

SYSTEM 3400

(with 34000 Devices)

ANALOGUE ADDRESSABLE FIRE DETECTION AND ALARM SYSTEM

Commissioning Manual

Version 3.4X
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Pre-visit checks

Control panel power-up

Interface & panel OS

Address allocation

Loop tests

Beam Alignment

Outstation checks

Sensor states

Labeller/configurer

Mimic configurer

Installed equipment tests

Network power-up

GENT Supervisor

Modem

Appendices

Parts list

Preface

The update issue 2.1 of the Commissioning manual contains information on the Service Request Interface. The second issue contained single channel interface, loop powered zone module, beam sensor, A4 Mimic panel and version 3.4 upgrade, plus updates to the commissioning tools.

This first issue covered products compatible with version 3.3X 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

- 13499-22 Applications Manual for System 3400 (with 34000 devices)
- 13499-23 Installation Manual for System 3400 (with 34000 devices)
- 13499-26 Operating Manual for System 3400 (with 34000 devices)
- 13563-011 GENT Supervisor Operator's 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	2	3/97	This second issue covers Commissioning of system 3400 (with 34000 devices) and network system 3500 products that are compatible with version 3.4X software, plus additional products Update pages issue 2.1 contain information on the Service Request Interface Unit
1 to 14	2	3/97	
App: B	1	4/96	
App: A,C,D,E & F	2	3/97	
App: G	2.1	10/98	
Parts	2	3/97	
Phone			

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Customer feedback

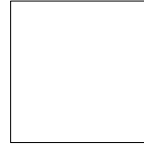
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Pre-visit checks

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
 - Labeller configurer preparation
 - Mimic configurer preparation
 - GENT Supervisor preparation
 - Importing a graphics project.
- 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.
- 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 referred to in this document are compatible with version 3.3X software. It is important to check the appropriate card and chips show the correct software version.

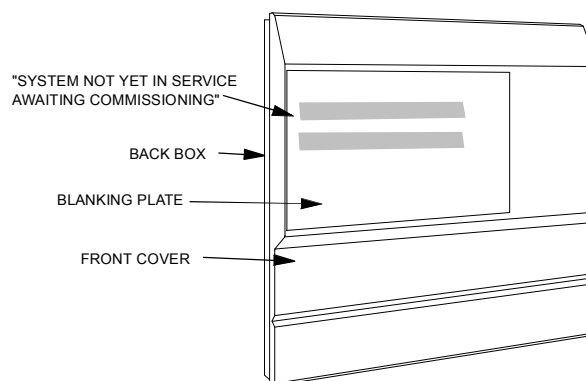
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Control panel power-up

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

Panel assembly

Figure 2-1 Panel (1-4 Loop) awaiting commissioning



f1210

- 1-4 loop panel (13404-XXXX)** Remove the *front cover* from the *backbox*. Remove the *blanking plate* from the front cover. The inner box is supplied with:

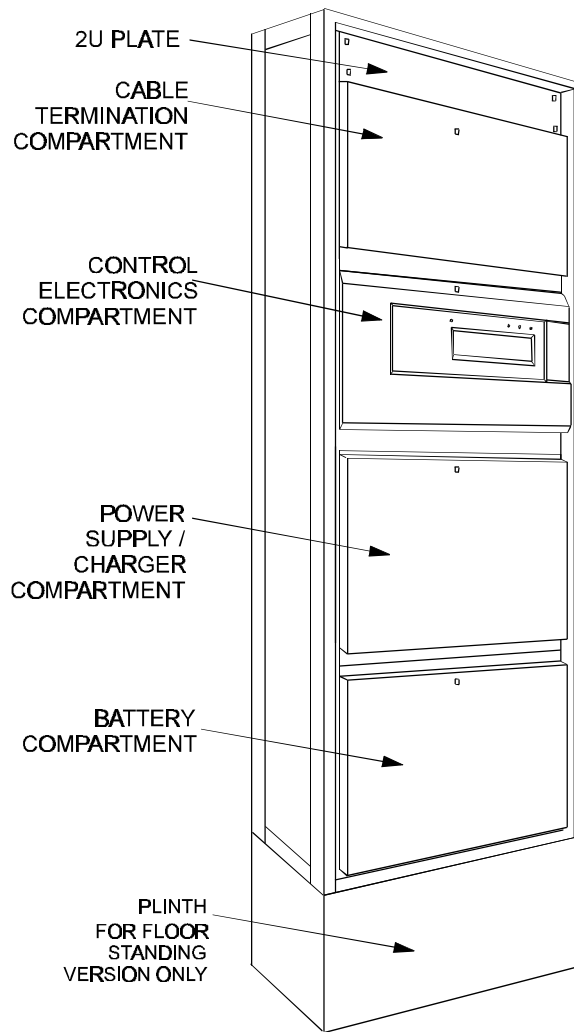
Component	Quantity
Moulded door	1
Battery cable assemblies	2
Battery links	4
Thumb nuts	2
Dzus studs	4
Screws	2
Shakeproof washers	4
Log book	1
Resistor 2K2	2

- Fit the *inner box* to the back box, using the *thumbnuts plus shakeproof washers* and *posi-screws plus shakeproof washers* to secure the inner box assembly.

NOTE: The moulded silver door may be fitted when appropriate.

- Route the *5 off 10way ribbon cable assemblies* through the top of inner box and connect to the corresponding sockets of the *terminal cards* in the backbox.
- Remove the *power supply cover* held by two securing screws.
- Route the *1 off 20-way ribbon cable* through the top of the power supply part of the inner box and connect it to the *right hand terminal card*.
- Connect the mains cable to the terminal located behind a cover fitted on top side of the inner box.

Figure 2-2 Panel (1-8 Loop) assembly



f1211

1-8 loop panel (13408-XXXX)

- Fit *2U plate* to the panel backbox. Fit it to the top for top cable entries and to the bottom for bottom cable entries.
- The *four compartments* should be fitted to the backbox using the fixings supplied.

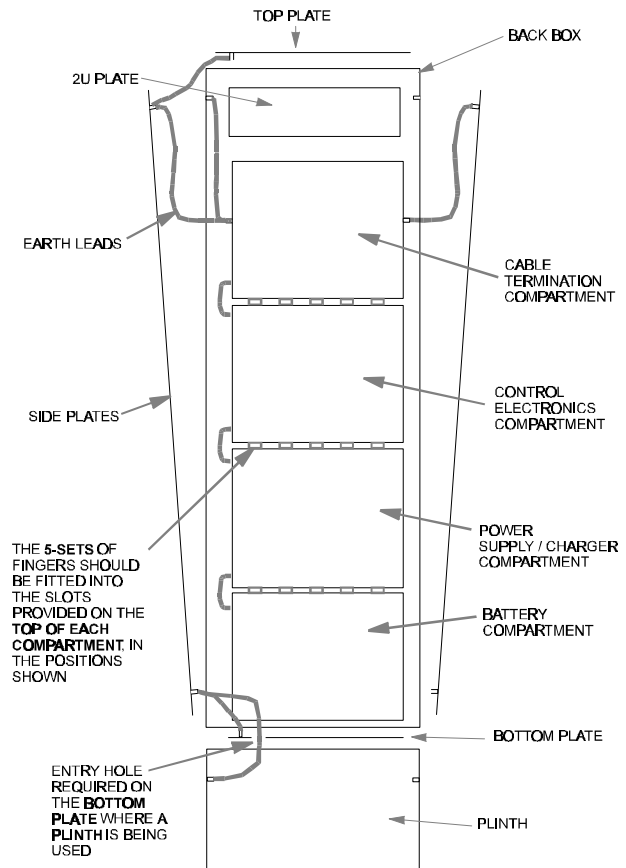
CAUTION: Ensure there is no damage to the copper fingers fitted to the compartments.

- The silver moulded door may be fitted when appropriate.
- Route the *two ribbon cables* upwards from the *power supply compartment* through the holes in the metalwork into the *control electronics compartment*.
- Connect the ribbon cable plugs to the appropriate sockets on the *card-backplane* and the *terminal board*.
- Feed the **three ribbon cables** through the *control electronics compartment* into the *termination compartment*, to make connection between the filter board and terminal board.

Install the earth leads

- The earth leads supplied with the control panel should be connected to the panel enclosure.

Figure 2-3 Earth lead connections to 1-8 loop panel



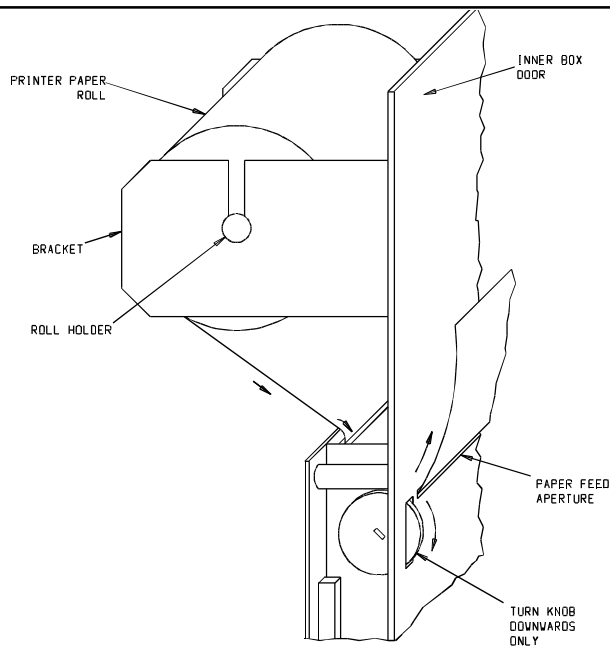
f1212

Install the printer paper

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

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

Figure 2-4 Paper feed



f1171

Card Slot & Socket Positions

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.

NOTE: The cards, slots and socket numbers that are used on the backplane have been revised.

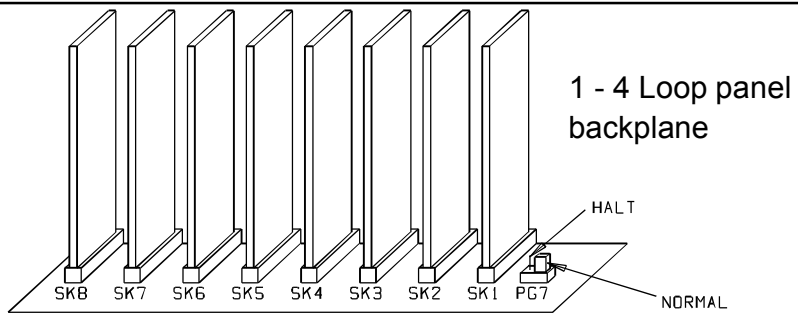
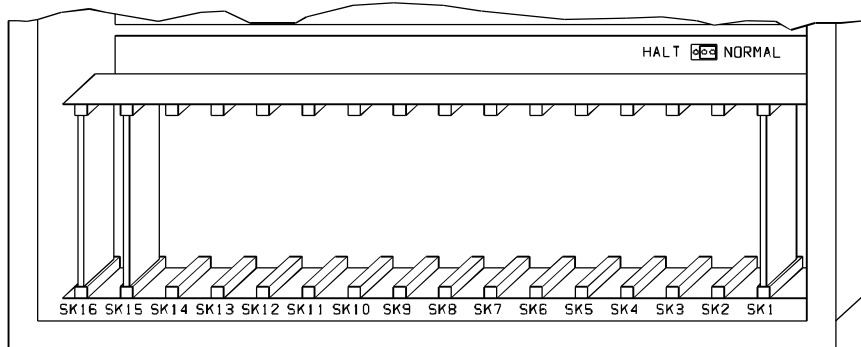


Figure 2-5 Panel backplane



f1240

Card type	4-loop control panel		8-loop control panel	
	Socket No	Card or slot No	Socket No	Card or Slot No
Local controller card (LCC) only	1	0	1	0
Input Output card (IOC) the standard one only	2	15	2	15
Loop processor card (LPC) only	3-6	1-4	3-10	1-8
Network card (or any card except LCC & LPC)	7	5	11-14	9-12
Random access memory card (RAM Card or Memory card)	8	6	15	13

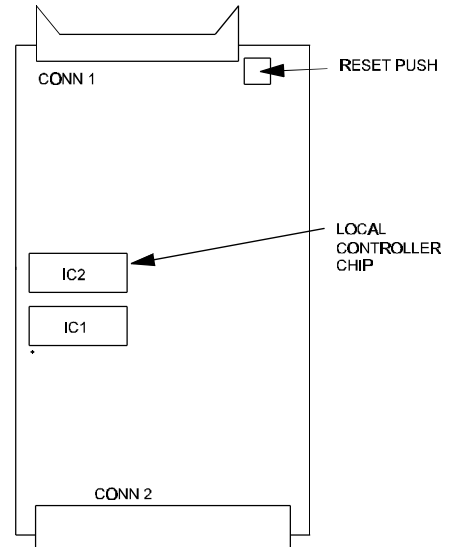
CAUTION: When installing the cards into a backplane, always use anti-static work procedures.

WARNING: Do not use antistatic procedures on live equipment.

- Ensure all cards are firmly seated into the respective socket.

Local controller card (LCC)

Figure 2-6 LCC card main components

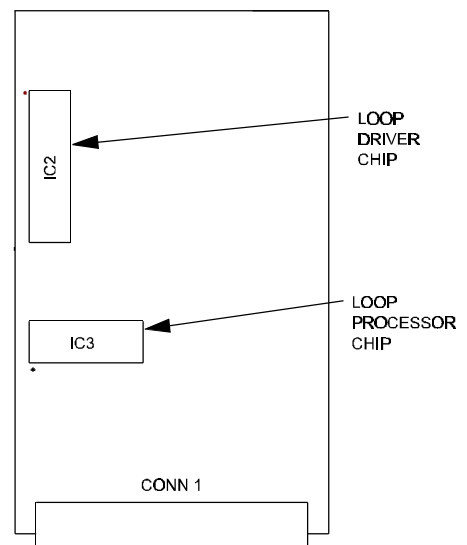


fl213

- Ensure IC2 holds the correct version of *local controller* software.
- The connector CONN 1 accepts a 40-way plug on a ribbon cable from the Display and keyboard card (DKC).
- The *reset push* button SW1 when pressed, provides a *warm reset* to all the cards in a control panel.

Loop processor card (LPC)

Figure 2-7 LPC card main components

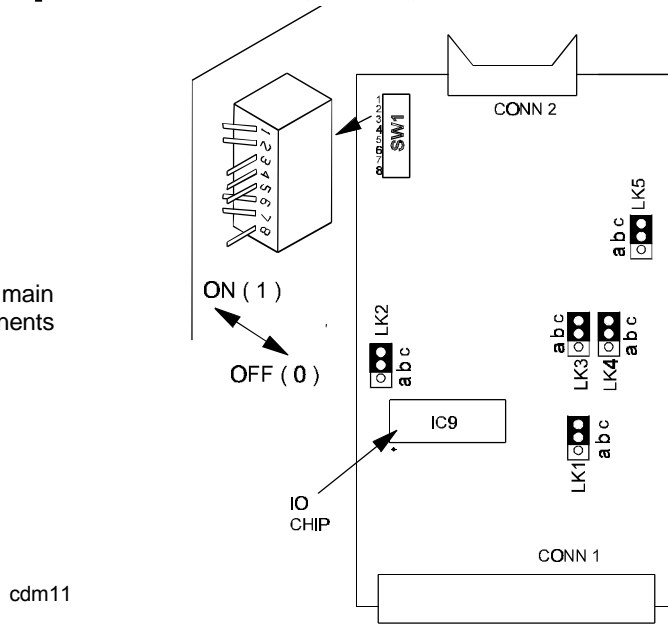


cdm12

- Ensure IC2 and IC3 holds the correct version of *loop driver and loop processor* software.

Input Output cards (IOC)

Figure 2-8 IO card main components



- Ensure IC9 holds the correct version of *input output* software.
- The connector CONN 2 accept a 20-way plug on a ribbon cable from the Display and keyboard card (DKC).
- Only **one** optional IOC can be fitted into a spare slot of the panel.

IOC options:

IO Card	fitted in	To facilitate connection of
Standard	Control panel	GENT Supervisor Commissioning computer
Universal	Control panel	Trend system
Graphics	Control panel	Graphic terminal
Printer	Control panel	Remote printer
Slave	Terminal node	GENT Supervisor and Master terminal

Link configuration

- 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	a-b b-c	RS485 RS232
LK4	a-b b-c	RS485 RS232
LK5	a-b b-c	RS485 RS232

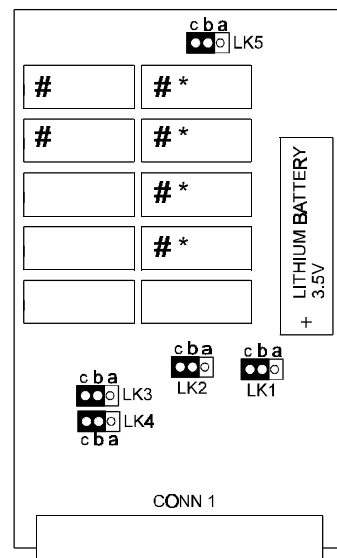
Dual in line switches

The IOC is factory set for 9600 baud with address 6.

Baud rate	Switch number			Switch number					Local controller (panel) address
	1	2	3	4	5	6	7	8	
1200	off	off	off	off	off	off	off	on	1
1800	off	off	on	off	off	off	on	off	2
2400	off	on	off	off	off	off	on	on	3
3600	off	on	on	off	off	on	off	off	4
4800	on	off	off	off	off	on	off	on	5
7200	on	off	on	off	off	on	on	off	6
9600	on	on	off	off	off	on	on	on	7
19200	on	on	on	on	on	on	on	on	up to 31

Random access memory card

Figure 2-9 RAM card main components



cdm13

FITTED TO THE LARGE CAPACITY RAM CARD
 * FITTED TO THE SMALL CAPACITY RAM CARD

Also referred to as RAM card or Memory card.

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

Connect the battery

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.

Card options

RAM card Option	Size	for use with
small capacity	128Kbyte	4-loop panel
large capacity	192Kbyte	8-loop panel

Link Configuration

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 on the IOC 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 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

- Locate the batteries inside the control panel enclosure or in an external enclosure where larger standby is required.
- Install the cable harness.

NOTE: Do not make the final connection to the batteries until the mains supply is powered-up, see Powering-up control panel section in this manual.

1 - 4 Loop panel with 24 hours standby

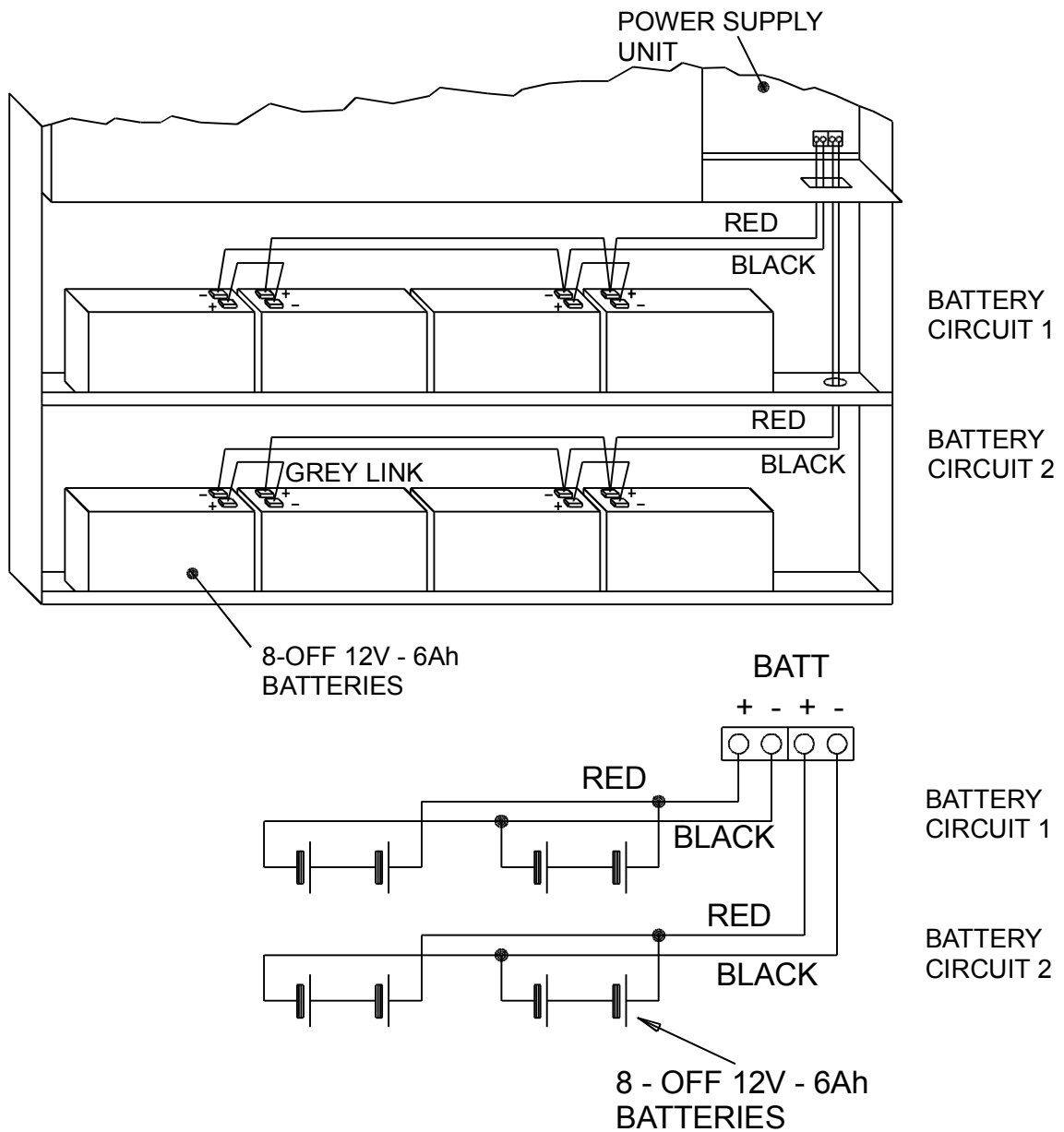


Figure 2-10 Batteries inside a 1 - 4 Loop panel
fl217

1 - 8 Loop
panel with 24
hours standby

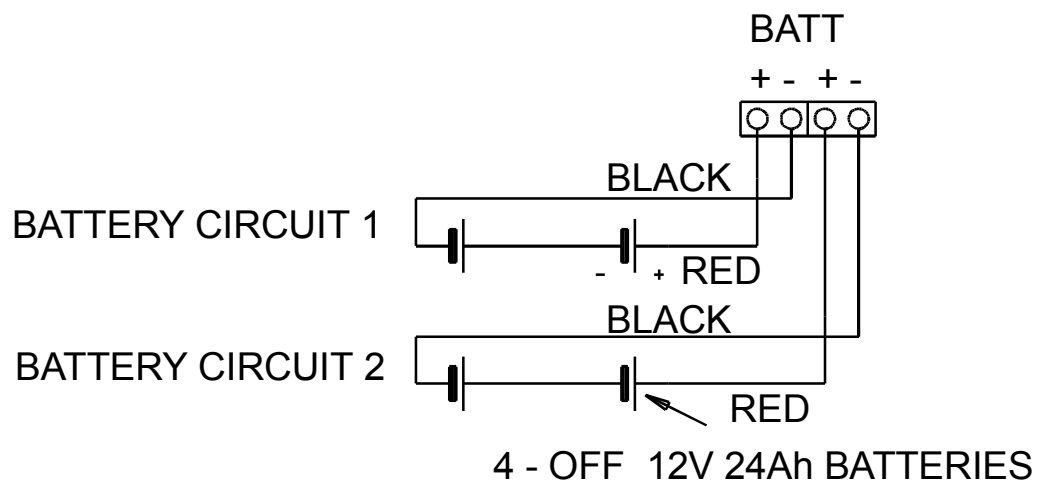
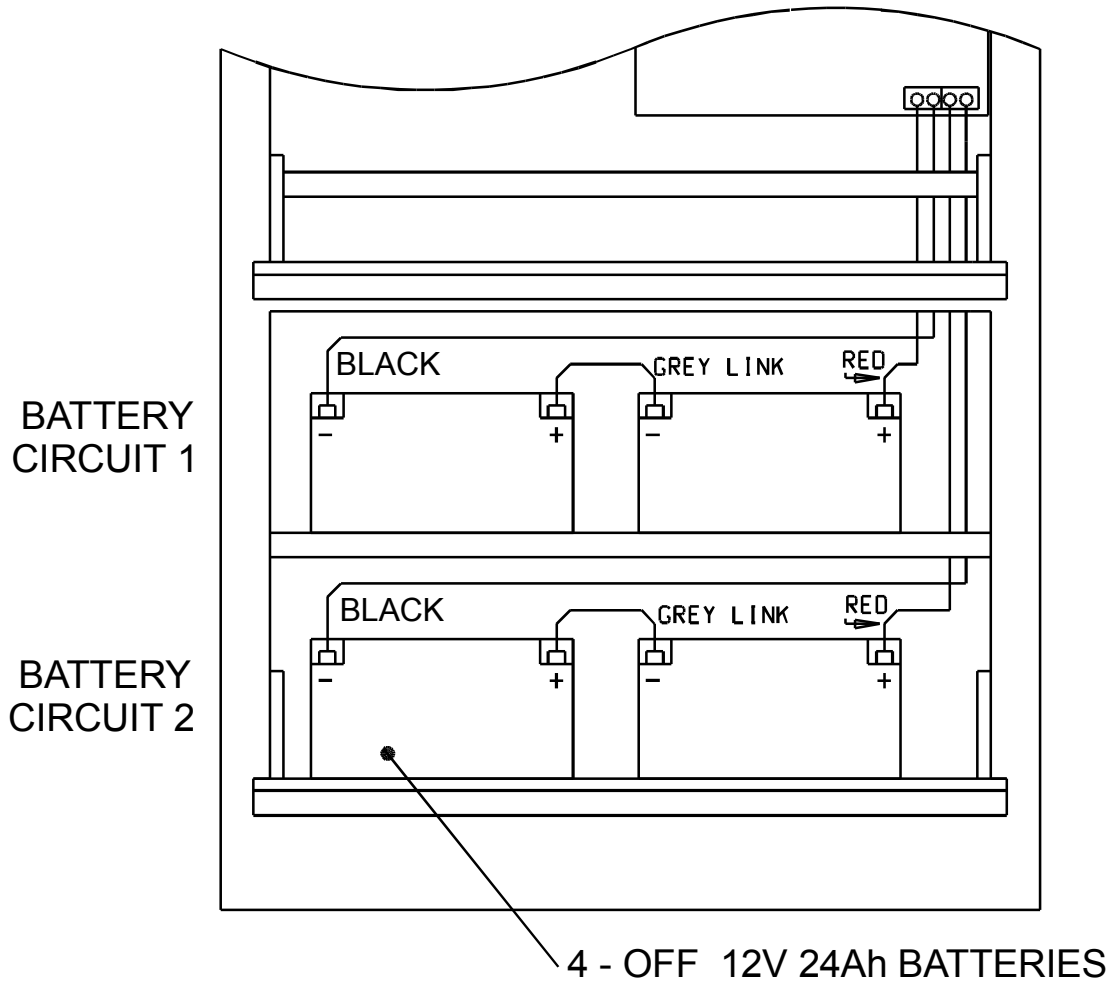


Figure 2-11 Batteries inside a 1 - 8 Loop panel
fi218

72 Hour standby battery supply

- To achieve 72 hours standby the following arrangements should be used. Where the cable length from the *battery cubicle / 5216 power supply / charger* and *control panel* should not exceed **20 metres**.

