** button is selected.*

Commission 1 Configuration

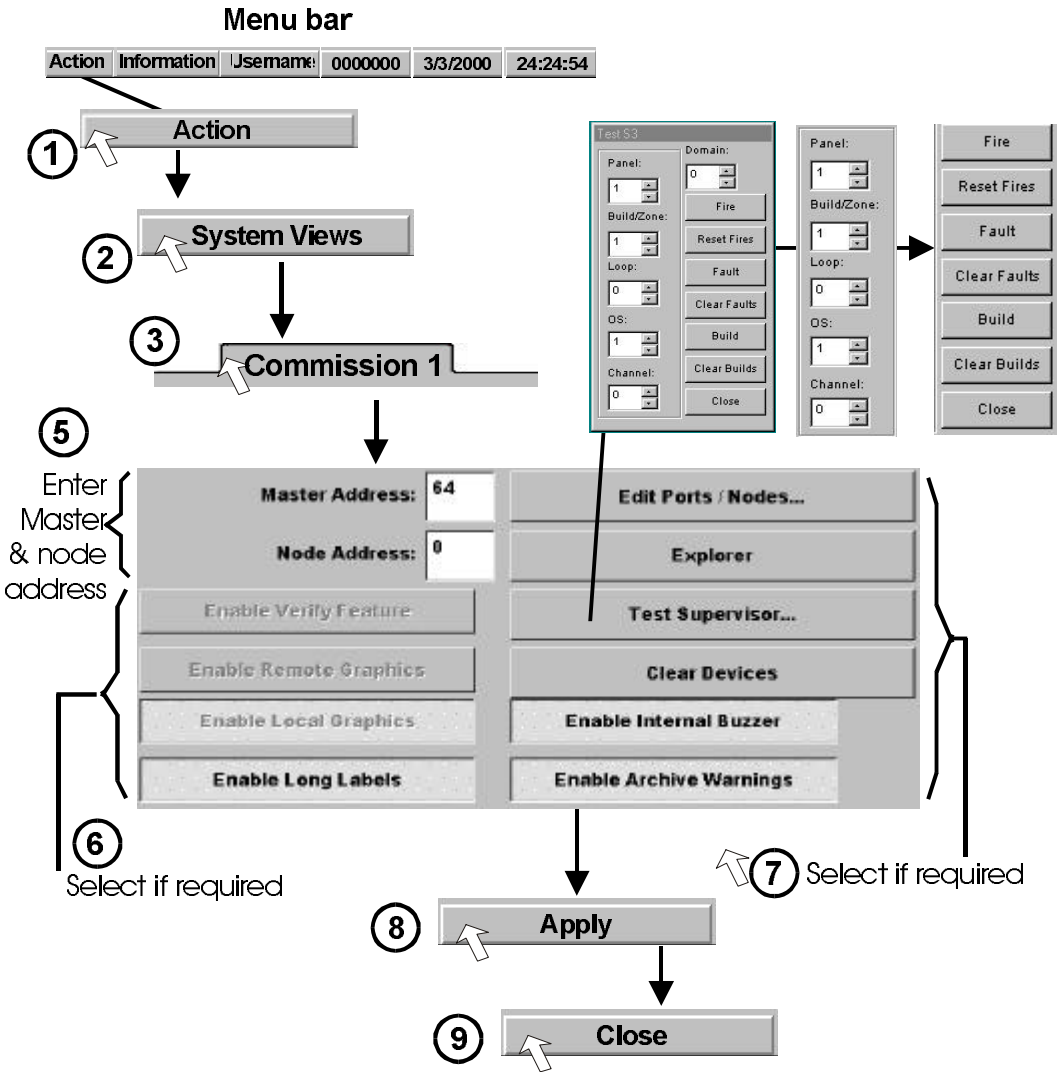


Figure 14-4 Commission 1 System view

cd8m137

Description of Functions

Master Address & Node Address

If there are multiple Supervisors connected to a network then each one must have a different Master Address (which is normally greater than 63 for historical reasons).

If there is a Standard IOC or a Slave IOC in the panel/node then the Node Address must be 0.

If there is a Domain IOC in the panel/node then the **Node Address must be 1**.

Enable Long Labels

Required if the Fire Alarm System is using 64 Character tokenised labels.

Enable Internal Buzzer

If selected it enables the audible warning in the event of a Fire/Fault/Emergency.

Enable Archive Warnings If the site wants to keep an electronic record of the historic log then this should be enabled. It causes a warning to be displayed when the historic backup file is nearly full.

Edit Port / Nodes Opens the configuration file where the connected panels are specified. See Adding Panels & Devices section for details.

Explorer Causes Windows Explorer to be started.
Caution: Only use this if you are sure you know what you are doing.

Test Supervisor Opens the Test window. This allows an engineer to generate test fires/faults/emergencies. Useful for proving changes to Auxiliary Text or Graphics.

Clear Devices Causes the System View database to be deleted.

Note: no changes are effected until the Apply button is selected.

User Action Buttons Configuration

Each User Action button can switch a single Command Build either on or off. For each button you need to configure 2 items:

a) Button Label – This is the text that will be displayed on the button.

b) Button Action – Defines the Command Build to be actioned and whether the button will turn it on or off.

Opening the User Actions Button Configuration File

The User Actions buttons are configured by editing a text file called UserActn.ini

This file can be opened by using the following procedure:

a) Enter **Gent Engineer** mode

b) Open the **Commission 1** tab in the System View

c) Select the **Explorer** button

d) Use explorer to make **C:\Supervisor\Gent\Data** the current folder

e) Double-click on the UserActn.ini file

Defining the Button Label

The buttons are numbered from 1 to 62 – 1 being the button in the top left hand corner. To set the label for a button (say button 1):

a) Find the section in the file titled **`[Labels]`**

b) Find the line in the section starting **`1=`**

c) Enter the text for the label directly after the equals sign

d) Ensure the semi-colon is removed from the start of the line (any line starting with a semi-colon will be ignored)

For example:
[Labels]
1=Disable Reception Area
`;2=2`

Setting the Button Action

To set the action for a button (say button 1):

a) Find the section in the file titled **[Actions]**

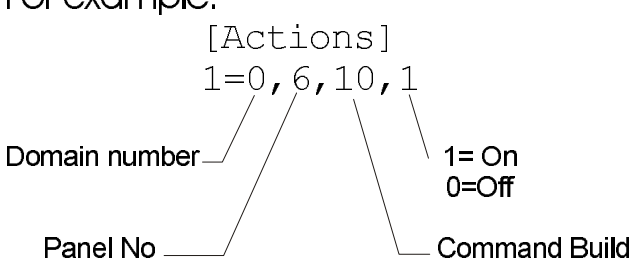
b) Find the line in the section starting **1=**

c) Enter the action string for the button directly after the equals sign (see below for details of the format)

d) Ensure the semi-colon is removed from the start of the line (any line starting with a semi-colon will be ignored)

For example:

cd8m152



Adding Panels & Devices

Adding a Panel

Supervisor 3 needs to be told which panels are connected to it – it cannot work it out for itself. The connected panels are configured by editing a text file called GentComm.ini

This file can be modified by using the following procedure:

a) Enter **Gent Engineer mode**

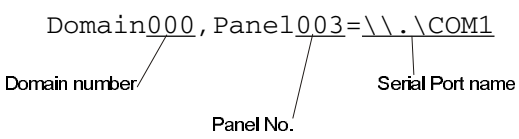
b) Open the **Commission 1 tab in the System View**

c) Select the **Edit Ports / Nodes button**

d) Find the section in the file titled [Gent3217Panels**]**

e) Enter a line for the new panel defining its Domain & Panel Numbers and the serial port that it is connected to. The format is as follows:

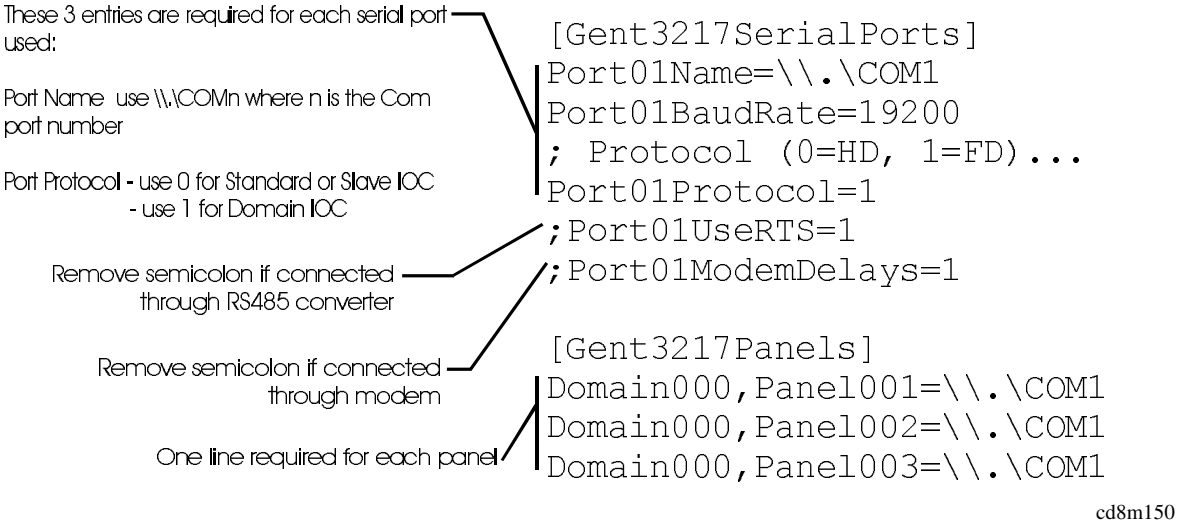
cd8m151



f) Ensure that there is no semi-colon at the start of the line (any line starting with a semi-colon will be ignored)

g) Re-boot the Supervisor.

The full format of the GentComm.ini file is described below:



cd8m150

Adding Devices

The System View database is automatically created by a background scan that is continuously updated.

This means that if devices and/or loops are added to the system they will be automatically added to the System View. However they may take up to 24 hours to appear since the background scan for this purpose is very slow.

If there is no Auxiliary Text or Graphics then there is no problem and there will be no need for any further configuration at the Supervisor once the devices have been added.

However if the Supervisor has Auxiliary Text or Graphics then great care must be taken. If the new devices are simply added to the system then the Auxiliary Text and Graphics tracking will be corrupted. In these cases Emac Controls Ltd should be contacted before the additions are made so that the Auxiliary Text and/or Graphics Tracking can be updated to suit.

The next version of Supervisor software will be modified to improve this aspect of Supervisor configuration.

Troubleshooting

Symptoms	Possible Problem	Action to be taken
An error message is displayed stating “Device.mdb needs to be repaired”	This is a known problem that sometimes occurs after devices/loops have been added or removed.	Telephone Technical Support or Emac Controls who will talk you through how to repair the file.
“Panel lost by supervisor” fault displayed	1. If only one panel from a network is lost then there is a problem with that panel’s connection to the network – not with the supervisor.	Check network for cable faults Check network connections in panel Check that Comms is not disabled at network card in panel.
	2. If all panels lost then problem is more likely to be at supervisor end.	Check baud rate settings in supervisor and panel are the same Check entries in GentComm.ini file (see *Adding a Panel* section) Check connections and continuity in serial cable Check serial cable is connected to correct serial port in PC
Panel not shown in System View or Card Details not available for a panel.	Supervisor has probably not been told about the panel.	Check that there is an entry in GentComm.ini file (see *Adding a Panel* section)
Comms display shows nothing but zeros	1. If “Panel lost by supervisor” fault displayed	See “Panel lost by supervisor” section above
	2. If no “Panel lost by supervisor” fault displayed then there are probably no panel entries in the GentComm.ini file	Check entries in GentComm.ini file (see *Adding a Panel* section)
Emergency event not displayed	1. The Command Build label may not start with an asterisk (*)	Check the Command Build label and modify if necessary.
	2. The Command Build number is outside the range configured to display as Emergencies	Check the Emergency Command Build Range configuration and modify if necessary (see *Commission 2 Configuration* section above)

Symptoms	Possible Problem	Action to be taken

Comms display stationary	Supervisor software has crashed. It should reboot automatically after 30 seconds. If supervisor does not reboot then it has probably been started in "NOTSHELL" mode (so watchdog software is not working).	To start supervisor in normal mode (so that watchdog works):
		1. Enter Gent Engineer mode
		
		2. Exit supervisor (Exit function is in Action menu)
		
		3. If log-in window is displayed then log-in using:
		User name = Gent
		Password = Gent
		
		4.Start Supervisor through Start menu:
		`Start`
		`-> Programs`
		`-> Supervisor`
		`-> Supervisor 3`
		
		5. Reboot PC. Check that Supervisor software is automatically started.

Event pop-up windows are not being displayed	Event Display function is turned off.	Change Event Display function to Centred (see *User Configuration* above).
Custom keyboard not working properly.	1. Enable keyswitch turned off	Keyswitch should work as follows: Position 1: Fires, Emergencies, Faults, Warnings, Login & Cancel Buzzer keys operate Position 2: All keys operate except Start Sounders Position 3: All alarm controls keys operate
	2. Fn Key Capture function not enabled	Enable Fn Key Capture function (see *User Configuration* above).

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Modem

Preparation

- ❑ Commissioning computer (PC)
- ❑ MultiTech Modem software
- ❑ Leads to connect the PC to
  - the Modem

Factory settings

This procedure assumes the modems are set to their factory defaults. The factory defaults switch settings are as follows:

Switch No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
UP	X	X		X	X	X				X			X	X	X	
DOWN			X				X	X	X		X	X				X

The default software settings for the modem can be found in the MT2834L Series Owner's Manual.

Set-up procedure

- ❑ With the modems set to their factory defaults.
- ❑ Connect the modems to a PC comm port 1 via a serial comms cable.
- ❑ Insert the MultiTech modem set-up disk into the PC's Floppy drive.
- ❑ Switch the PC on or reboot if it is already running.
- ❑ Type ANSW to set the modem to Auto-Answer mode
- ❑ When the set-up is complete set the switches as follows :

Switch No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
UP		X	X	X	X			X						X		X
DOWN	X					X	X		X	X	X	X	X		X	

Disconnect the Auto-Answer modem and connect the other modem.

Type ORIG to set this modem to Originator mode.

When the set-up is complete set the switches as follows :

Switch No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
UP		X	X	X		X		X						X		X
DOWN	X				X		X		X	X	X	X	X		X	

Set-up is now complete.

Set-up the GENT Supervisor for Modem

- Modify the configuration from within the **[Tools]** menu commissioning mode to acknowledge the use of the modem, ie remove the semi-colon (;) from the two relative lines:

```
; modem 9600 Tm = 300          becomes Modem 9600 Tm = 300
; modem 9600 Ch = 80           becomes Modem 9600 Ch = 80
```

Save the file

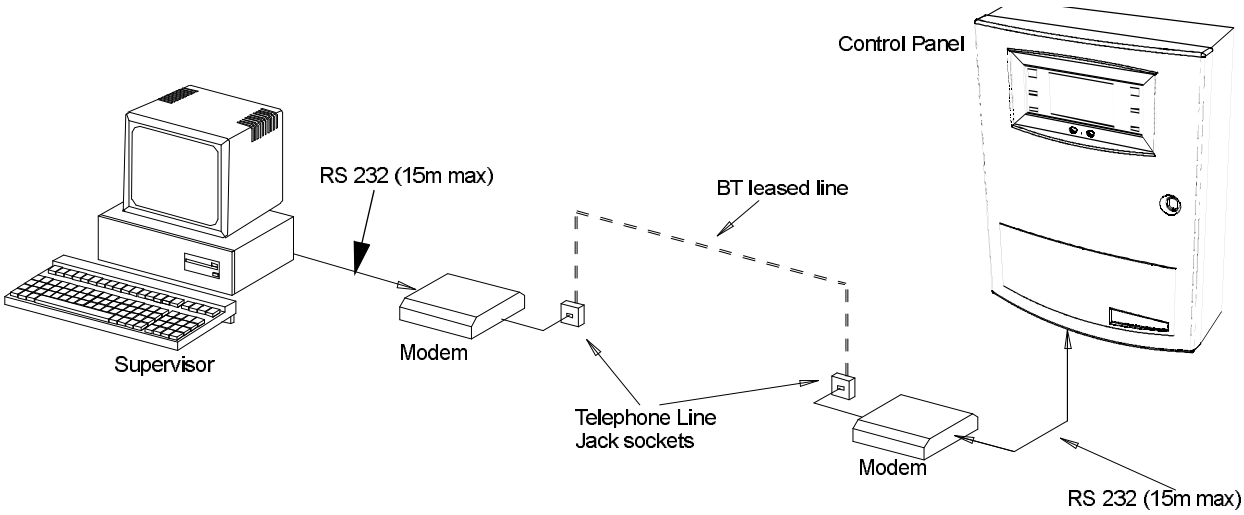

Figure 15-1 Modem to supervisor and control panel cdn440

Connect the modems

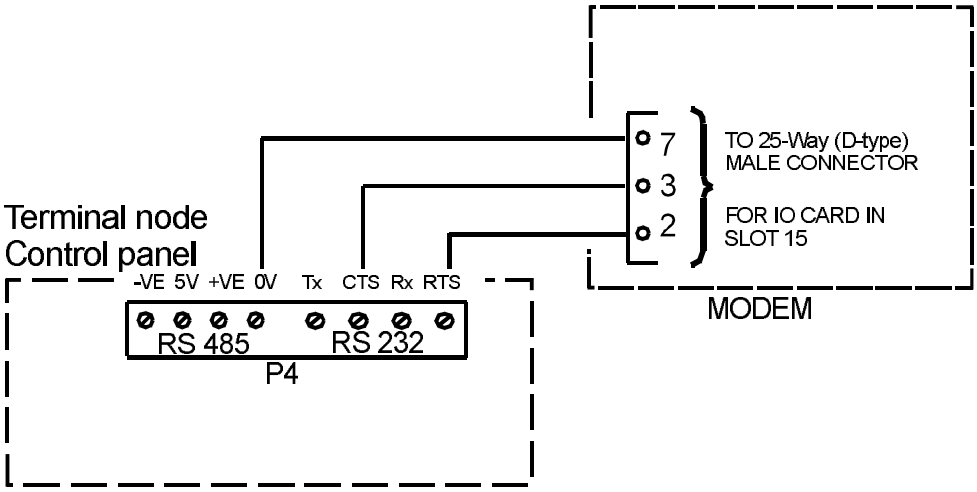

Figure 15-2 modem connections

cd8m140

- ❑ Connect one *modem* to the Supervisor *converter unit* and the other to the terminals of IO Card in slot 13/15 of the *network controller*. This is done using the 25 pin D type connector lead assembly.

> ***NOTE:*** *It does not matter whether the supervisor is connected to the originator of answerer modem. Plug the modems into the BT socket and mains adapter.*

Working modem

- ❑ On power-up or after a line failure, the modems will try to establish a communication. Once there is a successful communication the DCD LED will be lit on both modems.

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Appendix A

Menu maps for Vigilon EN54 panels

Maps

The following pages show all the options that are available under:

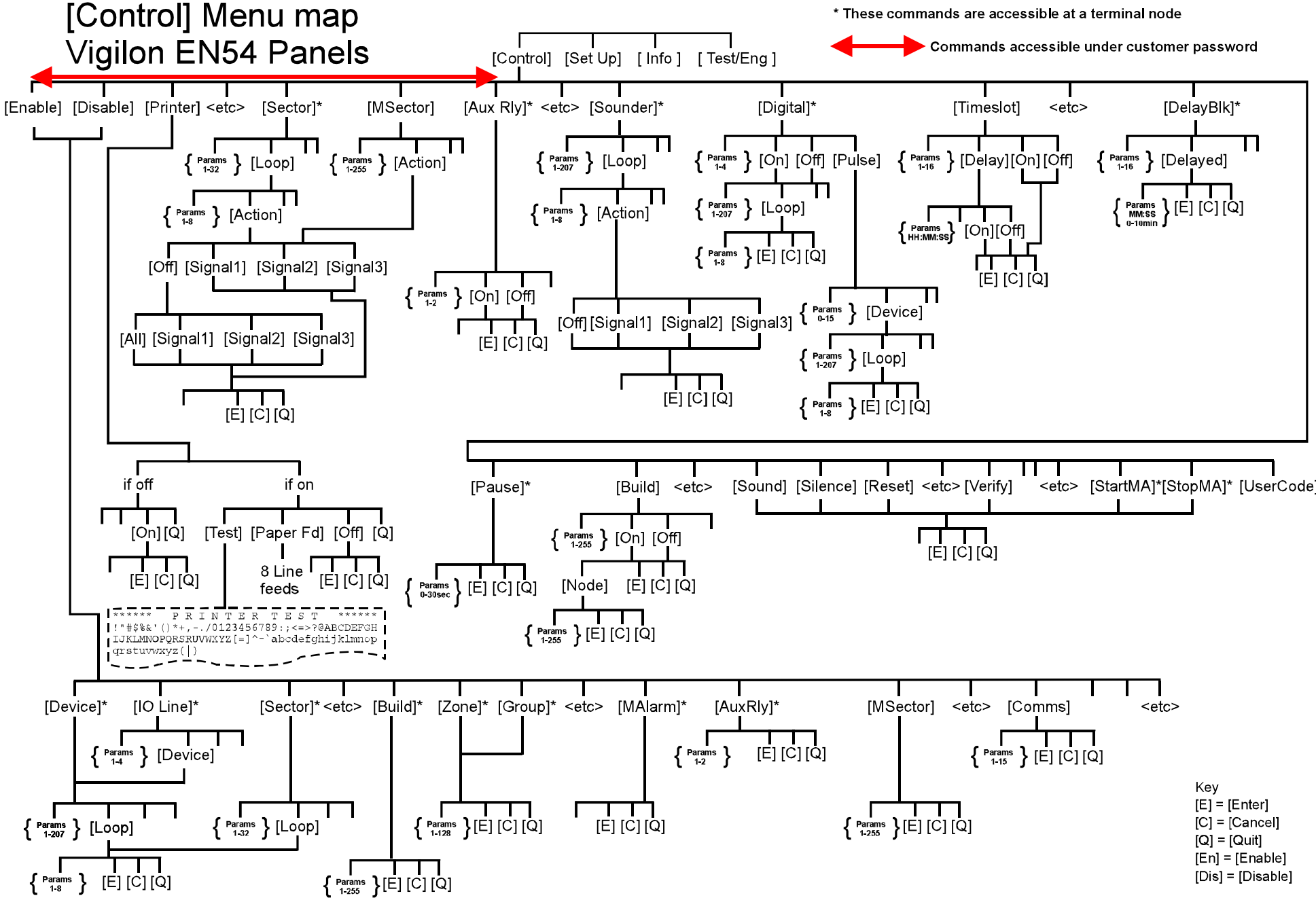
- Control
- Setup
- Information
- Test / Engineering menus

Equipment

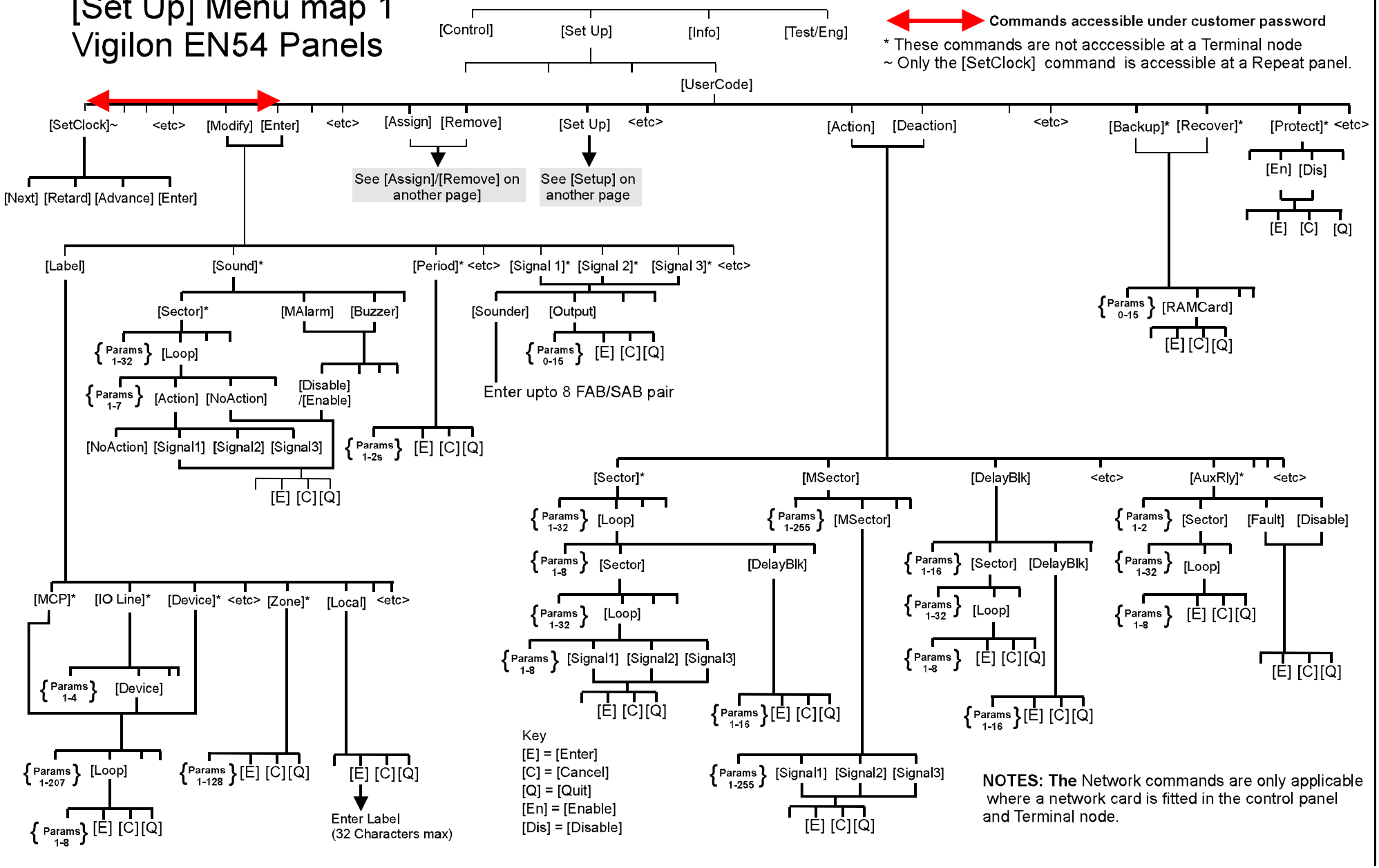
The **EN54** equipment covered include:

- Vigilon 1 - 4 Loop control panel
- Vigilon Repeat panel
- Vigilon Terminal node