Power cables

- Power cables must be 4mm² MICC or flexible cable with mechanical shield i.e. conduit. Termination should be made into a connector which feeds the respective PCB with 2.5mm² cores. Keep the length of 2.5mm² cable as short as possible.

1 - 4 Loop panel with 72 hours standby

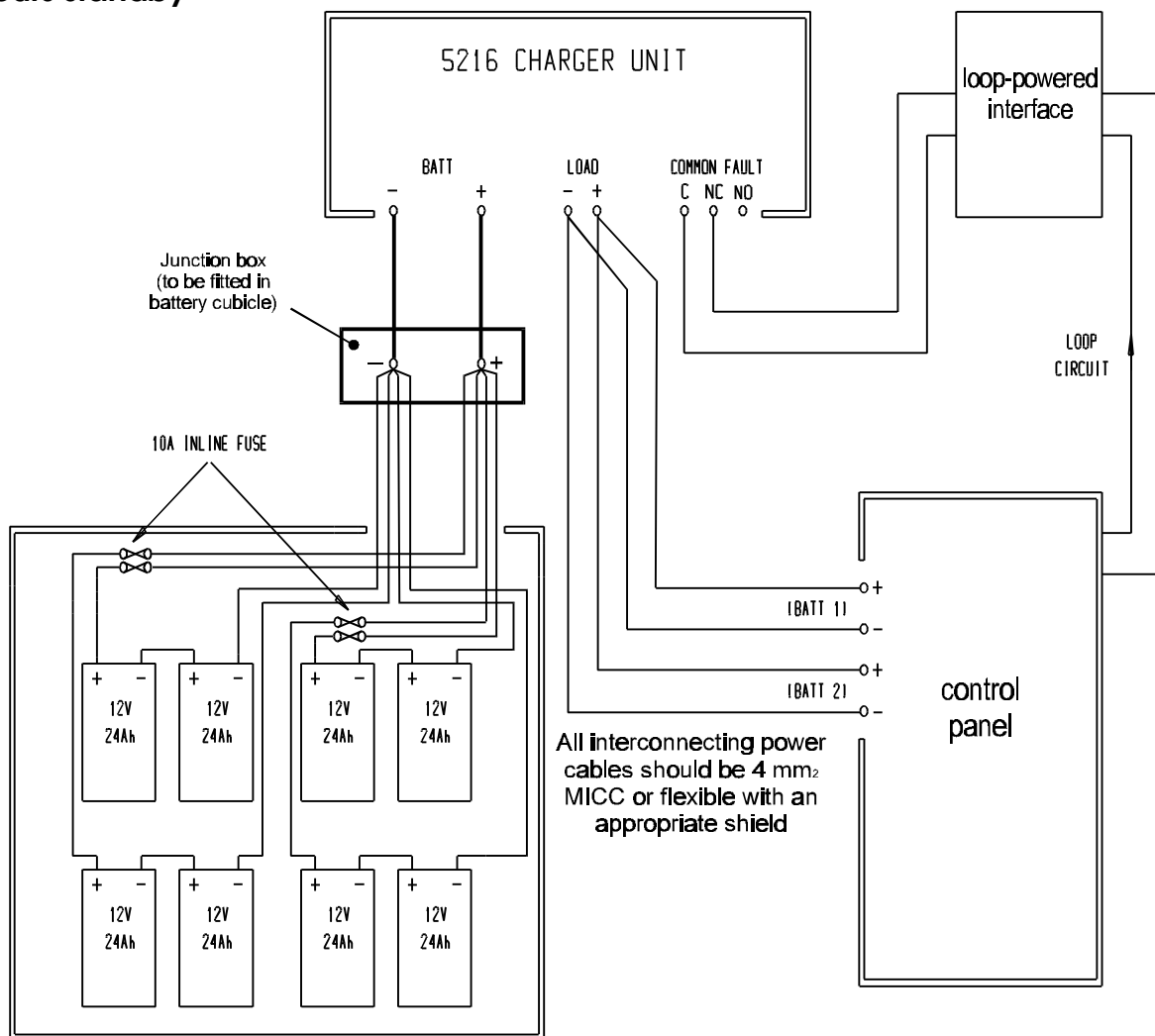


Figure 2-12 External batteries for 1 - 4 Loop panel
cd37

Modification to MKIII PSU

- Open the **control panel power supply cover** to gain access to the **power supply board**. Cut out resistors **R92, R96, R57 and R56** on the board, located near the bottom on either side of the heat sink.

Interface input

- A *5216 power supply / charger* fault can be signalled to the 3400 system. This signal is sent to a *loop powered interface* input. The input channel should be labelled **Check External Batteries**. The *control panel to charger* wiring is therefore also fault monitored.

NOTE: The original batteries supplied with the Control Panel as standard are not required.

1 - 8 Loop panel with 72 hours standby

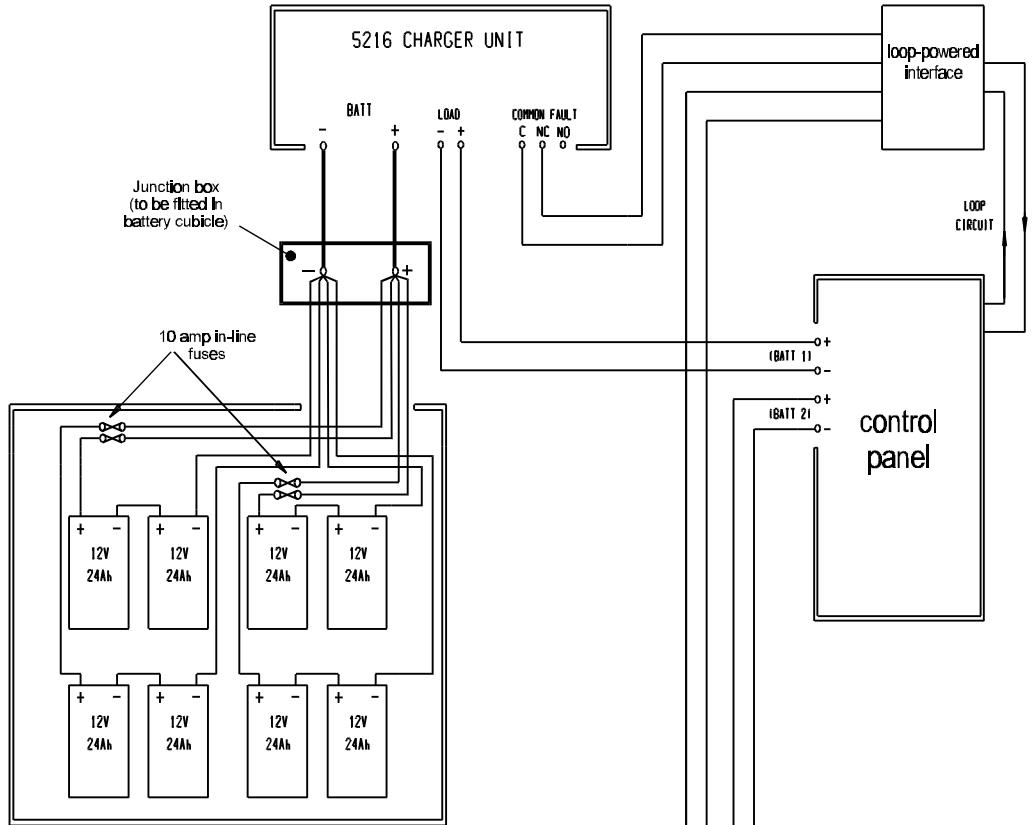
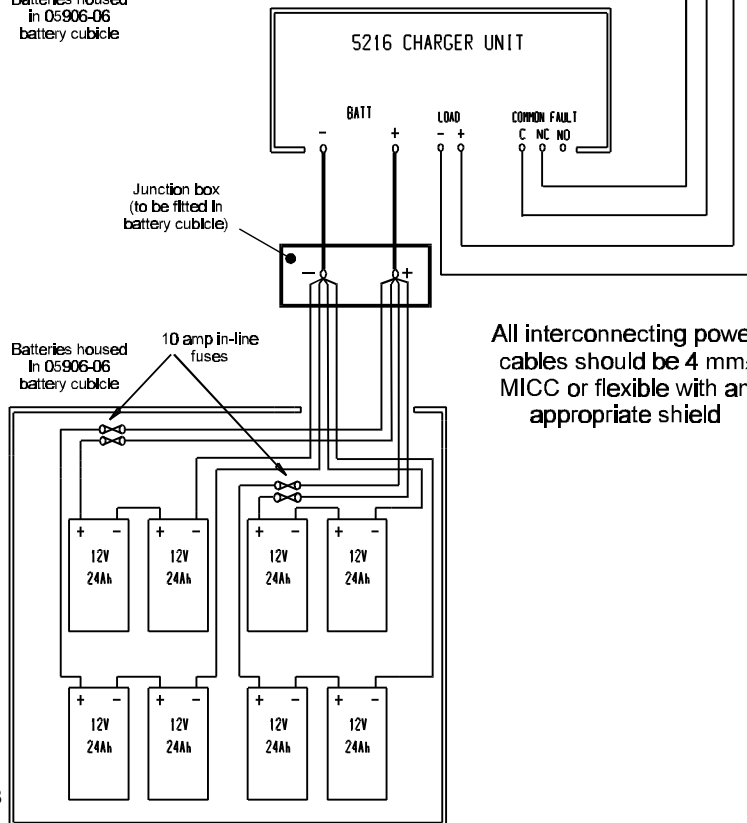


Figure 2-13 External batteries for 1-8 Loop panel

Batteries housed in 05906-06 battery cubicle



All interconnecting power cables should be 4 mm² MICC or flexible with an appropriate shield

cd38

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 light flashes. The warning light changes to steady indication when the power green light is lit.
- the display provides the following messages:

```
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 allocation, see message action list part of this manual.

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

Menu Maps

- See Appendix A

Initial control panel tests

- Display** Test the display using the [**Disp Test**] facility in the [**Test/Eng**] menu. All the lights and buzzer (including Backlight) will remain on for a short duration.
- Clock** Set up the time and date using the [**Set Clock**] facility in the [**Set Up**] menu.
- Printer** Test the printer using the [**Printer**] facility in the [**Control**] menu.
- Power** Test the panel mains and battery supply by carrying out a temporary disconnection. Ensure indications are given of disconnection and reconnection.
- Master alarms** Check indications are given of master alarm open and short circuit tests.

How to set up password access

A passwords restricts access to controls at the control panel:

- SECURITY - access is the door key.
- ENGINEERING - PASSWORD 1
- CUSTOMER - PASSWORD 2
- Engineers password changes daily and is for servicing org. use only.

NOTE: The **Engineering password** will provide the same access to the menu commands as that available with the **Engineers password**.

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

To set up an Engineering password

- the engineering password is for customers site engineering person, who is responsible for the fire alarm system.

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

To set up a Customer password

- The customer password provides access to restricted menu options that cannot alter the configuration of the system.

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

Interface and panel outstations

It is important to prepare *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.

34440 (Mains powered) Fire alarm interface unit

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

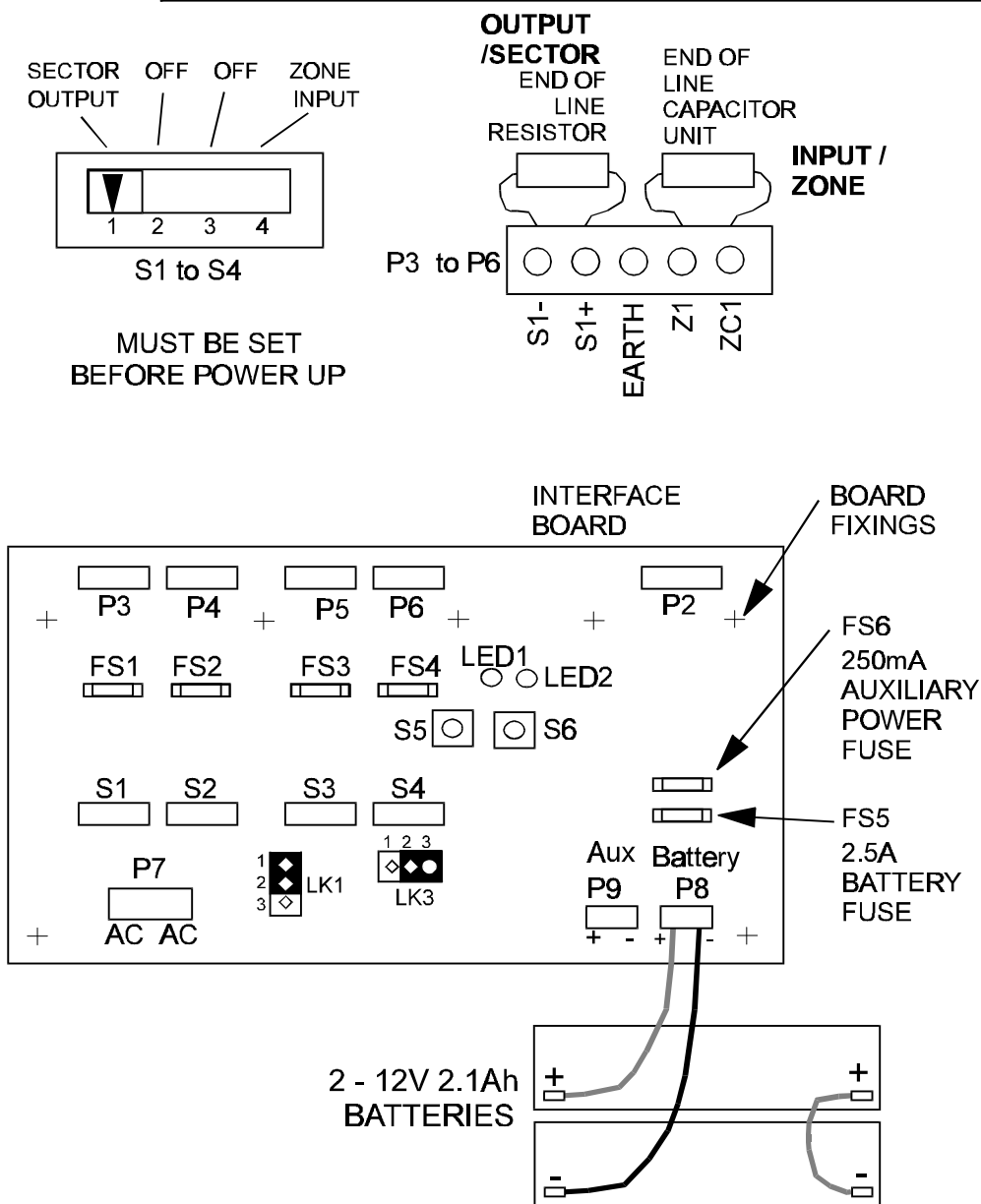


Figure 3-1 Interface board connections
cdn34

Ratings

Zone (input)	24V nominal 2mA maximum	LINK	POSITION	MEANING
Sector (output)	24V nominal 500mA maximum (500mA total for all sectors)	LK1	1 - 2 #	Normal zone voltage
Auxiliary power output	24V nominal 250mA maximum	LK1	2 - 3	Low zone voltage 'Reduces the zone voltage by 4V for Thorn detectors'
LED1 (green)	When lit it indicates local mains power is healthy	LK3	1 - 2#	Fail safe disable
LED2 (yellow)	When lit it indicates communication with loop circuit has failed	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 for 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.

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 located inside the interface unit enclosure.

- Connect the mains supply and power-up the unit, notice that LED1 and LED2 will be 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** 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	7600 range		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	7600 range		1-2	whole range
7	Gent	7600 range		1-2	whole range
8	Gent	7600 range		1-2	whole range
9	Gent	7600 range		1-2	whole range
A	Gent	7600 range		1-2	whole range
B	Gent	7600 range		1-2	whole range
C	Gent	7600 range		1-2	whole range
D	Gent	7600 range		1-2	whole range
E	Gent	7600 range		1-2	whole range
F	Gent	7600 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 3400 system will not be able to differentiate between a fire from a call point or detector.

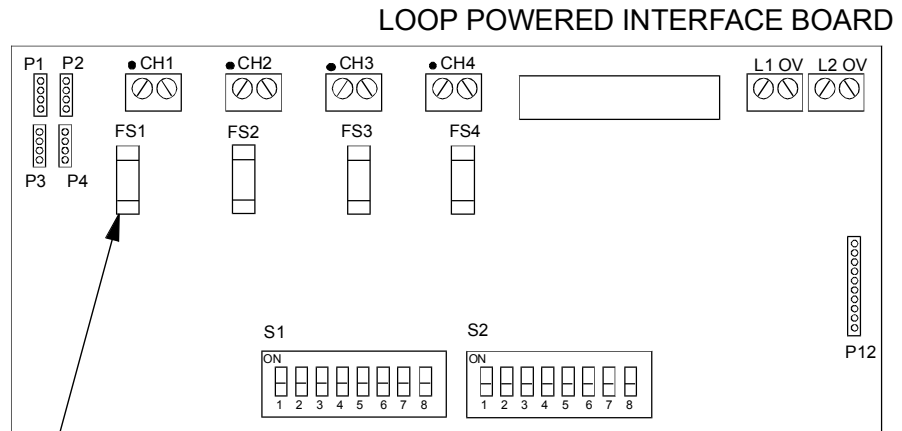
IO Line tests

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

34450 (Loop powered) Fire alarm interface unit

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

Figure 3-2 Mains interface & line-module boards



FS1 to FS4 ARE ALL 100mA

f1220

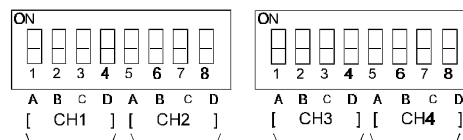
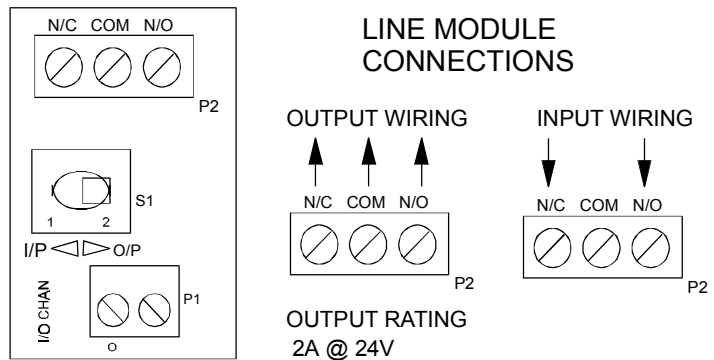


Figure 3-3 Switch settings

f1221

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	-

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 if required 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 connection of line modules in remote locations and 19245-06 power supply input output lines.

IO line test

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

19245-06 Power supply unit (with relay)

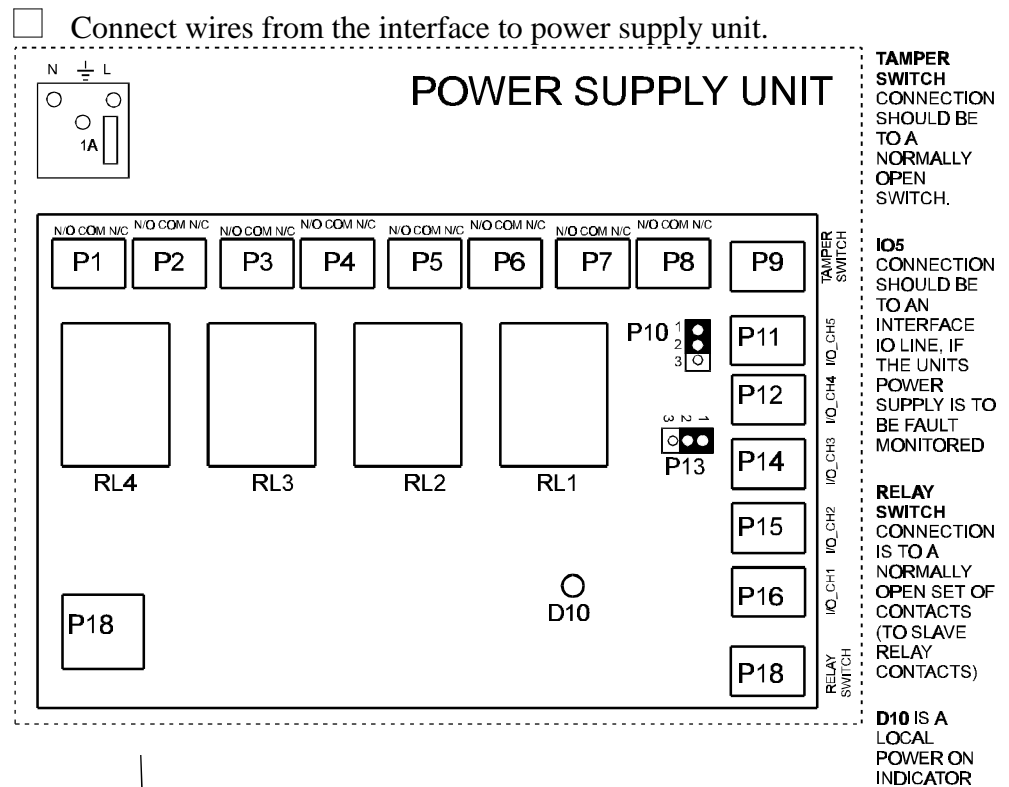
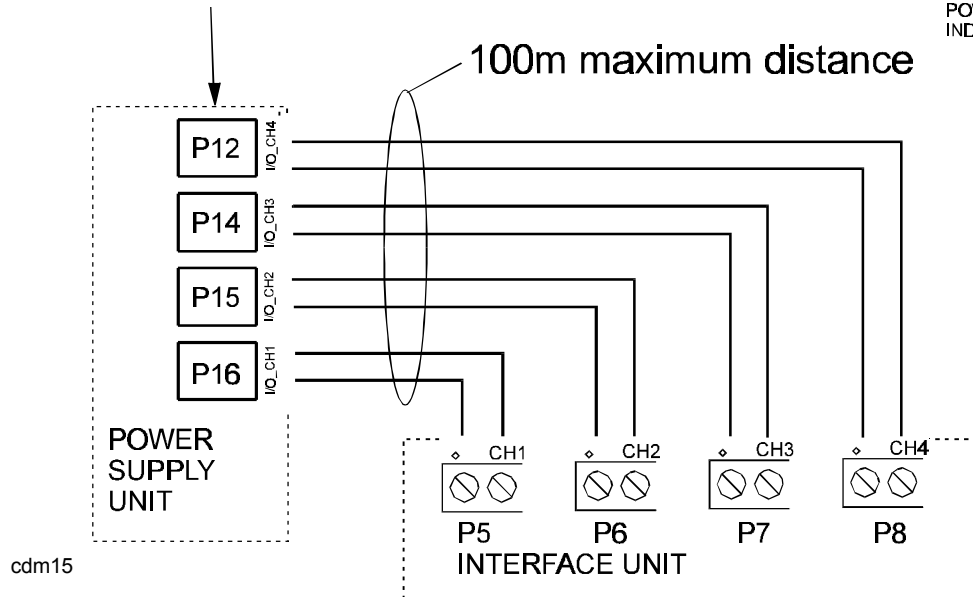


Figure 3-4 Interface to PSU board connections



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 allocation stage.

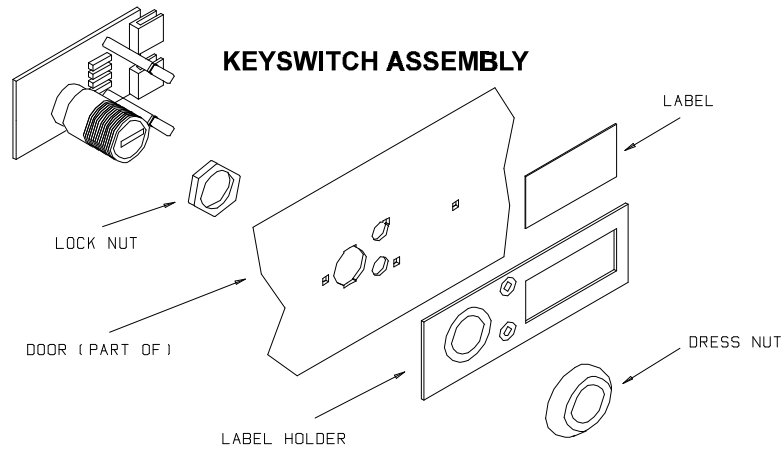
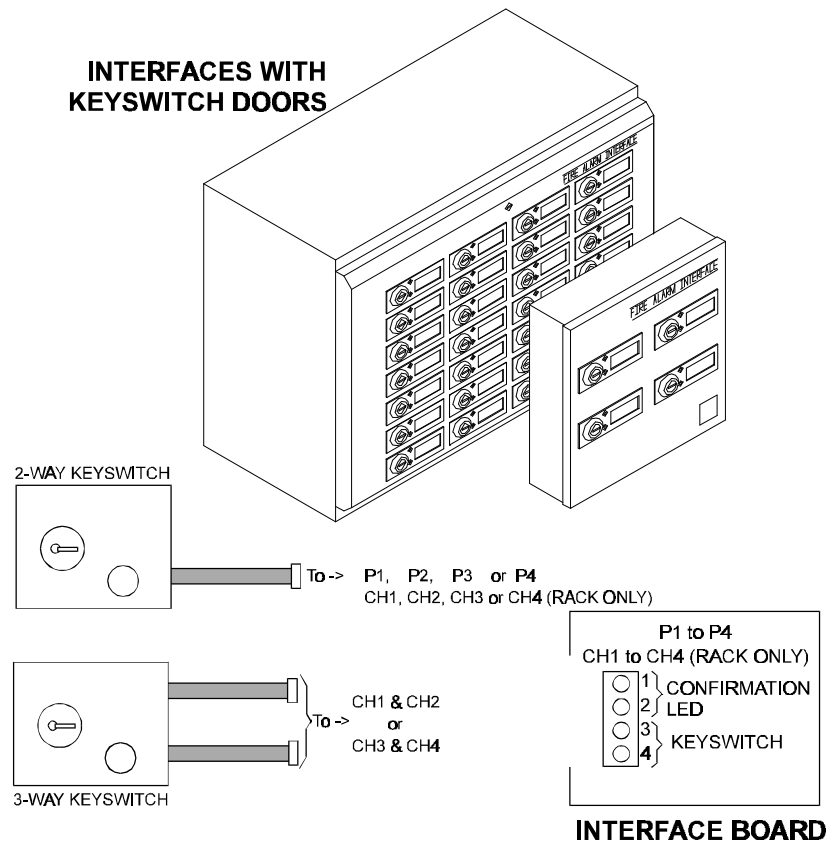
- Link settings** Configuring the links P10 and P13

Link	Position	Function
P13	1-2	<p>A <i>mains fault</i> on the <i>power supply unit</i> can be monitored via I/O_CH4 channel 4.</p> <p>If all IO lines are being used then a channel 4 will monitor dual faults, mains failure of <i>power supply unit</i> as well as IO line failure.</p>
P10 plus P13	2-3 plus 2-3	The local power supply unit is fault monitored via I/O-CH5 terminals
P10	1-2	A normally open tamper switch can be monitored via I/O-CH5. The I/O-CH5 should then 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

INTERFACES WITH KEYSWITCH DOORS



f1223

Figure 3-5 keyswitch interface doors

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

- Remove the appropriate *blanking plates* from the door.
- Fit the keyswitch, *lock nut*, *label holder* and *dress-nut* to the door.
- Exchange the interface door
- Fit the wires from keyswitch to connectors P1 - P4 or CH1-CH4 (Rack only) located on the interface board.

13445-05 Interface rack unit

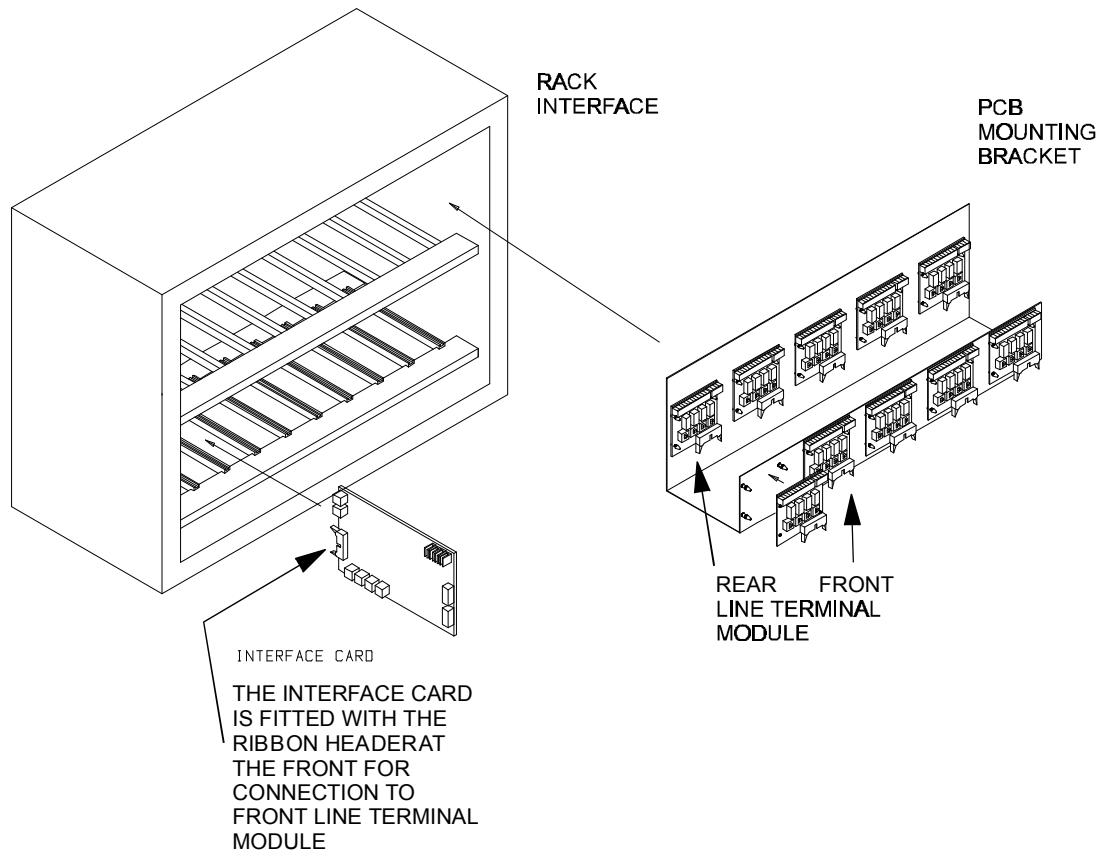


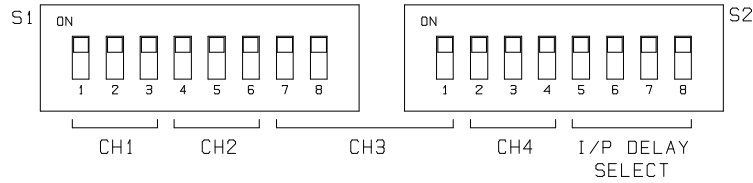
Figure 3-6 Rack interface board assembly

f1296

- 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 modules 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 do not become trapped.
- Set the switches S1 and S2. Note the switches are configured differently to that in the loop powered interface unit.

Figure 3-7 DIL switches on rack interface board

fl224



Channel → Switch No→	Switch S1 → <- Switch S2 →				Mode
	CH1 1 2 3	CH2 4 5 6	CH3 7 8 1	CH4 2 3 4	
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

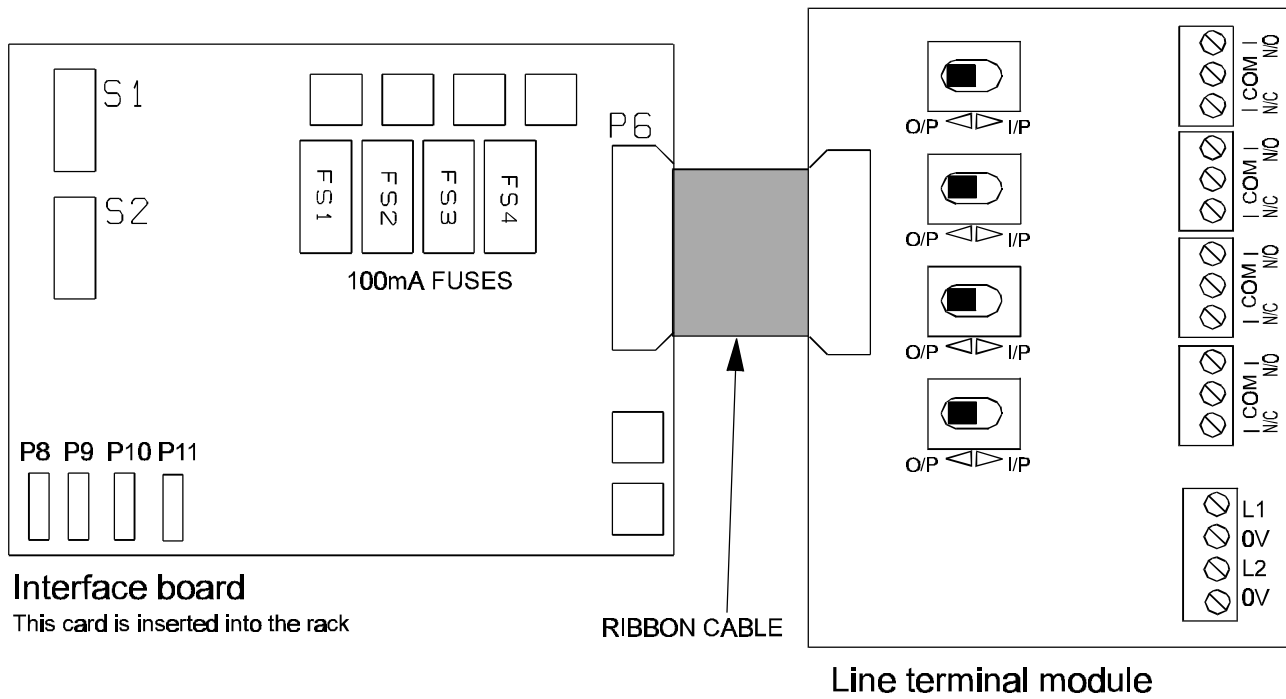
Switch S2 No →	5 6 7 8	Channel No	Delay
	0 0 0 0	All	No delay
	0 0 0 1	CH1	10 seconds
	0 0 1 0	CH2	10 seconds
	0 1 0 0	CH3	10 seconds
	1 0 0 0	CH4	10 seconds

- Partially insert 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 cards to **either** the respective *line-terminal module or keyswitch*. Then fully insert the interface card into the 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

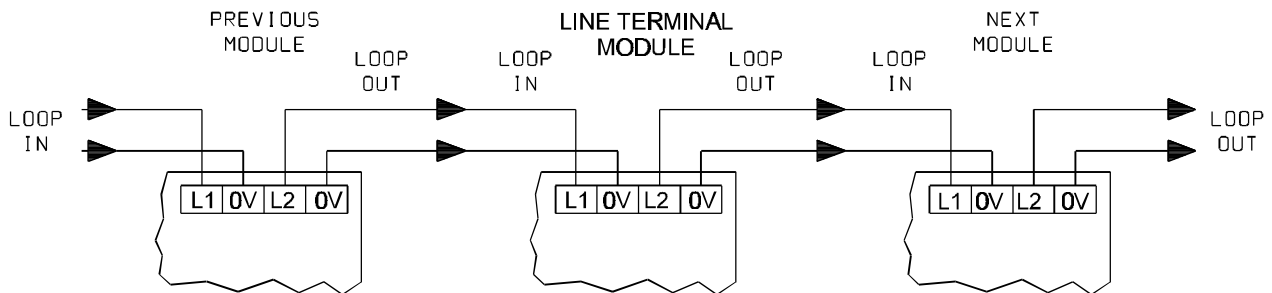


Figure 3-8 Rack interface and line terminal module

cdm16

Tests

Interfaced equipment test

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

Keyswitches Tests

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

34460 Fixed extinguishant interface unit (Loop powered)

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 connection are made then the valuable extinguishant may be inadvertently release.*

- 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 3-9 Interface to extinguishant panel connection

TBA

13450-XXXX Repeat panel

With or without the printer and keyboard option.

Connect the mains supply. The terminals are located inside the inner box of the repeat panel.

Power-up the panel 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 is on for a short duration
- a battery disconnected message appears
- the display shows:

MAIN PANEL OFF LINE

Connect the battery supply to the panel.

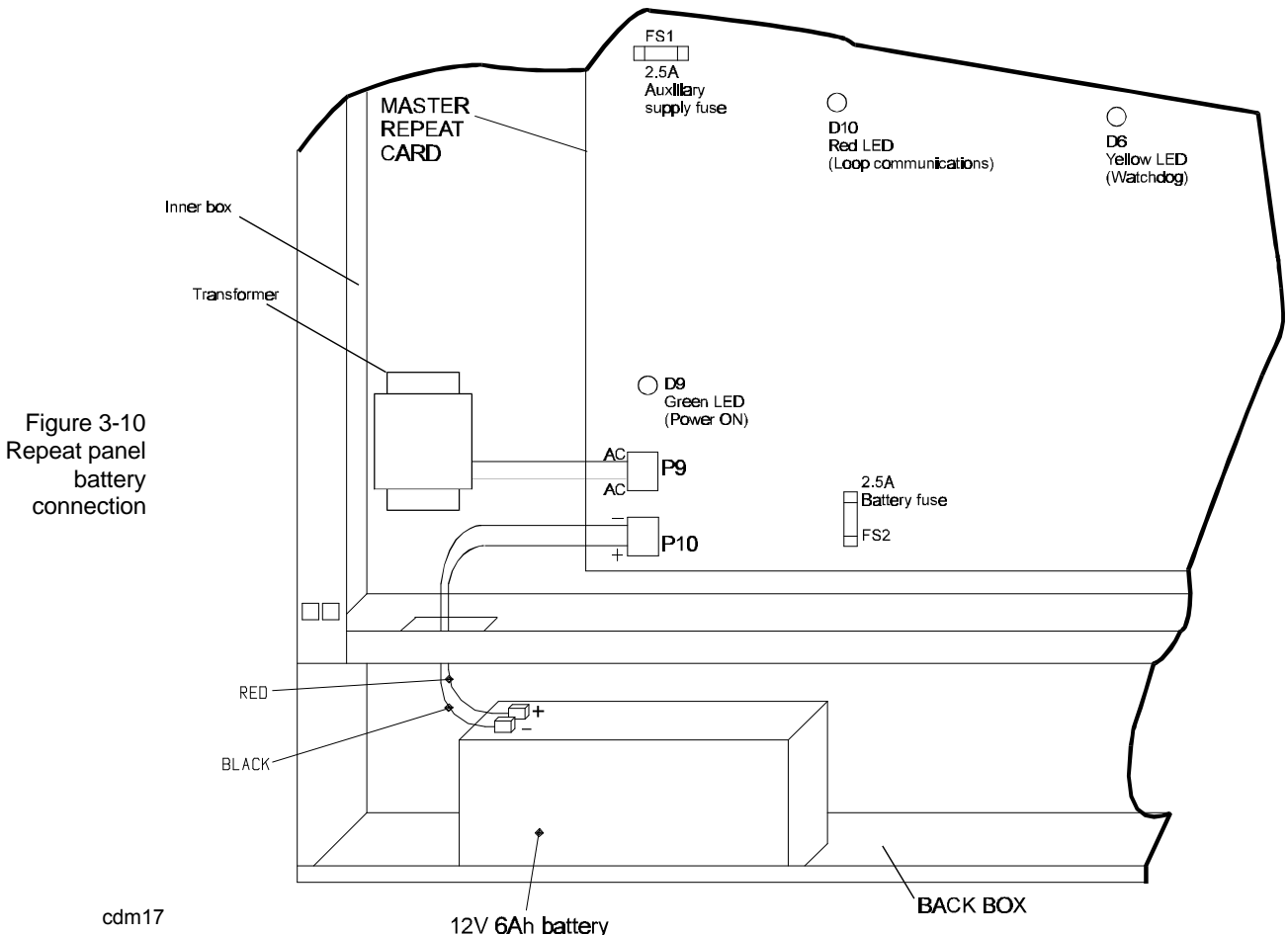


Figure 3-10 Repeat panel battery connection

cdm17

See Appendix A for the menu map.

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

13460-XXXX 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.

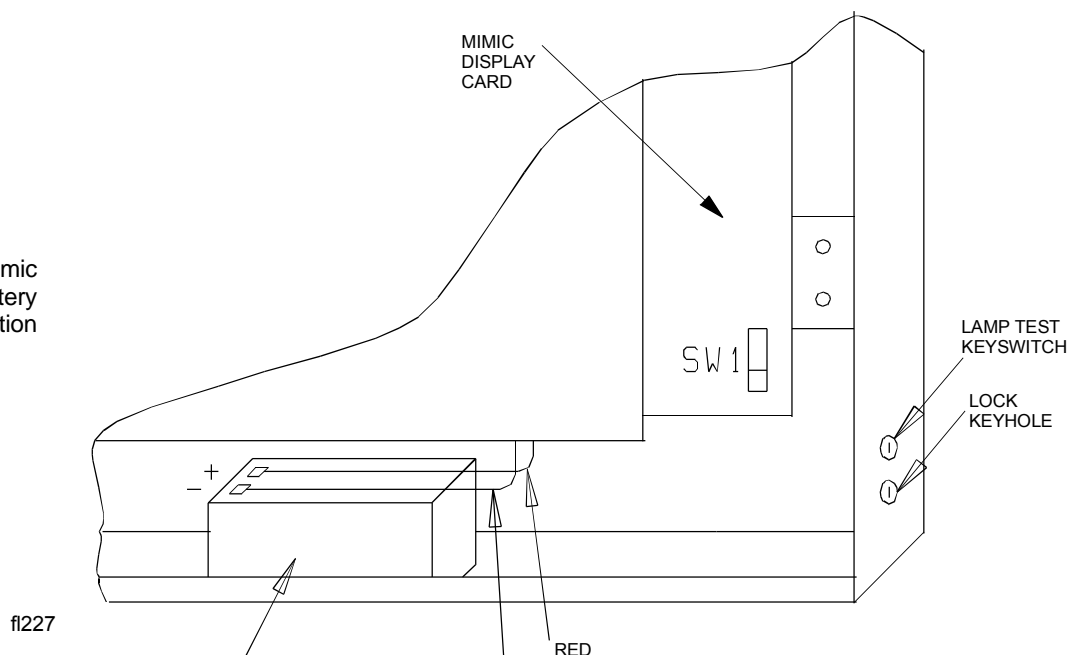
NOTE: Ensure the custom site plan is fitted to the panel to coincide with the LED matrix.

- Open the inner *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 switches on for a short duration