[Control] Menu map
Vigilon EN54 Panels

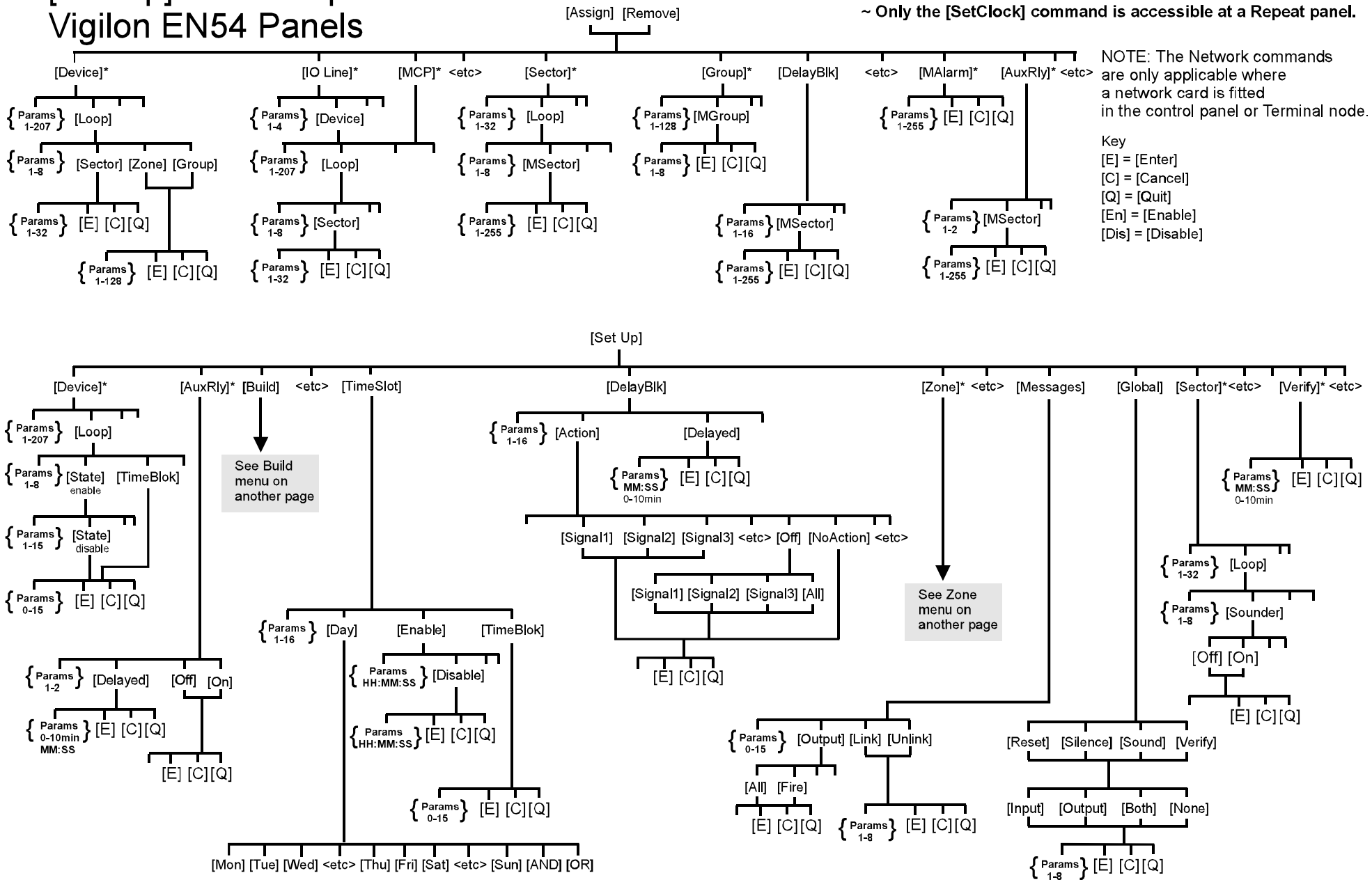


[Set Up] Menu map 1
Vigilon EN54 Panels

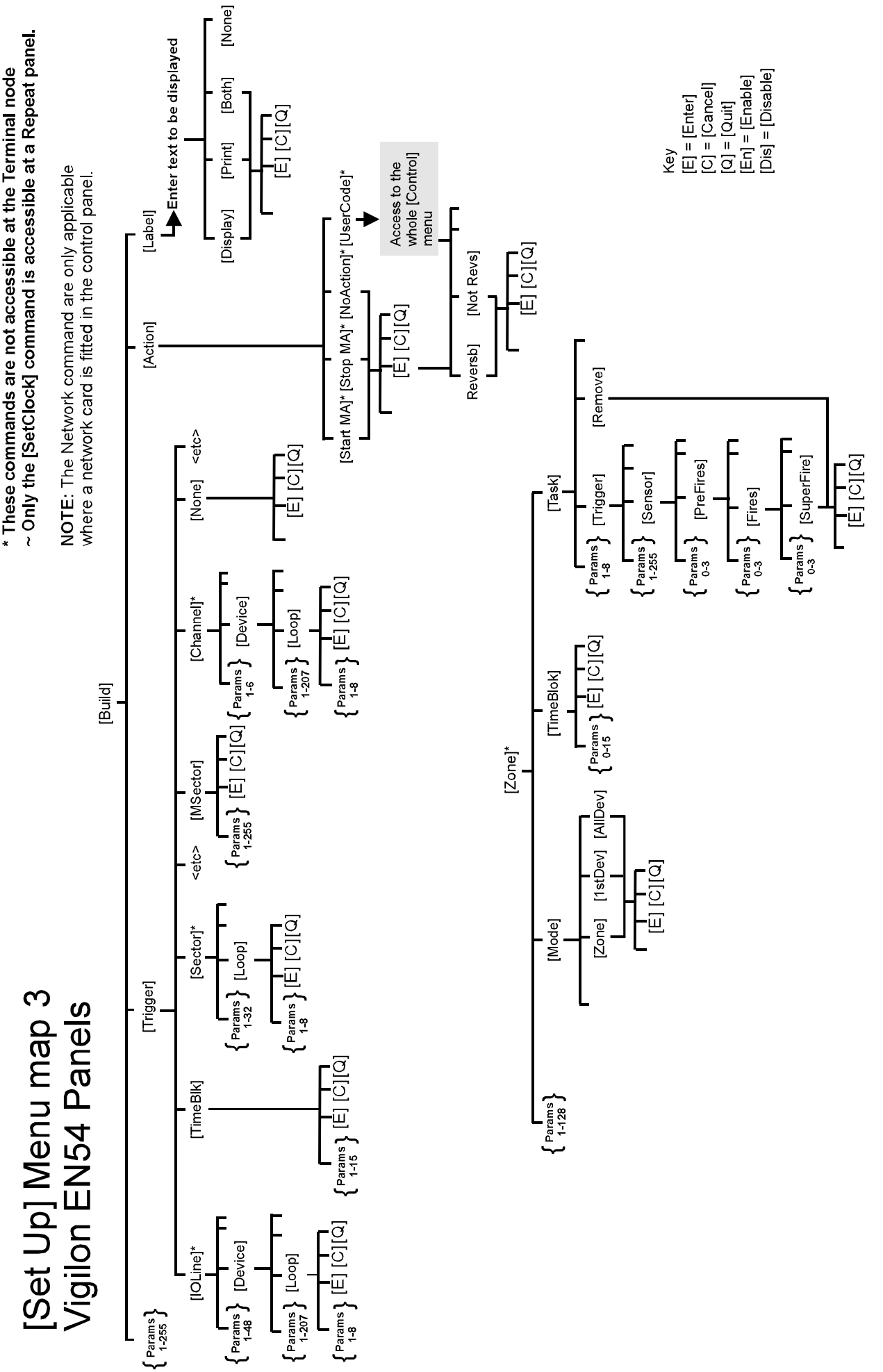


[Set Up] Menu map 2
Vigilon EN54 Panels

*** These commands are not accessible at the Terminal node**
~ Only the [SetClock] command is accessible at a Repeat panel.

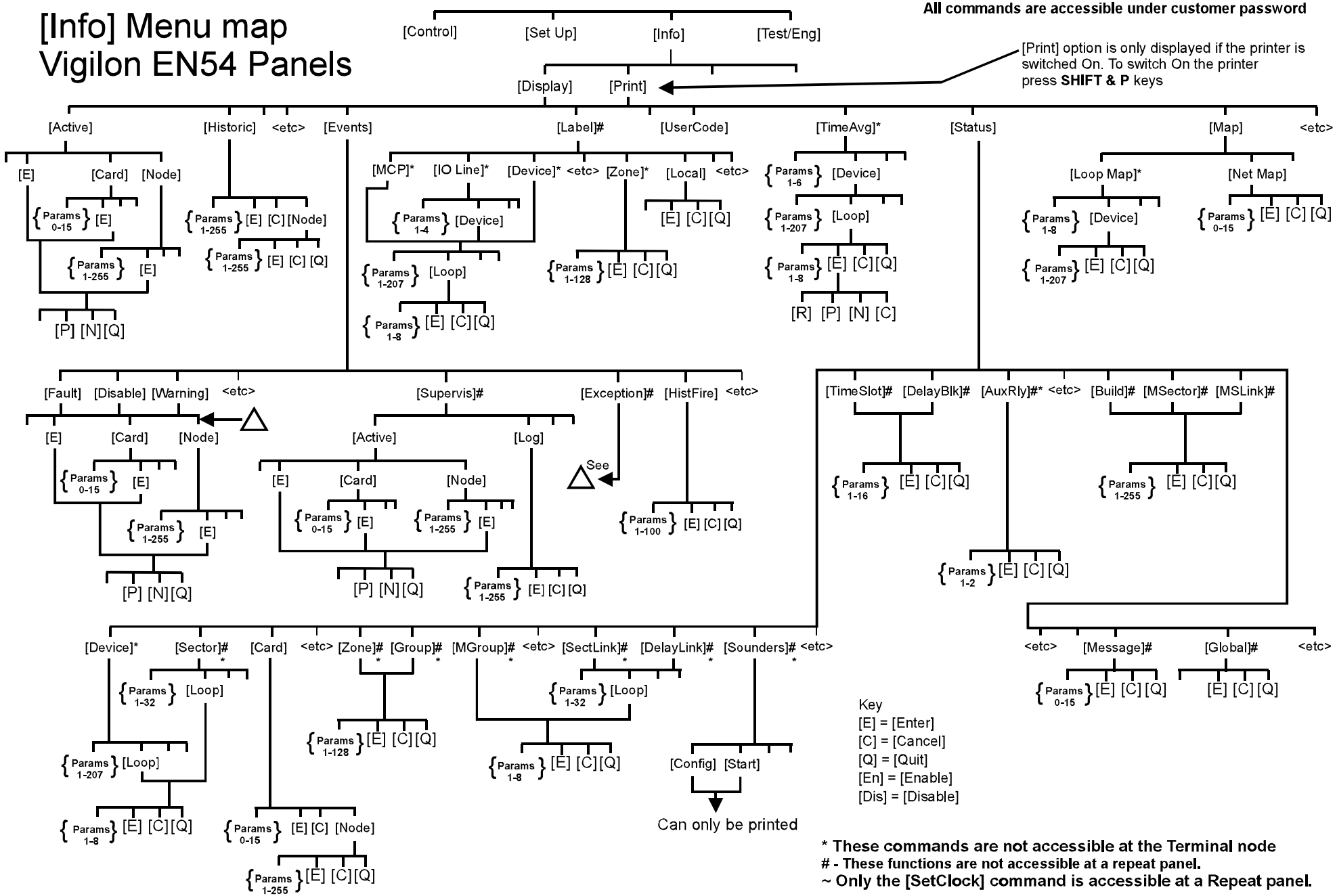


[Set Up] Menu map 3
Vigilon EN54 Panels



[Info] Menu map
Vigilon EN54 Panels

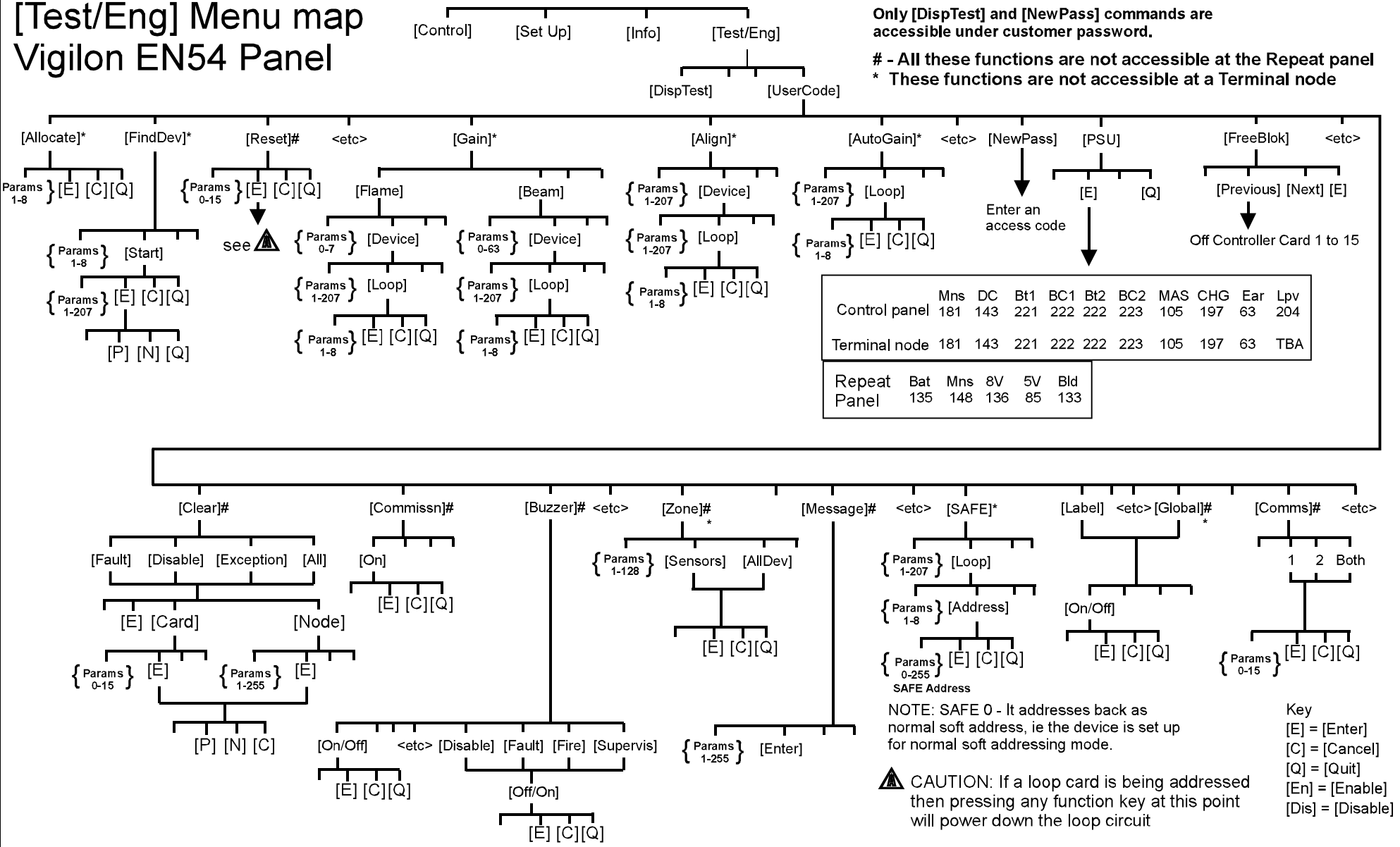
All commands are accessible under customer password



Key
[E] = [Enter]
[C] = [Cancel]
[Q] = [Quit]
[En] = [Enable]
[Dis] = [Disable]

*** These commands are not accessible at the Terminal node**
 # - These functions are not accessible at a repeat panel.
~ Only the [SetClock] command is accessible at a Repeat panel.

[Test/Eng] Menu map
Vigilon EN54 Panel



Menu maps for LPC approved Vigilon V3+ Panels

Maps

The following pages show all the controls and indications that are available under the main menu of the control and indicating equipment:

main menus

- ☐ Control
- ☐ Setup
- ☐ Information
- ☐ and Test / Engineering.

Equipment

The equipment covered include 1 - 4 Loop control panel, Repeat panel and Terminal node

Control accessibility and indicator visibility

For instructions on how to set up passwords for access levels see page 2-13. There are three accessibility levels of **controls and indicators** defined in *BS5839:Part 4:1988*. These are:

Access level 1 ☐ controls and indications accessible with the **control panel door closed**.

Access level 2a ☐ controls and indications accessible by means of a **door key** carried by **authorised operator** or **customer**.

Access level 2b ☐ controls and indications accessible by means of a **door key** and 'usercode' **password** known to **authorised operator** or **customer**.

Access level 3 ☐ controls and indications accessible by means of a **door key** and 'usercode' **password** known to **authorised servicing personnel or engineering personnel.**

> ***NOTE:*** *There is another secret password for use by servicing organisation that changes daily, it provides access to controls and indications accessible at* ***access level 3.*** *This password is used when the pre-programmed passwords are not known.*

Controls and indications and access levels

An ‘X’ imply the control or indication is accessible or visible.

Control or indication	Access level 1 No restrictions	Access level 2a AUTHORISED OPERATOR (Customer) with key	Access level 2b AUTHORISED OPERATOR (Customer) with key and password	Access level 3 AUTHORISED SERVICING PERSONNEL (Engineering) with key and engineering password
Indications				
Fire alarm indication	X	X	X	X
Fault indication	X	X	X	X
Warning (Disablement, Test, Reset, software failure indication)	X	X	X	X
Power supply failure indication	X	X	X	X
Emergency Controls				
Sound alarms		X	X	X
Silence alarms		X	X	X
Reset system		X	X	X
Cancel Buzzer		X	X	X
Control menu				
Enable/Disable			X	X
Sector			X	X
Master Sector			X	X
Auxiliary relays			X	X
Printer			X	X
Digital				X
Time slot				X
Delay Block				X
Pause				X
Build				X
Sound				X
Silence				X
Reset				X
Setup menu				
SetClock			X	X
Modify			X	X
Enter			X	X
Assign				X
Remove				X
SetUp				X
Action				X
Deaction				X
Backup				X

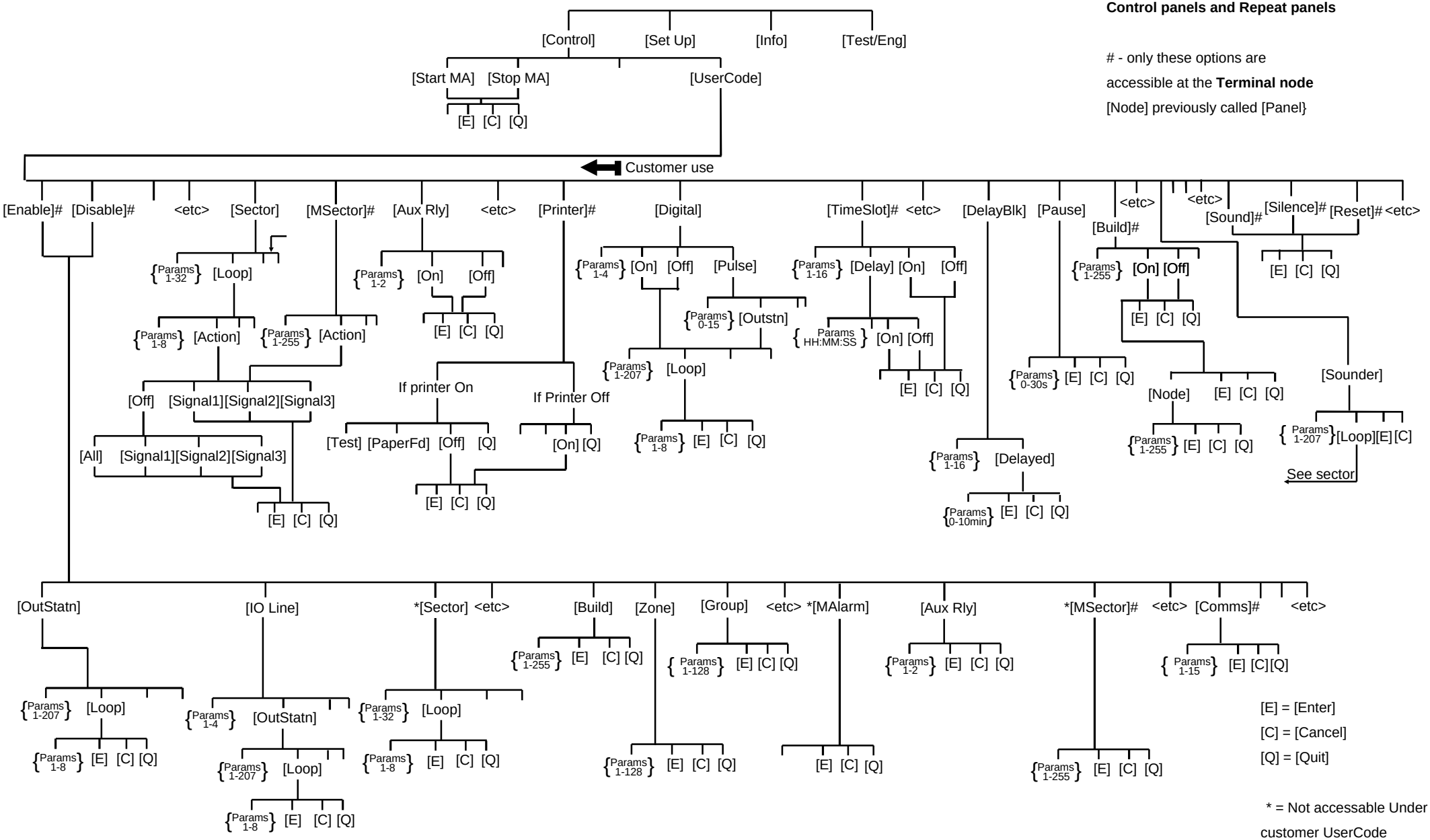
Control or indication	**Access level 1** No restrictions	**Access level 2a** AUTHORISED OPERATOR (Customer) with key	**Access level 2b** AUTHORISED OPERATOR (Customer) with key and password	**Access level 3** AUTHORISED SERVICING PERSONNEL (Engineering) with key and engineering password
Recover				X
Protect				X
Information				
Fire		X	X	X
Fault		X	X	X
Warning		X	X	X
Event		X	X	
Label		X	X	X
Supervis			X	X
CardStatus			X	X
Status			X	X
Subfault			X	X
Map			X	X
Time average			X	X
Test Engineering				
Allocate				X
Find Outstation				X
Reset				X
Gain				X
Align				X
Autogain				X
New Pass			X	X
PSU				X
Free Block				X
Clear				X
Commissioning				X
Buzzer				X
Group				X
Message				X

[Control] menu map V3.6X

All menu options are accessible at the **Control panels and Repeat panels**

- only these options are accessible at the **Terminal node**

[Node] previously called [Panel}



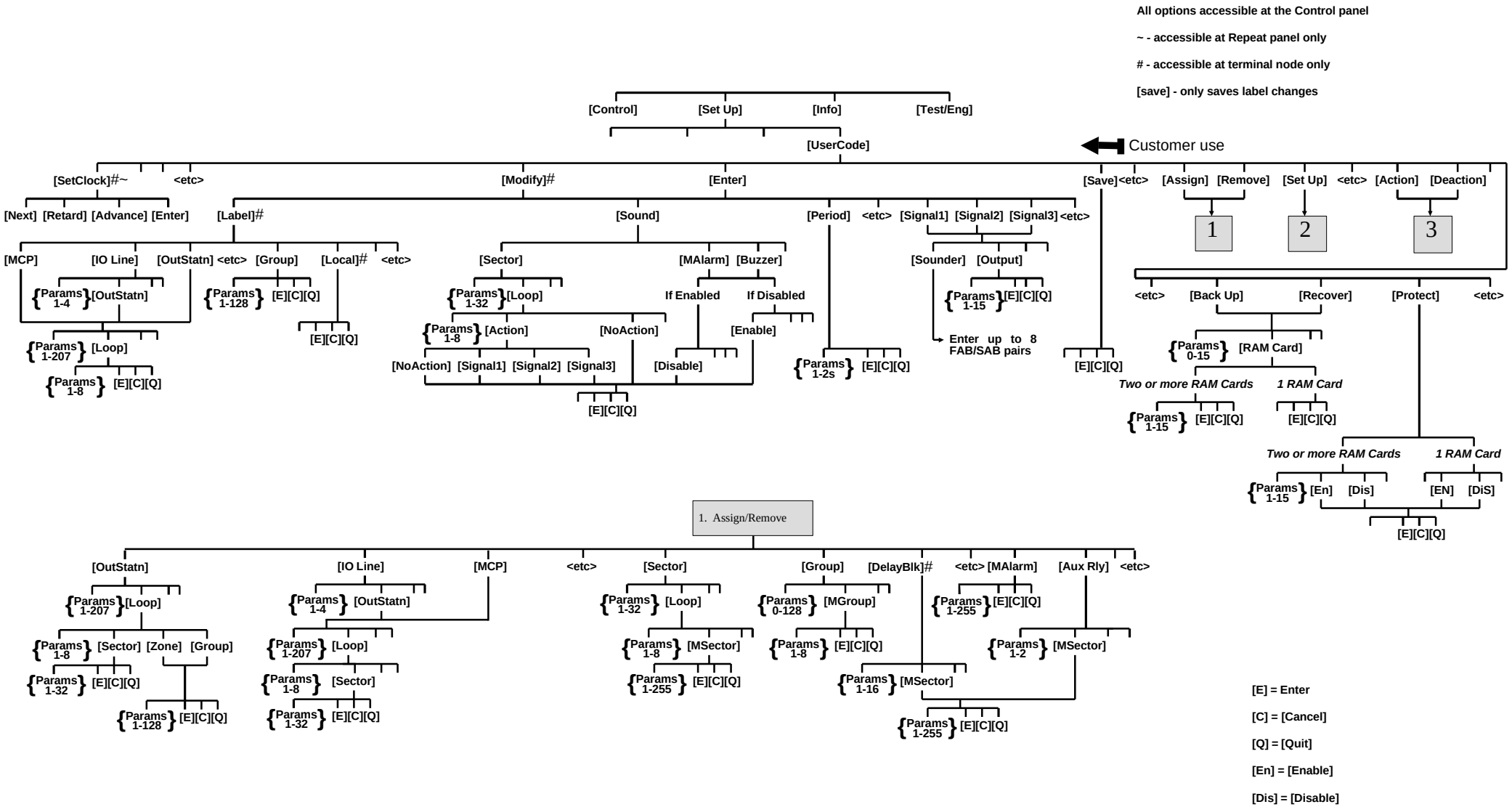
[E] = [Enter]