 - after a short duration a message will appear on the mimic

OFF LINE

- Operate the keyswitch on the panel, this will:
- cancel the local buzzer
 - and to carry out a lamp test.
- Connect the battery supply.

Figure 3-1 Mimic panel battery connection



34604 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 a *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*.

To fit the site plan

Remove the 8- screws holding the LED assembly to the door frame.

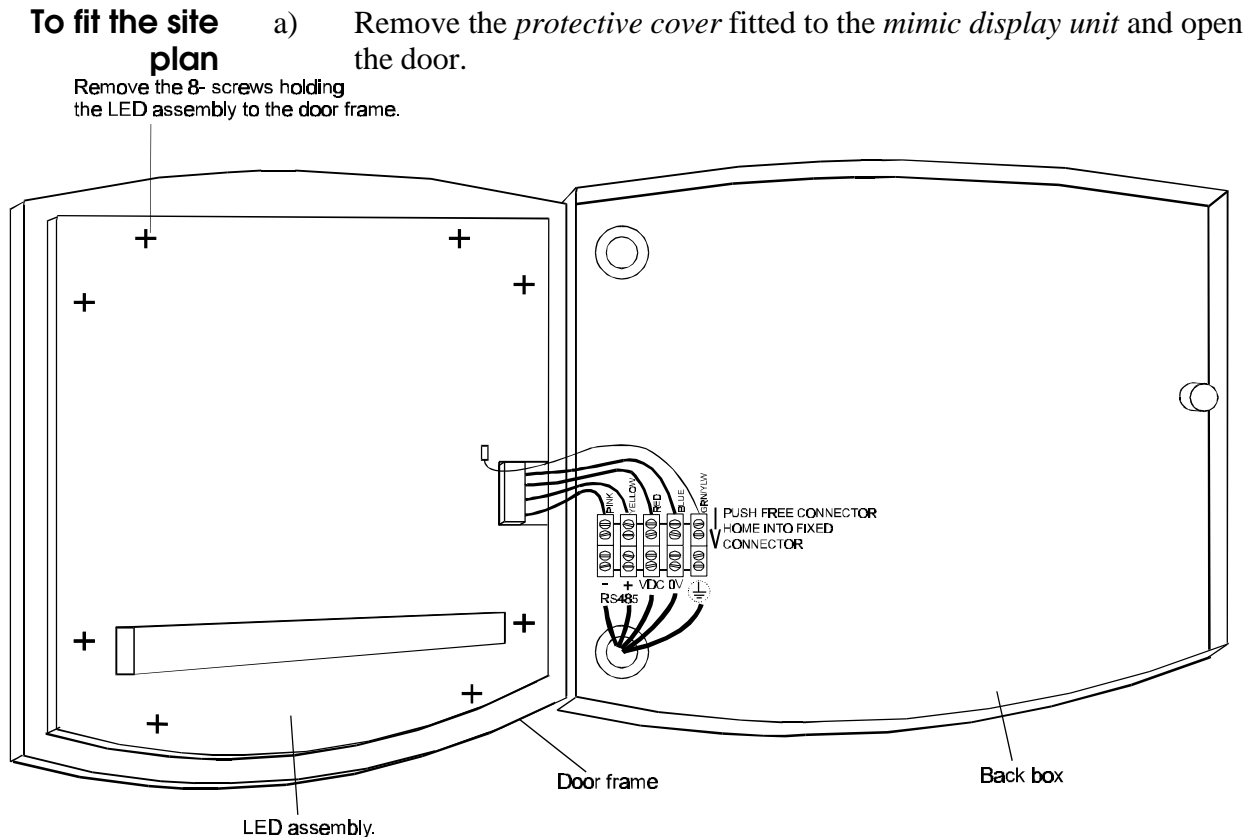


Figure 3-2 A4 Mimic panel with the door open
cdm18

- 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.

- d) Remove the remaining backing from the **adhesive sheet** attached to the **plan sheet**.
- e) Align and fit the **plan sheet** to the **LED blocks** and smooth out any air bubbles.

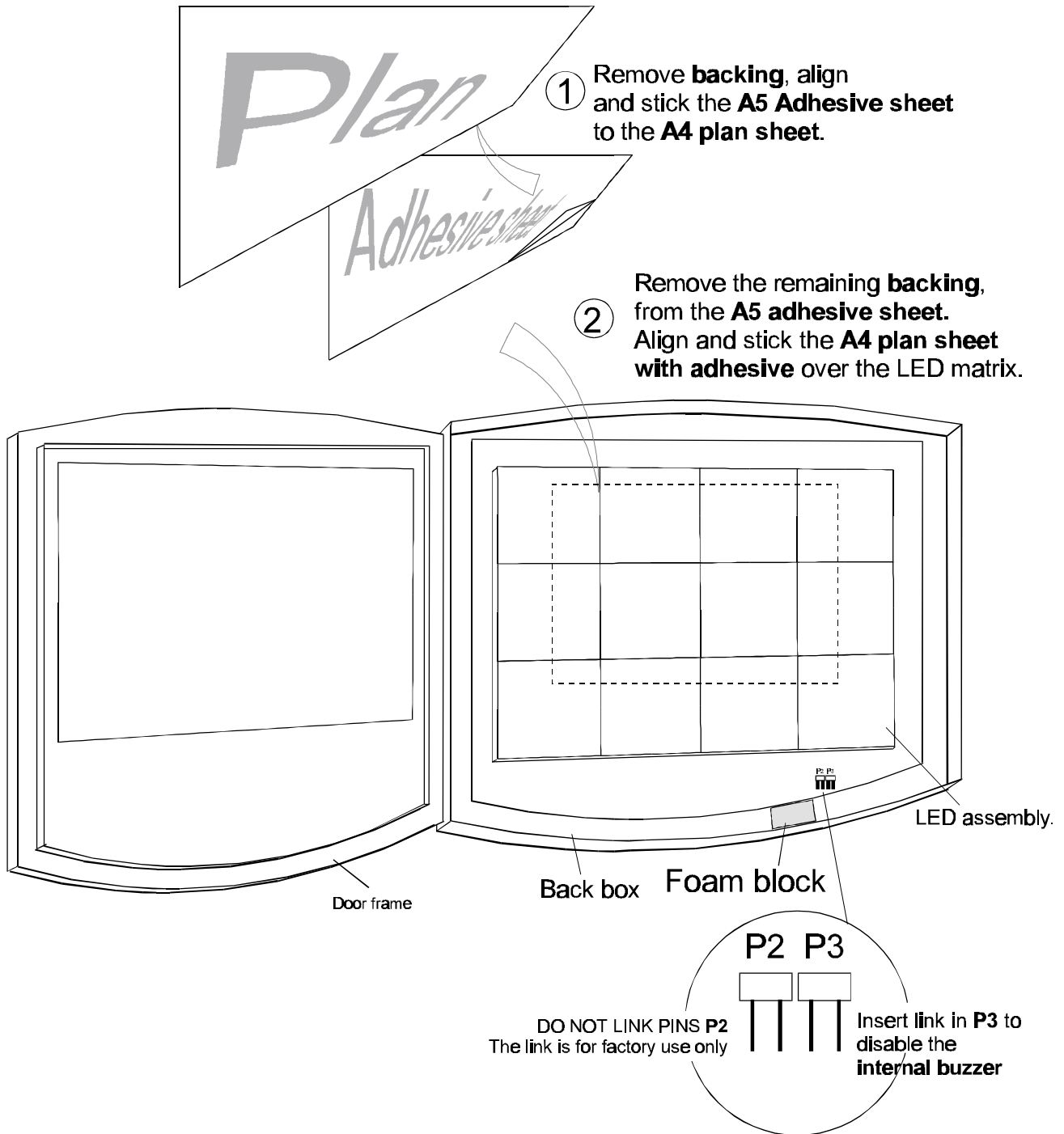


Figure 3-3 A4 Mimic plan and buzzer configuration
cdm20

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.

- i) Close and lock the door.

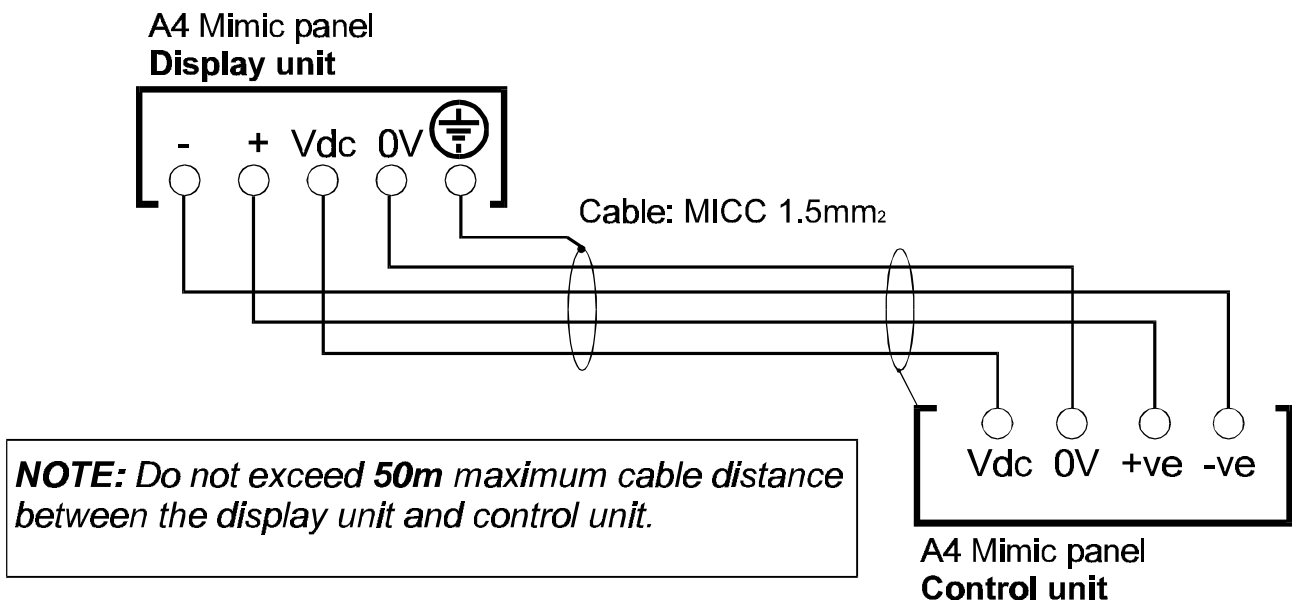


Figure 3-4 Mimic display to Control unit connections

cdm19

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 to the loop mains supply and *A4 Mimic display unit* to the *mimic control unit*.
- Check all internal connections are secure.

Local buzzer disable

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

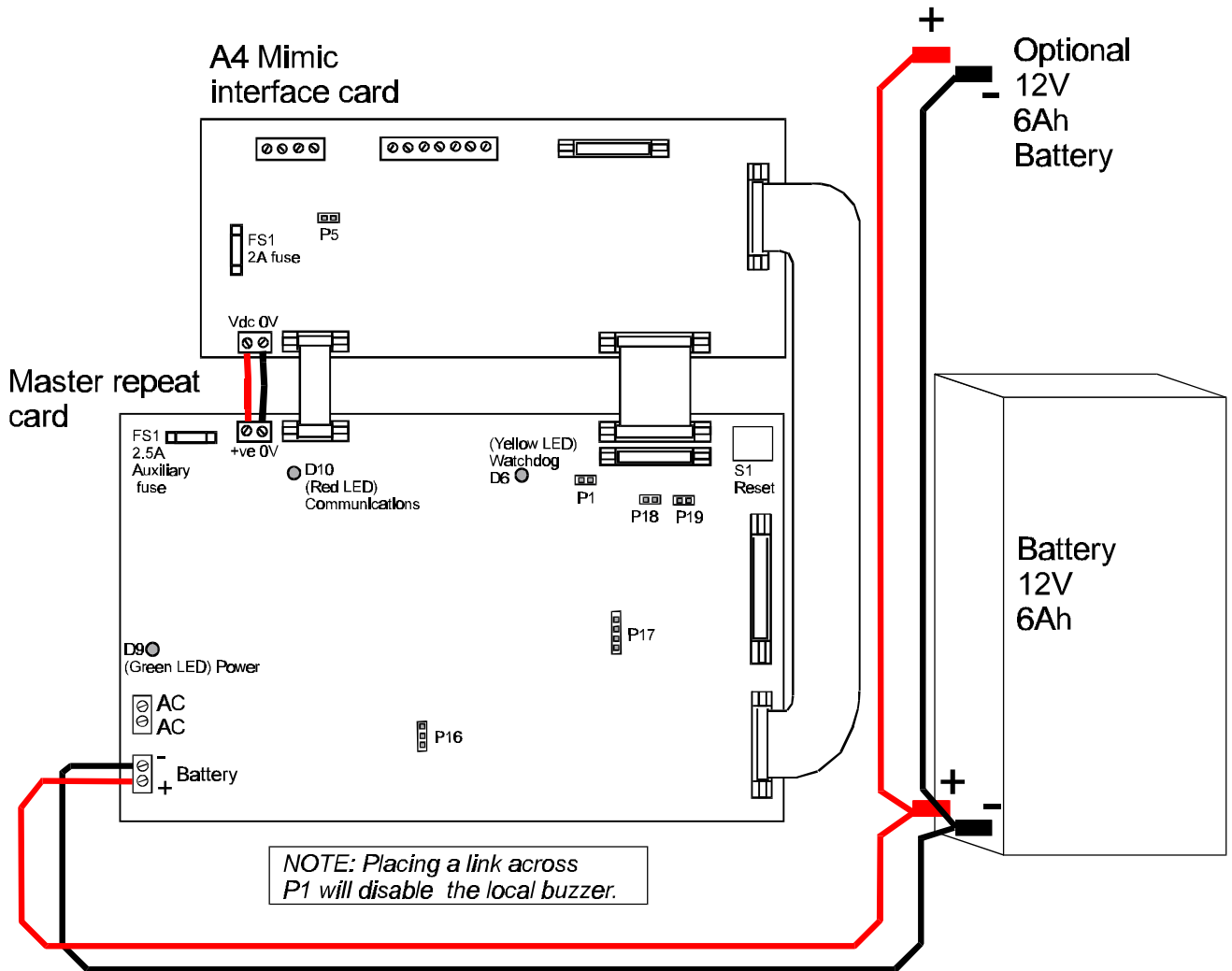


Figure 3-5 Components and battery connection
cdm21

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 buzzer is **enabled**, then there is no means of locally cancelling the buzzer during local fault condition.

Power-up

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

- 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



- 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 and mimic control units
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	

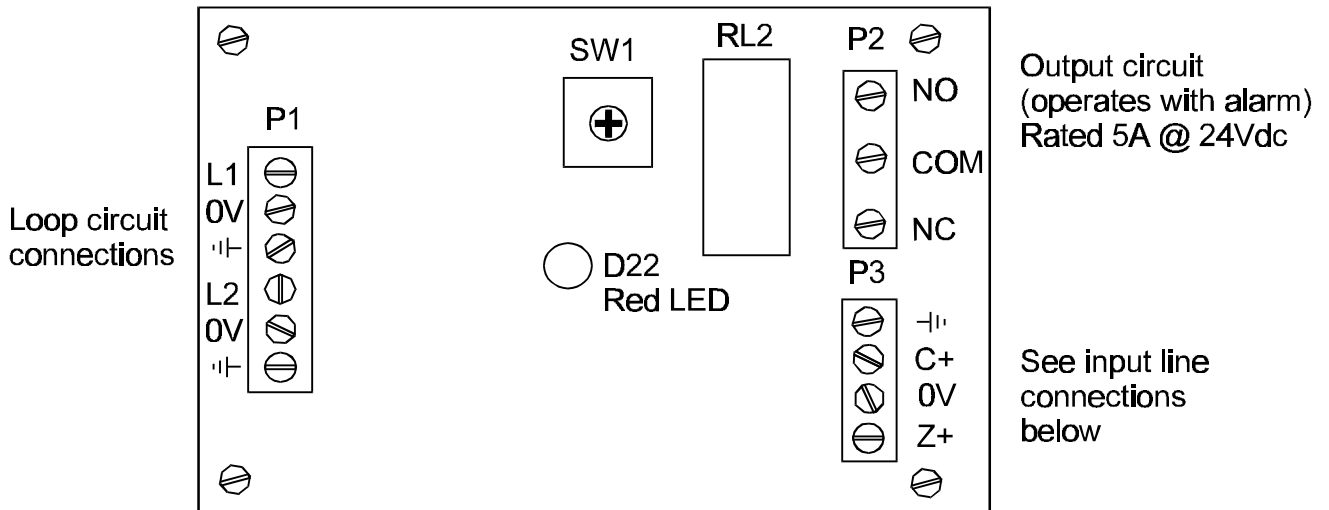
- Close the door and lock it.

34415 Single channel interface

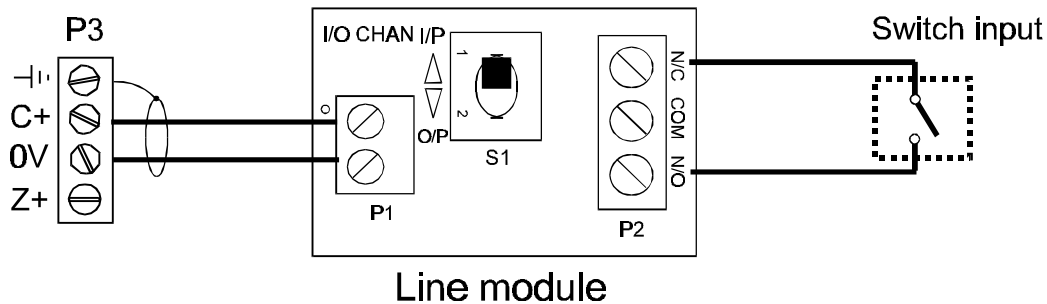
Open the front cover and make the cable connections to the loop circuit

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

Single channel interface



Single input using a line module



Multiple inputs

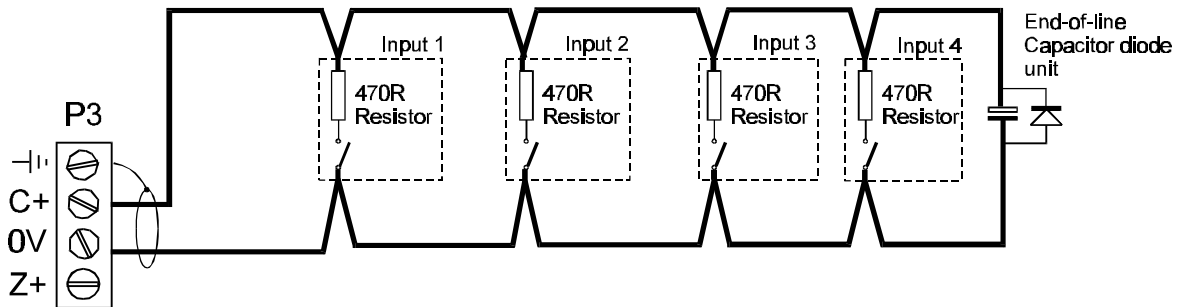


Figure 3-6 Single channel interface board cdm22

- 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 O/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 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 470 ohms resistor in series with the contacts.

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 3400 sector. Therefore the single channel interface outstation will need to be configured to a sector.

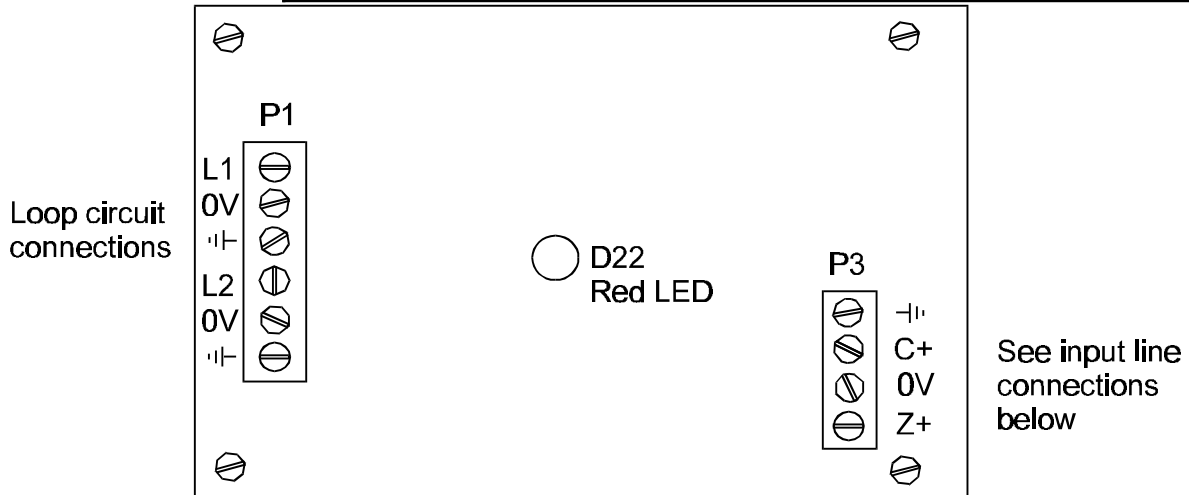
NOTE: A local switching facility to select the input/output mode of operation is not provided. The single channel interface unit operates both input and **output** circuits.

34410 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

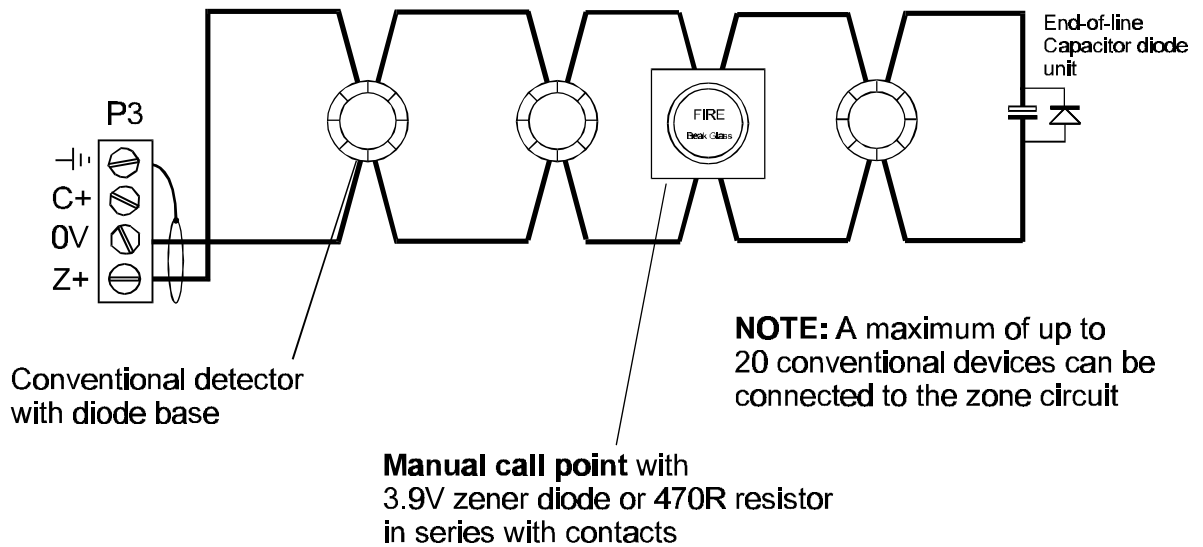


Figure 3-7 Loop powered zone module
cdm40

NOTE: The 3400 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 7600 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

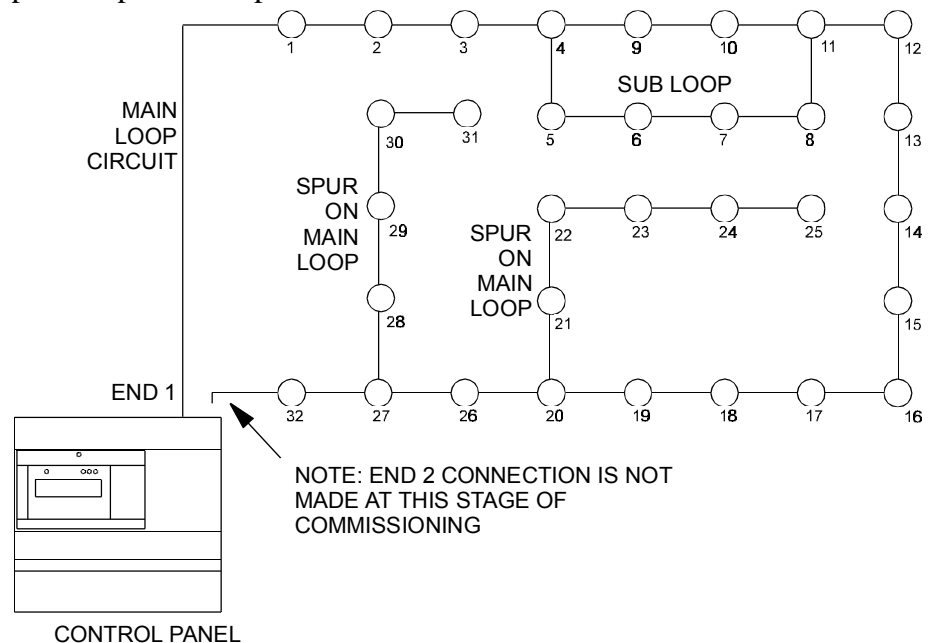
CAUTION: Completely power-down the control panel before removal and refitting of cards inside the panel.

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 allocation of any loop, End-2 must be disconnected.
- Sub loops** Ensure the far ends of each *sub loop* to 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



f1228

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 addresses are allocated

See Appendix B.

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 using **[Outstation]**, **[Status]** under the **[Info]** menu.

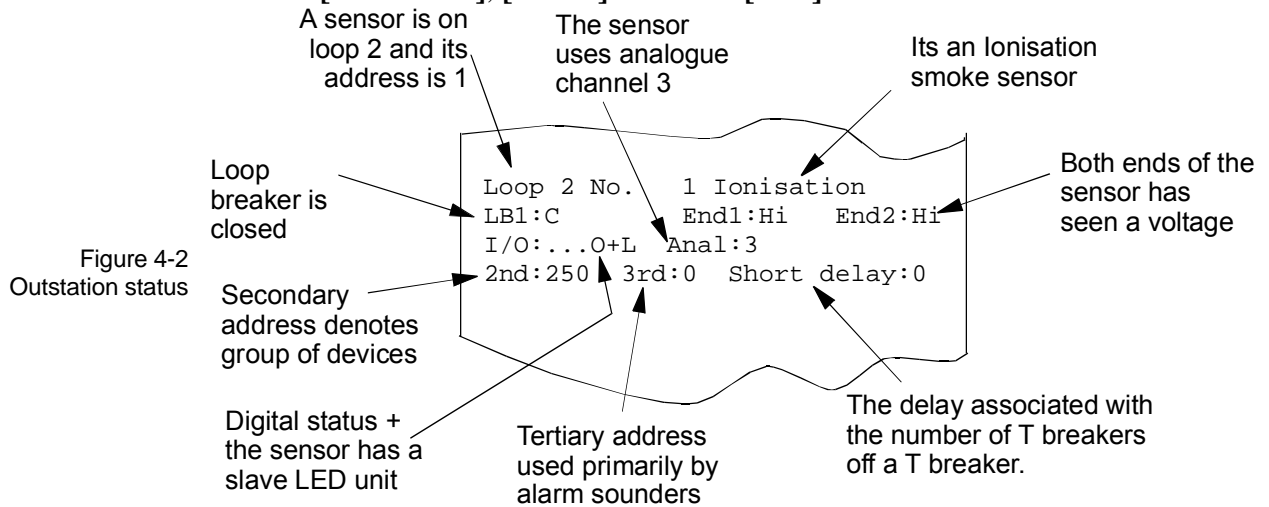


Figure 4-2
Outstation status

f1229

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
Halon 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.

Successful allocation

End-2 connection

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

- Check that the loop has started and is complete by viewing **[CardStat]** in the **[info]** menu.
- Repeat the procedure for other loops. One at a time.

Checking a 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.

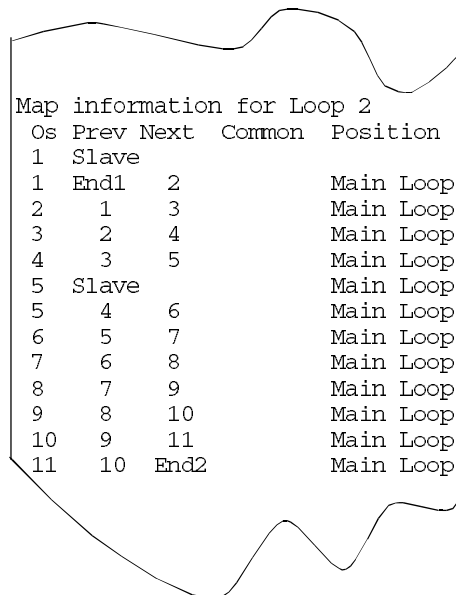


Figure 4-3 Loop map printout

- The following will be require:
 - two way radio communication
 - *as fitted wiring drawings* (2- copies) marked with device numbers
- a printout of the loop map obtained using **[Print] [Loop Map]** facility in the **[Info]** menu.

f1230

- 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 using the [**Back up**] facility in the [**Set up**] menu.

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.

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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 by using the **[Find OS]** facility in the **[Test/Eng]** menu.
- While a person operate the keys at the control panel, the other person will follow the loop wiring and confirms 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:

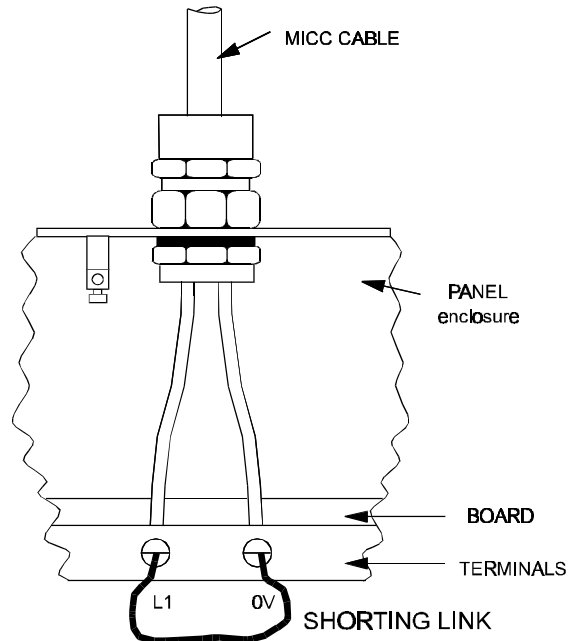


Figure 5-1 Shorting link

f1231

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

NOTE: A 3400 system with 34000 devices requires a short circuit test to be performed at mid point of each loop.

Short circuit isolation

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

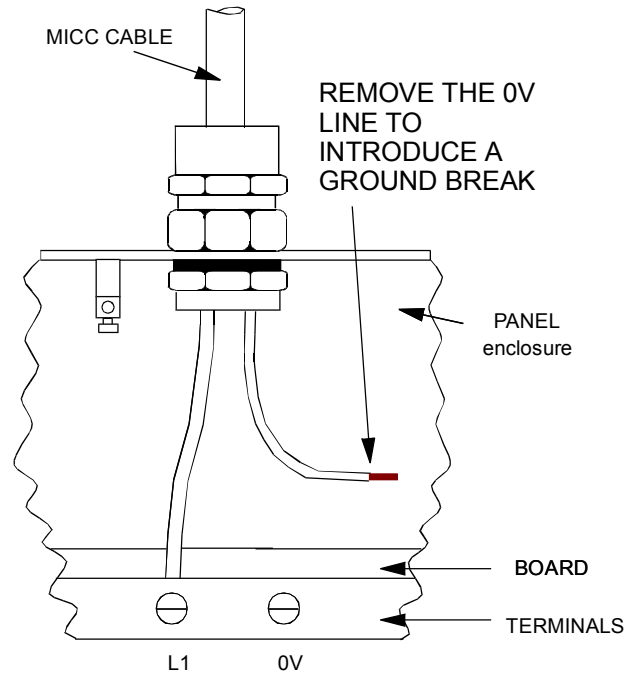
- power down the loop causing all the devices to open their *loop breakers*.
- the *loop processor* will close the loop breakers in each device in turn starting from End-1.
- if a device closes its loop breaker and the line signal dips, then a short circuit is assumed to be beyond that point on the cable.
- 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 *OV line* from End-1 of a loop circuit

Figure 5-2 Removal of *OV line* connection



f1232

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

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

Wiring changed - ground break
- To clear the fault, the *OV line* should be reconnected and then the loop should be re-allocated.
- The ground break test should be repeat for 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:

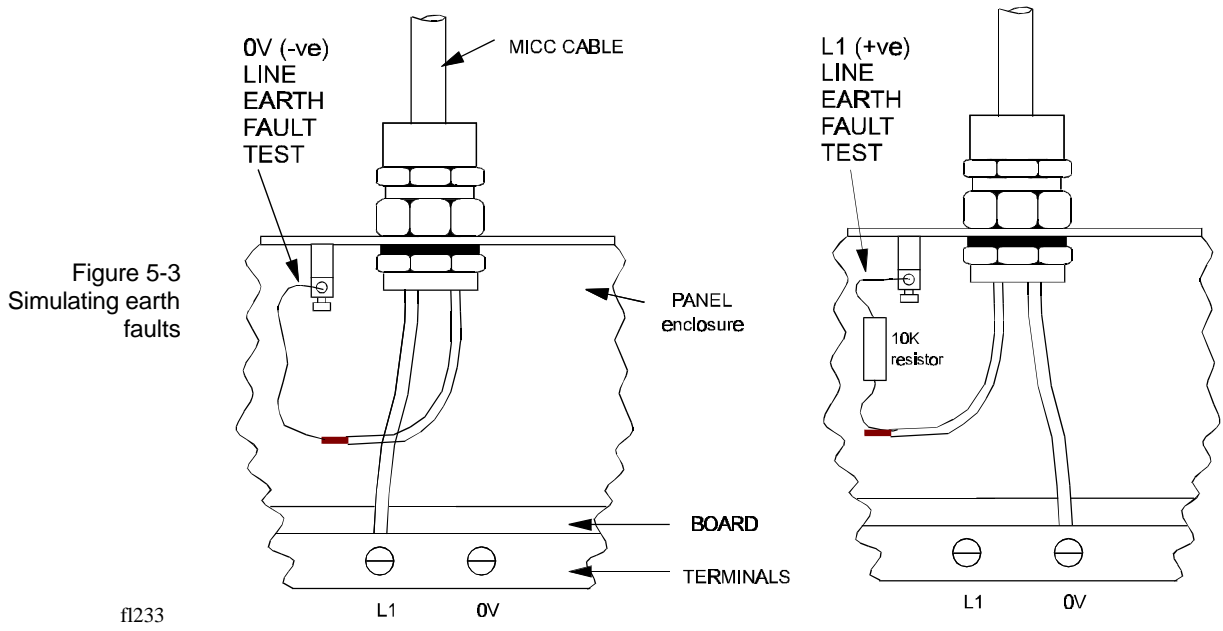


Figure 5-3
Simulating earth faults

f1233

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 should 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 should 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

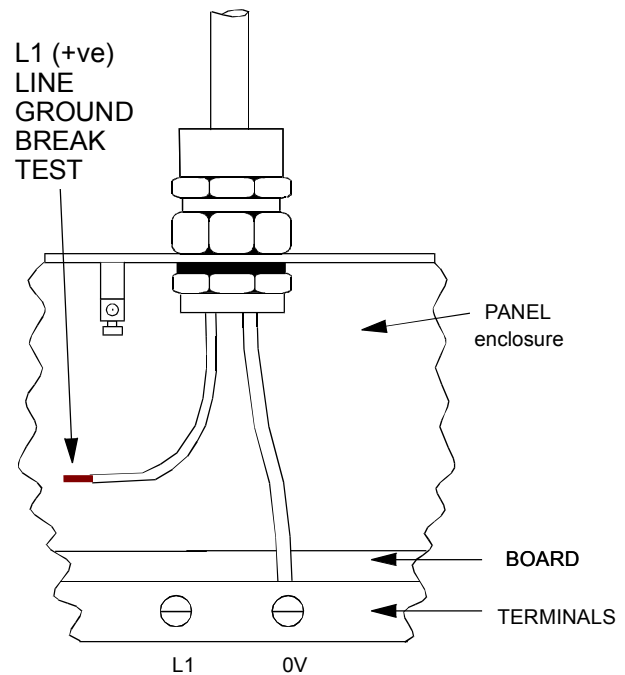
Earth fault monitoring

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



fl234

- Disconnect the +ve line 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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34740 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 34740 Beam sensor is a Type 3 sensor and it is SAFE compatible.

- The beam *transmitter* and *receiver* heads are be 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 indications 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

- This beam sensor has a **black plastic circular label** surrounding the lens of each sensor head
- The base has a **black plastic cover** fitted over the *2-way base* electronics.

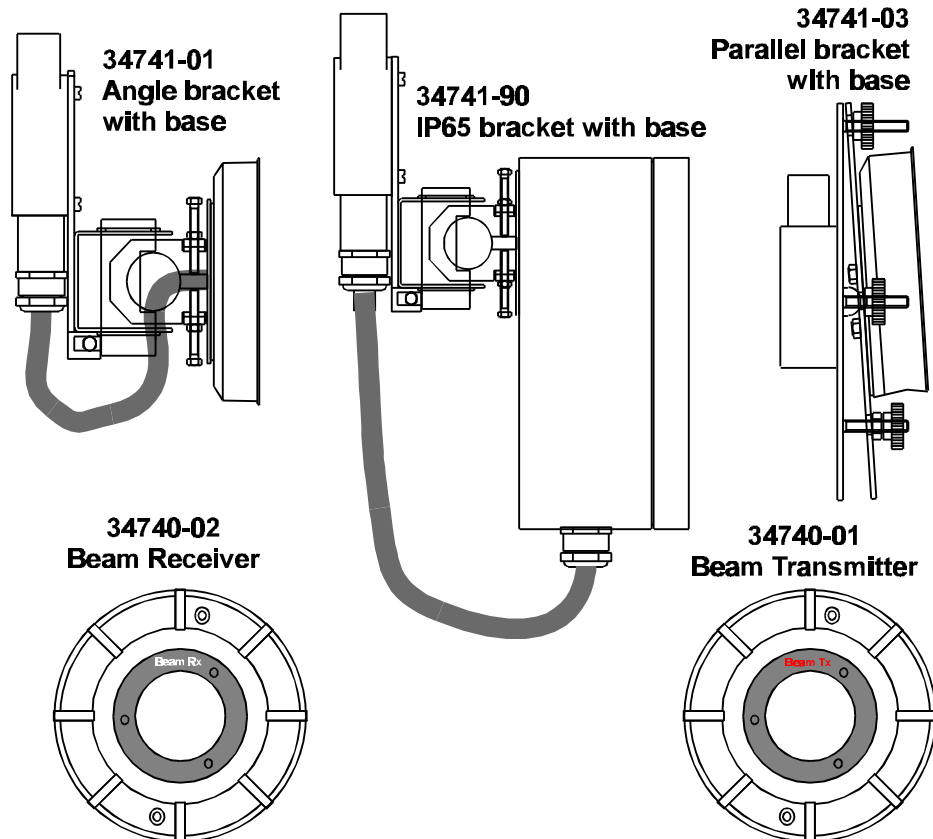


Figure 6-1
Beam sensor pair and brackets

cdm76

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.

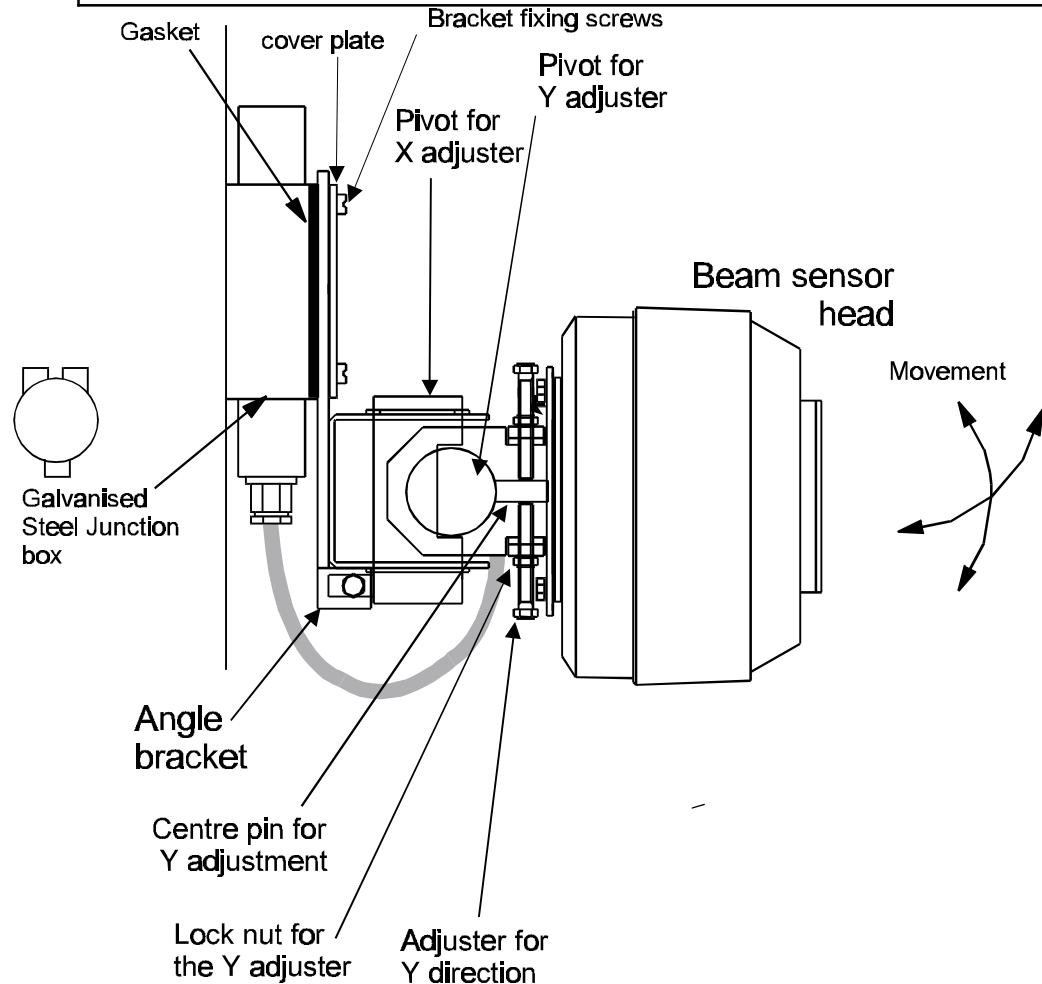


Figure 6-2 Beam sensor with bracket assembly
cdm44

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 using the [**Gain**] function in the [**Test/Eng**] menu.

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** message is given on the display. Otherwise a 'Memory corrupt' message will be displayed.

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 can be seen for a large signal
 - a 100mS LED flash can 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:
- and 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**] in the [**Set Up**] menu.

Outstations checks

Check the outstation status

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

Device type	Digital channel	Analogue channel	Time average Tnew
Optical	4 ...0	1 - optical	200 - 235
Heat	4 ...0	2 - heat	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 environment may change time average readings. Use the **[Info]** menu and select -> **[Time Av]** -> channel **[No.]** -> and outstation **[No.]**.

Tnew	Foreground (fast) time average readings					Background (slow) time average readings					
	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 by using [SubFaults] ,under the [Info] menu.

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 <i>sub-fire</i> band and if set should be taken as showing that the sensor is at their optimum sensitivity for their 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 <i>sub-fire</i> 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 in state 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 <i>windy location</i> . 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 are 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 by using the [Clear] [SubFault] function in the [Test/Eng] menu.

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	sub fault band		fault band
			0	1	2	3
ENVIRONMENT	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	sub fault band		fault band
			0	1	2	3
E N V I R O N M E N T	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					
S E N S O R	5th	Drift out of range high	OK			Above upper limit T ₉ >250 [Replace]
	6th	Heat channel drift or out of range	OK			Below lower limit T ₁₁ <20 [Replace]
	7th	Noisy (High frequency)	OK	Single HF noise event detected	Multiple HF noise seen	
	8th					
O U T S T A T I O N	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	sub fault band		fault band
			0	1	2	3
E N V I R O N M E N T	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 from normal [Check location, state & type]	
	4th					
S E N S O R	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					
O U T S T A T I O N	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	sub fault band		fault band
			0	1	2	3
E N V I R O N M E N T	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]
S E N S O R	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					
O U T S T A T I O N	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 sensor 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	State 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 at a higher sensitivity than the selected <i>state</i> .	Fire detection that will easily pass the respective British Standard test .
Fire	Fire detection at the sensitivity of the selected <i>state</i> .	Fire detection that is referenced to the respective British Standard test .
SuperFire	Fire detection at lower sensitivity than the selected <i>state</i> .	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°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°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 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°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°C.
State 2	Grade 1, limited rate of rise	Applicable for normal ambient temperature where temperature variations are expected up to 40°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 for ambient temperatures up to 60°C with rate of rise feature. Fixed temperature will operate at 84°C.
State 6	High temperature with no rate of rise	Provides detection as specified by Range 1 in BS5445:Part 8 , for ambient temperatures up to 60°C with no rate of rise feature. Will operate at 84°C.
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	Separation for the 13474 type	Separation for 34740 type	State
Short path	1-8.5m	2-30m	State 2/3
Long path	8.5-30m		
Long path	>30-85m	>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 1 second 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

Labeller /Configurer

See also:

- Appendix C** Guidelines for standalone system functions
- Appendix D** Guidelines for network system functions

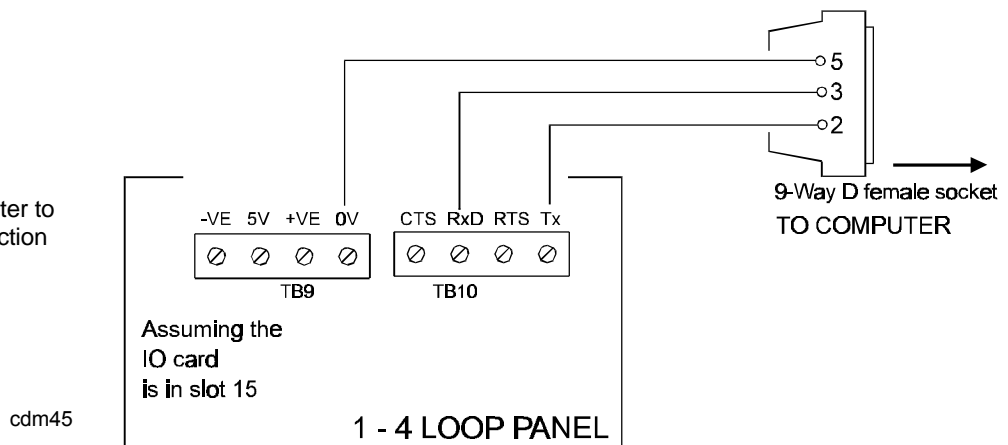
Preparation

It is essential to have the following:

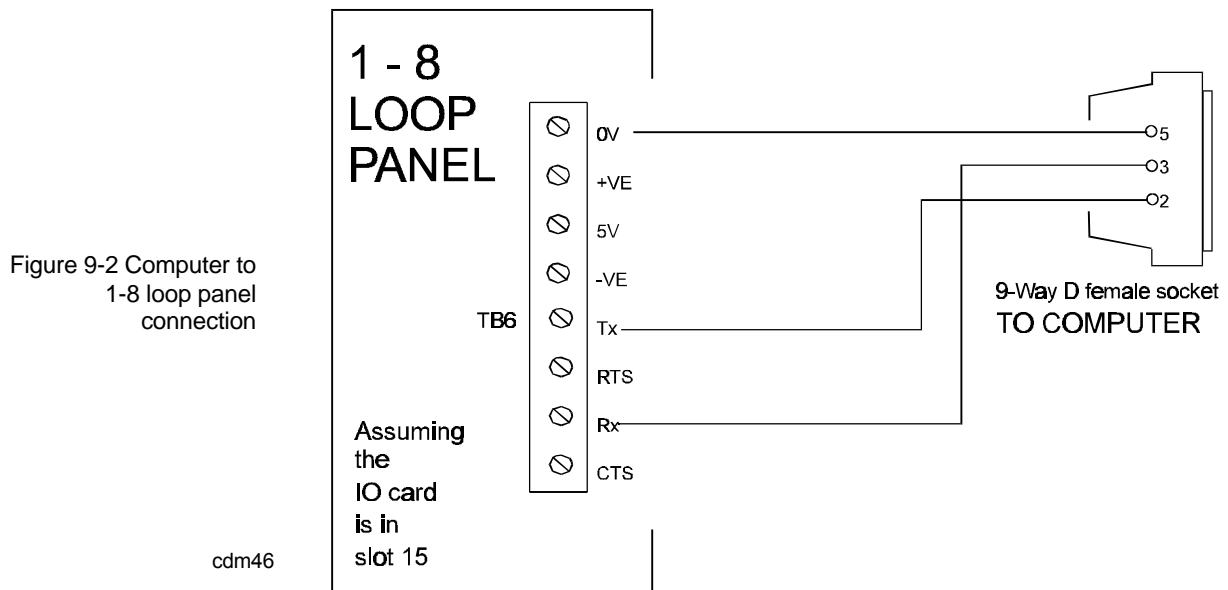
- the commissioning computer
- leads to connect the computer to:
 - control panel
 - printer
 - mains supply
- HT Basic dongle
- printer- *to print labels and configuration information*
- labeller configurer + HT Basic software, *assumed loaded on computer*
- as fitted wiring drawings - *showing devices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

NOTE: The following procedures assume that it is a **standalone control panel** to which labels and configurations are to be transmitted.

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



Connecting the computer to panel



Power-up the computer

NOTE: Ensure the *HT Basic dongle* is fitted to the parallel port.

- GENT Shell** After powering up the computer select the labeller/configurer option from GENT shell window.
- Select the correct version of *labeller/configurer* required, for example *version 2, 3, 3+ or senator*.
- Default line** The default line should then be set by pressing <<CTRL>><<D>> keys: Enter:
Local Controller - this should be the same as the panel address set on the LCC Card
Loop Processor - this should be the loop number whose set data is being edited.
- The <<Ctrl>><<R>> key can recall up to 20 previous entries.

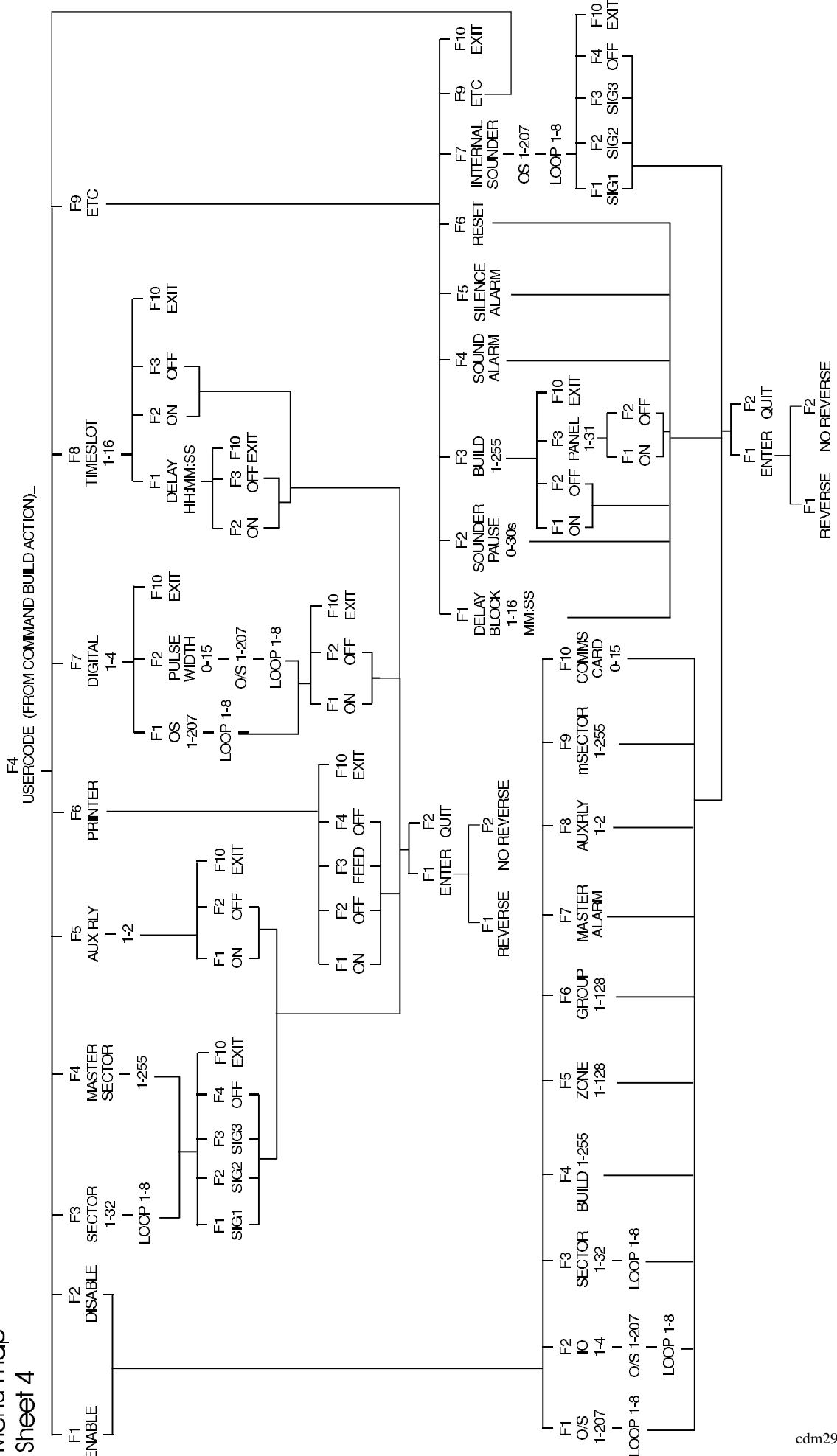
NOTE: The status window indicates execution commands, errors and prompts. The F1 - F12 function keys provide easy selection of menu option.

- Use the catalogue facility to list files previously saved.

Menu maps of the labeller configurer

- The following pages contain the labeller configurer menu maps.

LABELLER/CONFIGURER
Menu map
Sheet 4



cdm29

How to retrieve a system

NOTE: The retrieval command will bring both the label and configuration information from the control panel to a computer file.

- F1 - RETRIEVE / TRANSMIT 3400 SYSTEM
- F1 - RETRIEVE / OPEN FILES
- F2 - RETRIEVE 3400 SYSTEM FILES

Enter a filename - having no more than *7 characters maximum* and then press **[Enter]**

Confirm that the *computer is connected to panel*, type 'Y' and press **[Enter]**

- F10 - EXIT
- F4 - STORE FILES **-this is very important**

To *rewrite (over) previous files*, type 'Y' and press **[Enter]**

- F10 - CHAIN PROGRAM

Confirm if *labeller & configurer files* (are) saved - press 'Y' then press **[Enter]**

The main menu is displayed.

Labelling a system

With the fire plan retrieved from the control panel, the system may be labelled. To do this select:

- F3 - LABELLER PACKAGE, from the chain program

How to label outstations

- F1 - OPEN EXISTING FILES

Type file name and then press **[Enter]**

- F2 - SETUP LABELS

Press **[Ctrl]-[D]** to select loop for labelling

- F1 - OUTSTATION LABELS

Type in the range of outstations that you are to label and then press **[Enter]**

The display shows the first outstation of the range. Type in the label name and then press **[Enter]**:

up to 28 character label can be given to an MCP's
up to 32 characters for all other outstations.

Confirm entry of label by pressing **[Enter]** - do this for each label

- F10 - EXIT

- F4 - STORE FILES **this is very important**

Confirm if you wish to *rewrite (over) previous files.*

- F10 - CHAIN PROGRAM

Confirm that the *labeller file (is) saved* - type Y then press **[Enter]**

The main menu is displayed

How to transmit labels

- F1 - RETRIEVE / TRANSMIT 3400 SYSTEM

- F1 - RETRIEVE / OPEN FILES

- F1 - OPEN EXISTING FILES (*Re-open file as it has been closed on exiting labeller package*)

Type file name e.g.; GENT then **[Enter]**

F10 - EXIT

NOTE: The configuration and label files are independently transmitted to the control panel.

NOTE: If there are any map conflicts, then amend the map in the **plan modify** if necessary.

F2 - TRANSMIT LABELS

Confirm that the computer is connected to the control panel - Type Y then press **[Enter]**

The status window will confirm transmission and when it is complete.

F10 - CHAIN PROGRAM

Confirm that the *labeller & configurer files (are) saved* - type Y then press **[Enter]**

Saving the labels at the control panel

When the system modifications are complete - The new or revised loop map must be backed up to the RAM card in the control panel.

Printout of Labels