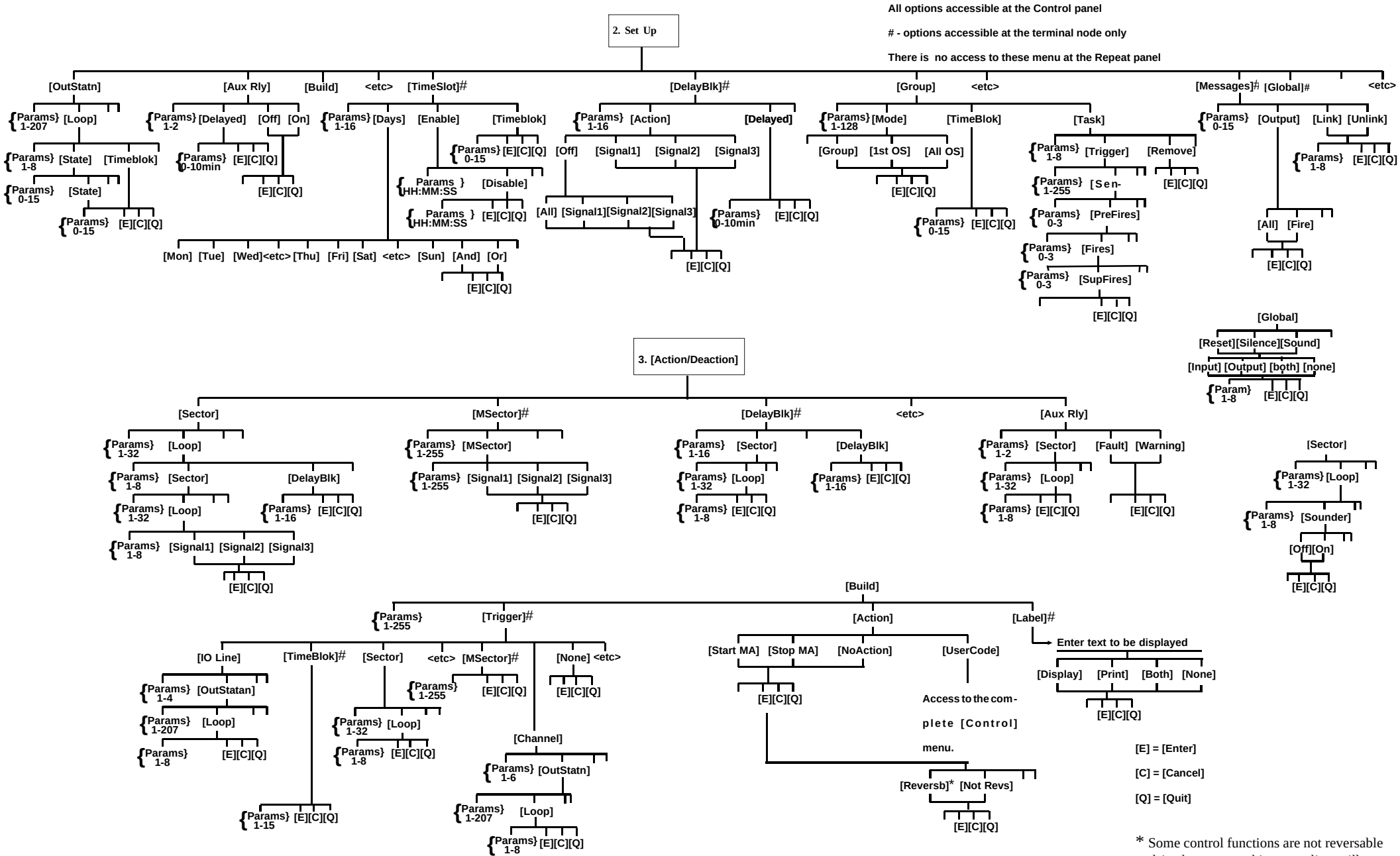
[C] = [Cancel]

[Q] = [Quit]

* = Not accessable Under customer UserCode

[Set up] Menu map V3.6X





* Some control functions are not reversable and in these cases this menu line will not appear

[Information] menu V3.6X

All options are accessible at the **control panel**

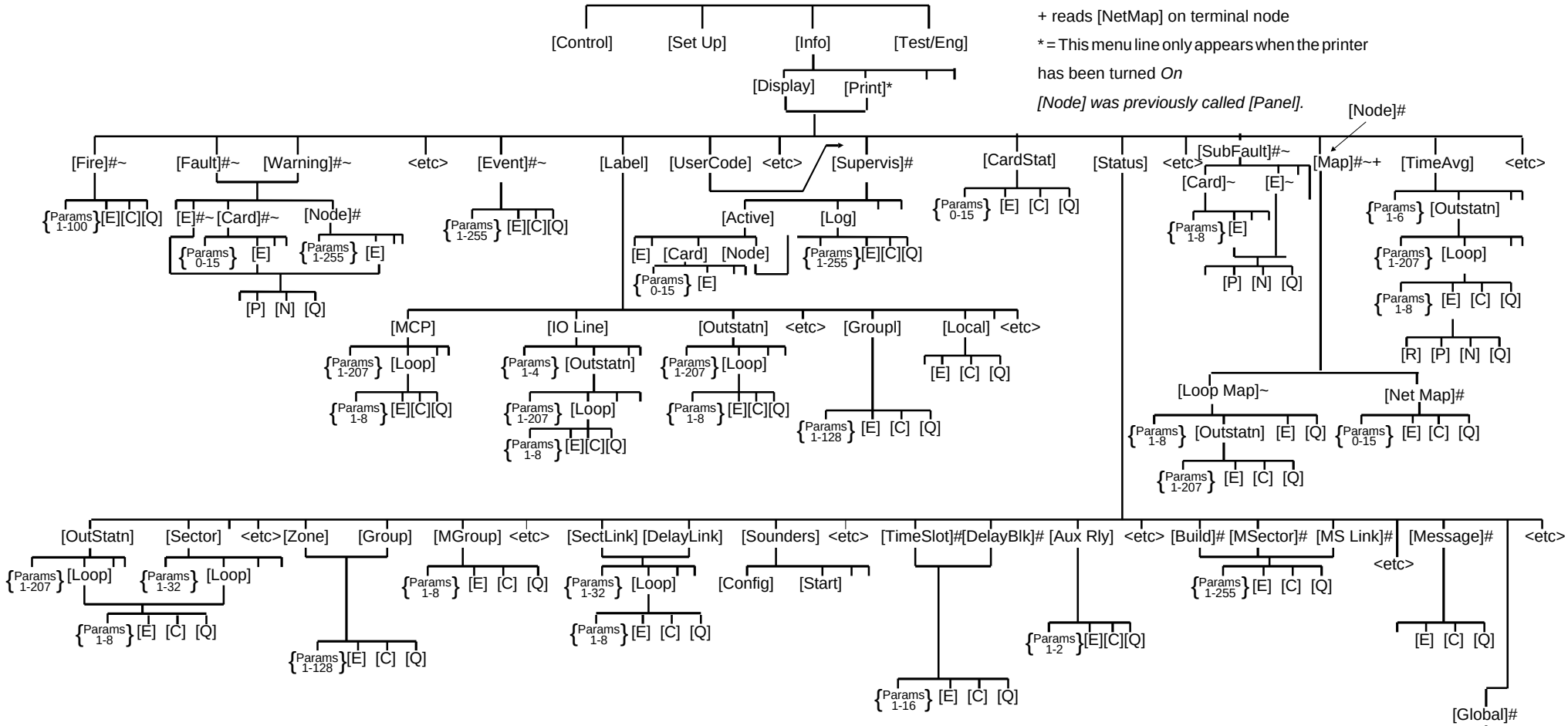
- options are accessible at the **Terminalnode**

~ - options are accessible at the **Repeat panel**.

+ reads [NetMap] on terminal node

* = This menu line only appears when the printer has been turned *On*

[Node] was previously called [Panel].



Interface period is 2 Seconds

Sig 1	65 00 65 00 65 00 65 00	10
Sig 2	4F 25 4F 25 4F 25 4F 25	15
Sig 3	4F 00 4F 00 4F 00 4F 00	15

[E] = [Enter]

[C] = [Cancel]

[Q] = [Quit]

[P] = [Previous]

[N] = [Next]

[R] = [Repeat]

[Test/Engineer] menu map V3.6x

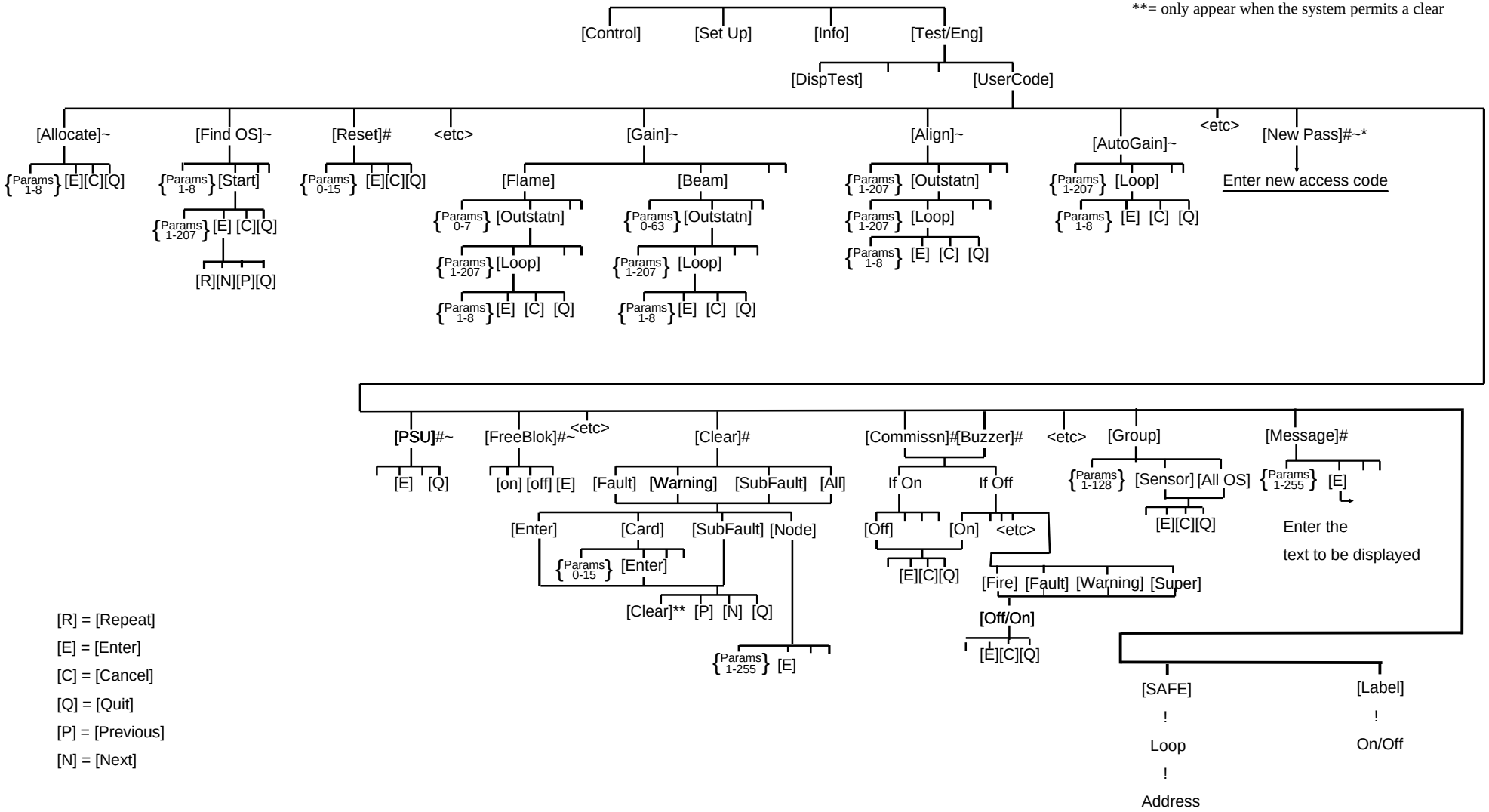
All options - accessible to control panel

~ - accessible to repeat panel

- accessible to terminal node

* = only accessible under Customer UserCode

**= only appear when the system permits a clear



[R] = [Repeat]

[E] = [Enter]

[C] = [Cancel]

[Q] = [Quit]

[P] = [Previous]

[N] = [Next]

Appendix B

Message Action List

This appendix lists all the messages that are likely to be displayed at the *control panel* or *repeat panel* of the fire system.

British Standard

The British Standard *BS5839:Part 4:1988* requires following notification to be given:

- Where a system is designed with a control panel that meets the requirements of *BS5839:Part 4:1988* then the use of **[Disable] [IO Line]** option under the **[Control]** menu and **[Set Clock]** option under the **[Setup**] menu using the `Customer Password' is not recommended.
- The circuit for which a warning of failure is not provided. The circuits that are connected to the control panels - **auxiliary contacts** and **clean contacts** are **not monitored for failure**.

Latching events

The following faults are identified as latching events.

- Too many errors
- Unrecoverable Tx fault
- Checksum error
  EPROM,Configuration data and EEPROM in sensors
- Slave outstations lost
- Loop (partial) short circuit.
- Ground break
- Loop allocation fault
- Invalid loop configuration
- RAM card recovery failures or map mis-match

How to clear a latching event

To **clear** a **latching fault** it is necessary to **re-allocate** the **loop circuit**. To re-allocate a loop circuit refer to section headed *How to power a loop.*

Message Action list

The messages displayed at the *control panel or repeat panel* are given here in an *alphanumerical* order to provide guidance:

- on faults that are most likely to generate the message
- probable meaning of the message
- along with suggestions on what initial actions may be taken to rectify the problem.

> ***NOTE:*** *Only the messages that are applicable to the appropriate system will appear on the display of the panels*

- The term **Outstation** and **device** are used interchangeably.

Message	associated with..	meaning..	..possible action
A spurious FIRQ at card x	IO Card / DKC / Backplane	There is glitch on the IO Card hardware that appears on the backplane	Clear and ignore single occurrence
A spurious IRQ at card x	IO Card Backplane	There is glitch on the IO Card hardware	Clear and ignore single occurrence
A spurious NMI at card x	IO Card Backplane	There is glitch on the IO Card hardware	Clear and ignore single occurrence
A spurious SWI2 at card x	IO Card Backplane	There is glitch on the IO Card hardware	Clear and ignore single occurrence
A spurious SWI3 at card x	IO Card Backplane	There is glitch on the IO Card hardware	Clear and ignore single occurrence
Access fault at card x	Any Card	Card cannot talk to the Local controller	Replace card if the fault keeps reoccurring Could also be caused by excessive network messages. Investigate message passing
ACIA Failed at card x	Network Card or IO Card	Communication chip failure or the FABs and SABs are corrupt	Reset the card and replace if it fault keeps reoccurring
Alarm Zone Disabled / Enabled at card x	Loop Processor Card	-	
Alarms silenced	Local Controller Card	Silence alarms button has been pressed	-
Alarms sounded	Local Controller Card	Sound alarms button has been pressed	-

Message	associated with..	meaning..	..possible action
Alarms Verified	Local Controller Card	Alarms verify or acknowledge button has been pressed	-
Allocation started from end 2 at Card x	Loop Processor Card	No devices found on End-1 or End 1 of loop is open circuit	Check the wiring to the first device or last device on the loop
Allocation : Too many card x number y on loop z	Loop Processor Card	Allocated more than 200 devices or the device is restricted for the particular software version	Replace incompatible devices ie:32000 or SMS device found in system
Allocation : Tx fault card x number y on loop z	Loop Processor Card	Invalid reply from the device	Check the device. Also check cable routing and length (measure resistance and capacitance of cable)
Allocation : HW fault card x number y on loop z	Loop Processor Card	Loop breaker relay has not closed or serial line End-2 is faulty or relay is stuck i.e. closed. The device may not be correctly fitted.	Check device the connections
Allocation : Double Allocated card x number y on loop z	Loop Processor Card	Two devices are given the same address. Loop breaker (relay contacts) are fused 'micro welded' together (closed) or there is a bad connection.	The device may be faulty. If the contacts are stuck then a gentle tap on the assembly containing the relay may free the contacts.
Allocation : Map error card x number y on loop z	Loop Processor Card	Loop wiring is incorrect. A sub loop may have been wired on a spur	Check and rewire if necessary
Allocation : memory Overflow at card x number y on loop z	Loop Processor Card	Loop processor has run out of memory during allocation / when starting a loop	Software error or more likely a faulty RAM chip
Allocation : not ready at Card x	Loop Processor Card	An attempt allocate a loop when it is already allocating	Wait and if it takes longer than 10 minutes then reset the loop card
Allocation : OK at Card n : Allocated x	Loop Processor Card	The loop circuit has been successfully allocated	-
ASCII Device is faulty number x on loop y	Loop Processor Card	Failure of control panel to communicate with Repeat / Mimic panel. The power supplies to the panels are not connected	If applicable connect the power supply or RESET the Master Repeat Card in the Repeat and Mimic panel. If necessary replace the card/software

Message	associated with..	meaning..	..possible action
Back up	Memory (RAM) Card	Data is being copied from cards and stored onto the RAM Card	-
Battery disconnected/ restored	Power supply	A disconnection is indicated when the ADC value from the battery is equal to or less than 130	Normally it should be= 234 (27.4V) - to give restored indicationValue = Vbatt 1/6x256/5
Battery discharged	Power supply	This indicates the failure of battery load test. The ADC value should be equal to or less than (Normal -9).	Check load test and the battery condition
Baud rate x at Card y	IO Card / Network Card	Baud rate set by DIL switch has been read	If required, change the baud rate
being Initialised at Card x	RAM Card	RAM card is being set up by the Local Controller Card ready for use	-
Buffer full at card x	Any Card	Software error	-
Buffers out of step at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Call point on interface unit operated/restored	Device	Mains powered interface input has been triggered by conventional MCP.Value of input is equal to or less than 6V	-
Call point operated/restored number x loop y	Device	Break glass has been broken or operated with a test key	Replace the break glass to restore the call point or remove the test key, whichever is applicable
Call point open cct number x on loop y	Device	Monitored base does not see end-of-line unit. These is a bad connection to MCP	Check the internal wiring, there may be a loose connection
Call point short cct number x loop y	Device	Call point contacts are short circuit	Check the call point contacts and circuit internally
Call point glass is broken number x loop y	Device	Breakglass has been operated when the device is disabled	Replace the glass, if necessary
Card found/lost at card x	Any Card	The RAM card has been found/lost (is locked out)	There may be a hardware fault on card or backplane. Investigate and rectify

Message	associated with..	meaning..	..possible action
Card lost at card x	Memory (RAM) Card	Card is missing or Battery link is not inserted or Battery is flat less than 3V	Replace the battery (Normal voltage is 3.9V)
Card n recovered /Card n backed up	Memory (RAM) Card	Data recovered to a card from the RAM card. A card data has been backed up to the RAM card.	-
Chamber Removed / Replaced number x on loop y	Device	Device chamber has been removed	Replacing the chamber will cause a replaced indication
Charger Fault	EN54 Panel Power Supply Unit (PSU)	Charger circuit has failed	Replace the PSU
Charger Fault number x on loop y	EN54 System device power supply (Repeat, Mimic or mains powered interface)	Charger circuit has failed	Replace the board with power supply circuit
Charger Restored	EN54 Panel power supply	Charger circuit is working again	-
Charger Restored number x on loop y	EN54 System device power supply (Repeat, Mimic or mains powered interface)	Charger circuit is working again	-
Clock changed / Clock not set up	Local Controller Card	Time and date has been altered or no time has been entered	If necessary, set the clock using the set up menu
Comms Enabled/Disabled at card x	IO Card Network Card	Card communications has been enabled or disabled Control panel has been isolated from network in echo node	If necessary, manually enable/disable the Comms using the control menu
Command build enabled / disabled	Local Controller Card	This is an automatically or manually controlled action	If necessary, manually enable/disable the command build using the control menu
Command build activated/deactivated	Local Controller Card	Command build has been switched ON (activated) or OFF (deactivated)	If necessary switch ON/OFF the command build manually using the control menu
Comms supply Restored	Terminal node	The 5V supply has been restored	-

Message	associated with..	meaning..	..possible action
Comms Supply Fault	Terminal node	The 8V communication power supply has failed	Replace the power supply unit
Communications started/stopped at Card x	IO Card	Communication to a particular panel has started/stopped	Check the wiring and the communicator of the communication
Control passed at Card x	Network	-	-
Corrupted RAM memory at card x	Any Card	Checksum failure on configuration at midnight	Recover data and record in log book. If it reoccurs then replace the card
DC Power fail restored	Power supply	Check ADC of output 27V regulator Normal=146(28.5V)	-
DC too high / DC too low	Power supply	The DC supply is: Too high if greater than 164 (32V) Too low if less than 102 (20V)	Check the mains supply
Delay blocks setup	Local Controller Card	A Delay Block has been configured	-
Delay blocks Cleared	EN54 System Local Controller Card	-	-
Detection Zone Disabled/Enabled at card x	Loop Processor Card	The detection zone has been enabled or disabled automatically or manually	If necessary, manually enable/disable the Detection zone using the [control] menu
Detector on interface unit number x on loop y channel z	Device	Mains powered interface input has been triggered by conventional detector. Value of the input should be equal to or less than 10V	-
Device Address Changed from x number y on loop z	Loop Processor Card	Device SAFE address has changed	If necessary rectify the device SAFE address
Device Battery O/C or Fault Restored number x on loop y	Device	Failure of fuse or battery wiring is O/C or battery open circuit on products like mains powered interface unit Normal value = 27.4V Value is equal to or less than 16V (O/C) / greater than 17V (Restored)	Check and replace if necessary to restore

Message	associated with..	meaning..	..possible action
Device battery fault/restored	Device	The battery has failed the load test For a mains powered interface the value is equal to or less than (Normal - 2V)	Check and replace the battery if necessary
Device Enabled / Disabled at Card x	Loop Processor Card	Device has been enabled or disabled manually or automatically	If necessary manually enable or disable the device
Device Fault number x on loop y	Audio Control Unit	Fault input has been asserted	Check remote equipment wired to the fault input
Device Gain set to x number y on loop z	Beam and Flame devices	Confirmation of a change in gain setting	-
Device Mains Failed / Restored number x loop y	Device	Failure of mains supply to mimic/repeat /mains powered interface unit.The value of rectified DC is equal to or less than 8V i.e. failed.	Check mains supply connections and the mains fuse. When the rectified DC is greater than 24V it is restored
Device Mains too high number x loop y	Devices like: Mimic / Repeat / Mains powered interface unit	Failure of device mains supply.The value of rectified DC is too high i.e in the region of 30V	Check the power supply and replace it if necessary
Device Mains too low number x loop y	Devices like: Mimic / Repeat / Mains powered interface unit	Failure of device mains supply.The value of rectified DC is too low i.e. In the region of 17V	Check the power supply and replace it if necessary
Device power Fault / Restored number x on loop y	Device	The failure of internal power supply rail	Replace the device
Device power too high/restored too low/restored number x on loop y	Device	Internal power rail of mains powered interface unit has a value of rectified DC equal to greater than 32V (high) / less than 30V (restored) DC equal to or less than 24V (low) / greater than 26V (restored)	Replace the device
Device Replaced is faulty Number x on Loop y	Loop Processor Card	Tx fault re-finding device	Check connections to device / base and also device type etc
Device Replaced number x loop y	Loop Processor Card	The replaced device is now communicating with the panel	-

Message	associated with..	meaning..	..possible action
Device power too low/restored number x on loop y	Device	Internal power rail of mains powered interface unit has value of rectified DC equal to greater than 32V (high) / less than 30V (restored) DC equal to or less than 24V (low) / greater than 26V (restored)	Replace the device
Device soft address; SAFE: number x on loop y	Device	Device primary address does not match SAFE address	Check loop configuration
Disables Cleared	Local Controller Card	All disables removed from the panel	-
Duplicate SAFE Address error: number x on loop y	Device	Two devices on a loop have the same SAFE address	Change one of the SAFE address
Earth Fault/ Fault Cleared	Power supply	The ADC value to earth of the 8V regulator is equal to: or greater than 5 (for a +ve fault) or less than 3 (for a -ve fault)	A clear indication is normally given when ADC is equal to 64
Enabled Aux relay x Disabled Aux relay X	Local Controller Card	The auxiliary relay has been enabled or disabled automatically or manually	If necessary, manually enable/disable the auxiliary relays using the [control] menu
End switching normal at card x	Network	Network card is back to normal operation, (see also end switching disabled)	-
Exception number x on loop y	*(Also referred to as Sub-Fault)* Loop Processor Card	Condition pattern has been matched	Check the condition codes
Excessive transmission error rate **Too many errors:lost device or loop split**	Loop Processor Card	There were more than 10 reply errors in one day (More than 16 reply errors will cause the device isolation.)	Check screening and electrical noise in area of operation + check loose connections to loop
External Fire at panel n	Local Controller Card	There is a Fire on another panel in a network	Investigate the fire

Message	associated with..	meaning..	..possible action
Fast scan started number x on loop y channel z	Datalogging	Fire sensor has detected a change on its input	The message is normally given when the data logger is connected
Fault cleared Warning cleared	Local Controller Card	Fault or warning has now gone	-
Firemans microphone operated / released number x on loop y	-	-	-
Fire reset	Local Controller Card	The Fire reset button has been pressed	-
Fire number n loop y channel z	Loop Processor Card	Pattern match is equal to a Fire or MCP operated or conventional detection on IO line of interface operated	-
Front cover opened	IO Card / DKC	The button on the control an panel has been released on opening the front door of the panel	This message only appears on Supervisor
Full keyboard Removed / Fitted number x loop y	IO Card / DKC/ MRC	The QWERTY keyboard has been 'removed'(is not fitted)	Check the cable connections to the keyboard to bring about the 'fitted' message.
Group Enabled / Disabled	Local Controller Card	A group has been automatically or manually enabled or disabled	If necessary, manually enable/disable the group using the control menu
High Error rate at Card x	Network	High number of communication errors	TBA
Incompatible Card Version at card x	Any Card	There is a card software conflict, that is V2, V3 or V4 loop cards in the same panel	Fit compatible software
Interface input - fault / restored number x on loop y channel z	Device	IO line triggered fault	Check the wiring and restore the input for normal operation.
Interface Input Fire number x on loop y channel z	Device	Fixed extinguishant IO line triggered a fire	Check the wiring and restore the input for normal operation
Interface input S/C / restored number x on loop y channel z	Device	The interface wiring is shorted. The value of input is equal to or less than 2V	Check the interface wiring and rectify to restore the input

Message	associated with..	meaning..	..possible action
Interface Failed at Card x	IO Card	The interface timer chip has failed	Clear the fault and ignore single occurrence. Replace the card on multiple failures.
Interface output S/C or O/C or Restored number x on loop y channel y	Device	The value of output is equal to or less than 50% for S/C or is TBA for O/C	Check the wiring and restore the output circuit
Interface input operated / released number x on loop y channel z	Device	Fixed extinguishant interface unit input has been triggered	Follow the FE system reset procedure to release the input
Interface Input O/C / restored	Device	The end-of-line is not seen.	Check the wiring. The device may have been removed, if so refit the device to restore.
Interface input not Reset number x on loop y channel z	Device	The input line continues to trigger	Check devices on the IO line
Intermittent Fault at card x	Any Card	A fault has been picked up by the local controller	Replace the appropriate card if the fault keeps reoccurring
Invalid task delay at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Invalid configuration at card x	Loop Processor Card	Loop recovered with freeblocks ON	This is not allowed. Switch OFF the freeblocks and reallocate
Invalid message / reply received at card x	Loop Processor Card	The message/reply received cannot be understood. The communication can be from a Repeat, Mimic, Supervisor, Network or Orator system	Ignore single occurrence and record in log book
Invalid message/reply at card x	Network Card	The message/reply has not been understood from other panels	Ignore for single occurrence and record in log book