```

*****
* 3400 SYSTEM LABELLER *
*****
                25:4:96                Page 1
                File: NAME

Local 2 : panel label                                Loop 1                No of os x

OS   Prev  Next  Comm  Position  Type  Label
1    End 1   2    -    Main loop  Ion (0)  Corridor
2    1      3    -    Main loop  OptHeat (0)  Stairs
3    2      4    -    Main loop  Loop I/F    Interface box
                                I/O line 1  (input)    Input from hospital link
                                I/O line 2  (input)    Input from hospital link
                                I/O line 3  (input)    Input from hospital link
                                I/O line 4  (input)    Input from hospital link
|    |      |    |    |    |    |
x    y    End2  |    Main loop  MCP (0)    Reception
    
```

Configuring a system

With the default fire plan retrieved from the control panel, the system may be site specific configured. The following is guidance on the configurer package commands:

- F3 - CONFIGURER PACKAGE, from the chain program

Labeller/configurer commands

- Not all commands (options) are covered here.

Command	what it does
[OPEN EXISTING FILES]	To open an existing file, the file name must first be entered to allow the computer to retrieve it from the disk. If at this point the file name is not known, then the disk may be catalogued to review the file name.
[RETRIEVE 3400 SYSTEM FILES]	<p>To retrieve information from a control panel the lead between the computer and the panel must be connected.</p> <p>The system whose information is to be retrieved must be fault free and should have had all its loop maps checked.</p> <p>A file name with up to 7 alphanumeric characters must be given to allow easy identification of data within it. This should resemble the name given to the site in which the system is installed.</p> <p>After the file name has been entered the user is asked if the System is connected to the computer, if answered 'Y' for YES then the information is retrieved. The menu key prompts will re-appear on the display once the file has been retrieved.</p>
[CREATE NEW FILES]	To create a new file, a file name of up to 7 characters must be given. The file can then be used for building a planned system before it is installed on site by using facilities in Plan/Modify.
[SET UP A PLANNED SYSTEM]	<p>The initial information required by the computer for a planned system is the local controller, loop processor and outstations.</p> <p>The local controller address is determined by the address setting on the input/output card to be installed in the control panel of the planned system. If the system is a network of control panels then each of the individual controller addresses will be different.</p> <p>Enter address of each loop processor card in the control panel and then the total number of outstations on each loop.</p>

Command	what it does
[SET UP A NEW LOOP]	<p>This facility provides a means to create new loops on a planned system, or to expand an existing system.</p> <p>Before selecting this facility the default line must be set to the required new loop address. After selection of the facility the total number of outstations on the new loop should be entered. The default type for the outstations will be asked at this point. All outstations will be the same type so some may need to be edited.</p>
[DELETE EXISTING LOOP]	<p>NOTE: The default line must be set to the loop no longer required before selection of this facility.</p> <p>Then the question of certainty must be answered before the loop will be deleted.</p> <p>CAUTION: Deleted information cannot be retrieved, it is lost forever.</p>
[INSERT OUTSTATIONS]	<p>To insert outstations, the default line must have the correct loop number. Specify the outstation following which new outstations are to be inserted, together with the number of outstation inserted.</p> <p>The default type of the inserted outstations must be entered. All the inserted outstations will be the same type which will require modification.</p>
[REMOVE OUTSTATIONS]	<p>To remove outstations from a loop the default line must first be set up to the correct loop processor address number. The total number of outstations to be removed followed by the loop position from which removal should commence must be entered upon selection of this facility. After the point of removal the predecessor and successor outstation addresses may have to be amended.</p>
[DISPLAY SYSTEM ON FILE]	<p>The selection of this facility provides a display of the overall system plan by giving the system set up information which includes local controller address, loop processor address and the total number of outstations on each loop. The display remains on the screen for only a short duration and serves as information to the user, normally before and after the editing of local controller and loop processor addresses has taken place.</p>
[EDIT LOCAL CONTROLLER ADDRESS]	<p>The local controller address is factory set to 6 for each control panel and most stand-alone installations will use this address. However, for networked systems with several control panels the local controller address will be different on each Panel. This facility allows the local controller address to be edited. To do this the existing system information is required to be set on the default line before selection of this facility and then the new local controller address of between 1 to 31 can be entered.</p>
[EDIT LOOP PROCESSOR ADDRESS]	<p>Often there are requirements to change loop circuit connections at the control panel to put the loop numbering sequence in some logical order to make identification of installation easier. This facility allows transfer of information from originally specified loop processor address to another address. To do this the default line is required to be set with the original loop processor address before selection of this facility and then enter a new loop processor number, which can be any number from 1 to 8.</p> <p>NOTE: The new loop processor address must be a vacant card slot or socket position in the control panel.</p>

Command	what it does
[LOCAL CONTROLLER LABELS]	<p>Each panel on a networked system can be identified by entering a 32 character label. The local controller address is specified on the default line.</p>
[GROUP LABELS]	<p>A quantity of devices forming a group can also be given a common or group label. The group label will appear in fire conditions only, and can be up to 28 alphanumeric characters to identify the general location of the grouped devices. Individual outstation labels should still be assigned for fault display purposes.</p>
[EDIT OS MAP AND STATUS]	<p>This option is selected to modify the map information for each outstation.</p> <p>Set the default line first to show the correct loop number.</p> <p>Organising the Address Allocation [Prev, Next and Comm addr] If outstations have been inserted or removed then the previous, next and common addresses will need amending. These are outstations before, after and on the tee of the reference outstation.</p> <p>NOTE: A 'T' Breaker outstations with nothing connected to the COMMON LINE, must have the COMMON ADDRESS set to open circuit.</p> <p>Mapping Loop Status of an Outstation [Position] An outstation can be on the main loop, sub loop or spur circuit. This entry specifies the loop position.</p> <p>The Type of Outstation Edited [Type] Upon entering this facility a range of outstations are displayed to prompt the user to make a selection. After making a selection the computer asks whether: a) outstation is a Tee breaker or not b) outstation is 3400, 3300 or SAFE</p> <p>Digital Lines Allocated to an Outstation [Dig alloc] The digital allocation is automatically selected, however for Interface Units an entry is required of used I/O lines of the planned system.</p> <p>NOTE: The I/O line No 1 is associated with left most terminal blocks on the interface board having terminal marking +S1 - S1 (output) or Z1 ZC1 (input), set by adjacent in line switch. Similar for other circuits.</p> <p>Channels Allocation to an Outstation [Channels] An outstation can use up to 6 analogue to digital channels depending upon its type. The appropriate channel used by the outstation appears on the display .</p>
[COMMAND BUILD LABELS]	<p>A label of up to 40 characters can be given to a command build to indicate that it has been triggered, ie. the resulting action.</p> <p>NOTE: If a Command Build has a label which is displayed the fault buzzer will also sound until the command build is reversed.</p>

Command	what it does
[ASSIGN/REMOVE]	<p>Assign or remove Outstation, IO lines, MCPs Sectors Group, Delay blocks, Aux Rlys, Master Alarms and Aux relay</p> <p>The computer requires entries of outstation addresses and loop numbers followed by sector, group or zone number of assignment or removal, devices with input/output lines must also specify the IO line number.</p> <p>Guidelines:</p> <p>If you have spare sectors on a loop then DO NOT use sector 1. Since if an outstation loses its sector setup it drops back into sector 1 - sector 1 should be left for default operation, the default operation is: ACTION Sector 1 Loop 1-8 on Sector 1-32 Loop 1-8 Sig 2 ACTION Sector 1-28 Loop 1-8 on Sector 1 Loop 1-8 Sig 2</p>
[ACTION/DEACTION]	<p>Sectors on Sectors and Delay Blocks Master Sectors on Master Sectors Delay Blocks on Sectors and Delay Blocks Aux Rlys on Sectors, Fault or Warning</p> <p>Fire events from any monitoring device in a sector, such as a fire sensor, can cause signalling or output devices in the same sector or any other sectors on any loop to sound continuous (<i>signal3</i>) evacuate (<i>signal 2</i>) or alert (<i>signal 1</i>). A fire sector can also action delay blocks which in turn can operate other sectors or delay blocks.</p> <p>The two auxiliary relays available at the control panel can be independently and automatically operated in the event of a sector operation and/or a fault condition and/or a warning condition within a system.</p> <p>All these actions can be individually deactioned if entries are made incorrectly.</p> <p>The computer requires appropriate entries of sector and loop addresses together with the signal action required and any delayed operation needed. For the delayed sector operation the required delay block number also needs to be specified. The auxiliary relay number to the actioned must also be predefined.</p>
[SET UP]	<p>Outstations to States and Timeblocks Aux Rlys to Delays and Off/On Timeslots to Timeblocks, Days and Enabled/Disabled Delay Blocks for Action and Delay Groups for Mode and Tasks Groups to Timeblocks Messages on Cards to Output and Links to Master Groups Build Blocks to Trigger, Action or label Global Controls to Master Groups Sector to integral sounder mode</p>

Command	what it does
[OUTSTATION LABELS]	<p>Labels are given to devices connected to a loop circuit to identify their physical location.</p> <p>The entry line will automatically stop at 32 characters for outstations & interface I/O lines - 28 characters for MCP outstations.</p> <p>Interface units can have 1 common label and 1 label for each of the 4 Input/Output channels. The computer automatically provides entry prompts for additional label information associated with Interface units, and fire sensors with manual call point connected.</p> <p>Guidelines: After approximately 50 label entries the information entered should be stored to prevent accidental loss of data.</p> <p>If a range of outstations to be labelled is entered, then after the label for the first outstation in the range has been entered, the next outstation will automatically be displayed. The 'quit' function will exit the user from the label input format back to the menu.</p> <p>The 'invalid' function will return the user to the start of that particular label entry if a mistake has been made. The recall function (Ctrl R) can be used to recall the previously entered label and either entered or edited for the current outstation.</p>
[STORE]	<p>Before exiting the Configurer through the chain program, any configuration performed must be stored onto the configuration file. This is because the computer automatically wipes clean the memory for re-entry into Configurer or entry into the Labeller.</p> <p>If a pause in entering data is to occur, or approximately 50 configurations have been entered, then as a general rule the entered data should be stored. Upon selecting this option the computer automatically clears the menu prompts until storing is complete.</p>
[Display] or [Print]	<p>If print option is selected then a printout of all the System configuration entered in a configuration file will be provided. To print or display all entries the default line must be set with Loop processor address zero. However, specific loop details can be printed by setting the appropriate loop processor address on the default line. Alternatively, specific configuration details can be displayed or printed by selecting the INFO facility under the CONFIGURE menu.</p> <p>Upon selection of this option the choice of using the computer's date or entering the date is given (the date should be in the 01:09:88 format).</p> <p>NOTE: THE PRINTER MAY HALT FOR OVER A MINUTE DURING THE PRINTOUT WHILST FILES ARE SEARCHED TO PRINT RELEVANT INFORMATION ONLY.</p> <p>NOTE: Once a printout has commenced it cannot be stopped. The menu prompts will disappear during a print process and reappear upon completion.</p>

How to insert outstation(s)

Produce a printout of the [**LoopMap**] before and after modification. Ensure the loop is *re-allocated* after the modification.

- F2 - PLAN / MODIFY 3400 SYSTEM
- F1 - READ / CREATE FILES
- F1 - OPEN EXISTING FILES

Type the file name and then press the [**Enter**] key

- F10 - EXIT
- F2 - PLAN / MODIFY 3400 SYSTEM

Press [**Ctrl**]-[**D**] and enter local controller address (panel number) and loop processor address (loop number)

- F4 - INSERT OUTSTATIONS

Enter the *Number of outstations to be inserted*. e.g. **1** then press [**Enter**]

Enter the outstation address **after** which the new outstation(s) is (are) to be inserted. If new outstation address is to be **5**, then type in **4** and then [**Enter**]

NOTE: *The existence of slave units on loop circuits is not be recognised by the labeller/configurer. Neither does the labeller/configurer allow insertion of slave units on to a loop.*

- Select [**default**] outstation type **1-22** then press [**Enter**]:

Outstation	ident	T Breaker	digital	channels
<1> Sounder	0	N	.00.	
	0	Y	.00.	
	2	N	.00.	
	2	Y	.00.	
	4	N	.00.	
	4	Y	.00.	
<2> Interface unit mains powered)	8*	Y	all possible	1,2,3,4,5,6
<3> Halon interface (mains powered)	9*	Y	all possible	1,2,3,4,5,6
<4> Optical heat	0	N	...0	1,2
	0	Y	...0	1,2
	2	N	...0	1,2
	4	N	...0	1,2
	4	Y	...0	1,2

<5> Heat	0	N	...0	4
	0	Y	...0	4
	2	N	...0	4
	4	N	...0	4
	4	Y	...0	4
<6> Ionisation	0	N	...0	3
	0	Y	...0	3
	2	N	...0	3
	4	N	...0	3
	4	Y	...0	3
<7> Beam transmitter	1*	N	...0	
	1*	Y	...0	
<8> Beam receiver	1*	N	...0	1,2
	1*	Y	...0	1,2
<10> System MCP	0	N	...0	
	4	N	...0	
<11> Repeat panel	44*	Y		
<12> Mimic panel	28*	Y		
<13> Loop interface	8*	N	all possible	1,2,3,4,5
<14> Zonal mimic	60*	Y		
<15> Halon loop interface	9*	N	all possible	1,2,3,4,5
<17> Analogue MCP	2	N	...0	6
<18> Optical/Heat Sounder	2	N	.000	1,2
<19> T breaker O/S	2	Y	...0	
<20> Audio Control Unit	?	Y		
<21> Distributed Amplifier Unit	0	N	I00I	
<22> # Heat sounder	2	N	.000	2

* - the labeller configurer cannot alter these values

- this option is specific to V3.34 labeller configurer software or later

New outstations

Consideration should be given when setting up the following products:

Repeat sounder: In Plan/Modify select a the standard sounder.

Single line interface: In Plan/Modify select a Loop interface and then set up the outstation as follows:

Digital = I..0 or I0.0 (if output channel is used)

Channel = 1,5 or 1,2,5 (if output channel is used)

Loop powered Zone module: In Plan/Modify select a Loop interface and then set up the outstation as follows:

Digital = I..0

Channel = 1,5

A4 Mimic and A4 Repeat: In Plan/Modify select a standard mimic or repeat as appropriate.

NOTE: The new MRC has a digital status ...0 To set up a repeat mimic or ACU with the new MRC it is necessary to change the digital status.

New ACU & DAU: The default digital status of the ACU is ...0

- Select outstation TYPE relating to the system TYPE:
 - < 2 > - SAFE then **[Enter]** (e.g. 34000/32000)
 - < 4 > - 3300 then **[Enter]**
 - [Enter] - 3400

NOTE: The <2> selection should be used for **34000 devices**.

- As a default the new outstation will be an Optical/Heat sensor. To change it to any other outstation use [F9] EDIT O/S MAP/STATUS.
- The display confirms *Insert complete*. Modifications may be required to *Os map & command build blocks*.

NOTE: The inserted outstation will now have to be given a label using the labeller.

NOTE: Any inserted outstation will require re-configuring to ensure it is correctly *Sectorred & Grouped etc.*

How to edit an installed outstation

- F9 - EDIT O/S MAP/STATUS

It is recommended that the inserted outstation and the two outstations on either side of it are edited to ensure the map is correct. e.g. If inserted outstation is number 5 then edit range 3-7 and then press **[Enter]**.

The status of the first outstation to be edited will be displayed. To modify any part of the status use the function keys.

Editing the outstation type **[F5]** will also automatically edit the digital and analogue channels EXCEPT for the interfaces which must be set up separately.

The channels **[F7]** function will only activate the analogue channels. If an error is made then de-activate channels by selecting **[F5]** to reset the analogue channel.

- F10 - EXIT then **[Enter]**, upon completion of the editing. Repeat for every outstation being edited.

- F10 - EXIT

- F3 - STORE FILES - **this is very important**

To rewrite (*over*) previous files. Type 'Y' and then press **[Enter]**.

- F10 - CHAIN PROGRAM

Are labeller & configurer files (are) saved - type 'Y' then **[Enter]**

How to transmit the configuration

The revised configuration will be transmitted and confirmation messages will appear within the top right of the display.

The configuration and label files are independently transmitted to the control panel.

- F1 - RETRIEVE / TRANSMIT 3400 SYSTEM

- F1 - RETRIEVE / OPEN FILES

- F1 - OPEN EXISTING FILES

Type file name e.g.; 'Gent' then **[Enter]**

- F10 - EXIT

- F3 - TRANSMIT CONFIGURATION

Confirm the computer is connected to panel- type 'Y' then **[Enter]**

Saving the configuration at the control panel

- When the system modifications are complete - The new or revised loop map must be backed up to the RAM card in the control panel.

Printout of configuration

Outstation assignment

```
*****                               25:4:96                               Page 1
* 3400 SYSTEM CONFIGURER             *                               File: NAME
*****

Local Controller 2                Loop processor 1                Sector 1
Integral Sounder Option is turned OFF

                                OUTSTATION ASSIGNED
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20
1  IC I O . O 12 - O O O O O O O S S S M S I O
2  I O . O 12 - O O O O O O O S S S M S I O I
```

```
Local Controller 2                Loop processor 1                Sector 2
Integral Sounder Option is turned OFF

                                OUTSTATION ASSIGNED
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20
1  IC I O . O 12 - O O O O O O O S S S M S I O
2  I O . O 12 - O O O O O O O S S S M S I O I
```

- Keys**
- O Optical Smoke/Heat Sensor
 - m0 Optical Smoke/Heat Sensor with MCP
 - H Heat Sensor
 - mH Heat Sensor with MCP
 - I Ionisation Smoke Sensor
 - mI Ionisation Smoke Sensor with MCP
 - F Flame Sensor
 - BR Beam Receiver
 - BT Beam Transmitter
 - OHS Optical Heat Sounder
 - M Addressable MCP
 - a5* Interface Units - See example
 - S Alarm Sounder
 - IC Loop Powered Interface Unit
 - R Fire Alarm Repeat Panel
 - MM Mimic Repeat Panel
 - Outstation not assigned
 - DAU Distributed amplifier unit
 - ACU Audio control unit

NOTE: The key of outstations changes to show the type of outstation, ie 3400 or 34000 .

Example: An Interface Unit may be coded with a hexadecimal number *. The left digit gives INPUTs information whilst the right digit gives the OUTPUTs information. Convert the hexadecimal number into binary

```
Binary   8 4 2 1
inputs   1 0 1 0
outputs  0 1 0 1
channels 4 3 2 1
```

The above example is a binary equivalent of a5 which suggests circuits 2 and 4 of an interface unit are INPUTS and circuits 1 and 3 are OUTPUTS.

Sector linking

```

*****
* 3400 SYSTEM CONFIGURER *
*****
25:4:96
File: NAME
Page 1

```

Local Controller 2	Loop processor 1										Sector 1									
Integral Sounder Option is turned OFF																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Loop 1	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Loop 2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2

Similar printout are obtained for other loops and their sectors

Key
s1 signal 1
s2 signal 2
s3 signal 3

[] determined by computer

() determined by control panel - displayed in black characters on white background

Dig Alloc [134] (120)

This conflict is most likely to occur with interface units, as there may be differences in the entered information at the computer and the actual switch settings at the unit. Correction can therefore be made either at the computer or the interface unit to remove the conflict.

	Bits 4-7	Bits 0-3	
Channel 1	0 4	0 0	Output
Channel 2	0 5	1 1	Unsued
Chanvel 3	1 6	0 2	Input
Channel 4	0 7	0 3	Ouput



Mimic Configurer

See Appendix E

Mimic panel types

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

Preparation

The following is required:

- Access to the mimic repeat panel
- access to the control panel
- commissioning computer with mimic configurer software loaded
- leads to connect computer to:
 - control panel, printer, dataman and mains supply
- dataman programmer + leads to connect it 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 in configurer. This will make any future alteration easier to carry out.

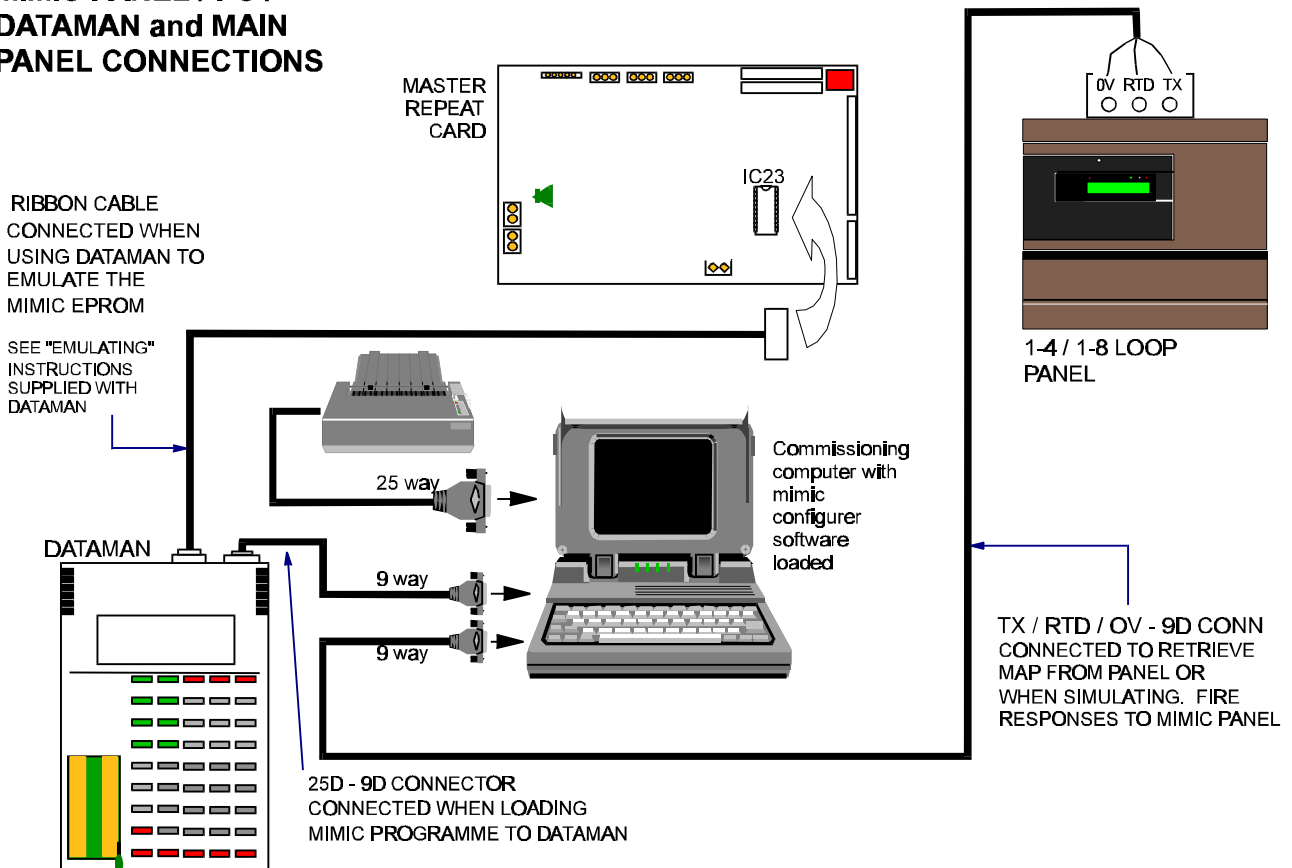
Mimic EPROM Chip removal

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



cdm49

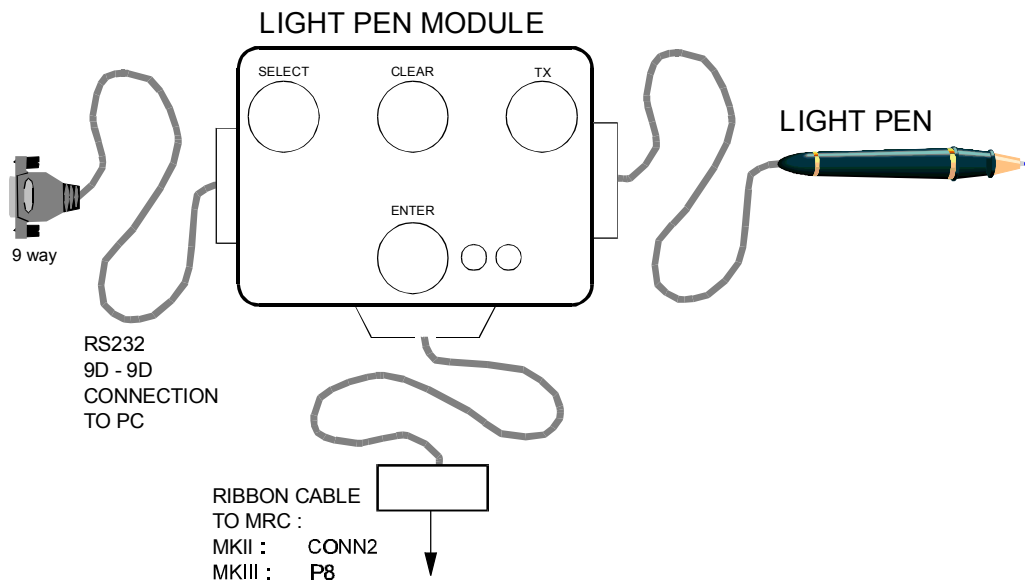
Figure 10-1 Mimic, dataman, computer and control panel

Powering-up the computer

- On powering-up the computer select: **Mimic Configurer**. Notice the status information is displayed at 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 set on the LCC Card
 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)



f1284

Figure 10-2 Light pen module

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

- Connect the 20 -way ribbon cable from the light pen to CONN2 of MRC board. The board is located inside the Mimic panel.
- Connect the light pen to the commissioning computer - RS232 serial port.
- Power-up the mimic panel and the commissioning computer running the light pen software
- Press the red reset button on the MRC.
- 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

- Point the light pen at the *required LED*. When the mimic has seen the LED it will remain illuminated between scans.
- If this is not the required LED, then move light pen at a *different LED* location until it is seen.
- When the required LED has been seen pressing the ENTER button will select it and it will remain illuminated between scans.
- 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.
- 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.
- 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 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 configuration

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 a system map

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

- F1 - System map
- F1 - Create system map
- 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 a 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:

- F1 - System map
- F2 - local processor address or
F3 - loop number or
F4 - outstations

How to set the mimic panel orientation

Select:

- F2 - Configure mimic panel
- F6 - Panel orientation etc. 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.
- **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.

- 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).
- Define the required shape by selecting all the LED's in the shape.
- When the required shape is displayed press the TX button to transmit the co-ordinates of all the LED's to the commissioning computer.
- The commissioning computer then creates an *LED Set Block* to display that shape. At this point a label for the set block will be asked for. This is an ordinary set block and may be re-used as required.
- Press the CLEAR button to turn *Off* the selected LED's

How to set outstation actions

To define the *shapes of illumination* on the mimic panel when sensors go into fire condition. From the config menu select:

- F1 - Outstation action, and then
- F1 - Set outstation action
- 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 size 1x1
 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 size 3x3
 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, Select:

- F1 - Outstation action, and then
- F2 - Change outstation action

Enter outstation address and make the changes to the action

Delete outstation action

To delete a set outstation action, Select:

- F1 - Outstation action, and then
- 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 blocks* 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:

- 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.
- F1 - Set new LED Set Block
Create an LED set block without any outstation reference.
- F2 - Delete a whole LED Set Block (this is an edit facilities)
- F3 - Add Action to LED Set Block (this was previously set)
- F4 - Delete Action from LED Set Block (this is an edit facility)
- 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 LED X Y LED's In Line LEDs in LEDs in
No Description State Cord Cord Line Dir X Dir 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	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

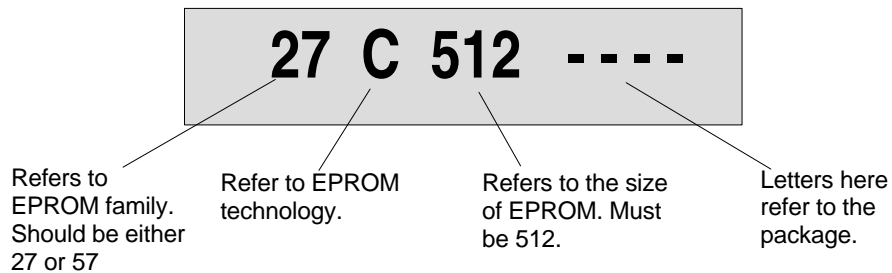
y co-ordinate: 0

: 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 programmer** 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 the **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,FFF
```

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 (the supplied ribbon cable with a 34-way IDC connector on one end and a dummy IC on the other). 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 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 placed 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 test simulation facility on the computer provides dummy signals to the control panel to simulate an *outstation-fire and reset fire*. The signals are transmitted in RS232 format to the control panel for it to take simulation action on the 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 simulation signalling process 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 occupant

- 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 test 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 be 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 P2 across pins 2-3. This enables the sound output to be varied using RV1.

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 of 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 be 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** the unit is located in 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 form an 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.

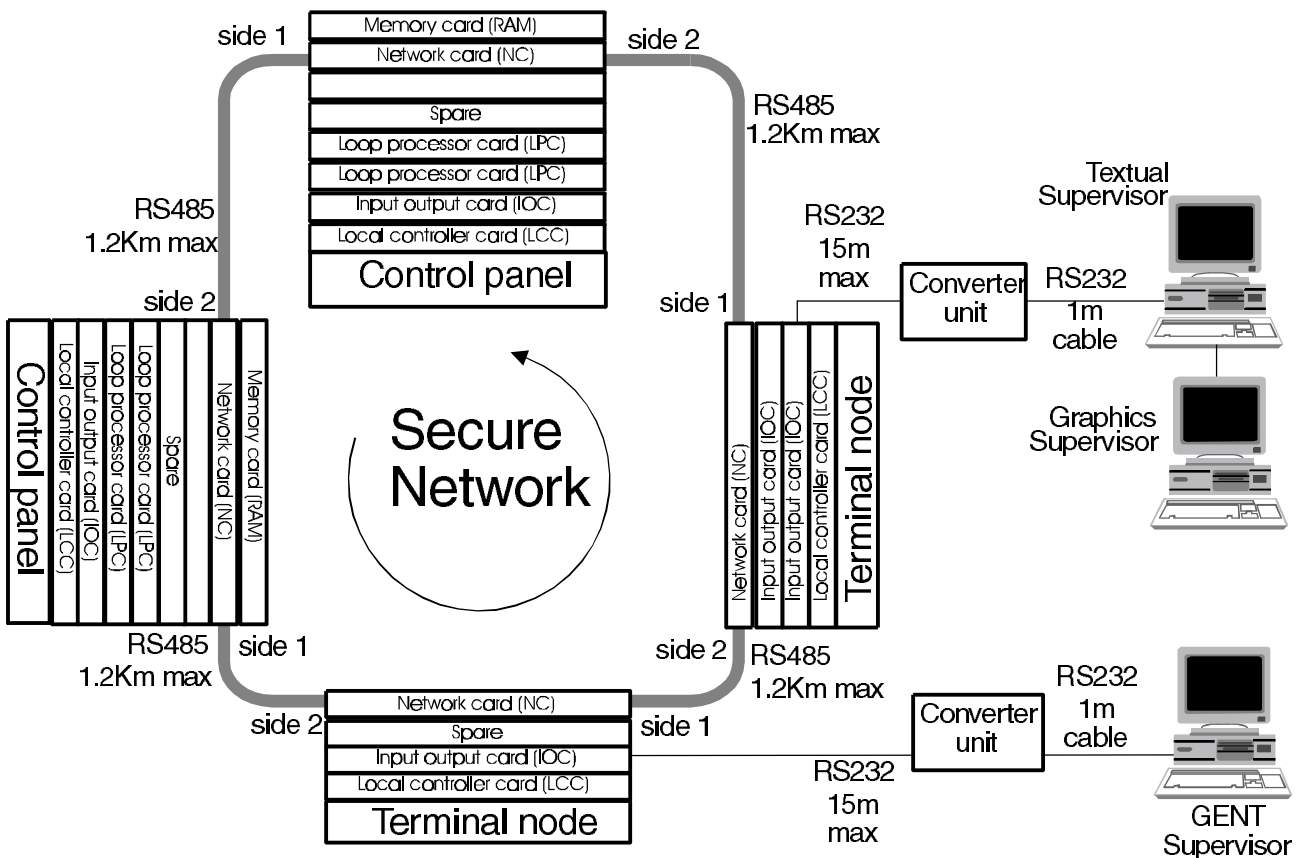
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Network power-up

Preparation

- Each standalone system to be networked should be commissioned.
- Check correct use of cabled twisted pair where applicable.



cdm31

Figure 12-1 Secure network

Network earthing arrangement

- Check the network cable **earth** connections are correct, see the installation manual

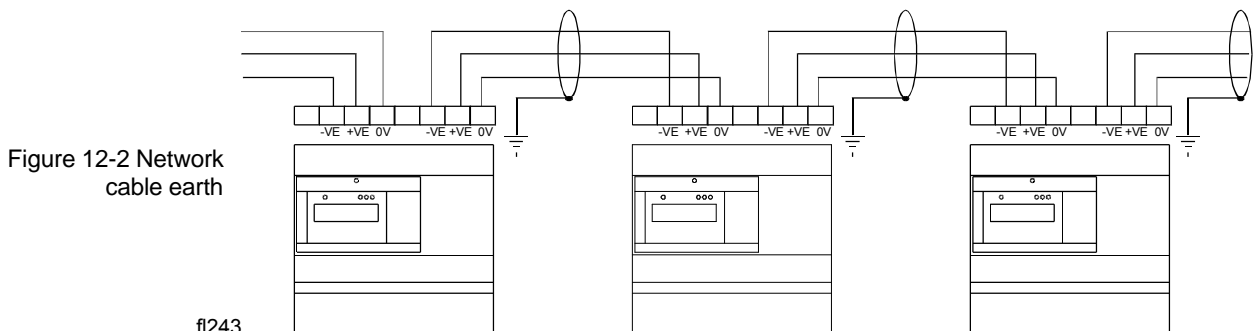
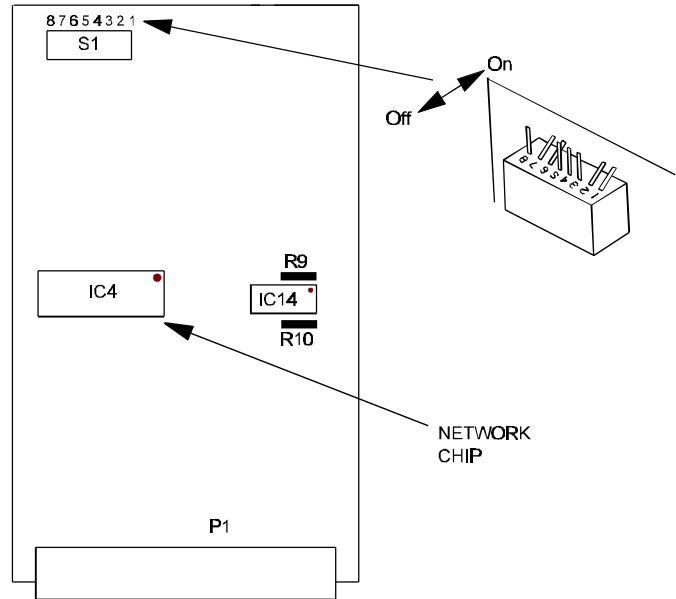


Figure 12-2 Network cable earth

f1243

How to setup the Network Card (NC)

Figure 12-3 Network card



f1239

Dual-in-line switch

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

Card 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			
63	on	on	on	on	on	on			

- The *network card and IO card* of panel/node should have the same address.
- The lowest *panel/node* address is given to the *network controller*, which is normally connected to the GENT Supervisor.
- The communication links should be set for RS485 format. The selectable *baud* rates are (4800, 9600, 19200, 38400).

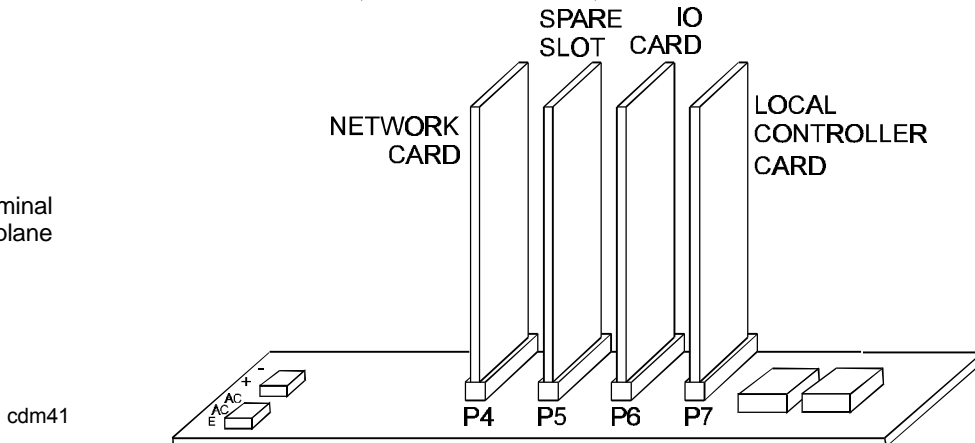
NOTE: All panels/nodes in a network must operate at the same baud rate. Normally 38.4K baud.

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

Where to install the Network card

- The network card should be fitted inside *control panels and terminal nodes* of a network.
- The *network card* should be fitted in:
 - socket 7 (slot or card no. 5) of a 3404 control panel
 - socket 13 (slot or card no. 11) of a 3408 control panel
 - socket P4 (slot or card no. 13) of a terminal node

Figure 12-4 Terminal node backplane



- See the *Control panel power-up* part of this manual for back plane slot location inside the control panel.

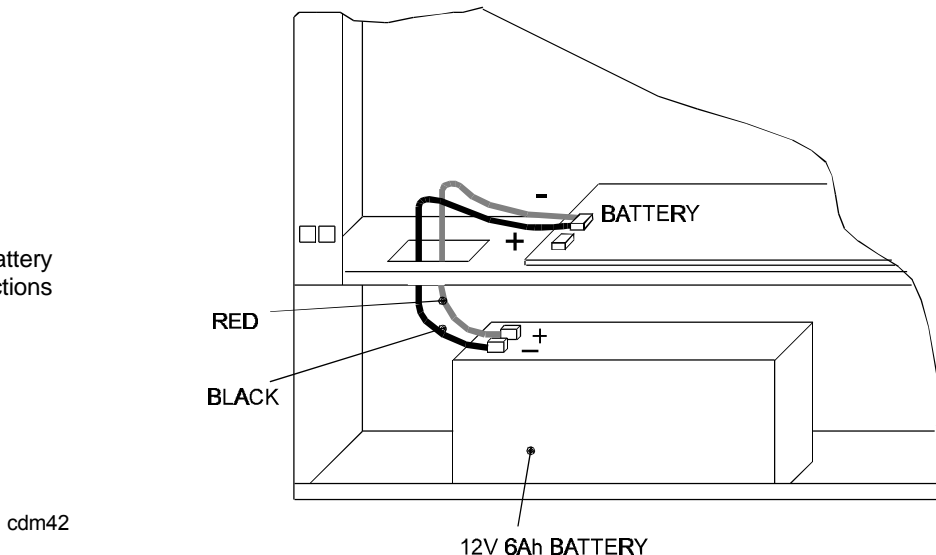
NOTE: There may be two IO cards installed to accommodate connection of two GENT Supervisor, ie one textual and one graphics.

NOTE: The second IO card must have a dongle fitted.

Powering-up the Terminal node

- Connect and switch On the mains supply and battery supply to the terminal node

Figure 12-5 Battery connections



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 from the rest of the network, ie it operates at the network card in an echo mode.

How to check a Network map

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

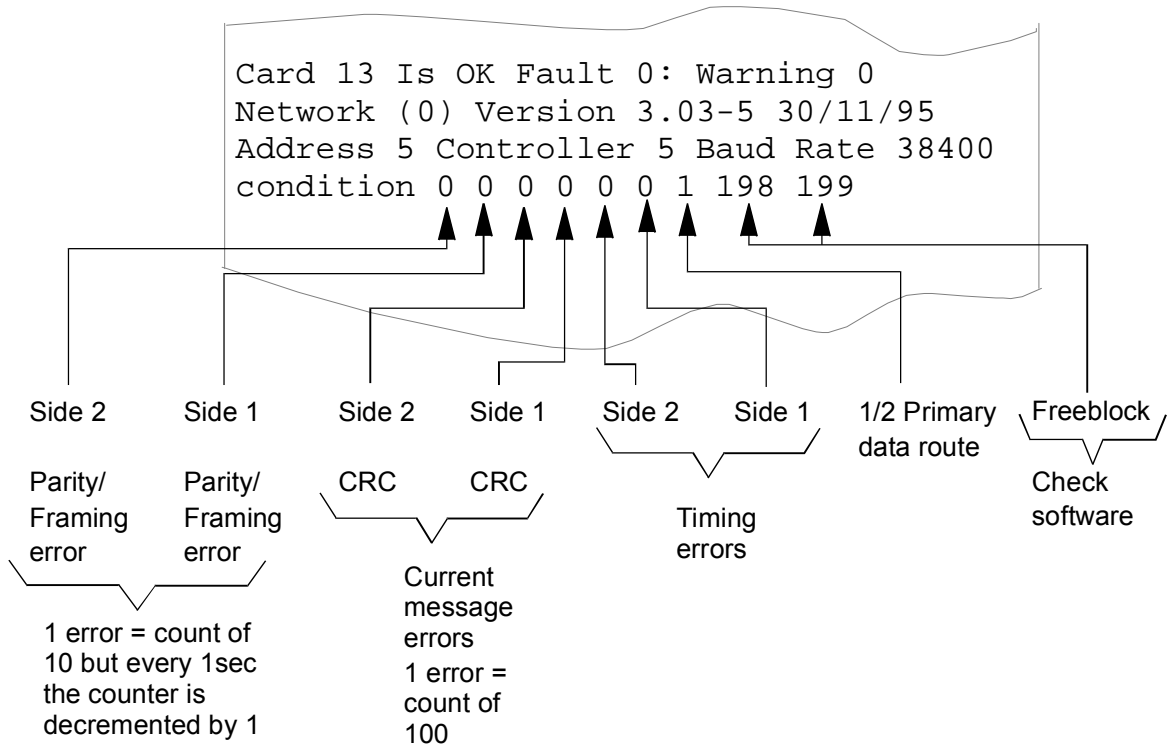
1 10 4 24 3 6

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:



f1244

Figure 12-6 Network card status

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 is from *Side 1* of the network controller.
- 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.

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.

GENT Supervisor power-up and commissioning

Normally the GENT Supervisors are supplied with the software pre-loaded and configured for site specific operation.

Preparation

- Check supervisor PC has been loaded with site specific software.
- Ensure the commissioning configuration is available for the:
 - textual system and
 - graphics systems

NOTE: Up to **three GENT Supervisors** can be connected in a secure network. The main one must be to a terminal node (network controller).

Minimum GENT-Card software

See Appendix F for 3.4X Upgrade

Check the cards in the panel/node of a network having a GENT Supervisor. The software version should be greater than:

- Local Controller Card - Version 3.4X
- Loop Processor Card - Version 3.4X
- Input Output Card - Version 3.4X
- Network Card - Version 3.4X

NOTE: Where two **IO Cards** are installed, they must both have the **same address**, plus the **second IO card** must have a **dongle** fitted.

NOTE: The network card (if fitted) must be set to the same address as the IO cards.

Distances and Baud rates

The GENT Supervisor communicates with a Control panel or Terminal node IO card using RS232 or RS485 or Modem/RS232.

Control panel/terminal node to the GENT Supervisor	Communication format	Baud
up to 15m	RS232	19200 Baud
up to 1.2km	RS485	9600 Baud
over a Modem	RS232	2400/9600 Baud

Multiple control panels may be connected over Modems using **RS232 Splitter unit** or **RS232 Compactor unit**.

Connections

- See the *installation manual* for connection details. The GENT Supervisor should be connected via a converter unit to a:
 - Terminal Node
 - or a Control panel.

NOTE: The node/panel that is a network controller is always given the lowest address in the network.

Set-up the RS232/RS485 Converter Unit

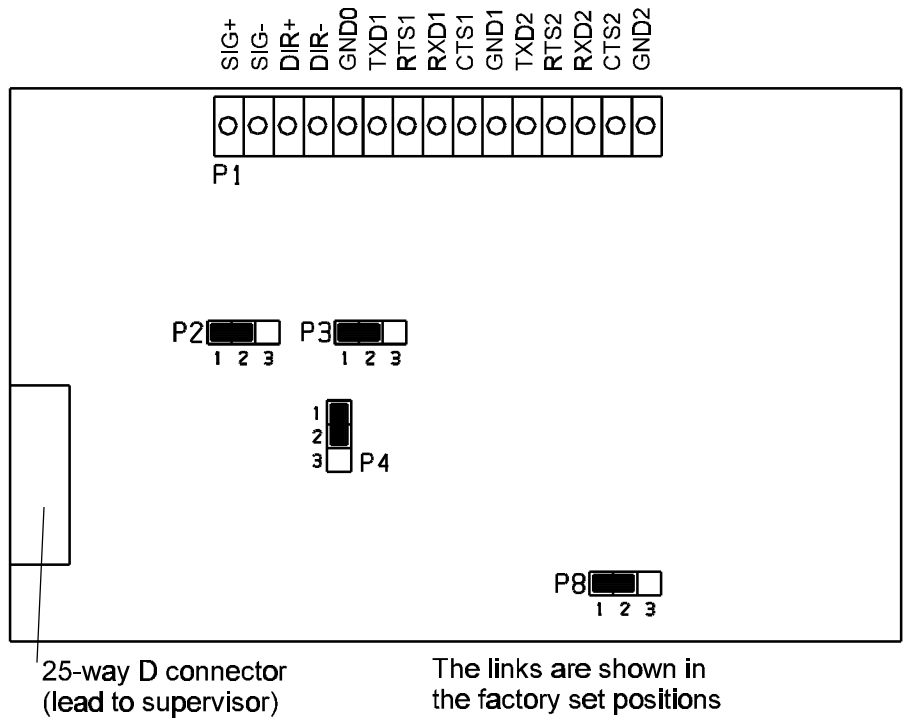


Figure 13-1 RS232/485 converter board cdm5

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 *GENT Supervisor*, when there is a failure of communication between the Supervisor and the panel/node, when P8 is set to selected.

Commissioning mode On selection of this mode the automatic re-boot facility of the GENT Supervisor on communication failure is disabled, when P8 is de-selected.

Installing PC- Hardware

See also the installation manual

CAUTION: Ensure the PC is **powered-down** completely.

Light pen card Install if applicable, see the User's guide supplied with the light pen. This card must be installed in a spare expansion slot.

Printer The text and graphics printers connect to LPT1 of the respective PC *parallel port card*.

Textual dongle Ensure the correct **textual dongle** is fitted to the main *parallel port* of the PC. There are four textual dongles available to select from: *Information, Security, Engineering and Configuration*.

PC Monitor The PC monitor used for graphics application should have been set to 800 x 600 resolution - 16 colours.

Software Installation

Disconnect the RS232 cable that links with the GENT Supervisor.

NOTE: Normally there would be no need to load software and set up the GENT Supervisor, as this work is done at Servicing organisation.

Install the PC-Software

- On powering-up the PC will boot-up into windows.
- Light pen software** If applicable, install the *light pen support software* and then *re-boot* windows. (refer to the User's Guide supplied with the light pen)
- Printer driver** The printer drivers must be installed where *graphics and text printers* used. Install the *printer driver* software, supplied with the printer.
- Check that the text dongle is fitted to the *parallel port*, in-line with the *printer cable (LPT1)*.

Install the Textual software

*NOTE: Ensure the **converter unit** is configured for the **commissioning mode** and relevant dongles have been fitted to the PC.*

- From the *Program Manager* select the **[File]** menu choose **[Run...]**'.
- Type *A:\setup.exe* and click **OK**.
- Installation disks** Insert *GENT Supervisor Disk 1* in the drive A and click **OK**.
- Select:
YES to install *Graphics with Text or (Graphics only)*
or NO to install *Text Only package*.
- Select *Full installation* and click **OK**. This will install all the supervisor files (including default configuration).
- Click **YES** to *Install autoexec.bat and config.sys ?* files.
- Insert *Gent Disk X* and click **OK**, the number of disks will depend on the type of supervisor package.
- Insert the *Gent Language Disk* and click **OK**.

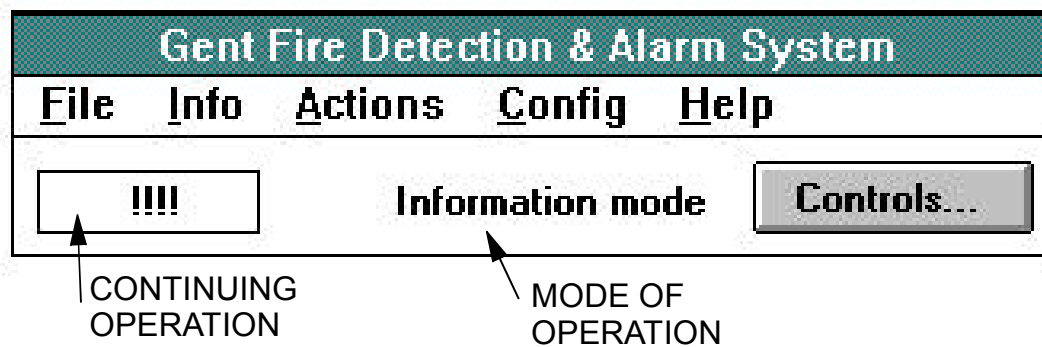
- Select *English* for the required language and click **OK**.
- Select **YES** to *Modify system.ini, win.ini and trend.ini*. This sets up windows to run the supervisor software automatically.

NOTE: If the installation is to have more than one GENT Supervisor, then each must be given a different **master address**. This must be done before connecting the Supervisor to the respective panel/node.

Initial power-up

This is a pre-connection GENT Supervisor power-up. This is required in order to set up the Commissioning and User configurations:

- Removing the Language Disk and close *windows*, then by switching the PC *Off* and then *On* again, *windows* will be re-booted.
- On the bottom right of the screen the *Gent Fire Detection & Alarm System* dialogue box will appear, plus a pop-up window will appear on the top left reading *Supervisor xx.xx Power Up*.



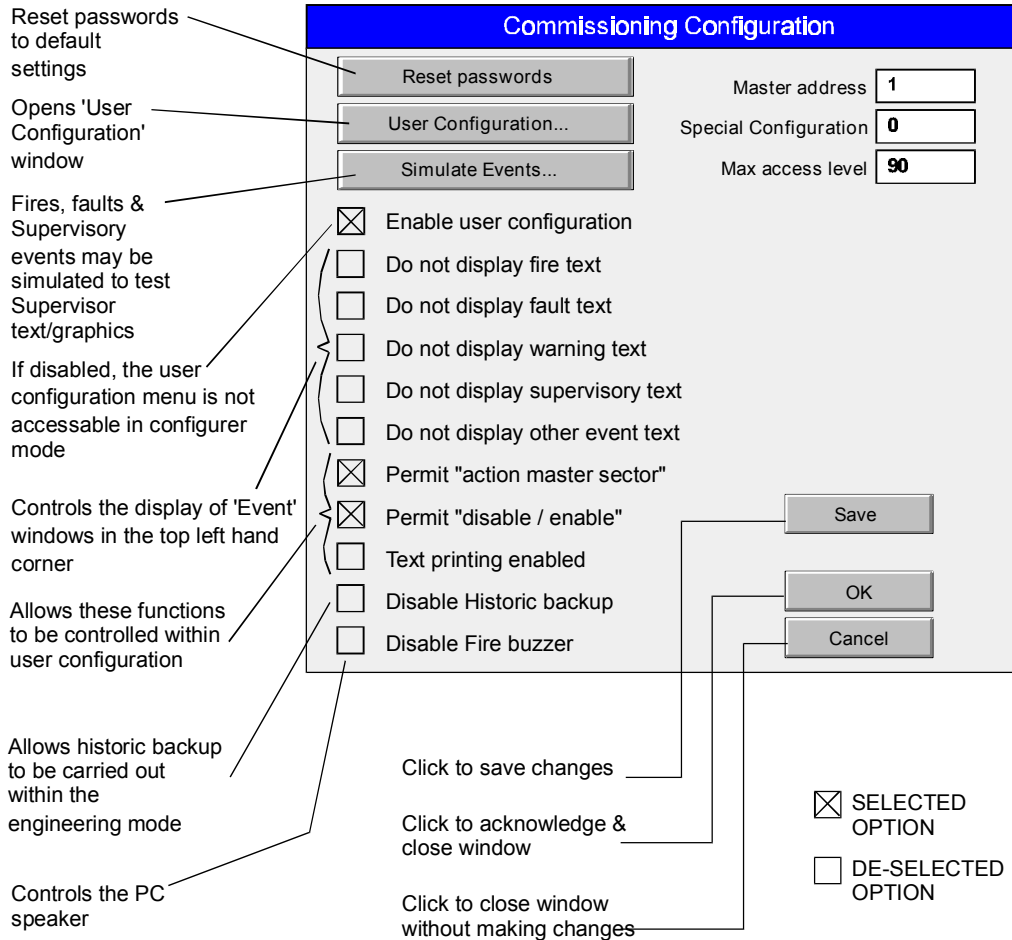
f1252

Figure 13-2 Textual window

- Initially the screen will display the *Information Mode*. The *continuing operation* indicator will show moving *** and !!* marks.
- The boot-up may take several minutes.
- Use the daily GENT-password to change to the commissioning mode.

**Change to
Commissioning
mode**

Commissioning Configurations



f1253

Figure 13-3 The commissioning configuration window

NOTE: Only the changes that have been saved will be remembered when the system is next re-booted.

- The required GENT Supervisor system configuration will have been determined during the project design stage.
- The **Commissioning Configuration** is only accessible in the *Commissioning Mode*.

NOTE: De-selected options in the *Commissioning Configuration* will not be accessible in the *User Configuration*.

Reset button

- On selecting reset password, all re-defined passwords will be reset to default ones.

Mode	Default password
Information	information
Security	security
Engineering	engineering
Configuration	configuration

User configuration

- On selecting the user configuration button access is provided to the User Configuration.
- Other setups

Selection	Normally set to
Master Address	64
Special Configuration	0
Maximum Access level	90

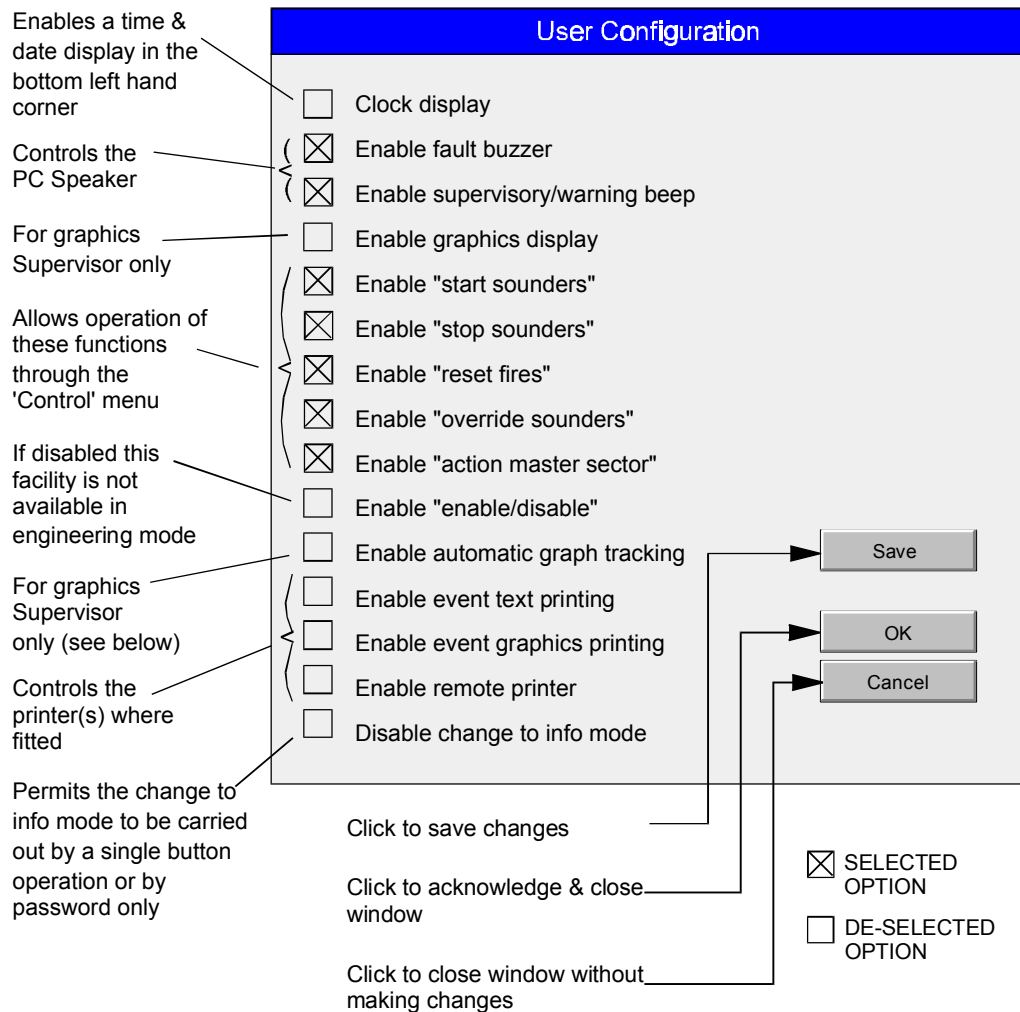
NOTE: Each GENT Supervisor in a network requires a unique Master Address. Re-boot the Supervisor on changing the master address.

Save configurations

- After making changes select the SAVE button and click **OK** to save the configuration.

User Configurations

- The *User Configuration* is accessible in the *configuration mode*.



f1254

Figure13-4 The user configuration window

- By enabling or disabling the required functions the GENT Supervisor can be customised for display, alarm operation and printing.

NOTE: When automatic graphics tracking is enabled, each page in turn will be displayed from site through to the specific location of the fire/fault event in 10 second increments. When disabled the specific location page of the fire/fault event will immediately be displayed.

Save configurations

- After making changes select the **SAVE** button and click **OK** to save the configuration.

Post connection Supervisor Power-up

- Connect the GENT Supervisor to the Converter unit.
- The GENT Supervisor will now search for any *terminal nodes and control panels* connected. All the addresses and baud rates are polled.
- Confirmation of each panel found will be displayed. A printout can be obtained if the printer is *on-line* and **enabled**.

NOTE: The GENT Supervisor will display error message for each **panel/node** having non compatible software fitted to cards.

- Initially the display will show the *Information Mode*. The *continuing operation* indicator will show moving ****** and **!!** marks.

NOTE: If only **!!** marks are continually displayed, then this means that there are no replies from the Panel or Node. If the marks no not move, then the textual dongle may not be fitted or may be faulty.

- The re-boot-up may take several minutes.
- Use the daily GENT-password to change to the commissioning mode.