Message	associated with..	meaning..	..possible action
Invalid task stage	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
IO line Enabled / Disabled at Card x	Loop Processor Card	The IO line is either enabled or disabled automatically or manually	If necessary, manually enable/disable the IO line using the control menu
Isolated Zone n at Card n	Loop Controller Card	Short circuit has occurred and the zone has been shut down	As per loop short circuit but must allocate both loops if the zone spans over more than one loop
Last Univ Tx Failed at Card x	Network	TBA	This message is never displayed
Loop Started not ready at card x number y loop z	Loop Processor Card	As per message	Wait and if it takes longer than 10 minutes then reset the loop card
Loop map has changed card x	Loop Processor Card	The map is different to that previously allocated	Check and confirm difference with backup map
Loop power restored	Power supply	Normal loop supply restored:Normal = 202 (44V) Where: Value = Vsupp x 1/11X256/5	-
Loop stopped at Card x	Loop Processor Card	The loop has been aborted or is still being allocated	Re-allocate the loop
Loop voltage too high/low	Power supply	The value is equal to or greater than 215 (high) or The value is equal to or less than 190 (low)	Check PSU under (Test/Eng) and replace if necessary
Lost Command number x on Loop y	Loop Processor Card	Lost FAB/SAB	Ignore single occurrence and record in log book
Lost Device number x on loop y	Loop Processor Card	There is no reply on ends 1&2 of the device	Check the device connections
Lost slave Device number x on loop y	Loop Processor Card	There is no reply on ends 1&2 of the device	Check the slave device connections and replace if necessary
Magnetic switch operated number x loop y	Device	Reset switch in the base has closed	Check base and proximity of magnetic field

Message	associated with..	meaning..	..possible action
Main program not running at card x	Any Card	Problem with software. The watchdog will operate the local controller	Software errors will activate a system reset Ignore single occurrence. Record event in log book
Mains failed / restored	Power supply	Failure is detected when the ADC output from the rectifier is equal to or less than 105	Check mains and fuse. Replace PSU if necessary. This should Normally equal to 190 (60V) to get a restored message Value = Vsecond x 1/16x256/5
Mains too low	Power supply	Mains supply is lower than normal.	
Mains too high	Power supply	The ADC value is equal to or greater than 220	Check the PSU and mains supply
Master Sector Actioned	Local Controller Card	Master sector has been switched ON/OFF	-
Master alarm **o/c** **or** **s/c** Restored	Power supply	No end-of-line unit seen. ADC value is greater than 92 or ADC value is less than 37 ADC value is 74	Check the wiring to the master alarm circuits. Ensure EOL is connected inside the control panel if master alarm circuit are not used
Master alarm restored	Power supply	Master alarm fault cleared The ADC value should be 74	
Master Sector Enabled /Disabled	Local Controller Card	Master sector has been enabled or disabled manually or automatically	If necessary manually enable or disable the master sector
Master alarm enabled/disabled	Local Controller Card	The master alarm has been enabled or disabled automatically or manually	If necessary, manually enable or disable the master alarm
Master polling/not polling at card x	IO Card	PC or SRI (service request interface) is not handshaking with the control panel	Check the wiring
Memory corrupt number x loop y	Device	EEPROM checksum failure	Replace the device
Neighbour ACK Failed at card n	-	Repeated address	Check domain addresses are unique

Message	associated with..	meaning..	..possible action
Network initialised at Card x	Network Card	Successful network map with polled panels	-
Network starting at Card x	Network Card	Communication starting with other connected panels	-
Network wiring fault at card x	Network Card	Wiring is presumed to be o/c between panel n and panel n	Check the wiring
Network Insecure / Secure at Card x	Network Card	There are 3 missing replies in a row on End-2 of the controller	Check the wiring. Check the error rate
New address n at card x	IO Card Network Card	The address set on the DIL switch has been read	-
New domain address n at Card x	Network Card	The address set on the DIL switch has been read at the particular card	-
NMI's missed at card x	Loop Processor Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
No periodic interrupts at card x	Any Card	Problem with software, the watchdog will operate the local controller	Software error will activate a system reset Ignore single occurrence. Record event in log book
No response number x loop y	Loop Processor Card	There is no communication with repeat or mimic panel software	Power-up the repeat or mimic panel
Node lost/restored at Card x	Network Card	There has been 15 missing replies from another panel	Check the wiring or check and reset the panel Network card to restore
Node found at Card x	Network Card	Another panel on the network acknowledged	-
Node double allocated at card x	Network Card	Two network cards has same address	Keep address unique
Not enough RAM at card x	Any Card	Not enough memory	Reset the card and ignore single occurrence. If necessary replace the card or add RAM

Message	associated with..	meaning..	..possible action
Nothing found at Card x	Loop Processor Card	No devices found on End 1 or End 2	Check wiring of loop circuit
Panel in/out of commissioning mode	Local Controller Card	Commissioning mode switched ON/OFF	To manually control this use the Test/Eng menu
Panel powerup	Local Controller Card	Software reset of system or there has been a manual reset of card 0	If an automatic reset has occurred than check for system errors
Panel Label Set up	Local Controller Card	Panel label has been set from the menu	-
Pattern number x on loop y channel x	Loop Processor Card	Sensor has detected an interesting event eg fire/fault	-
Pointer corrupted at Card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Pointer missing at card x	Any Card	Software error	Software errors will cause a system reset Card fault should be ignored for single occurrence. Record the event in log book
Prefire number x on loop y channel z	Loop Processor Card	Pattern match less than a Fire	-
Printer lost/fitted at card x number y on loop z	IO Card / DKC / MRC	The integral printer has not been seen and is 'lost'.	Check the connections to the printer, replace ribbon if necessary and reset card 15 for 'fitted' message.
Program memory corrupted at card x	Any Card	Checksum failure on EPROM at midnight.	Clear and ignore single occurrence. Record in log book.
Program runaway at card x	Any Card	CPU has crashed	Clear and ignore single occurrence. Record in log book.

Message	associated with..	meaning..	..possible action
Program not running at Card x	Any Card	Problem with software the watchdog will operate the local controller	Software errors will activate an automatic system reset Ignore for single occurrence. Record event in log book
Q buffer full at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Q buffer number Fauld at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
RAM initialised	Memory (RAM) Card	Memory available verified	-
RAM is write protected at Card x	Memory (RAM) Card	The memory is read only	Disable the protect to write using the set up menu
RAM is not write protected	Memory (RAM) Card	Read and write is possible to the memory card	Enable protect if required using the set up menu
Recover failed at Card x	Loop Processor Card	Loop does not match what is on RAM card	Check and confirm/correct the difference and then backup
Recover succeeded at card x	Loop Processor Card	Successful recovery after a previous failure	-
Replaced device Wrong type number x on loop y	Loop Processor Card	Device is a different type	Check and confirm installation of correct type and reallocate. Back up to memory.
SAFE Address not Set up number x on loop y	Loop Processor Card	The replaced device is not SAFE addressed. The device previously installed in the location was a SAFE addressed	Set up the SAFE address
Scan error number x at Card y	Loop Processor Card	Invalid universal scan reply	Check loop length and screening

Message	associated with..	meaning..	..possible action
Sector Enabled/ Disabled at card x	Loop Processor Card	The sector(s) has been enabled or disabled automatically or manually.	A manual enable/disable is possible using the control menu
Sector actioned	Loop Processor Card	Sector is switched ON/OFF	-
Sensor out of specification number x on Loop y Channel z	Loop Processor Card	Fault pattern has been matched	Check and replace the sensor if necessary
Shared memory hardware is faulty at Card x	Any Card	There are backplane problems	Remove all other cards than the LCC. See if the problems persists. Replace backplane if necessary
Slave micro failed at Card x	Loop Processor Card	Loop driver is watchdogged by loop processor	Reset and ignore single occurrence. Record in log book
Slave Device Replaced number x on loop y	Loop Processor Card	Slave type device has been replaced	-
Software errors	Software errors will activate a system reset	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Spurious acknowledgment at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Spurious FAB Number x on Loop y	Loop Processor Card	Device has FAB but shouldn't have any	Ignore single occurrence. Panel will remove the indication
Stack too deep at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book

Message	associated with..	meaning..	..possible action
Stack overflow at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Superfire number x on loop y channel z	Loop Processor Card	Pattern match is:equal to greater than a Fire	-
Supply totally Failed	Local Controller Card	The message does not normally appear	-
Switching inhibited at end 1 at card x	Network	Automatic end swapping on the network controller has been disabled for test/ purpose	-
System Printer Lost at card x number y on loop z	IO Card (Printer option)	TBA	TBA
System Restarted /Started	Local Controller Card	Link on back plane restored	-
System stopped	Local Controller Card	Backplane link moved causing the system to stop	The link should not be normally accessed
System Printer fitted at card x number y loop z	IO Card	An 80 column serial printer fitted	-
Task stuck at card x	Any Card	Software error	Software errors will activate a system reset Ignore single occurrence. Record the event in log book
Test set found / removed at Card x	Loop Processor Card	Remote allocation unit has been found connected to the system	Disconnection of the test set will bring about a removed message
Too many errors x at Card y	Network Card	Up to 6 communication errors in a row	Check wiring and cable screen. There may be faults with the installation.
Too many errors number x on loop y	Device	More than 15 errors from a device in 34 hours	Check the loop wiring to the device
Two master has the same address at Card x	IO Card / DKC	Two PCs have been given the same address	Each PC must have a unique address

Message	associated with..	meaning..	..possible action
Two controller at Card x	Network	There are two network controllers	One network controller will automatically shut down
Unable to claim buffers at card x	Any Card	System too busy	Wait or reset card if stuck.Record in log book
Unrecoverable Tx fault number x loop y	Loop Processor Card	More than 3 reply errors in a row	Check the device connections and replace if necessary.
Warning cleared	Local Controller Card	Warning has been removed	-
Warm restart	Local Controller Card	The 5V rail has seen a dip activating the watchdog or the red button has been pressed or panel power reconnected	-
Wiring changed - short at card x number y loop z	Loop Processor Card	Loop short circuit after the particular device	Check wiring and device after indicated device
Wiring changed - ground break at card x number y on loop z	Loop Processor Card	A test has shown a break on the 0V line (conducted every minute)	Check wiring of 0V around loop
Wiring changed - split/closed at Card x number y on loop z	Loop Processor Card	No reply received from a device at End-2 of loop	Check wiring, there can be other reasons
Wiring changed part short at Card x number y on loop z	Loop Processor Card	Less than 80 ohms between the +ve and 0V of loop wiring	Check wiring and device after the partially shorted device
Wrong card type at Card x	Any Card	Card in wrong slot, ie loop card in slot 15	Move the cards to the right location
Zone enabled / disabled at Card x	Local Controller Card	The zone has been enabled or disabled automatically or manually	If necessary, manually enable or disable the zone

Appendix C

Guidelines for standalone system configuration

This appendix provides guidance on factors that must be taken into consideration when applying *standalone system* **functions,** such as:

- ❑ labels
- ❑ sectors (including flag set sectors)
- ❑ delay blocks
- ❑ time slots and time blocks
- ❑ zones
- ❑ groups
- ❑ command build
- ❑ sounder configuration
- ❑ auxiliary relay

Labels

- ❑ Labels are given to identify location of areas on a site.
- ❑ A previously created labels can be modified.
- ❑ a *32 character label* can be assigned to a:
  - device
    (*28 characters label if it is a MCP outstation)*
  - each Input/Output line
    (*28 characters label if MCP is being used on the line)*
  - group
    (*28 characters label if MCP is in the group)*
  - control panel

> ***NOTE:*** *Where manual call points are being used each can have a label of up to 28 characters.*

Input channel label

- A **supervisory input** *channel label* of an *interface unit* will only be displayed at the *control panel* of the standalone system.

  - By adding an * in front of the *channel label* will allow the label to appear on all the networked panels.

    The networked panels must however be setup to display **all events**. In this configuration the label will also be displayed at a *terminal node and GENT Supervisor* in the network.
  - When an interface input is operated the standalone system's (local) *control panel* **buzzer** can only be activated by configuring the input to trigger a **command build**. In this case the command build should not have actions.
  - To activate buzzers of control panels in a network an * must be inserted before the **command build label**.

Sectors

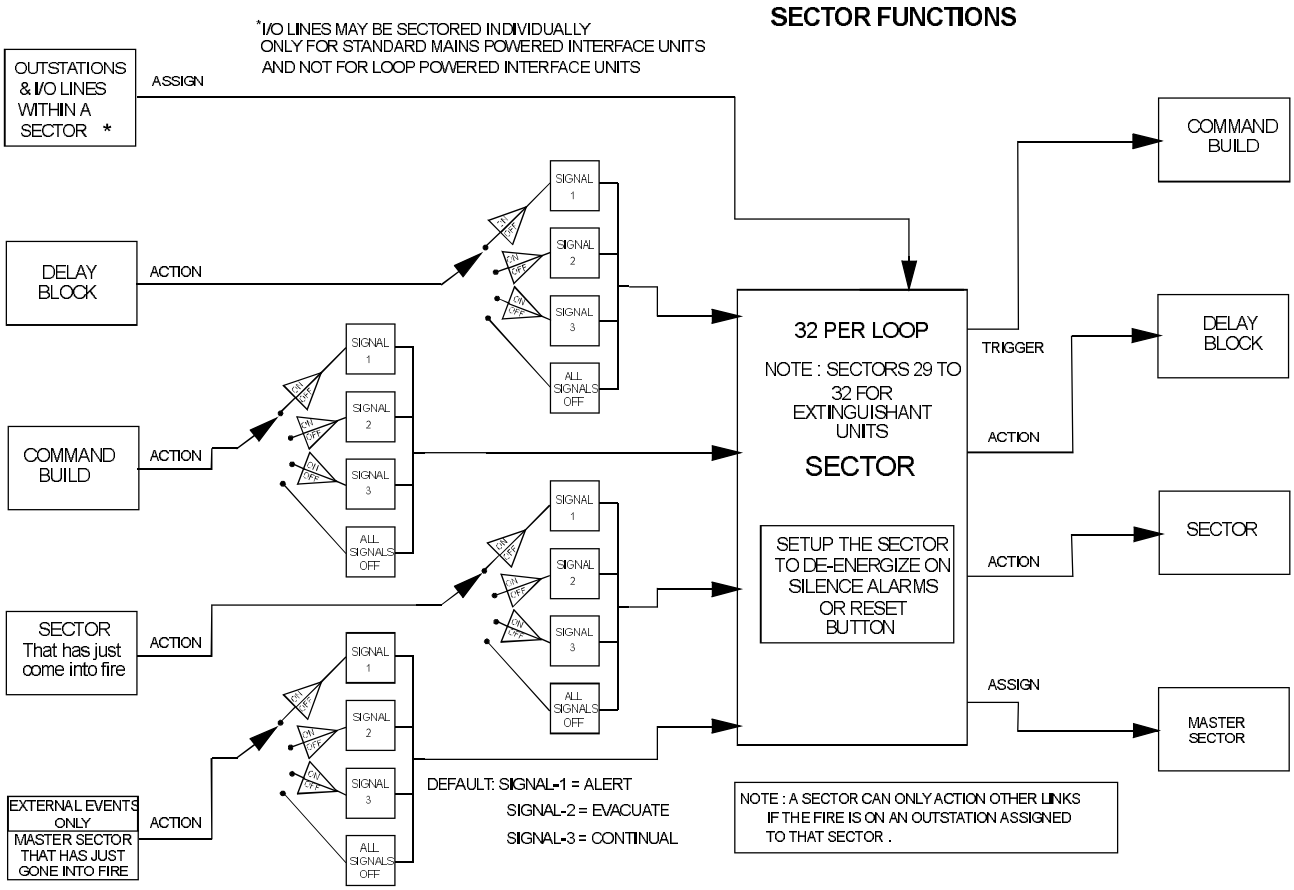


Figure C-1 Sector functions
cdm33

- There can be up to 32 sector per loop
- a sector is a collection of outstation on the same loop having a common action.
- a sector that is actioned ON will activate its alarm devices, such as interface outputs and alarm sounders.

- a sector can be configured to give one of three signals
  - Signal 1 Alert (priority 3)
  - Signal 2 Evacuate (priority 2)
  - Signal 3 Continuous (priority 1)
- sectors 1-28 operate automatically with ‘Sound Alarms’ and ‘Silence Alarms’ buttons
- a sector (any one of 1-28) that is configured for NO action on ‘Sound Alarms’ button will be silenced on operation of the ‘Reset’ button
- the sectors 29-32 are independent of the ‘Sound Alarms’ button and are primarily used with Fixed Extinguishant interface.
- sensors, call points and interface inputs may be assigned to more than one sector.
- a loop powered interface is assigned to a sector as an outstation only ie; inputs and outputs are not separately configurable to sectors.
- alarm sounders, OHS and interface outputs are restricted to one sector only.

Integral sounder operation

- Integral sounder sector operation is also referred to as a flag set sector, can be configured using **[Sector]** -> **[Sounder]** -> **[On]**.
- A sector configured for integral sounder operation in the event of a fire event at an *optical heat sensor sounder* (OHS) device will ONLY operate the local sounder (of the OHS).

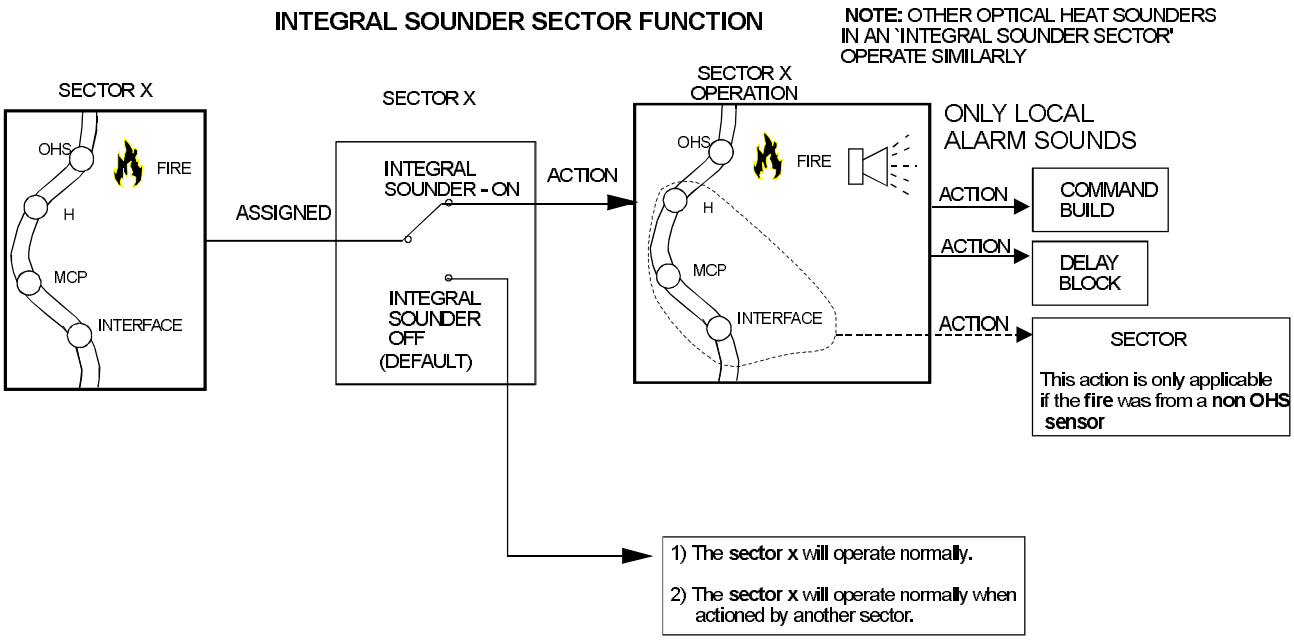


Figure C-2 Flag set sector
cdm47

Default fire plan

- The fire plan on power up is known as 'one out all out'. This is when sector 1 is assigned with all devices of the system, A fire will activate evacuate (signal 2) on all interface outputs and alarm sounders.

> ***NOTE:*** *The fixed extinguishant interface inputs and outputs are automatically assigned to* ***sectors 29****.*

To assign a default fire plan

- To manually configure the default fire plan using the set up menu:
  - Assign all outstation and IO lines to sector 1
  - and then action all sectors (except extinguishant sectors) on all sectors to signal 2

To remove the default fire plan.

- If the system is not intended to operate with the default 'Fire Plan', then do exactly the same as making the default fire plan, but this time replace the **[Assign]** with **[Remove].**
- the monitored line MCPs must be removed
- all sensors, call points, sounders and interface lines are now completely separate from each other
- also [Deaction] all sectors on all sectors. This will remove any configured sector actions
- a site specific 'Fire Plan' can now be set up by assigning outstations within common initiation areas to sectors and then actioning them together to form the required 'Fire Plan'.

Fail safe fire plan

- It is advisable to build a fail safe mechanism when sectoring. If for any reason certain sector assignment has been lost due to system power down and subsequent RAM card recovery conflicts on system power up, the sounders will still operate in the event of a fire.
- the fail safe mechanism will involve leaving Sector 1 on each loop free from any outstation assignment, as any outstations that lose their sector assignment will default to Sector 1.
- the following action will give an evacuate tone to any alarm sounders that have defaulted to Sector 1:
  - Action all sectors (non extinguishant sectors) on sector 1 to signal 2
  - Action sector 1 on all sectors (except Sector 1 and extinguishant sectors) to signal 2

Site specific fire plan

- A site specific fire plan can be created by configuring sectors.

Delay Blocks

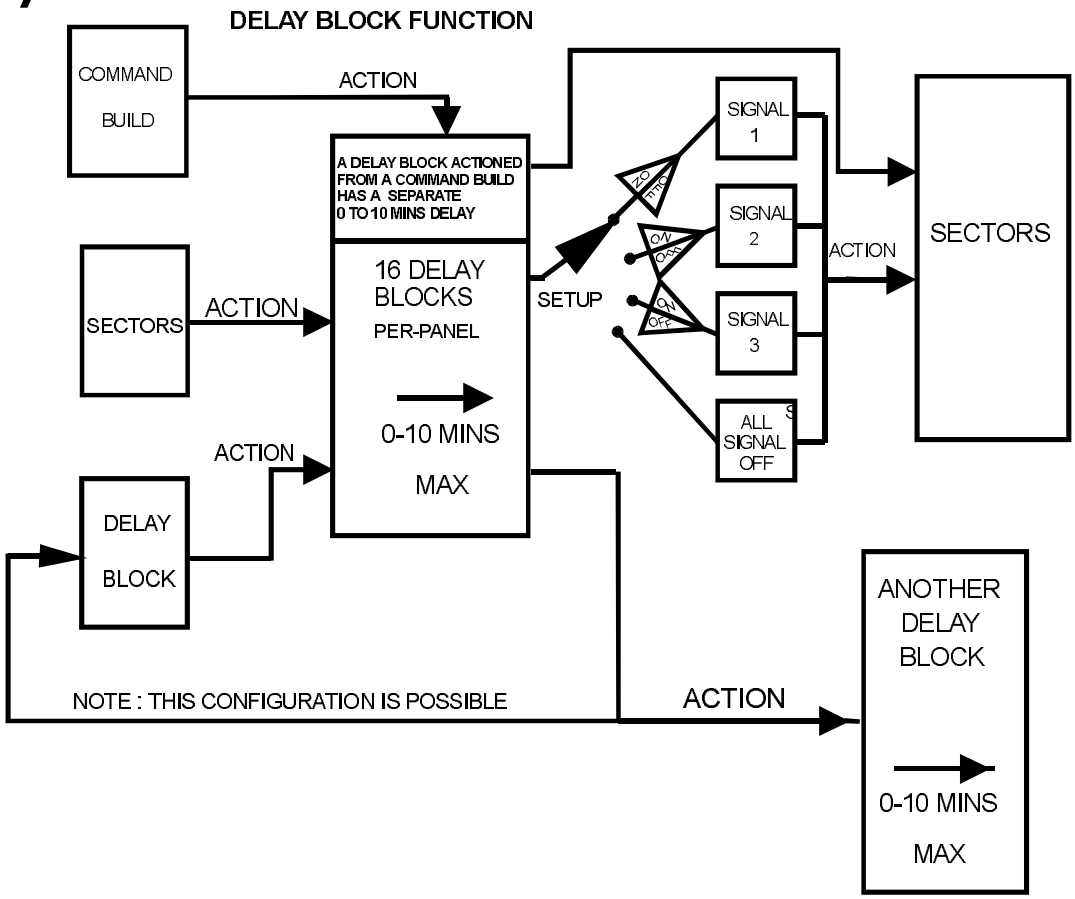


Figure C-3 Delay block functions
cd8m102

- ❑ There can be up to 16 delay blocks per panel
- ❑ each delay block can provide a delay of between 0-10 minutes (in 4 second increments) before starting a desired action
- ❑ a delay block can action:
  - sectors
  - and delay block
- ❑ a delay block may be actioned by:
  - sectored fire event
  - master sector (a global fire event)
  - command build
  - delay blocks
- ❑ if the required delay is beyond 10 minutes. This can be achieved by a delay block actioning another delay block before the required action is taken
- ❑ where a delay block is actioned by a command build, a different delay time is set up (within the command build entry line).

Time slots and time blocks

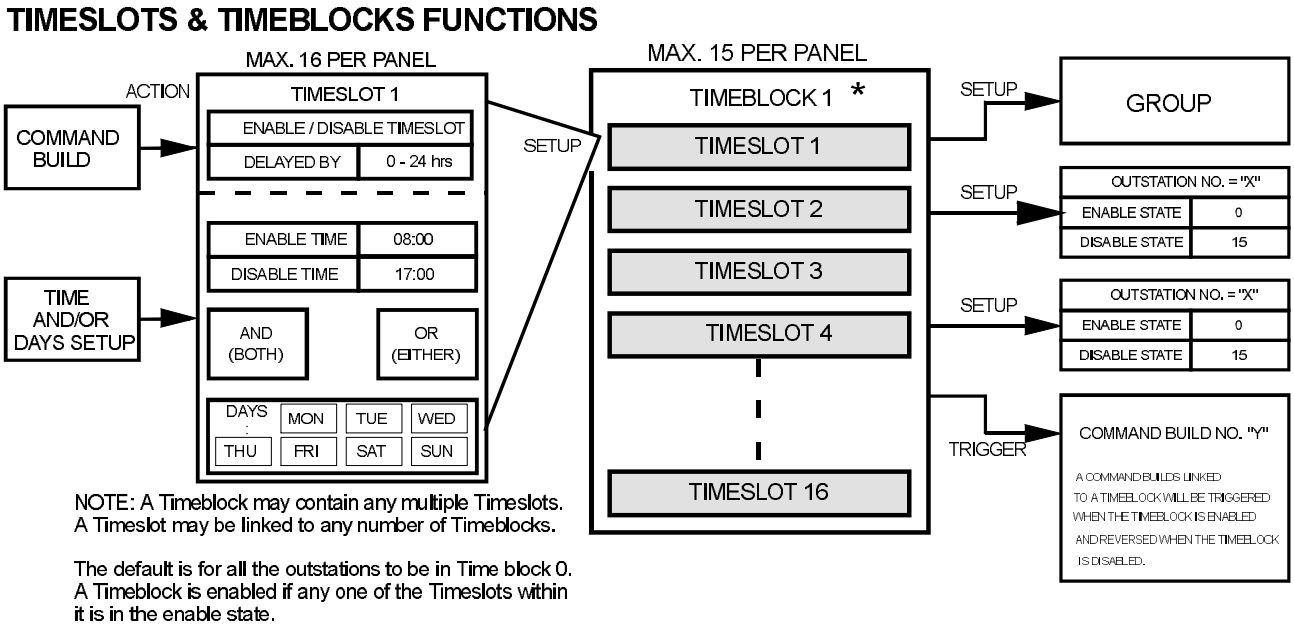


Figure C-4 Time slot and Time block functions
cdm35

Time slots

A time slot must be linked with a time block. It is the time block that perform actions on the system.

> ***NOTE:*** *Timeslots do not process when the panel is in fire condition.*

- a time slot can be:
  - triggered automatically
  - switched ON / OFF manually
  - or switched ON / OFF by Command build
- it performs an action immediately or after a delay of 0 to 24 hours.
- There can be up to 16 time slots per panel
- each time slot has to be given an Enable time and a Disable time
- each time slot must be ANDed / ORed to the days of week, (Mon, Tue, Wed, Thu, Fri, Sat Sun).
- when a time slot is ANDed with selected days, it will only operate on the selected days
- when a time slot is ORed with selected days, it will be enabled during selected times and will remain throughout the days selected

> ***NOTE:*** *Timeblocks can be linked to groups of EN54 system.*

Time blocks

A time block is used to perform periodic enable disable action on the system.

- ❑ There are 0 - 15 time blocks per panel
- ❑ the time block 0 is always in the enable state and is the default for all sensors
- ❑ time block can be linked to one or more time slots
- ❑ when a time slot is enabled the time block it is linked to is also enabled
- ❑ a sensor or Interface input can only be assigned to one time block
- ❑ when a time block is in an enable state:
  - any sensor(s) linked to it will operate in the enable state that has been set up
  - any command build linked to it is triggered
- ❑ when a time block is in a state any group tasks linked to it are also disabled.

Zones

ZONE FUNCTIONS

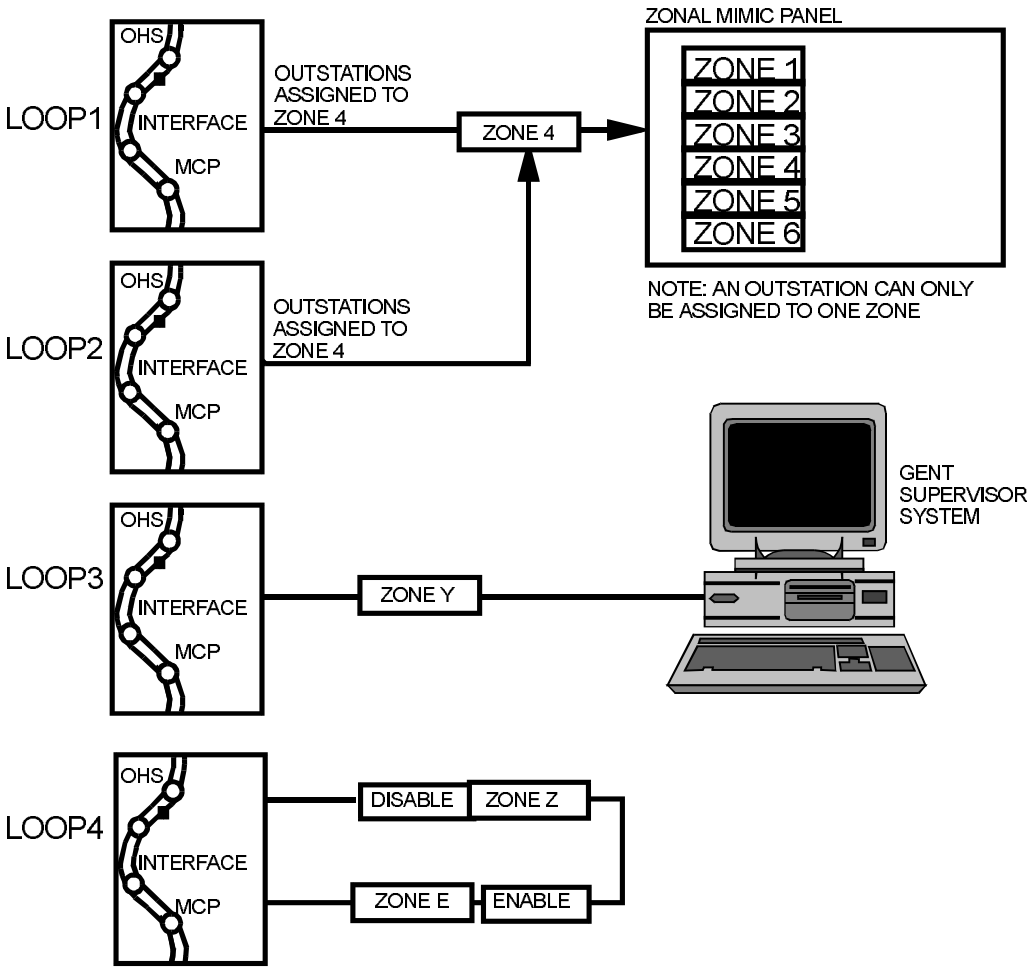


Figure C-5 Zone functions
cd8m103

- A zone has a collection of trigger devices that are located in the same general building. It may be used for one or all three of the following:
  - for illumination of zonal fire lamps on a Zonal Mimic
  - for use with the Supervisor to trigger graphics
  - for common disablement purposes
- There can be up to 128 Zones per panel
- Zones are used to send fire messages to zonal mimic and mimic repeat panel. Also fire and fault messages to Supervisor
- Outstations from any loop may be assigned to the same zone.
- An outstation may only be assigned to one zone.
- Input/output lines of an interface can not be assigned individually to zones. The interface lines can only be assigned collectively to a zone.

Groups (V3+) / Zone (EN 54)

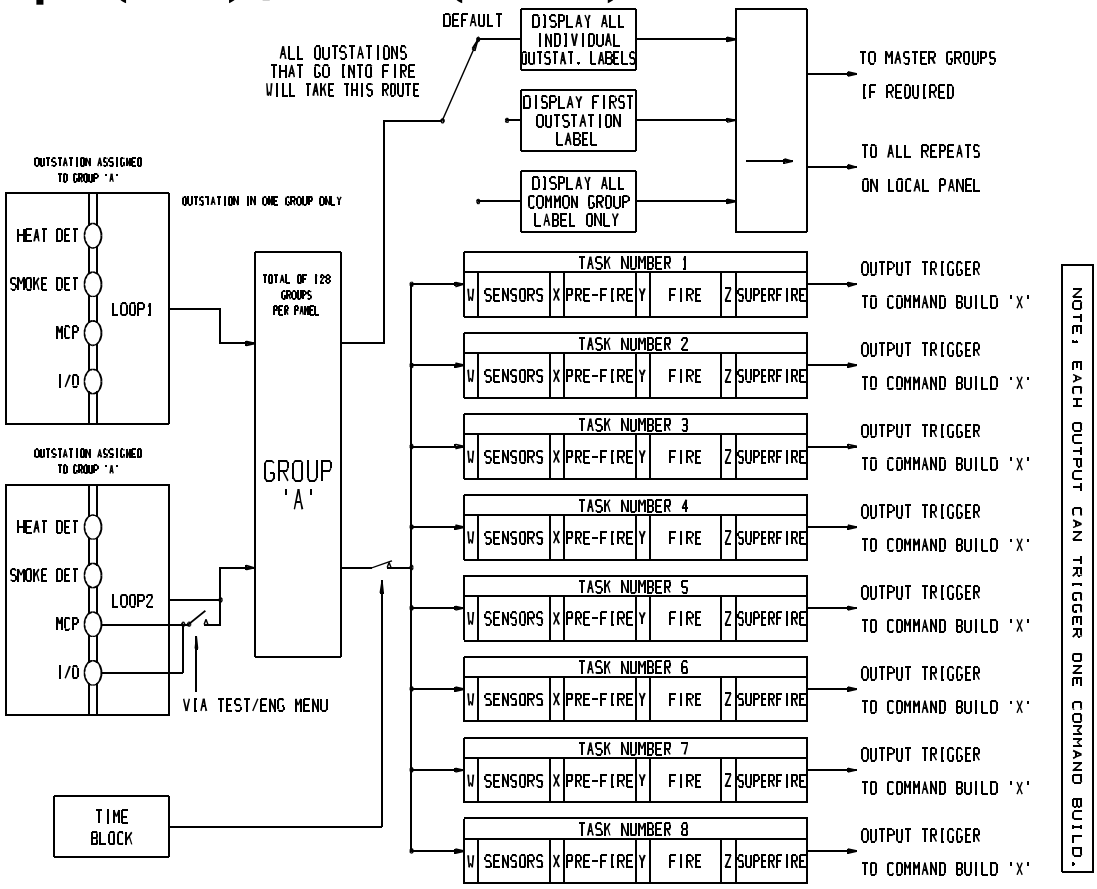


Figure C-6 Group functions
cd71

- There can be up to 128 Groups per panel.
- a group is a collection of outstations, sharing a common label
- an outstation can only be assigned to one group
- a group may be used to control the display of fire messages, to provide:
  - Common group label only
  - label of first outstation in fire
  - or all individual outstation labels (this is the default).
  - the default is ALL individual labels (Group 0)
- a group can provide 3-level sensing:
  - Prefires
  - Fires
  - Superfires
- sensors can be configured to provide coincidence operation using a combination of all 3 levels if required

- ❑ up to 8 permutations of fire detection (group tasks) may be configured per group
- ❑ a group task can be made to trigger a command build or a range of command builds, (this is done in the group set up menu)
- ❑ the same command build can be triggered by different tasks within a group
- ❑ disabling a group will disable the sensors within that Group
- ❑ disabling a group via a time block disables the tasks performed by the group.
- ❑ all outstations default to group 0
- ❑ a group is used for passing event messages via master groups.
- ❑ all local controller events are in Group 0, ie faults, warning, silence alarms and reset.

NOTE: *All local controller events are in Group 0, ie FAULTS, WARNING, SILENCE ALARMS and RESET etc.*

NOTE: *All outstations default to group 0 which can be used for passing event messages only, Group 0 can be assigned to a Master Group.*

Command Builds

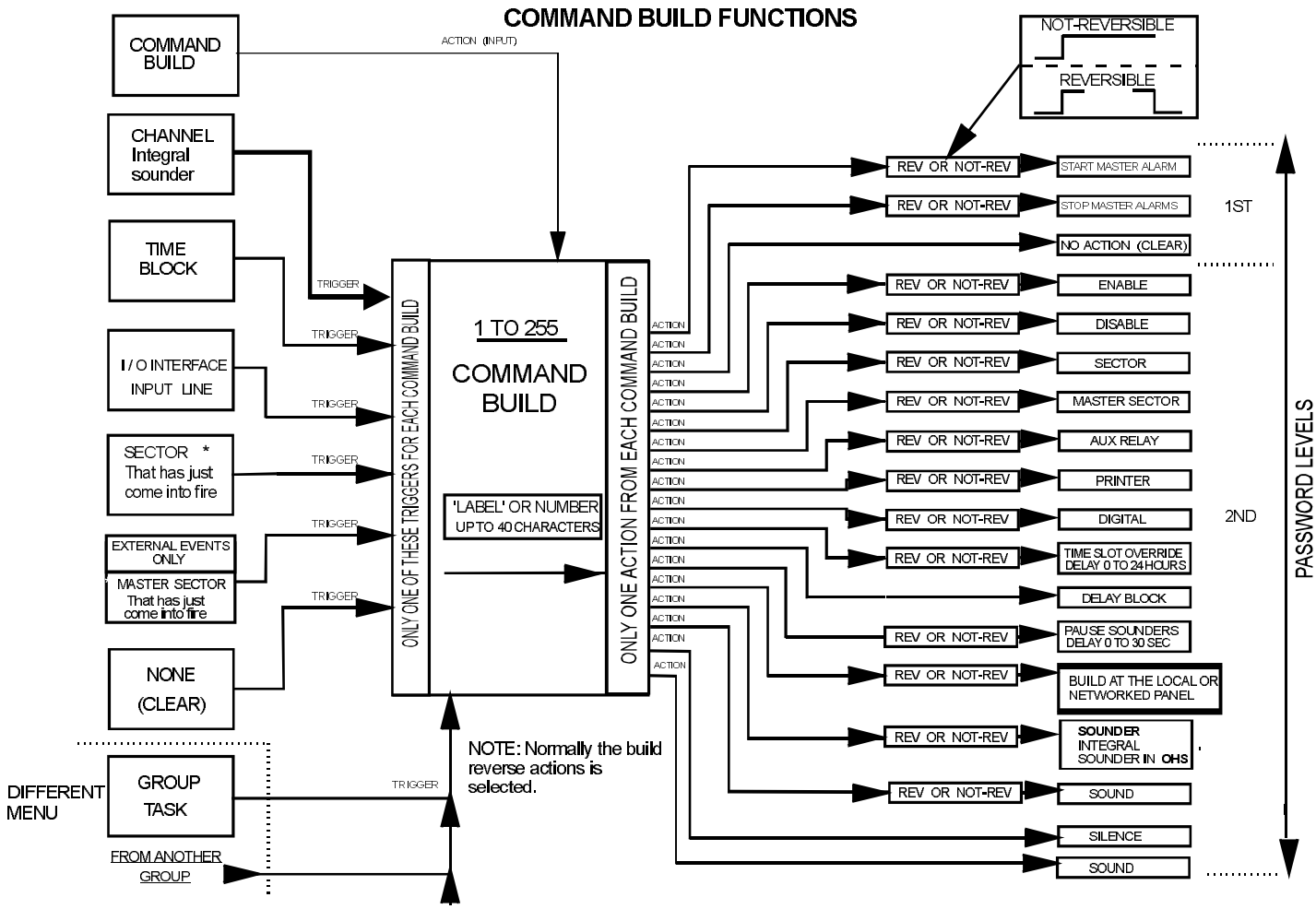


Figure C-7 Command build functions
cdm50

> ***NOTE:*** *The [Master sector] and across panel [command build] action are network options.*

> ***NOTE:*** *If possible use sectored action instead of command build action.*

- There can be up to 255 command builds per panel.
- a command build can only be set up with one trigger (can be a range)
- a command build can be triggered:
  - for reversible action (automatic deaction on removal of trigger)
  - or non-reversible action, (deactioned by another command build for a non-fire trigger or reset for a fire Trigger).
- the command build trigger for group tasks reside under the group menu.

- command builds that are triggered through a sector fire event will deaction on fire reset. This is independent of whether the sector is configured to deaction on silence alarms.
- command builds that are configured for turn Off actions have no reverse action to turn On again, another command build or manual action is required.
- command builds can be used under fire and non fire conditions to carry out pre-configured actions built up from the Control menu.
- a command build can only be set up to perform one action (can be a range), any split range would require a second command build.
- each command build can be given a 40 character label to be displayed and/or printed when triggered. If no label is given then nothing will be displayed
- if a label is given, the local fault buzzer will operate when the command build is active. If the label is prefixed with * then the networked panel fault buzzers will operate.
- command builds are logged with an On/Off time, this can be found via **[Supervisory] [Log]** in the **[Info]** menu and if still On via **[Supervisory] [Active]** but only if a label has been given to the Command Build
- when speed of operation is required the lowest number command builds should be used as these are processed first
- if a digital output to an IO line is to be actioned by a command build the I/O Line should not be assigned to a sector as it will deaction when the silence alarms is pressed regardless of the command build still being active
- a fire condition takes priority over a command build

> ***CAUTION:*** *Take great care not to action a digital output to an input line.*

Sounders Configuration

- The alarm sounders of each standalone system can be configured for three sound outputs.
- every 250mS over a 2 second time the sound output can be altered to high, low or off tone.
- sound signal configuration can be altered by modifying the FAB-SAB pairs via the **[Set-Up] [Modify] [Sounder] [Config]** menu.

FABs & SABs

The FAB (first action byte) determines tone and On/Off control while the SAB (second action byte) determines the action to be performed on the output.

Number	FAB action	SAB action
0	no output	Turns **Off** selected Outputs
1	-	10mS pulse on Selected Outputs
2	frequency tone	40mS pulse on Selected Outputs
3	-	90mS pulse on Selected Outputs
4	**On/Off** control.(On being low frequency)	160mS pulse on Selected Outputs
5	-	250mS pulse on Selected Outputs
6	high frequency tone	350mS pulse on Selected Outputs
7	-	480mS pulse on Selected Outputs
8	-	630mS pulse on Selected Outputs
9	-	800mS pulse on Selected Outputs
A	-	980mS pulse on Selected Outputs
B	-	1.2S pulse on Selected Outputs
C	-	1.4S pulse on Selected Outputs
D	-	1.6S pulse on Selected Outputs
E		1.9S pulse on Selected Outputs
F		Turn on Selected Outputs

Default FABs SABs	Time in seconds								
	0	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.00
Signal 3 (Continuous) Output turns on Low frequency sound continuous every 0.5 seconds.	4F	00	4F	00	4F	00	4F	00	
Signal 2 (Evacuate) First output turns on Low frequency sound continuously, then every half second the High frequency output is pulsed for 250mS.	4F	25	4F	25	4F	25	4F	25	
Signal 1 (Alert) The first output turns on High frequency then pulsed for 250mS every half second.	65	00	65	00	65	00	65	00	

Auxiliary Relays

The two auxiliary relays in the control panel are defaulted to operate on a sectored fire event.

- ❑ the auxiliary relays can be configured for normally-open or normally-closed operation.
- ❑ the relays may be configured to be operated with:
  - a Fault
  - a Warning
  - any combination of Sectored Fire events
  - or any of the above combination
- ❑ It is possible to delay the operation of each relay by up to 10 minutes after the first **FIRE** event. The accuracy of the delay is 0 - 4 seconds.
- ❑ The relay will operate immediately for fault and warning event.

Appendix D

Guidelines for Network options Configuration

These functions apply to network systems. See also guidelines for standalone system.

> ***NOTE:*** *For information on Command build actions across a network, see Appendix C.*

> ***NOTE:*** *When commissioning a* ***network of control panels****, ensure the* ***software version*** *is same across all the panels. This is also applicable when an existing network is to be installed with additional panels.*

Master Sectors

MASTER SECTOR FUNCTIONS

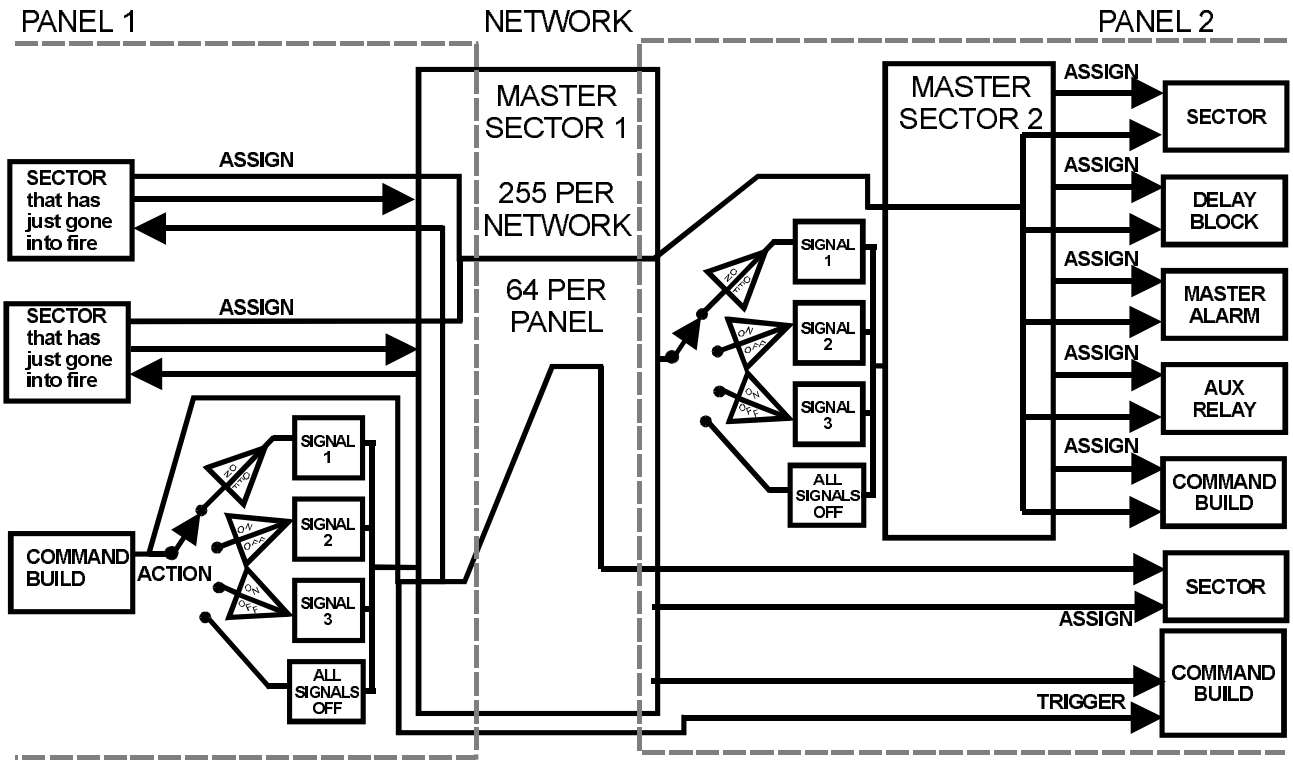


Figure D-1 Master sector functions
cd8m104

- There can be up to a maximum of 64 Master Sectors per panel
- a total of 255 master sectors per network system
- they are therefore a collection of:

- Sectors
- Delayblocks
- Master Alarms
- and Aux Relays from one or more Systems.

❑ they provide global alarm actions across a network of control panels

Guidelines

❑ Fire input sectors must only be assigned to one Master Sector.

❑ Output Sectors can be assigned to more than one Master Sector.

❑ Master Sectors can be actioned by a Sectored Fire Event.

❑ a triggered master sector can action (one or any combination of):

- Sector
- another Master Sector
- Command Build (not locally)
- Delay Blocks
- Master Alarms
- or Auxiliary Relays.

❑ If a Sector assigned to a Master Sector has a Fire Event, the Master Sector will not perform any local actions on the Panel in alarm.

❑ If a Command Build actions a Master Sector, the actions will be performed on other panels, but Command Builds will not be triggered.

❑ A Master Sector must have something assigned to it before any Master Sector action links can be made to it.

❑ Master Sector Fire Event actions on other Panels can be stopped by global Silence Alarms .

Master Groups

MASTER GROUP FUNCTIONS

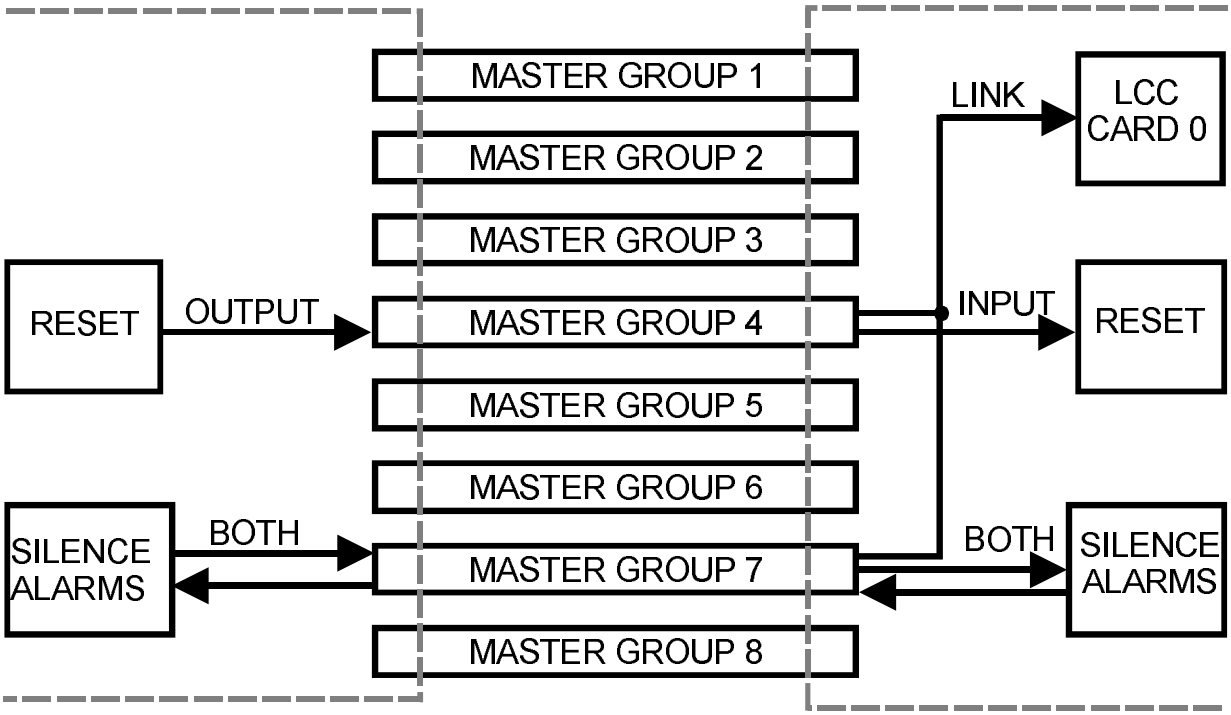


Figure D-2 Master group functions
cd8m105

NOTE: *The verify control can be operate globally, like Sound alarm, Silence alarm and reset.*

- ❑ There can be up to a maximum of 8 Master Groups per network.
- ❑ These are a collection of Groups used for:
  - Selective fire and non fire event message routing within a Control Panel or around a Network of Panels
  - and for routing Global Controls 'Silence Alarms, Sound Alarms and/or Reset' to designated Control Panels on a Network.
- ❑ Messages can be displayed or printed on Control Panels or Repeat Panels. Messages are routed on a Card by Card basis, ie:
  card 0 = Panel LCD
  card 15 = Panel Printer
  cards 1-8 = Repeats and Mimics (Loops 1-8)
  - Each Card can be configured to display/print **All Events** (default) or just **Fire Events.** Repeat Panels on the same loop will always give the same information.

NOTE: *Once message passing has been setup for a global repeat or mimic indication, the local panel will also have to have reset messages routed also any other groups than 0 will have to be routed.*

- Groups within different Control Panels can be assigned to the same Master Group.
- Global controls can be configured to output/input or both.

NOTE: *Messages and controls within a standalone system do not require any setting up.*

NOTE: *The Group 0 contains all panel events and fire resets and therefore must always be assigned to a Master Group.*

Appendix E

Mimic Configuration

Illumination area of the A4 Mimic panel

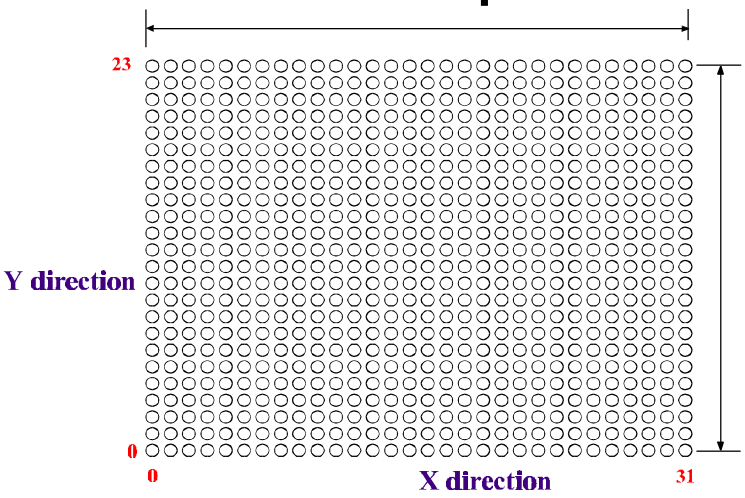


Figure E-2 A4 Mimic panel aperture

cdm39

Illumination area of the A2 Mimic panel

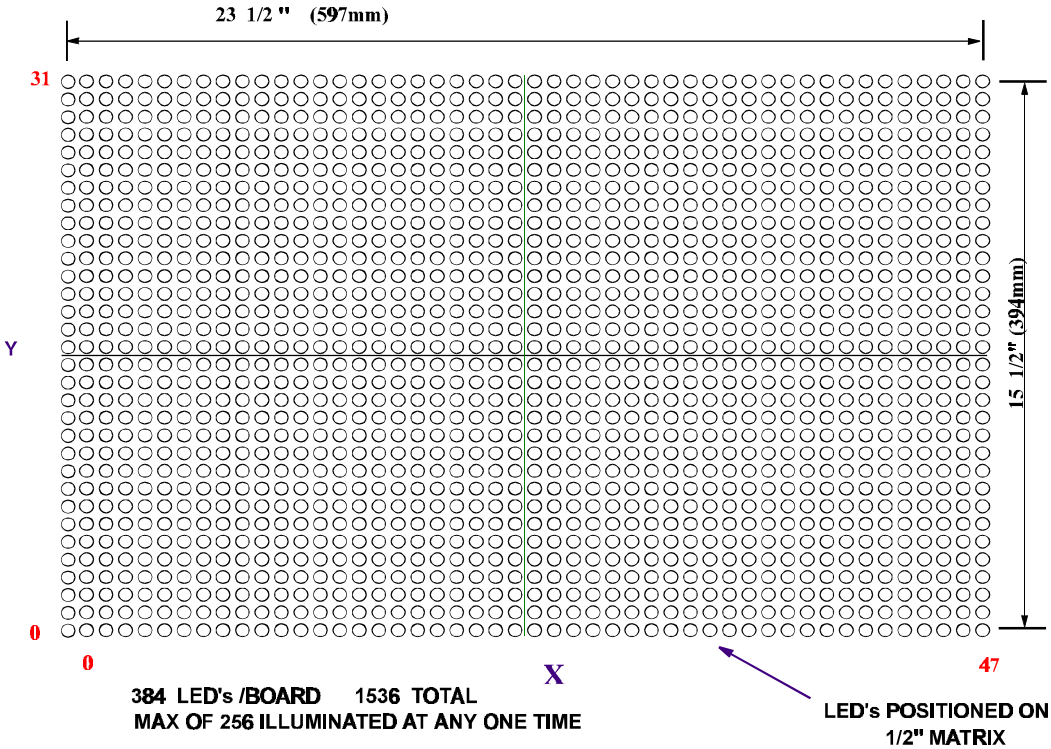


Figure E-1 Mimic/ Zonal panel Illumination area

fl271

LED boards

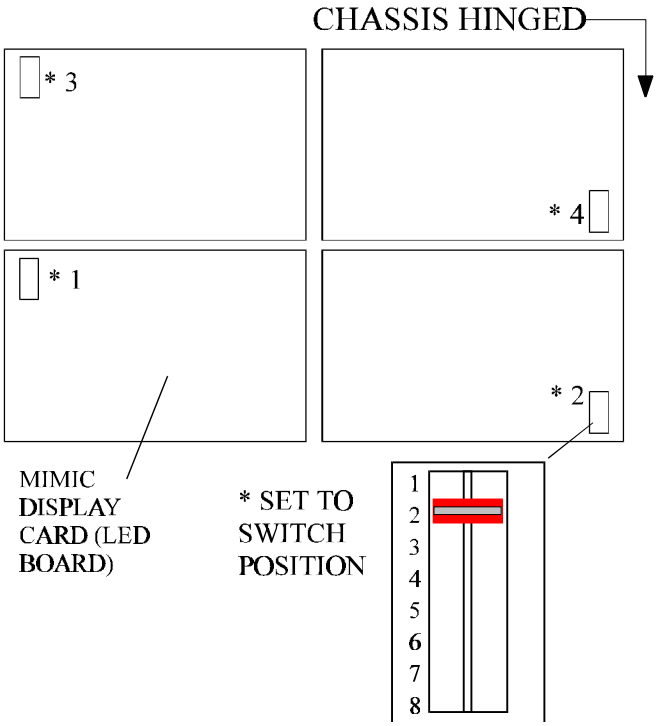


Figure E-3 LED board address settings (factory set)

cdm37

Set Actions shapes

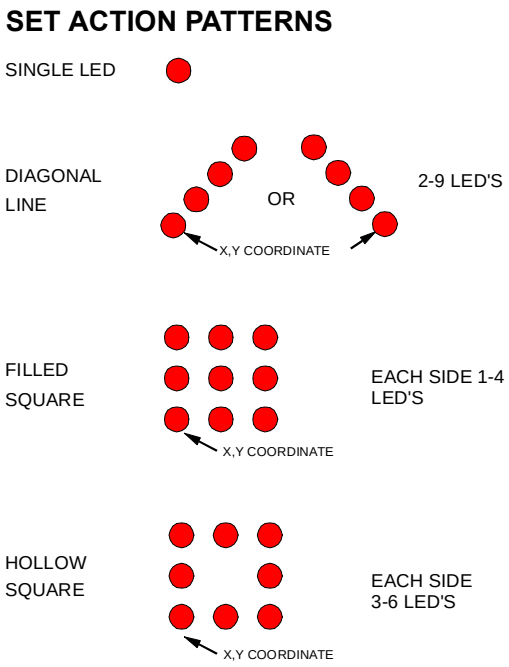


Figure E-4 Standard shapes of illumination

fl272

Characters, Fire and Clock

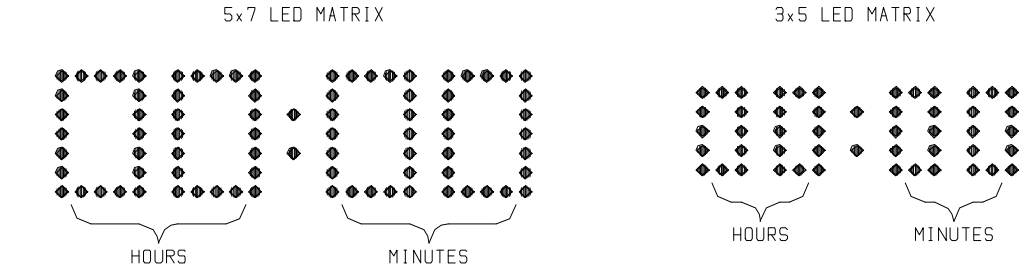
THE FOLLOWING CHARACTERS MAY BE DISPLAYED ON 3x5 or 5x7 MATRIX

SPACE ! " # $ % & ' ( ) * + , - .
\ 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D . . . Z [£] ^ _ a b c d
. . . z { ¦ }

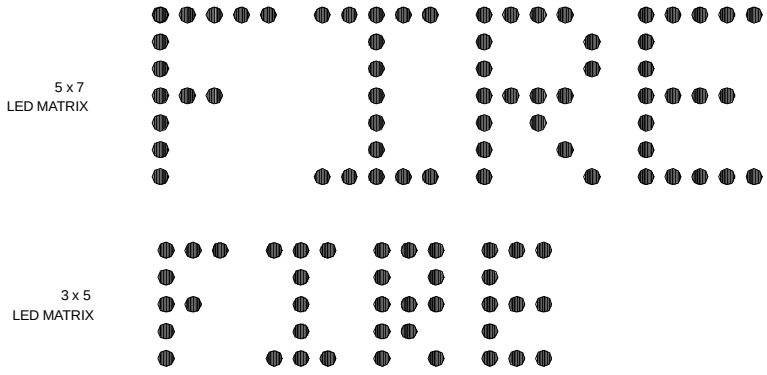
THE FOLLOWING CHARACTERS CANNOT BE SATISFACTORILY DISPLAYED ON A 3X5 MATRIX

" # $ % & ' * , \ ? @ £ m w { ¦ }

CLOCK DISPLAY



FIRE MESSAGE



fl273

Figure E-5 Character set

Outstation actions

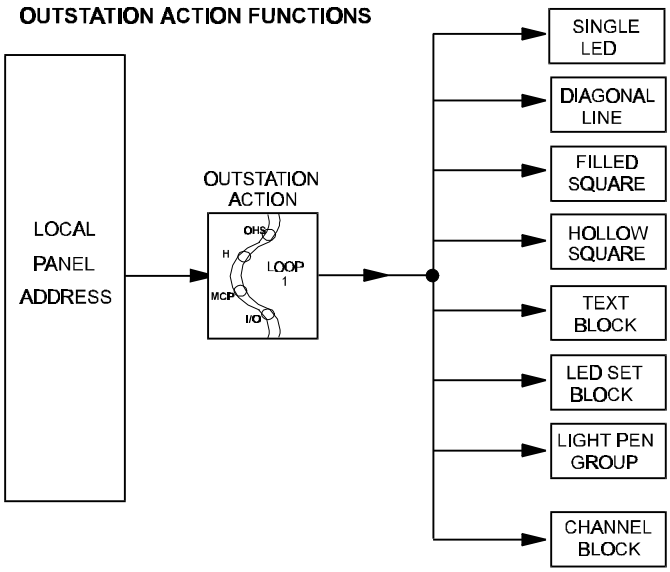


Figure E-6 Outstation actions

fl279

Outstation default actions

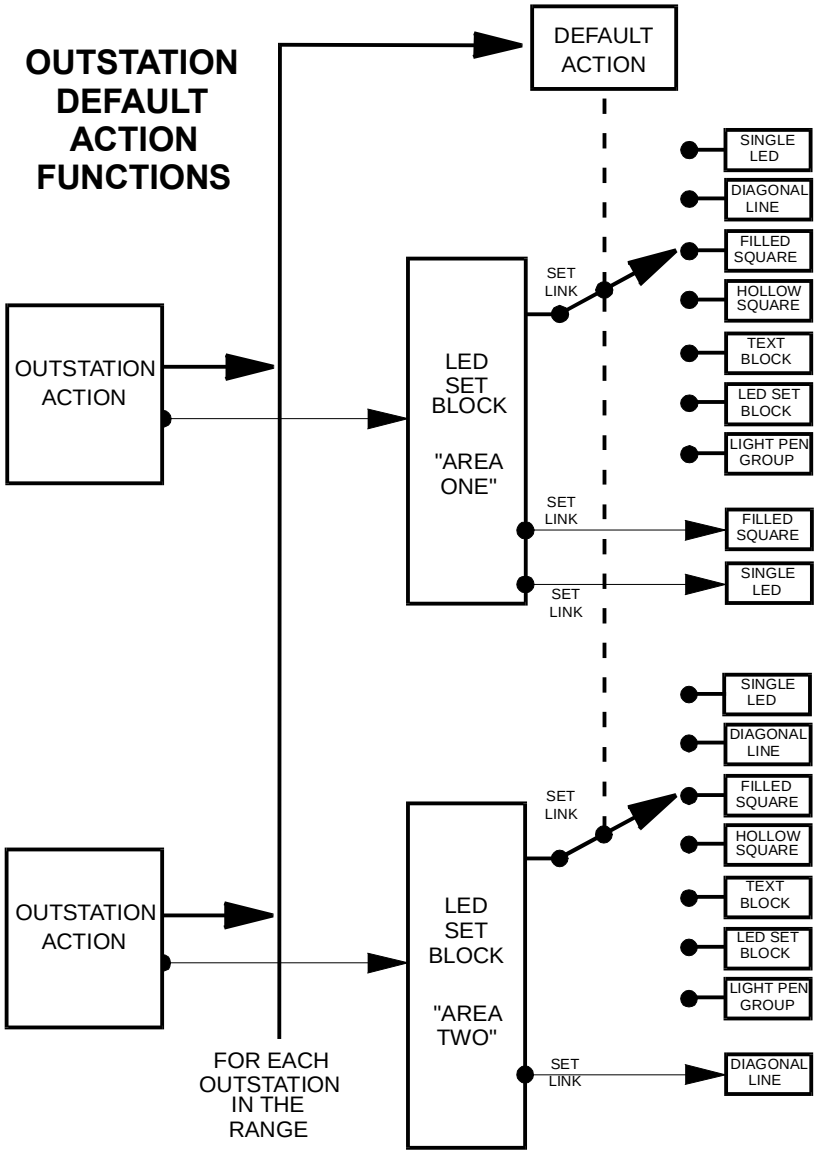


Figure E-7 Outstation default actions

fl280

LED Set block

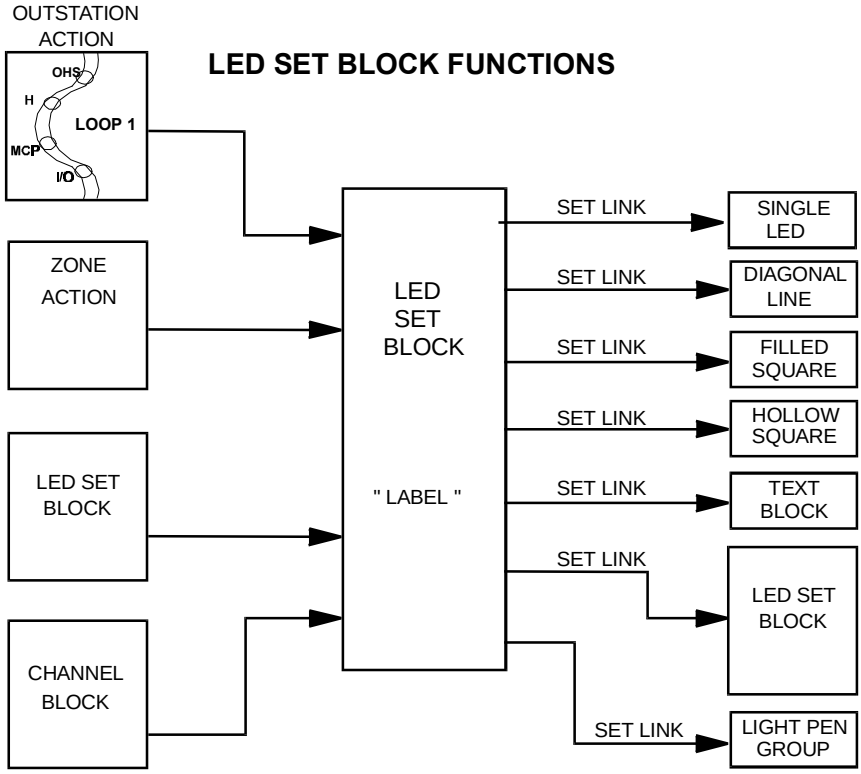
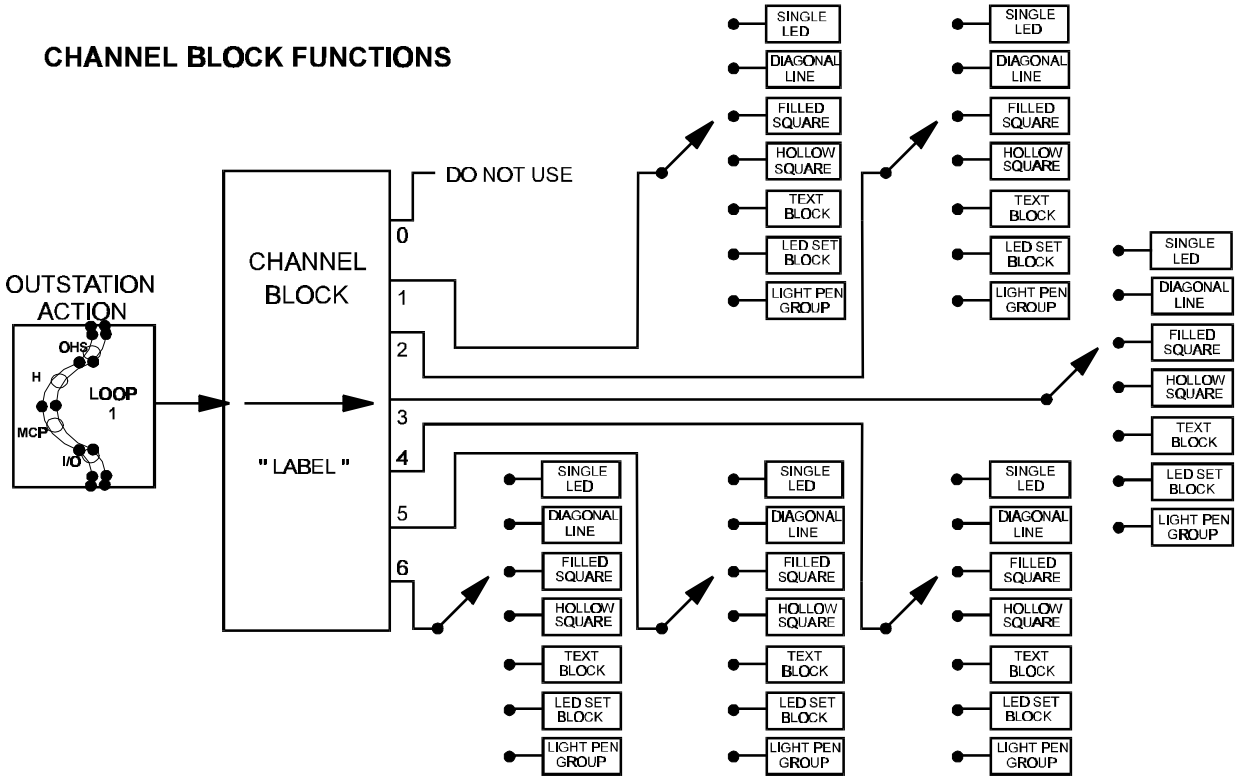


Figure E-8 LED set block actions and links

fl278

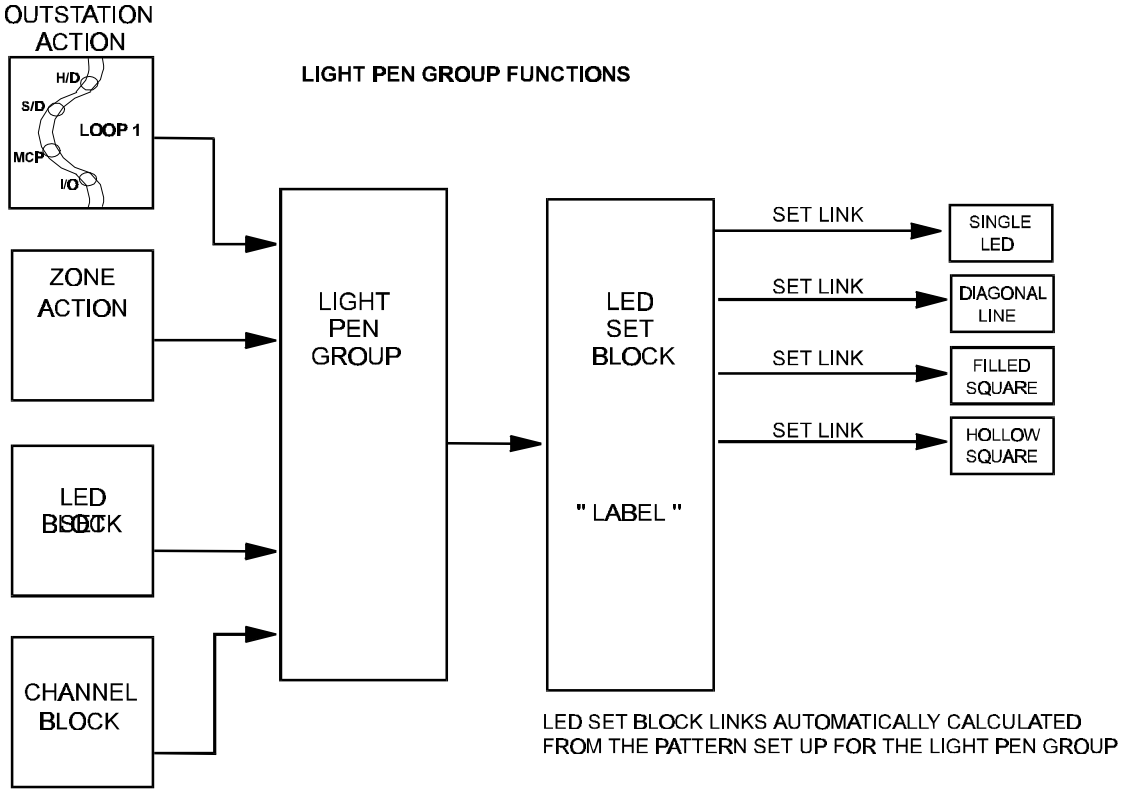
Channel Block



fl277

Figure E-9 Channel block actions

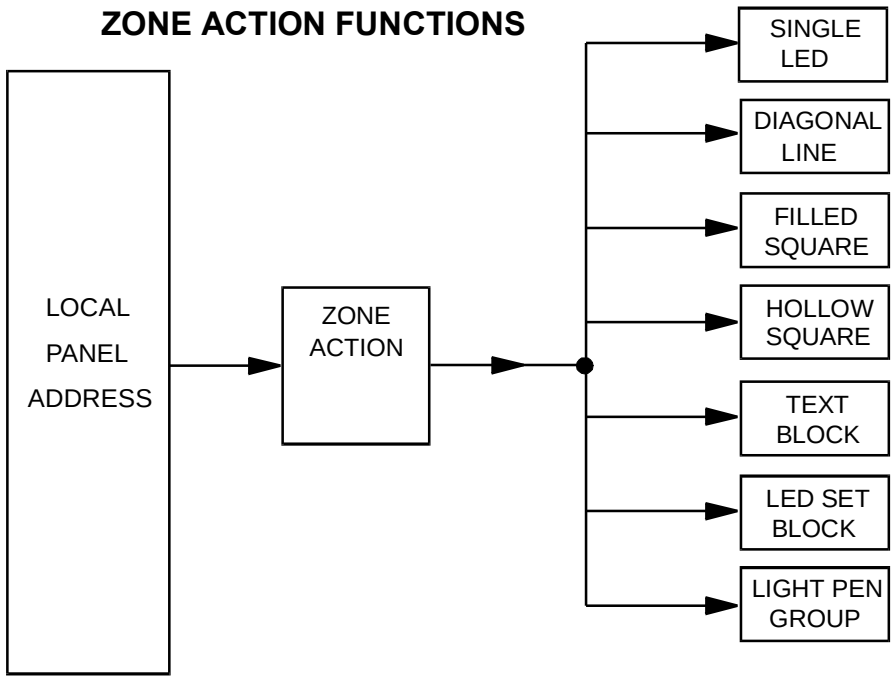
Light pen group



fl276

Figure E-10 light pen group

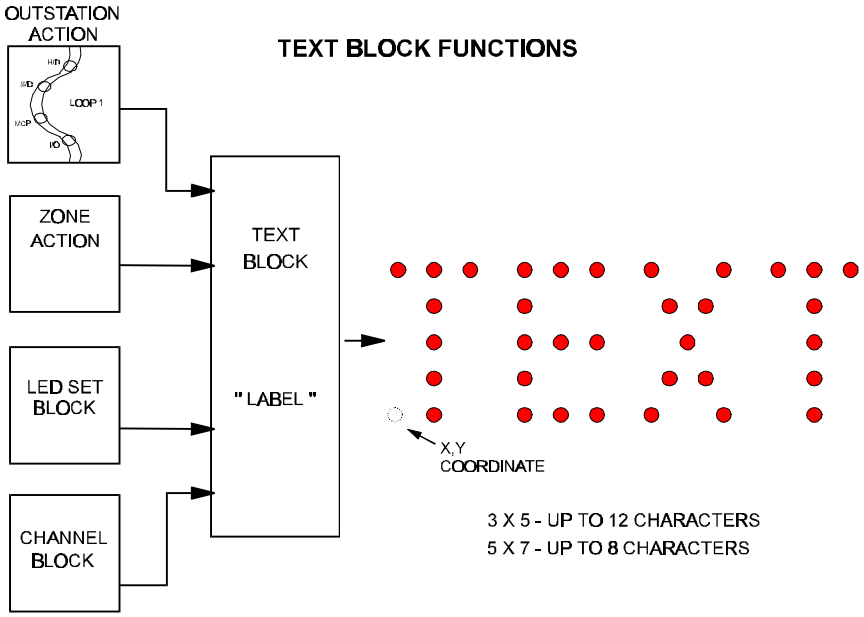
Zone actions



fl275

Figure E-11 Zone actions

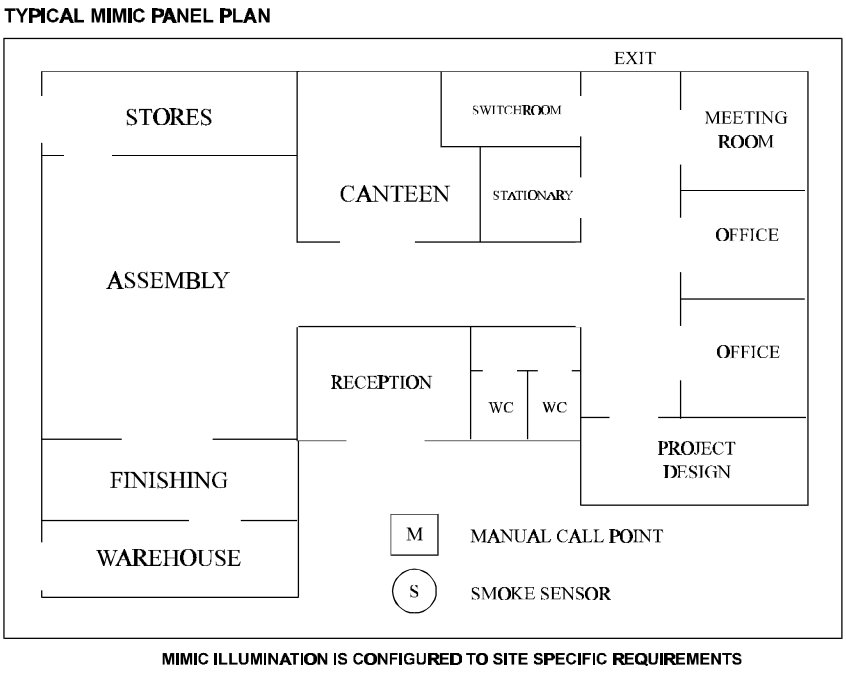
Text block



fl274

Figure E-12 text block

Typical mimic plan

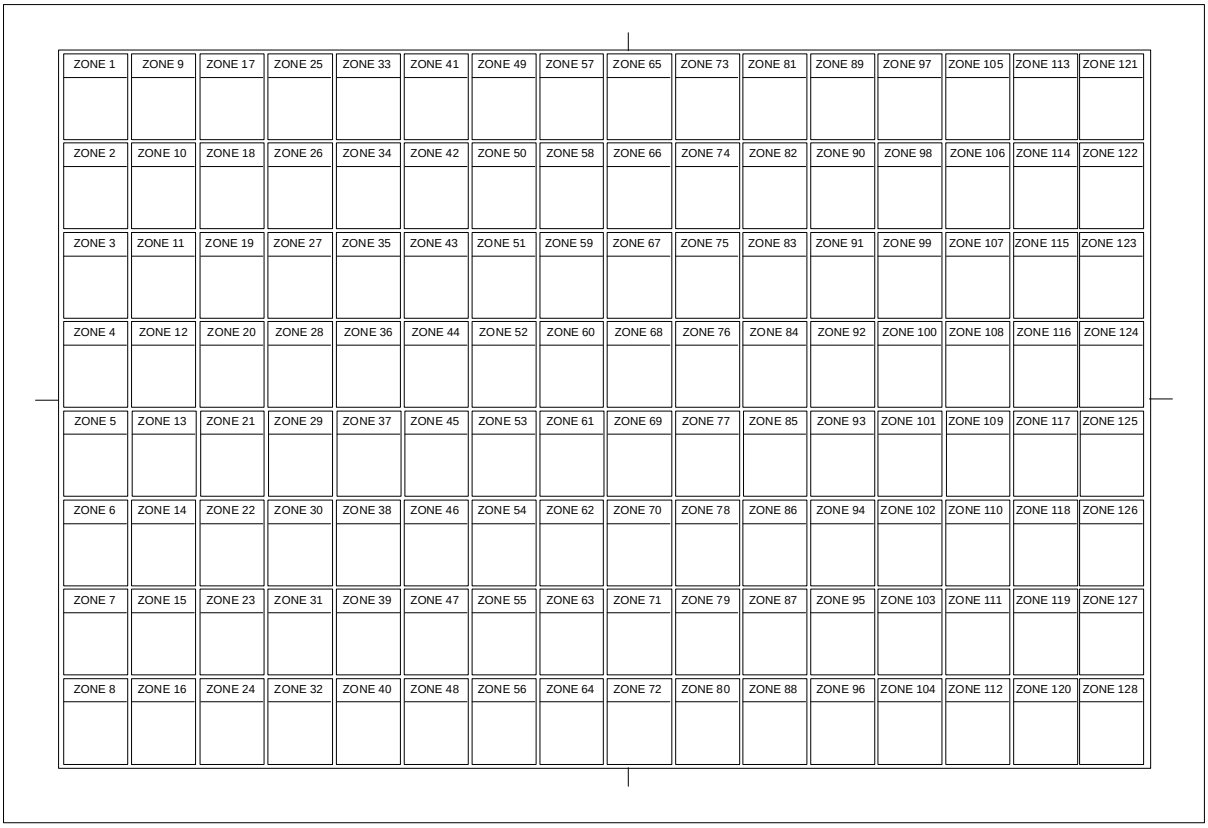


fl281

Figure E-13 Typical mimic plan

Zonal Mimic plan

ZONAL PANEL LAYOUT



fl282

Figure E-14 zonal mimic plan

A4 Zonal mimic plan

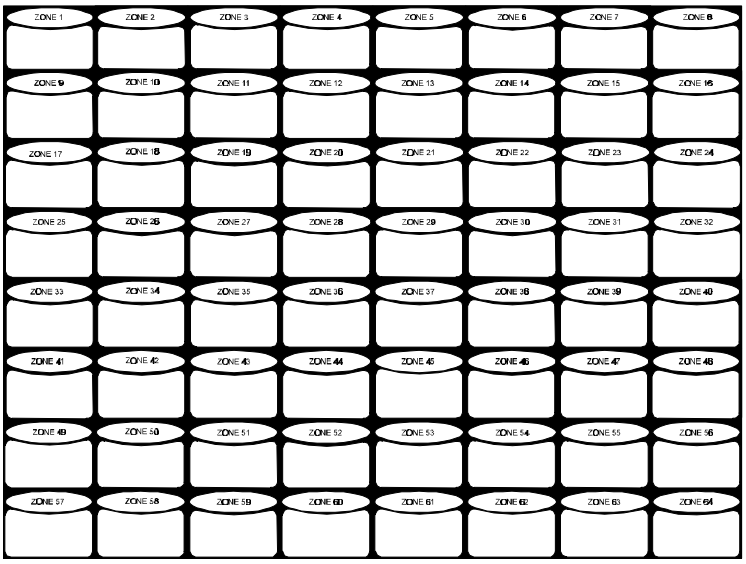


Figure E-15 A4 Zonal mimic layout
cdn433

Appendix F

Service Request Interface (SRI)

The Service Request Interface (SRI) is a unit that connects a Fire System via telephone line to a **Remote Service State Monitor** (RSSM), also called **Central station**. The RSSM monitors the fire system status. These procedures describe how to commission a SRI unit.

Pre-commissioning checks

☐ Ensure the central station **administrator is informed** of the site commissioning in advance.

☐ The **site ID** and full **postal address** will be required

☐ Ensure a standard **telephone line and socket** is installed no more than **2.4m** cable distance from the SRI unit.

> ***NOTE:*** *Ensure the customer is aware that the telephone line rental and call charges are the responsibility of the customer.*

☐ Tools required:

- Telephone hand set
- Commissioning computer with SRI commissioning software
- PC to SRI lead

Commissioning process

The process to commission the SRI unit involves carring out the following in the order shown:

☐ Check the SRI unit telephone line is working.

☐ Check the factory settings of the SRI board

☐ Connect the SRI unit to a control panel/node

☐ Power-up the SRI unit

☐ Test the SRI communicates with the control panel/node

☐ Programme the site data into the SRI unit

☐ Connect the SRI modem cable to the dedicated telephone socket

☐ Test the SRI unit is able to dial up the Central station

☐ Test the Central station is able to dial up the SRI unit

Checking the SRI unit telephone line

Telephone call to the central station administrator

☐ Select the appropriate exchange type on the telephone hand set and connect it to the SRI telephone socket. Make a call to the central station administrator and pass on the **telephone numbe**r of the SRI unit.

☐ Get a return call from the central station to check the telephone number given is correct and that the line can receive incoming calls.

How to check for TONE or PULSE exchange

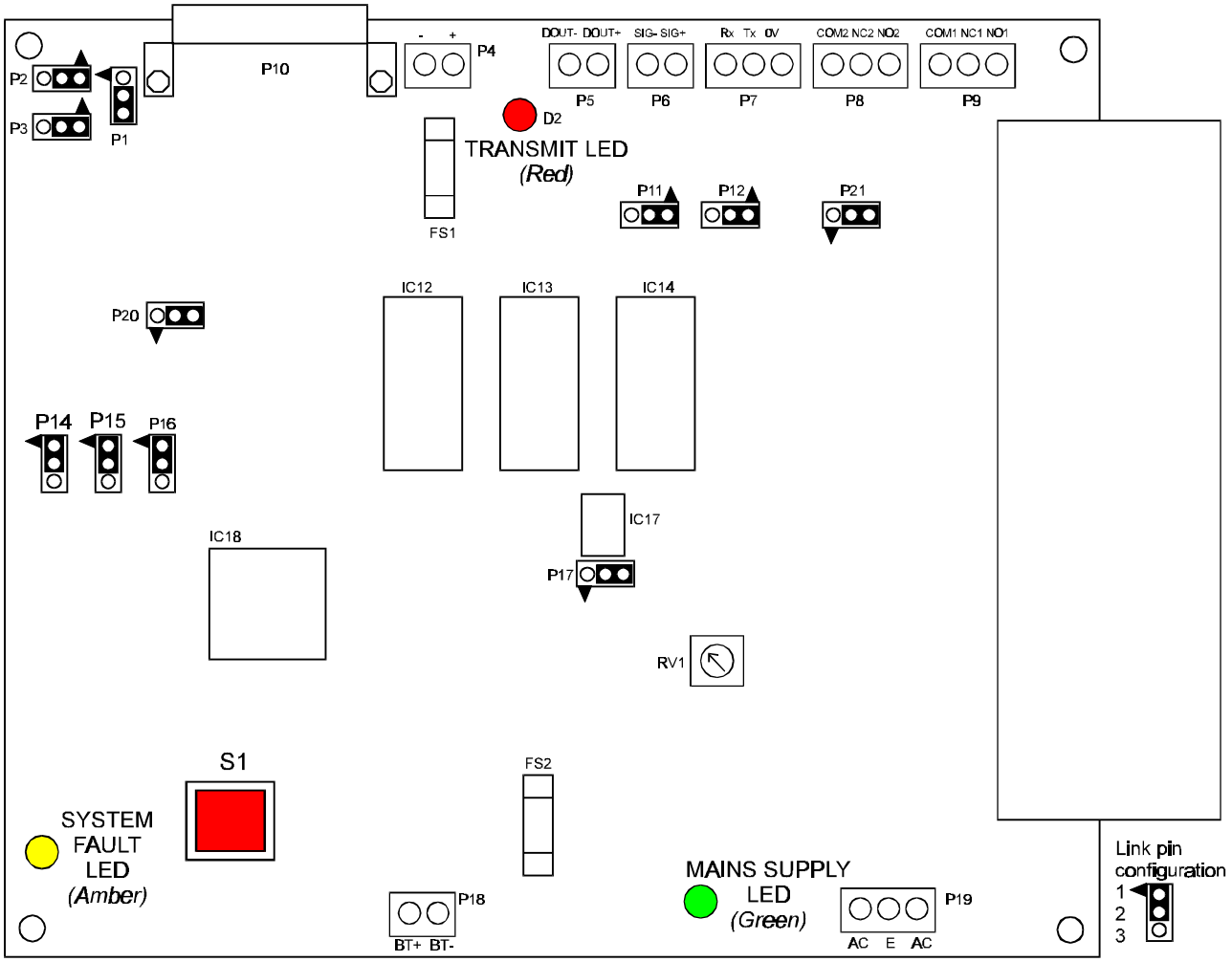
> ***NOTE:*** *According to British Telecom in the UK virtually all exchange are TONE type.*

If you need to test the telephone line, then you will need a telephone hand set with a TONE / PULSE switch:

☐ With the phone set for TONE, dial a number you know, if it connects and rings or if you get an engaged tone you are connected to a TONE exchange. If the call does not connect or you do not get an engaged tone, then this means either the line is dead, or you are connected to a PULSE exchange.

☐ Switch the phone to PULSE and dial again, you should hear a series of clicks as you dial and if it connects or you get an engaged signal you are on a PULSE exchange.

Check the factory settings of the SRI board



cdm303

Figure G-1 SRI board factory settings

SRI board links

Link	position 1-2	**position 2-3**	**Comments**
P1	-	factory setting	Modem power supply connected
P2	factory setting	-	Special ring indicator
P3	-	factory setting	Ring indicator
P11	RS485 DIR TERM factory setting	-	RS485 end-station
P12	RS485 TERM factory setting	-	RS485 end-station
P14	factory setting	Commissioning mode	When set for Commissioning mode the SRI unit will talk to PC
P15	factory setting	Test mode	When set for Test mode the SRI unit will output test data from the modem 25-way connector to the 3400, but will not dial out.
P16	factory setting		Not used
P17	2400	factory setting 1200	Sets the modem port **baud rate to 1200**
P20	-	factory setting	Not used
P21	RS485	RS232	Select RS232 or RS485
	The shaded link configuration is factory set.		

SRI board LEDs indicator's and Fuses

LED	Status	Comments
D27	**On** (green LED)	Power On LED - Normally lit to indicate when the mains power supply is connected and switched On
D26	**Off** (Amber LED)	System Fault - Normally **Off** and is lit to indicate a system fault
D2	On steady, Off or flickers (Red LED)	Transmit LED- On - to indicate a connection to control panel Off - to indicate **no** connection to control panel Flickers - to indicate communicating
FS1	0.5A fuse	12V supply to modem
FS2	2.5A fuse	Battery charger
Mains terminal block	3.15A fuse	Mains supply to the unit

How to connect the SRI unit to a control panel

☐ Connect the **mains cable** to the mains terminal block in the SRI unit, **but do not switch on the mains power.**

☐ Connect the **RS232 or RS485** data cable to the SRI unit and control panel/node. **For information on cable see Network cable section.**

- For *RS232* the cable length must not exceed **15m.**
- if using *RS485* the cable length can be up to **1.2Km**.

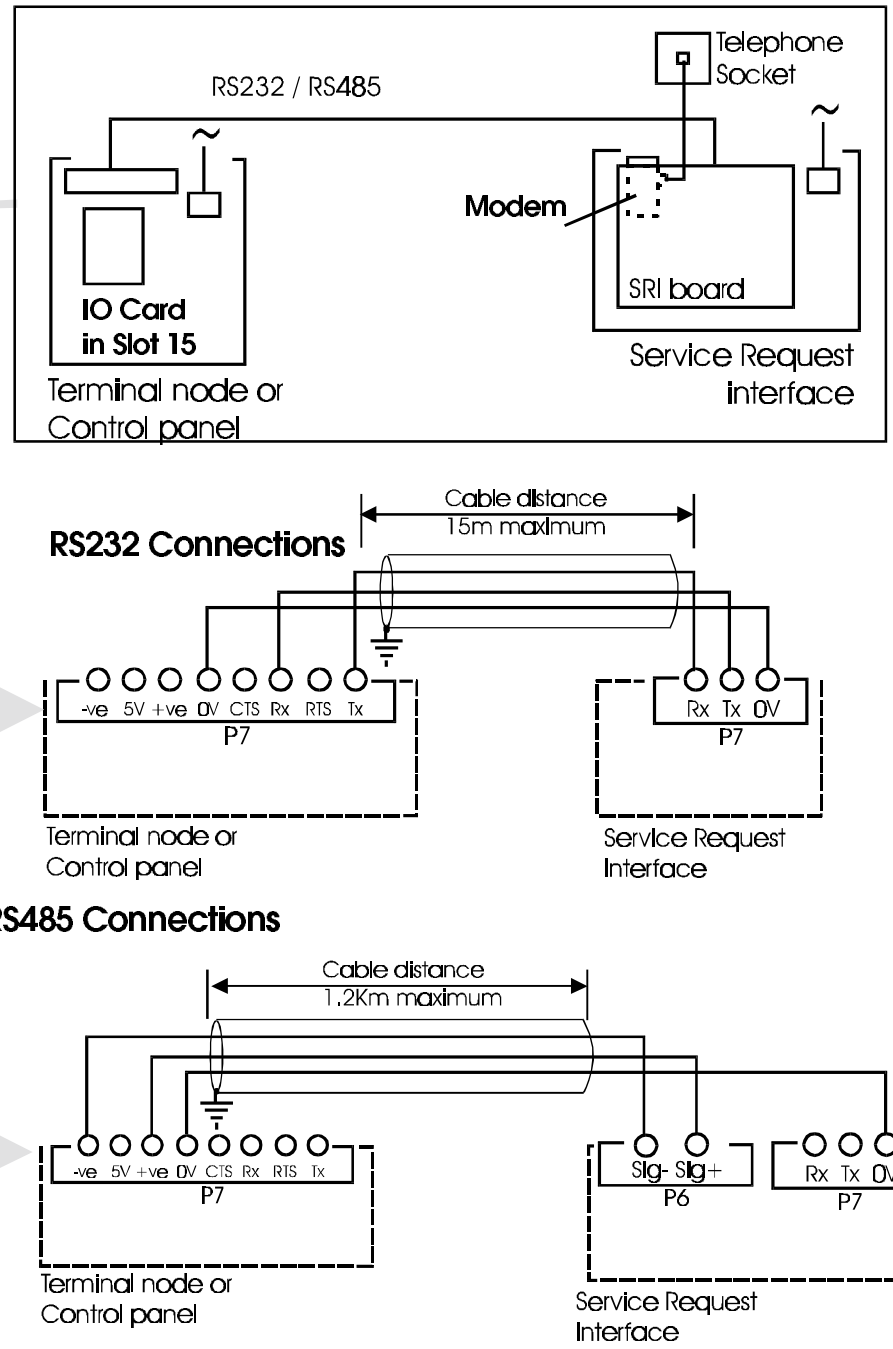


Figure G-2 Wiring the SRI unit

cdm305

Check the IO card in the panel/node

Link settings

☐ Ensure the IO card in the control panel / node is set for **RS232 or RS485** communication at **9600 baud**, as appropriate and then **reset** the IO card at the panel/node.

IO card software

☐ Check the **card status** of the **IO card** and ensure it is **version 3+** or above using [CardStat] in the [info] menu.

How to test SRI to control panel connection

☐ Configure **Link P15** on the SRI board to **position 2-3 (test mode).**

☐ Press the Reset button **S1** on the SRI board.

Messages

☐ If communications are established between the SRI and the control panel then a message appears on the control panel:

```
Communication started at Card 15
Master polling at Card 15
SRI - FINAL TEST MODE SELECTED
```

☐ Return link P15 to default and reset the SRI by pressing button S1.

Data held by Modem in the SRI unit

The SRI board has an **EEPROM Chip - IC12** which holds the data to allow its Modem to talk to the **Central Station.** The EEPROM Chip is programmed using the Commissioning computer with the following data:

Automatic entry

☐ **Schedule Call Unit** and **Call Receiver Unit** *phone numbers* (including backup *phone numbers).*

Entered manually

☐ Using the SRI commissioning software on Commissioning computer: *Exchange type, internal exchange access number, local or national exchange, Site name, address,* ***district, adjacent street/other****, post code,* ***grid reference****, site number and* ***site type****.*

The data entry in ***bold italic*** are not mandatory.

How to programme the EEPROM in the SRI unit

☐ Ensure SRI mains and battery are disconnected.

☐ Disconnect the 25-way ribbon cable from **P10** on the SRI board.

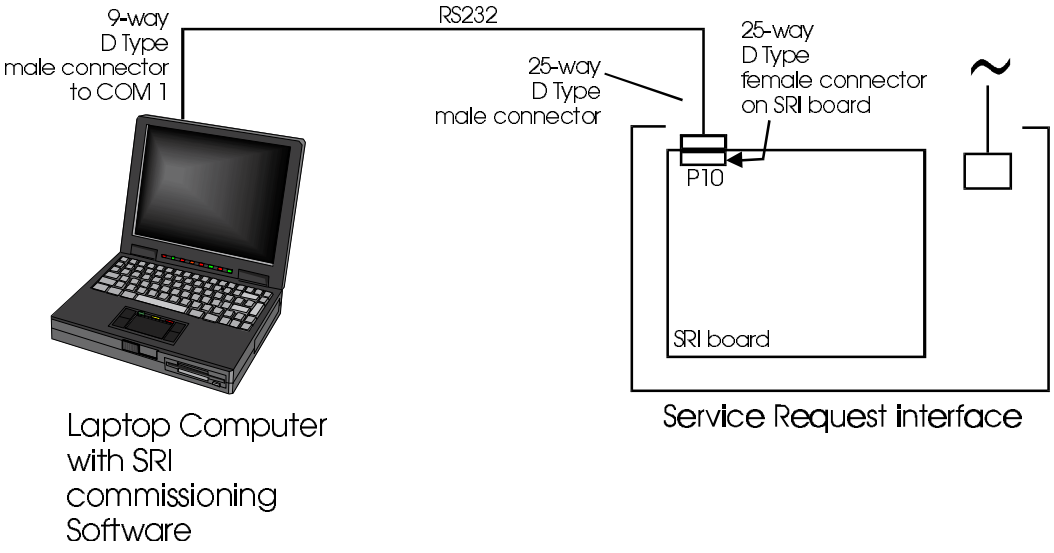
P14 link on SRI board

☐ Set the **commissioning mode link P14** on the SRI board to **pins 2-3**.

☐ Power up the commissioning computer

9-25 ways lead

☐ Fit the **9 to 25 way lead** to connector **P10 on the SRI board** and the other end to the computer's **COM 1 port.**

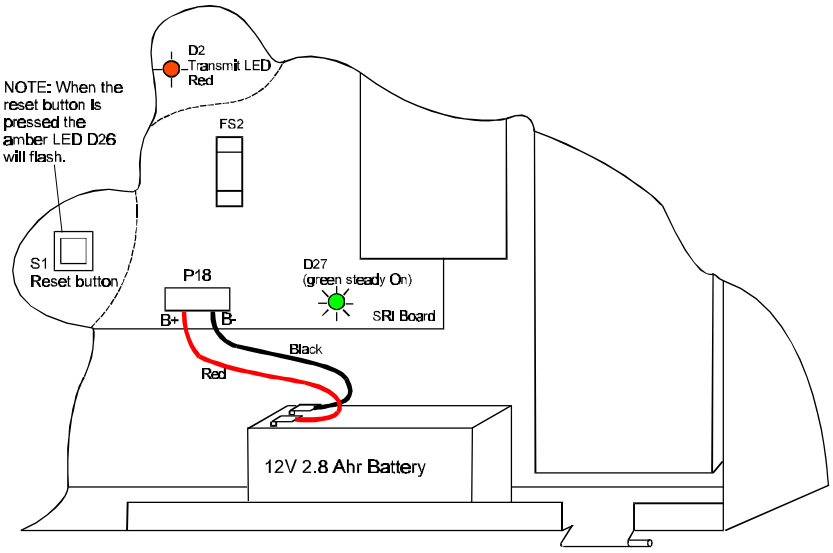


cdm304

Figure G-3 Setting up the SRI Modem

Powering up the SRI unit

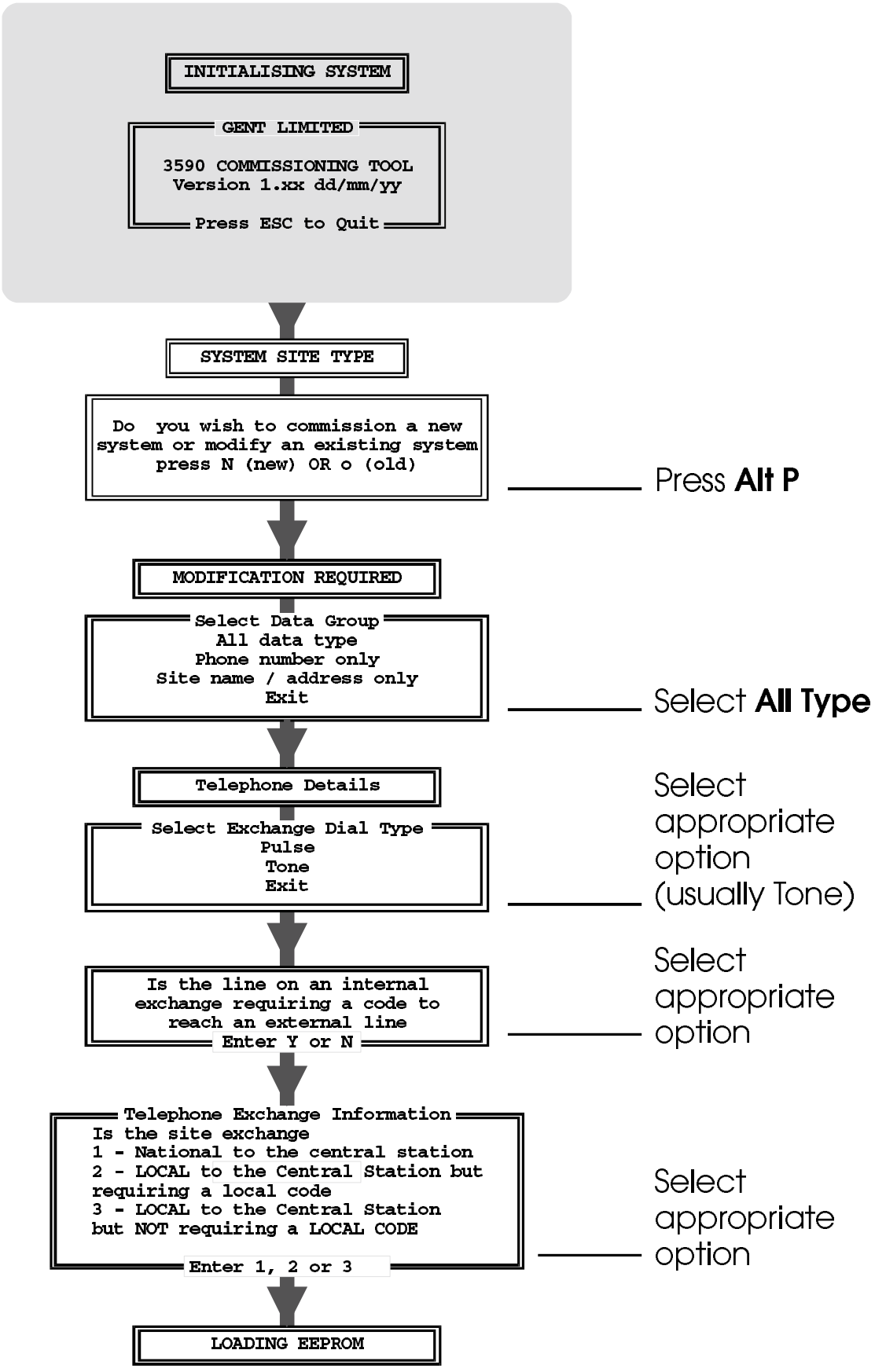
☐ Power-up the SRI unit and reset it by pressing **Reset button S1.** Wait for about 20 seconds and run the SRI software on the commissioning computer.

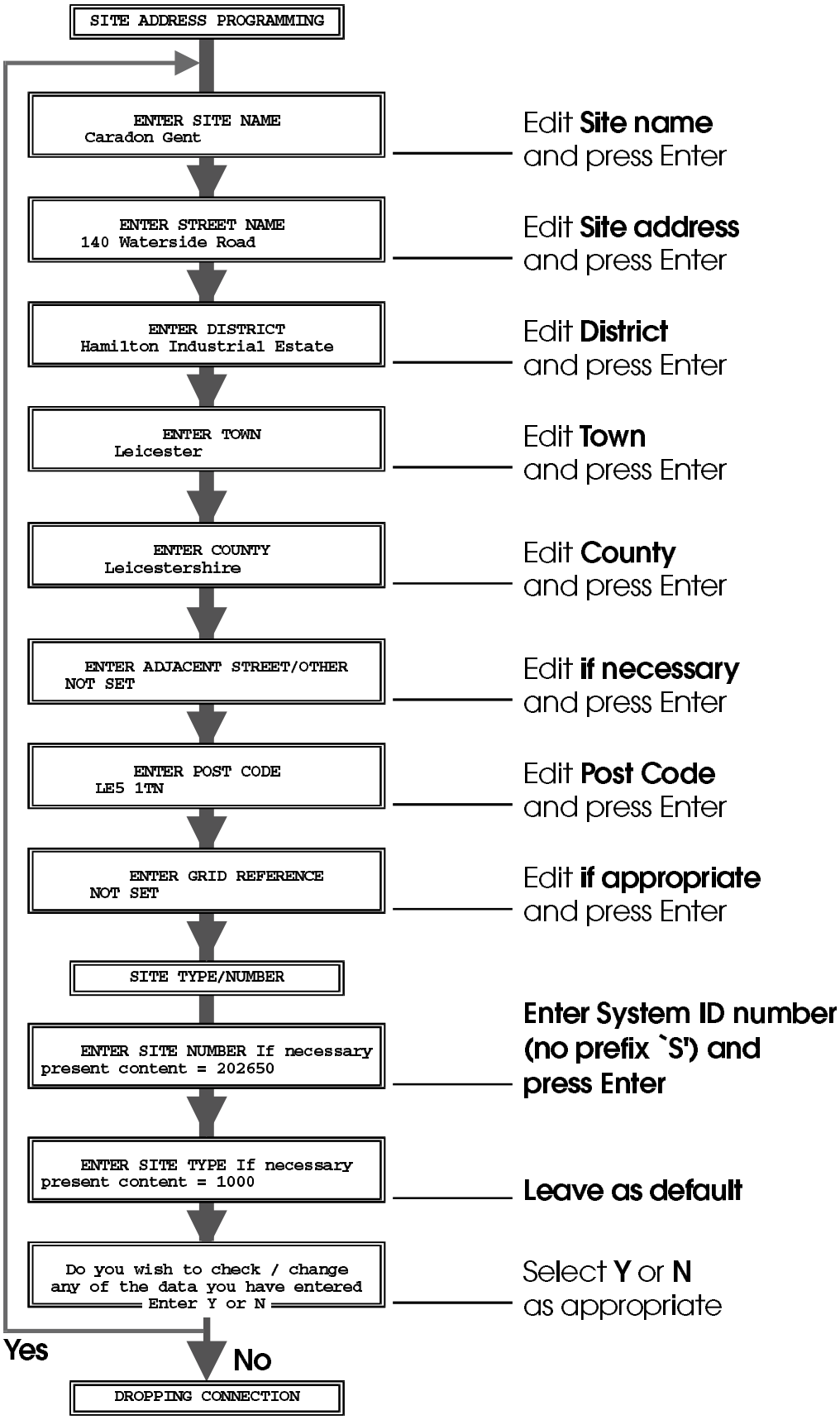


cdm306

Figure G-4 SRI Battery connection

Enter site specific data into the computer.





NOTE: Do not remove the lead between the SRI unit and the commissioning computer until connection has been fully dropped and the program reverts back to GentShell.

Error Messages

Message	Meaning	Possible Remedy
CONFIGURATION FILE MISSING OR CORRUPTED	The configuration file could not be opened.	Check that the file “sri_com.cfg” is present.
3590 SRI UNIT NOT FOUND	The SRI is not responding to an “IS NODE PRESENT” command	Check the wiring between the PC and the SRI, also check that the SRI is in commissioning mode press reset and retry
SRI EEPROM REPLY LENGTH INCORRECT	The length of a *general purpose buffer string* in a partial reply to the command ‘IDENTIFY SRI’ is incorrect	Check that the software versions of the PC and the SRI are compatible
INVALID PASSWORD	The password entered is not correct	Check with the **central station administrator** the correct password
SITE ALREADY COMMISSIONED	The SRI has already been set up	Confirm that the site has not already been commissioned. If it has not been previously set up, check that the software versions are compatible.
VERIFICATION FAILURE	A data field in the EEPROM has failed to verify its new contents	It is possible that the EEPROM is faulty. Replace the SRI board.
UNEXPECTED ERROR	This is an unexpected condition occurring in the program.	Note the error numbers displayed and report the error.

On completion

☐ Disconnect the computer from the SRI board and reconnect the **SRI modem to the SRI board.**

☐ Return **Link P14** on the SRI board to the factory setting.

SRI unit to the Central Station connection and test

- ☐ Ensure the **P14 and P15 are set to link pins 1-2** on the SRI board**.**
- ☐ Connect the SRI to the dedicated telephone line.
- ☐ Press the Reset button **S1** on the SRI board
- ☐ Ensure the panel / node has no fault events
- ☐ Introduce a fault at the control panel/terminal node, for example a battery fault or mains supply failure and check the central station is able to receive fault events. Remove the fault and wait for a call from the central station to confirm the restoration.

> ***NOTE:*** *If existing faults cannot be cleared from the panel then a fire event will need to be generated.*

- ☐ The central station administrator will then initiate a call to the SRI to verify connection.
- ☐ Contact the central station administrator to verify the connection.
- ☐ Upon satisfactory completion of the commissioning test, close the lid on the SRI unit, control panel or terminal node, ensuring that any earthing links are securely fitted.
- ☐ The Central station will now monitor the sites fire detection and alarm system.

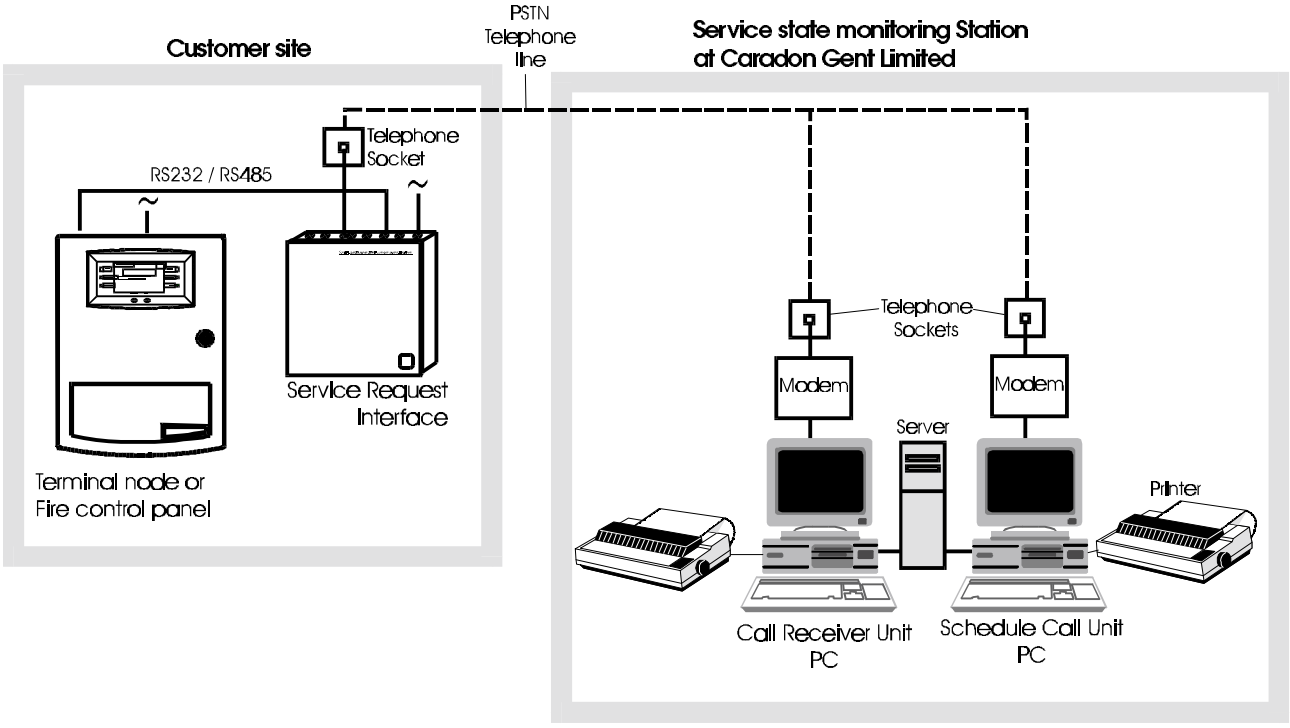


Figure G-5 Site to central station connections

cdmcd8m148

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Appendix G

Setting up the RS232/RS485 Converter Unit

An RS 232 / RS 485 converter unit may be required for connecting a Supervisor 3 to non Vigilon systems requiring a replacement Supervisor.

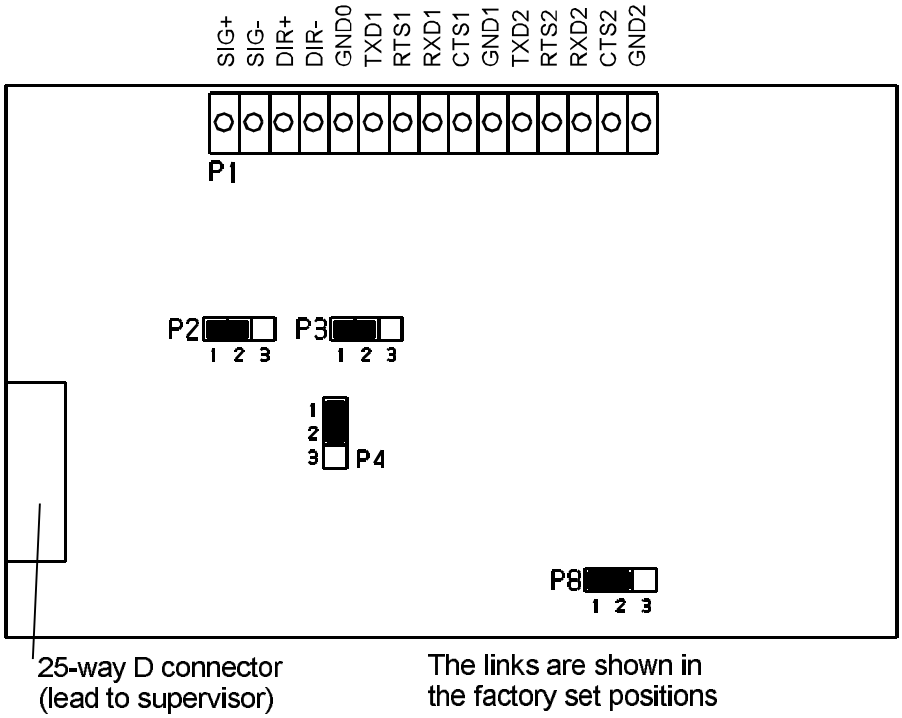

Figure H-1 RS232/485 converter board
cdm5

Link settings

- ❑ Set up the unit to operate in **RS232** or **RS485** communication format.

Link number	Function	Link position 1-2	Link position 2-3
P2	RS485 Direction termination	Connected	-
P3	RS485 Signal termination	Connected	-
P4	RS485 and/or RS232 Selection	Connected to provide RS485 + RS232	Connected to provide RS232 + RS232
P8	Commissioning Mode	De-selected	Selected

Mains supply

The converter unit will *re-boot* the *Supervisor 3 system*, when there is a failure of communication between the Supervisor and the panel/node, when P8 is set to selected.

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Appendix H -New backplane

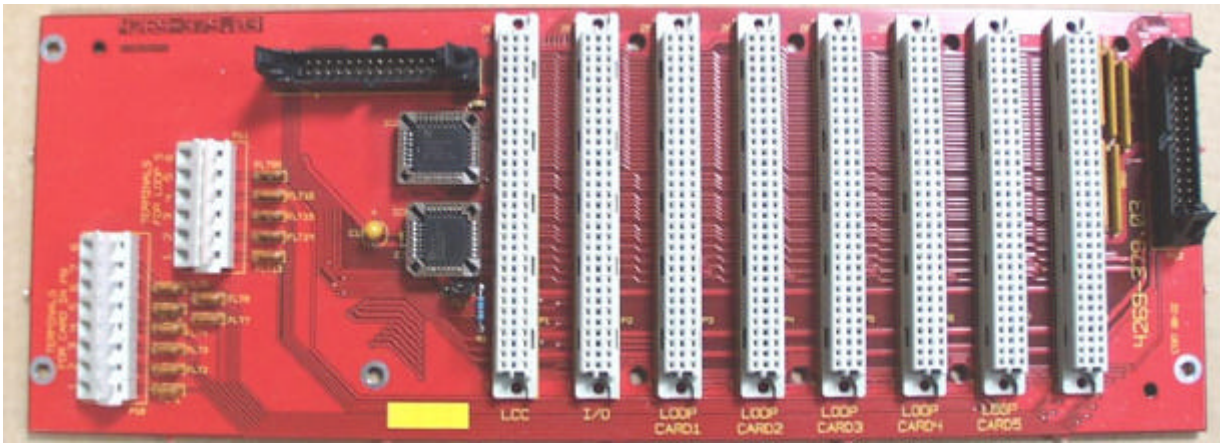


Figure H-1 The new backplane

jmpic3

From January 2000 a new backplane assembly is being introduced with memory on board and will be fitted as standard in the following panels:

- Vigilon Control panel (V3+ and V4 (EN54))
- 34000 Control panel (V3+)

This change removes the need for a separate, lithium battery backed, RAM card and creates a spare slot on the backplane.

The FLASH memory on the backplane assembly is not random read/write memory like battery backed RAM. Once a memory element has been written to it cannot be re-written to again until the whole FLASH memory chip is electrically erased.

Whenever configuration information is backed up the new data is stored in unused area of memory. Because a large FLASH chip has been used it is possible to perform at least 4 complete system backups before the FLASH memory becomes full. The exact number of backups depend on the number of loop cards installed in the panel

NOTE: *It will not be possible to recover earlier backups.*

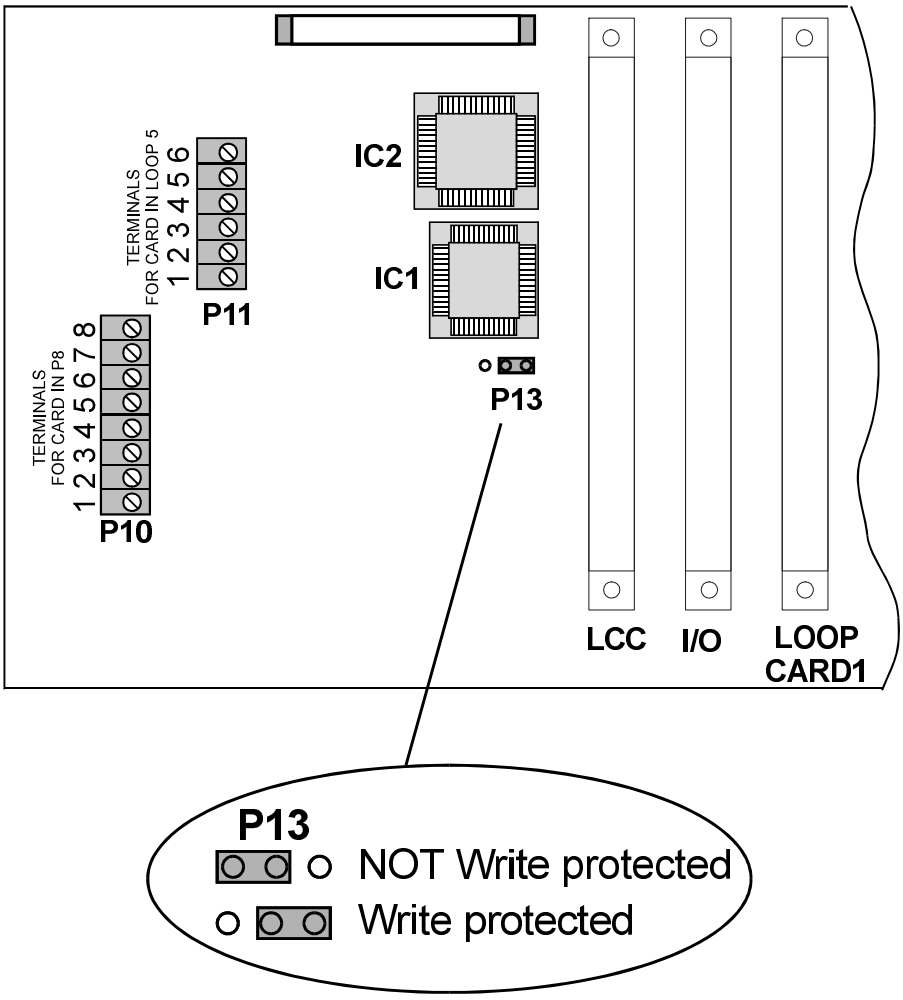
NOTE: *The spare card slot marked LOOP 5 must not be used to increase the loop capacity of the panel.*

Hardware and software write protect

Hardware write protect

A link header has been provided on the backplane within the control panel so that the FLASH memory can be write protected. When the header is in the write protect position it will stop SAVE and BACKUP commands from modifying the configuration memory. This link should be fitted on sites where customers require compliance to the EN54 Part 2 standard.

> ***CAUTION**: Do not attempt to write **hardware protect** while back up to the flash chip or initialisation of the memory is in progress.*



Software write protect

The software write protect feature [Protect] under the [Setup] menu will continue to provide a “soft” write protection on the FLASH memory.

Changes Menu options

Menu option description

The menu option **[RAM card**] under the **[Setup]** menu now reads **[NVM card]**, NVM stands for Non Volatile Memory.

> ***NOTE:*** *The FLASH memory always appears either at slot 14 (for Gent branded panels) and slot 13 (for Branded panels).*

A new menu command has been added that allows the FLASH memory to be erased. This is [Init NVM] and it is located within the [Test/Eng] menu. This command is normally hidden and can only be used when [Freeblok] are turned on.

> ***CAUTION:*** *Because there is a risk of losing configuration information initialisation operations should only normally be performed by qualified service engineers.*

Messages at the panel

Message	associated with..	meaning..	..possible action
`NVM is read only`	New Backplane (with memory)	user attempts to write to a hardware write protected NVM card	Remove the hardware write protect before writing
`No room on NVM card`	New Backplane (with memory)	user attempts to backup or save to an NVM card that does not have enough free space	If there is no memory left then the card slot 14 (Gent panel) or slot 13 for non Gent panels needs to be initialised

When the FLASH memory has been initialised the card status is shown as follows:

```
Card (0) Status 1.00 dd/mm/yy
512K bytes total. 64K bytes used.
Card: None   NVM is not write protected
```

> ***NOTE:*** *The 64Kbytes used is always required for storing card initialisation information.*

Compatibility & Upgrades

The Local Controller version required to support FLASH memory is:

- Version 3 - 3.66 or later
- Version 4 - 4.01 or later

Supervisor and comms tool

The Supervisor and all versions of Vigilon commissioning tools are compatible with the FLASH memory card.

Existing sites (LCC 3.66 OR LATER)

If an existing Vigilon site needs a replacement backplane the new backplane can be used. Once the new backplane has been installed it is possible to copy the configuration data from the existing RAM card to the FLASH memory using the [Backup] command. This results in a “NVM card X copied to card Y” message. The RAM card could then be removed.

Existing sites (LCC 3.66)

The RAM card is fitted in to the backplane as normal, because the flash memory is not used nor is it recgonised by the panel.

Vigilon system parts

Introduction

This section lists parts used in the Vigilon system. For further details on the availability of the parts, contact Gent Limited.

Control and indicating equipment

* - First fix products
Control Panels

VIG -1ST-FIX*	Control panel backbox + Battery box
VIG1 -V3+	Control panel (V3+) c/w 1 loop card
VIG1	Control panel c/w 1 loop card (EN54)
VIG2 -V3+	Control panel (V3+) c/w 2 loop cards
VIG2	Control panel c/w 2 loop cards (EN54)
VIG3 -V3+	Control panel (V3+) c/w 3 loop cards
VIG3	Control panel c/w 3 loop cards (EN54)
VIG4 -V3+	Control panel (V3+) c/w 4 loop cards
VIG4	Control panel c/w 4 loop cards (EN54)
VIG1-NET -V3+	Control panel (V3+) c/w 1 loop card and Network card
VIG1-NET	Control panel c/w 1 loop card and Network card (EN54)
VIG2 -NET-V3+	Control panel (V3+) c/w 2 loop cards and Network card
VIG2 -NET	Control panel c/w 2 loop cards and Network card (EN54)
VIG3 -NET-V3+	Control panel (V3+) c/w 3 loop cards and Network card
VIG3 -NET	Control panel c/w 3 loop cards and Network card (EN54)
VIG4 -NET-V3+	Control panel (V3+) c/w 4 loop cards and Network card

	VIG4 -NET	Control panel c/w 4 loop cards and Network card (EN54)

> ***NOTE:*** *The VIG-1ST-FIX part is common to all variants of Vigilon control panels, (including the Terminal Node). This means that to order a Vigilon control panel it will be necessary to order two parts, e.g the common part plus VIGx-V3+* ***or*** *VIGx-NET_V3+ where x =1,2,3 or 4.*

Control panel software	VIG-SOFT-COIN	Coincidence detection
	VIG-SOFT-INFO	Site wide fire information
Control panel accessories	VIG-FLUSH	Control panel flush surround
	VIG-RACK	Control panel 19" Rack mounting bracket
	VIG-WR-CASE	Control panel weather resistant case
Terminal Node	VIG-NODE-V3+	Terminal node (V3+)
	VIG-NODE	Terminal node (EN54)
Repeat panel	VIG-RPT-1ST-FIX	Repeat Panel Backbox
	VIG-RPT-V3+	Repeat panel (V3+)
	VIG-RPT	Repeat panel (EN54)

> ***NOTE:*** *The VIG-RPT-1ST-FIX part is common to the two variants of the Vigilon repeat panels. This means that to order a Vigilon repeat panel it will be necessary to order two parts, e.g the common part plus VIG-RPT or VIG-RPT-V3+.*

Repeat panel accessories	VIG-RPT-FLUSH	Repeat panel Flush Surround
	VIG-RPT-WR-CASE	Repeat panel Weather Resistant Case
Mimic panels	VIG-MIM	Mimic panel c/w drawing
	VIG-ZONE	Zonal mimic panel
	VIG-MIM-A4	A4 Mimic Panel
	VIG-ZONE-A4	A4 Zonal Mimic Panel
Spares	VIG-BATT	Spare control panel battery pack
	VIG-BATT-RPT	Spare repeat/mimic panel battery pack
	VIG-PAPER	Spare printer roll Mtp 401

Extra cards

VIG-LCC-V3+	Local controller card (V3+)
VIG-LCC	Local controller card (EN54)
VIG-LCC-NOD	Local controller card for Terminal node (EN54)
VIG-LCC-NOD-V3+	Local Controller Card for Terminal node (V3+)
VIG-LPC-V3+	Loop Card (V3+)
VIG-LPC	Loop Card (EN54)
VIG-RAM	RAM Card
VIG-NC-V3+	Network card (V3+)
VIG-NC	Network card (EN54)
VIG-IOC-V3+	Input/Output card (V3+)
VIG-IOC	Input/Output card (EN54)
VIG-IOC-DOM	Domain Bridge Input/Output Card (EN54)
TBA	Domain Bridge Input/Output Card (V3+)
VIG-IOC-SLV-V3+	Slave Input/Output Card (for Terminal Node)
VIG-IOC-UNI-V3+	Universal Communications Input/Output card (V3+)
VIG-IOC-UNI	Universal Communications Input/Output card (EN54)
VIG-IOC-UFD	Universal Communication Input/Output Card Full Duplex (EN54)
VIG-IOC-UFD-V3+	Universal Communication Input/Output Card Full Duplex (V3+)
VIG-IOC-PRT-V3+	Remote printer input/output card (V3+)
VIG-IOC-PRT	Remote printer input/output card (EN54)

Sensors and Accessories

Sensors

VIG-SEN-OH	Optical heat sensor
19271-01	Optical chamber
VIG-SEN-OH-RL	Optical heat sensor with Remote LED connection
VIG-REM-LED	Remote LED for VIG-SEN-OH-RL
VIG-SEN-OH-ML	Optical heat sensor with monitored line MCP connection

	VIG-SEN-OHS	Optical heat sensor sounder
	19271-01	Optical chamber
	VIG-SEN-HS	Heat sounder
	19274-01	Heat sounder chamber
	VIG-SEN-H	Heat sensor
	19272-01	Heat chamber
	VIG-SEN-I	Ionisation sensor
	19273-01	Ionisation chamber
	VIG-SEN-H-EP	Environmentally protected Heat sensor
	VIG-BEAM	Beam sensor pair
	VIG-BEAM-ANG	Angle bracket with base for Beam
	VIG-BEAM-ANG-IP	IP66 Angle bracket with base for Beam
	VIG-BEAM-PAR	Parallel bracket with base for Beam
	07012-31	Conventional Flame detector
	VIG-SEN-DUCT	Duct sensor (inc 17908-05 Probes & VIG-SLV-LED Slave LED unit)
Tools	17918-22	Sensor chamber Extractor cup
	17918-23	Optical chamber electronics module removal tool
	17918-24	Ionisation chamber electronics module removal tool
	17918-25	Heat sensor electronics module removal tool
	17918-26	Sensor removal tool kit
Terminal Plate	VIG-SEN-TERM	Terminal plate 3-way
	VIG-SEN-TERM-4	Terminal plate 4-way
	19279-01	Semi-flush sensor mounting kit
	07700-21	Base for Conventional flame detector
T Breaker and Slaves	VIG-T	T breaker Unit
	VIG-SLV-LED	Slave LED unit
	VIG-SLV-RLY	Slave Relay unit

Alarm sounders

VIG-SND	Sounder
VIG-SND-T	Sounder T-Breaker

	VIG-SND-T-EP	Environmentally protected Sounder T-Breaker
	VIG-SND-RPT	Repeat sounder (VIG-SEN-TERM required)

Manual call points (MCP) 2-way

	VIG-MCP	Surface mounted MCP
	VIG-MCP-KEY	Surface mounted MCP keyswitch
	VIG-MCP-CVR	Surface mounted MCP with cover
	VIG-MCP-WR	Surface mounted MCP water resistant
	19289-01	MCP flush fixing plate
	VIG-MCP-WR-CVR	Surface mounted water resistant MCP with cover
	VIG-MCP-EP	Environmentally protected surface mounted MCP
Spares	13480-09	Spare MCP glasses 10 pack for LPCB approved
	14112-09GR	Spare MCP glasses 10 pack non LPCB approved

Interfaces

Mains powered	VIG-INT-MAINS	Mains powered fire alarm interface
	19104-52	Power relay (for mains powered interface) (up to 4 maximum can be used - supplied with base and diode)
4- Channel Loop powered	VIG-INT-LOOP	Loop powered fire alarm interface
	19245-05	Interface line module -up to 4 can be fitted in a loop powered fire alarm interface
	VIG-INT-KEY	4 way keyswitch **door** for loop powered interface
	VIG-INT-FE	Loop powered fire alarm interface (Fixed extinguishing)
1- Channel Loop powered	VIG-INT-ZONE	Loop powered zone module
	VIG-INT-1CH	Single Channel Interface (Loop Powered)
	19245-05	Interface line module

Rack	VIG-RACK-BOX	Rack interface back box
	VIG-RACK	Rack interface (19" Rack mounting)
	VIG-RACK-DOOR	Interface rack door (for Keyswitches)
	VIG-RACK-TERM	Line/Terminal module 4-way
	VIG-RACK-PCB	Interface rack PCB 4-way
Keyswitches	19245-02	2 position keyswitch assembly (for use with optional interface doors)
	19245-03	3-position keyswitch assembly (for use with optional interface doors)
	13445-40	Interface card (loop powered) (up to 10 used in 13445-05 rack interface)
Power supply Unit	19245-06	Power supply unit with 1 relay (for use with loop powered interface unit)
	19245-07	Mains relay (up to 4 for use with 19245-06 unit)
Fix Extinguishant	VIG-INT-FE	Loop powered fixed extinguishant interface

Manuals & Accessories

VIG-MAN-INS	Vigilon Installation manual
VIG-MAN-OPS-V3+	Vigilon Operator's Manual (V3+)
VIG-MAN-OPS	Vigilon Operator's Manual (EN54)
VIG-MAN-APP	Vigilon Applications Manual (EN54 and V3+)
VIG-MAN-COM	Vigilon Commissioning Manual (EN54 and V3+)
13563-011	GENT Supervisor Operator's Manual (for V3+ only)

GENT Supervisor

13563-10	Supervisor Text computer
13563-11	Supervisor Graphic II computer
13563-10T '	Supervisor Text Computer (Tower)
13563-11T	Supervisor Graphics 2 Computer (Tower)

> ***NOTE:*** *The Gent Supervisor graphics software requires custom graphics pages.*

Text software	13565-01	Supervisor Information mode software
	13565-04	Supervisor Configuration mode software
Graphics software	13566-05	Supervisor Text (information)/Graphics II software
	13566-06	Supervisor Text (Configuration)/Graphics II software
	13563-09	Supervisor Text/Graphics II software Upgrade
Accessories	13563-03	Supervisor Text Printer
	13563-04	Supervisor Graphics Printer
	13563-05	Supervisor Light pen
	4214-006	Fan fold paper (for 13563-03)
	4214-054	A4 paper 5 reams (for 13563-04)

UPS / Converter / Compactor

13547-14	Uninterrupted power supply 600VA (70 minutes standby)
13547-15	Uninterrupted power supply 400VA (55 minutes standby)
13563-02	Supervisor Converter/Splitter unit (RS232/RS485)
13548-03	RS232 Compactor unit (1 to 8 - RS232)
13563-01	Supervisor Modem (pairs)

Printer

13563-03	Supervisor Printer For Text Package
13563-04	Supervisor Printer For Graphic Package

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