Change to Commissioning mode

Check the connected System(s)

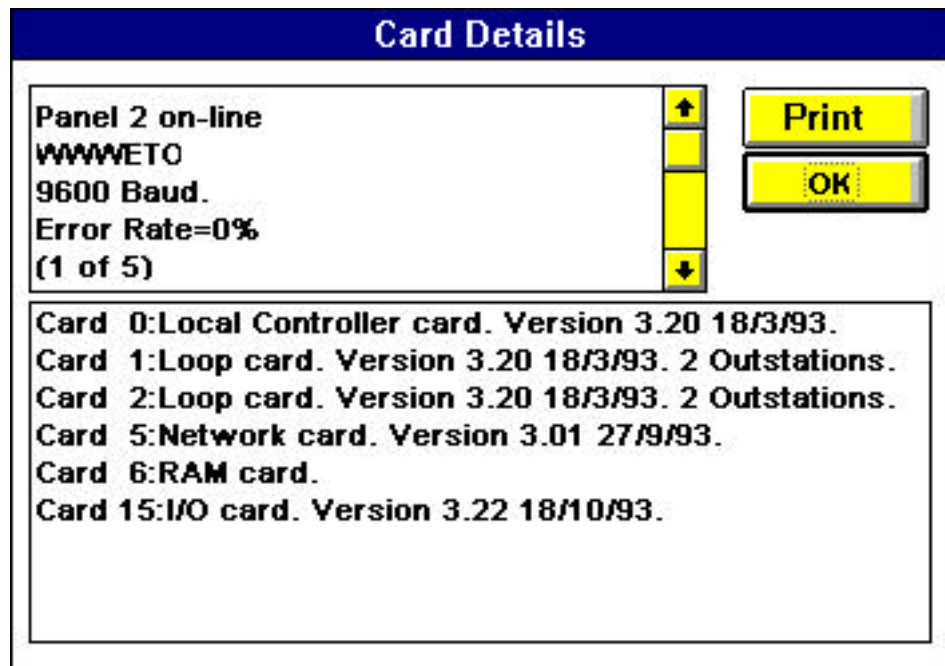


Figure 13-5 Card details window

pb77

- Card type** Check that all *panels and nodes* have been found and the *cards* installed in each are correct. This can be done by using the [**Card Type**] option in the [**Information**] menu.
- Active events** Check that any *active Faults, Warning and Supervisory events* of the panels and nodes are registered by the GENT Supervisor. This may initially take up to 45 minutes for a large network.

NOTE: Only supervisory events with labels starting with * will be registered by the GENT Supervisor.

- Check the Text Printer can **print events**. This can be done by selecting the [**Historic**], [**Fire**], [**Fault**], [**Warning**] and [**Supervisory**] option in the *Information menu*, and then by clicking on the **Print** button.

Importing a Graphics project

Preparation The following is needed:

- Graphics project disks

Check to ensure that the graphics project is compatible with the supervisor software.

To import a project

In the *User Configuration* window disable the *Enable Graphics Display* and then save the setting.

Now exit the GENT Supervisor.

NOTE: Ensure the schematics task menus are accessible, by installing the level 85 (Graphics Install) dongle.

Remove Text Dongle fitted to the parallel port of the PC and fit the *Level 85 (Graphics Install) dongle* in its place.

Re-boot the GENT Supervisor. Note the schematics task should not be displayed at this point.

Enter *Commissioning Mode* using daily password.

Whilst in the *Commissioning Mode* enter *User configuration* and re-enable *Graphics Display* and *Save the settings*.

NOTE: An error message will be displayed, which must be OKed at this stage.

Schematics Task is now displayed and menus should be accessible.

Click the **945 Schematics Project Mode** menu and select the *Engineering mode*. This enables the *Import Project* option.

Click the **945 Schematics Project File** Menu (not the page's file menu) and choose *Import Project*.

Insert the first Graphics project floppy disk into drive A:.

Click in the **Source Project** box, delete the contents and then type *A:\SUPRVISR.EXP*.

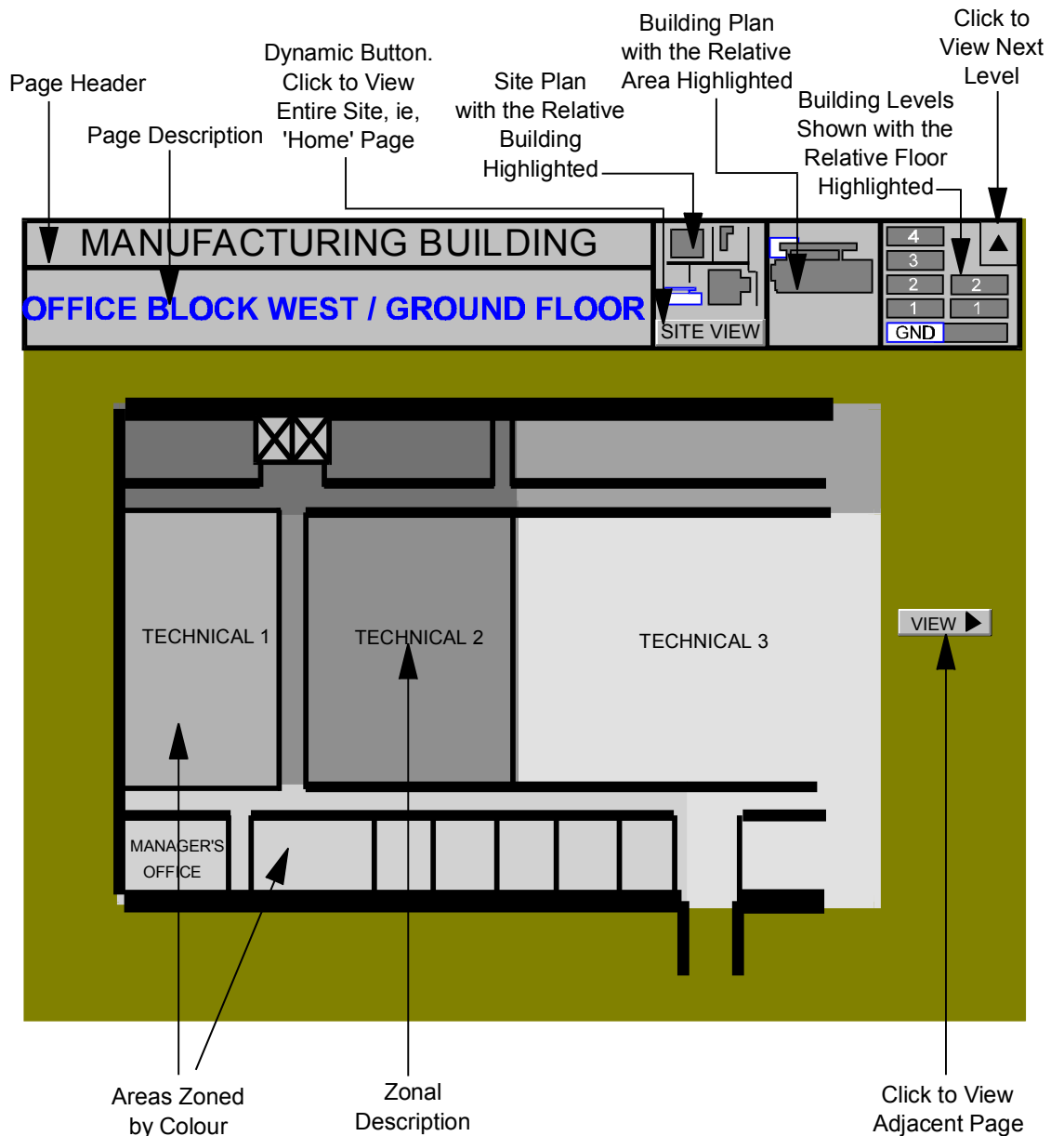
Click in the 'Destination Directory' box, then type *C:\SUPRVISR\GRAPHICS*.

Accept these by clicking **OK**.

All the graphics project files will now be automatically copied to the correct directories. Insert project floppy disks when prompted.

- Using the Tools install the graphics tracking file on version 1.23 of Supervisor.
- Remove the *Level 85 (Graphics Install) dongle* and replace with the original *Text dongle*.
- Re-boot** the GENT Supervisor and note the schematics task should now automatically open with the imported project.

Home page



f1255

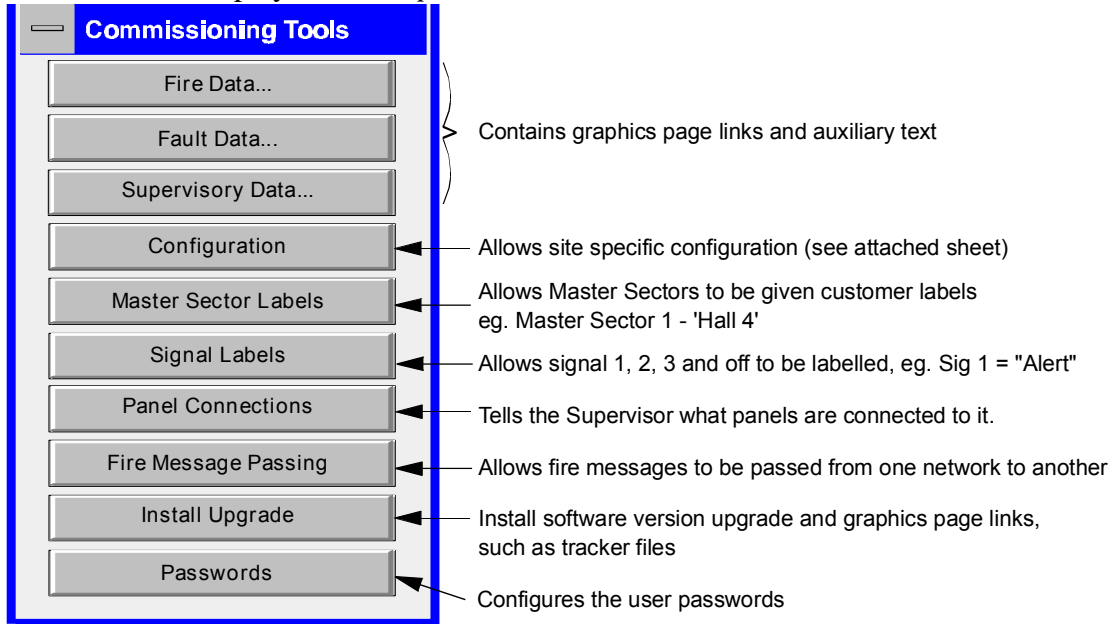
Figure 13-6 The top level graphics page

Commissioning Tools

- From the Supervisor **[File]** menu select **[Tools...]** to open the *Commissioning Tools* window. This is only accessible in the *commissioning mode*.

Opening a file

- On clicking the **appropriate** button in the *Commissioning Tools* window and by making the necessary data entry the required file is displayed in *Notepad*.



f1256

Figure 13-7 commissioning tools buttons

Editing a file

- Make the necessary changes to the text of the file. Any text entered following a ';' (semicolon) is classed as comments.

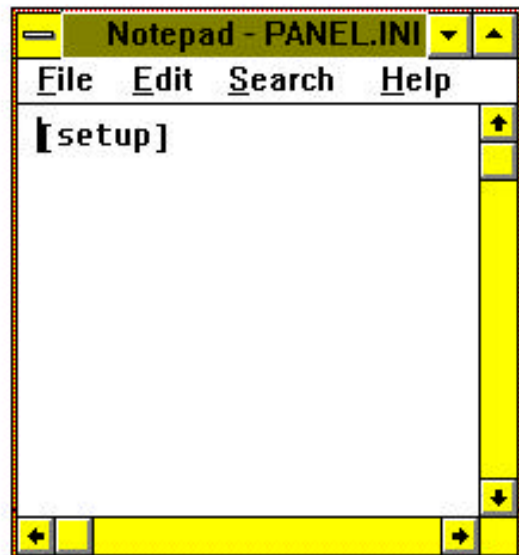


Figure 13-8 Notepad window

pb78

Saving a file

- On completing changes to a file, from the **[File]** menu select **[Save]** and then select **[Exit]**.

Fire Data...

This option allow editing of fire data on outstation, zone and outstation-channel basis the required *Graphics Page Tracking* and *Auxiliary Text* .

NOTE: *Although there are differences between versions of GENT Supervisor, the procedure is similar.*

- a) Click **Fire Data..** button in the Commissioning Tools window. Enter the *panel number* and click OK.
- b) Select the loop or zone and enter a number. Assuming a loop is entered the display will open FIRELOOP.XXX file:

NOTE: *When editing the supervisor files in notepad, ensure the letter case is inputted exactly as shown.*

```
[Graphics]
os1=location/page number
os2-4=location/page number
os5,ch1-2=location/page number

[AuxText]
os1="Aux text line 1","Aux text line 2","Aux text line3","Aux text line 4"
os2-4="Aux text line 1","Aux text line 2","Aux text line 3","Aux text line 4"
os5,ch1-2="Aux text line 1","Aux text line 2","Aux text line 3","Aux text line 4"
```

If required edit the [**Graphics**] page tracking and [**auxiliary text**] for other outstations and repeat for other panel-loops.

NOTE: *There can be up to 40 characters per auxiliary text line.*

NOTE: *The zone graphics page tracking and auxiliary text can be edited in a similar manner.*

- c) **Save** the file and **Exit**.

Fault Data...

This option allow editing of fault data on outstation, zone and outstation-channel basis to obtain the required Graphics Page Tracking and Auxiliary Text .

- Similar data entry to fire data, See Fire Data.

Supervisory Data...

- Similar to fire data entry, see Fire Data. Normally supervisory graphics is not used.

Configuration

- a) Click the **Configuration..** button in the Commissioning Tools window. This will open FDA_SVIS.CFG file and provide the user commissioning entries (already covered) with other configurations.

```
[special]
allow minimise=0      Set to 1 to iconise supervisor window
stay on top=1        Set to 0 to hide supervisor window behind graphics
hook kbd=1
print mode=0
;viewer name=view95.exe
;supervisory exe=security

[printing]
height=25
weight=400
font=roman

[timers]
fire scan=20
events scan=22

[exec]
conftool=passwd.exe
commtool=tools.exe
;commtool=program.exe

[sounds]
alert duration=5      The duration of warning and supervisory buzzer sound.

[display]
warning duration=10   The duration of warning and supervisory display.
supervisory duration=20 (maximum 99seconds)

[graphics]
home page=FIRE
project=c:\suprvisr\graphics\suprvisr

[systems]
trend=0

[scanning]
subfault interval=1000
subfault filter=1

[comms]
comm port=1
text printing=LPT1   Port for text printer (not available before V1.20)
```

```
[commserv]
txdebug=0
rxdebug=0
;modem2400Tm=350      Remove ';' to select baud rate of connecting modem
;modem9600Tm=300
;modem2400Ch=170
;modem9600Ch=80
```

- b) **Save the file and exit.**

Master Sector Labels

- a) Click the **Master Sector Labels** button in the Commissioning Tools window. This will open MASTER.DAT file.
- b) Under the **[master sectors]** heading, edit the names for each master sector, for example:

```
[master sectors]
1=West wing
2=East wing
3=Data Processing
```

NOTE: Each label can be up to 32 characters in length.

- c) **Save the file and exit.**

Sound Signal Labels

- a) Click the **Signal Labels** button in the Commissioning Tools window. This will open SIGNALS.DAT file.
- b) Under a **[signals]** heading, edit the names of the three **signals**, for example:

```
[signals]
signal1=Alert
signal2=Evacuate   default action
signal3=test
```

NOTE: Each label can be up to 16 characters in length.

- b) **Save the file and exit.**

Panels Connections

- a) Click the **Panels Connections** button in the Commissioning Tools window. This will open PANEL.INI file.
- b) Under **[setup]** edit the **panel** numbers and their **baud** rate, for example:

```
[setup]
1=19200
2=19200
```

NOTE: All panels/nodes in the secure network will work on the same baud rate.

- c) **Save** the file and **exit**.

Fire Message Passing

NOTE: This feature is not used.

- a) Click the **Fire Message Passing** button in the Commissioning Tools window. This will open MSG_PASS.INI file.
- b) Under a **[timedate]** heading edit the **panel** numbers, for example:

```
[timedate]
p0=1,2,6,19
```

*The time and date messages will be sent from the GENT Supervisor **po** to Panels **p1, p2, p6 and p19**.*

*The Terminal Node (Controller) passes the clock around the secure network, in this case **P0=1**.*

- c) Under a **[Fires]** heading edit the panel numbers, for example:

```
[fires]
p1=2,6,19
p2=1,6,19
p6=1,2,19
p19=1,2,6
```

The panels 1,2,6 and 19 are to send fire messages to each other.

- d) **Save** the file and **exit**

Install Upgrade

- a) Move the *commissioning mode* link **P8** in the converter unit. This should have already been done. Then click **OK**.
- b) Insert *supervisor disk 1*.
- c) Click the **Install upgrade** button in the *Commissioning Tools* window.
- d) Click **Yes** when prompted *Do you want to close down supervisor?*, the supervisor must **NOT** be working during upgrade.
- e) Select *partial installation* and then **OK**. This will install the new supervisor programs but keep the existing configuration files.
- f) When prompted *Install single files ?* - click **No**.
- g) On completion deselect the *commissioning mode* in the **converter unit**, and re-booted the PC. Check all the configuration files are correct.

Passwords

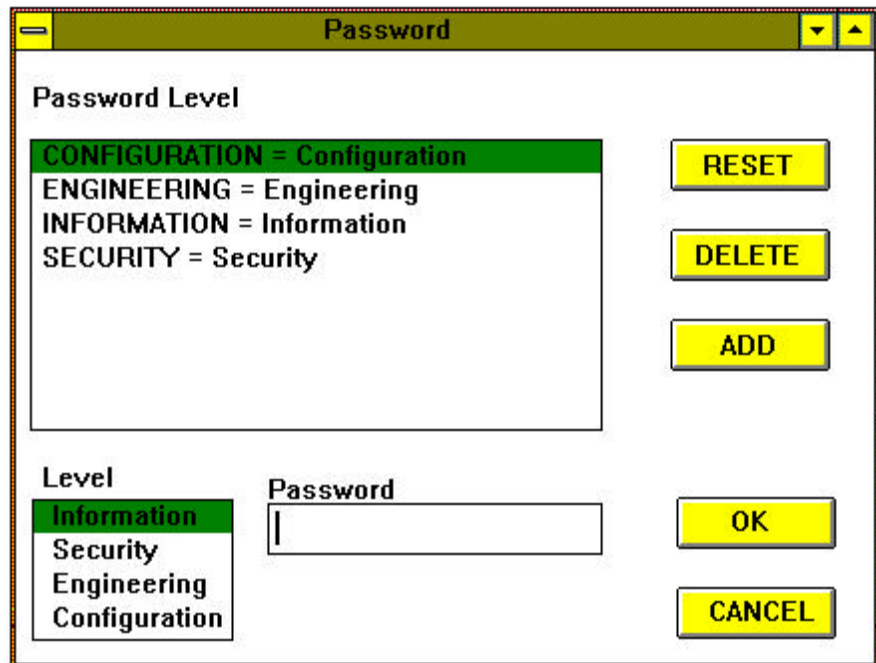


Figure 13-9 password window

pb79

The *Configuration Mode* users can create, alter and reset the **passwords** of the users of Information, Engineering and Security Modes.

Reset button

On pressing this button all the passwords for the modes will change to the default settings.

To delete a password

- a) Scroll and highlight the password in the password level box.
- b) Click the **Delete** button.

To add a new password

- a) Click the **Add** button. Notice *password* entry box and buttons appear in the password window.
- b) Click the level of password to be added:
Information
Security
Engineering
Configuration
- c) Click the *password* box and type a code for the user.
- d) Click the **OK** button. Notice the password list will be been updated to include the new password for the selected mode.
- e) To close password application, click the **control menu box** and select the **[close]** option.

Checking the GENT Supervisor

- If more than one GENT Supervisor are connected to a network then ensure each one has been given a unique master address.
- Check that events are displayed at all GENT Supervisors.
- If *text printer* is installed then check printout can be obtained.
- Check *Auxiliary information* is correct, if set up.
- Check that the *Master Sectors* operates as required, if set up.
- Check that the *Signal labels* are displayed, if set up.
- Check that correct *graphics pages* are being displayed for fire and or fault events,if set up.
- Check the *automatic tracking and printing* of graphics pages, if set up.
- Check *manual movement* between pages.

Modem

Preparation

- Commissioning computer (PC)
- Modem *answerer and originator* software
- Leads to connect the PC to
 - the Modem

Loading the Modem configuration software

- The *Modem configuration software* may be loaded onto the PC hard disk.
- To install the software:
 - insert the floppy disk in drive A
 - switch *On* the PC
 - at the *A:* prompt type *INSTALL*
 - after installation remove the floppy disk and re-boot the PC
 - The PC will automatically go into the *GENT SHELL* and the *PAXDATA* modem set up programmes will be shown.

Set modem board link

- Both modems must have the internal board link set up to leased line, that is pins 2 and 3 .

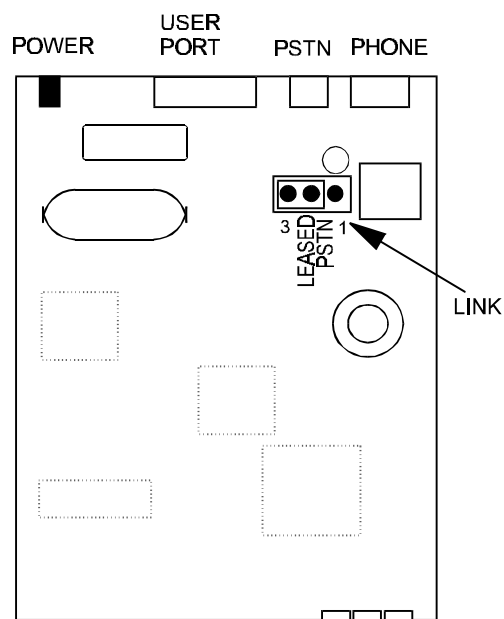


Figure 14-1 Paxdata 9642 modem link setting

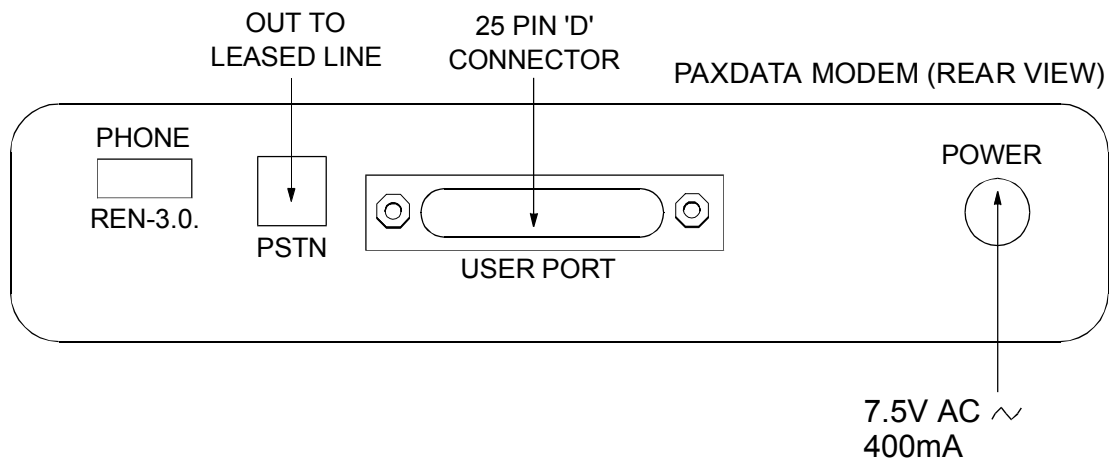
cdm32

Automatic set-up of PAXDATA 9642 modem

NOTE: The modems should be powered up throughout the set up.

- Each of the modem pair has an internal standby battery supply to allow it to memorise its set up, in the event of power failure.

NOTE: If the modems have been in storage then a 4 hour re-charge may be required.



fl258

Figure 14-2 Rear view of the modem

- Originator**
- Using a D type 9-pin to 25-pin lead, connect the PC to one of the modem.
 - One modem must be set up as the *originator* and one as answerer.
 - Run the *originate programme* on the PC. It does not matter which one of the modem pair is set up as the originator.
 - Check the PC screen, to make sure that the *data* being **sent** by the PC is the same as that being **received** by the modem.
- Answerer**
- Using a D type 9-pin to 25-pin lead, connect the PC to the other modem.
 - Run the *answerer programme*.
 - Check the PC screen, to make sure that the *data* being **sent** by the PC is the same as that being **received** by the modem.

NOTE: The modem configuration programme may be run directly from floppy disk. To do this insert the disk into **drive A** and power-up the PC. The originate or answer mode programmes can then be run straight from the floppy disk.

Manual setup set-up of PAXDATA 9642 modem

In the event of a PC not being available the modem may be set up manually. Although it is possible, it is time consuming and may be seen as a last resort.

PAXDATA (FRONT VIEW)

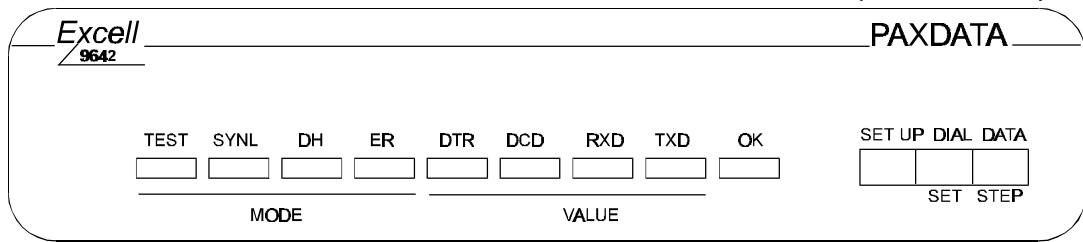


Figure 14-3 Front view of the modem

11259

- The LEDs and switches on the modem have 2 functions. In the *SETUP* mode the LEDs are split into 2 groups of 4 displaying *MODE* and *VALUE* in binary from numbers 0-15.
- Each *MODE* requires setting up according to the correct *VALUE* given to the *originate* and *answer*. This is what is being done in effect by software programme.
- Power up the modem and press the **setup** button
 - the green OK button will flash
 - the *ER LED* will also flash.
 - this indicates a No 1 (0001) in binary, ie *MODE 1* in combination with the *TEST*, *SYNL* and *DH* LEDs.

MODE	VALUE	
	Originate	Answer
0000	Not used	Not used
0001	0111	0111
0010	0000	0000
0011	0100	-
0011	-	0101
0100	0000	0000
0101	0000	0000
0110	0000	0000
0111	0000	0000
1000	0000	0000
1001	0101	0101
1010	0100	0100
1011	0000	0000
1100	0000	0000
1101	0011	0011
1110	0100	0100
1111	Not used	Not used

- Look at the set up chart to see the VALUE set up. In this case MODE 1 has a VALUE of 7, or 0111. Therefore press the DIAL/SET button. The MODE LEDs will stop flashing and the VALUE LEDs will be lit depending on the set up.
- Press the DATA/STEP button to step through in binary until the relevant VALUE is displayed, eg 7 = 0111. Using the DTR, DCD, RXD and TXD LEDs.
- Once the correct VALUE is displayed press the DIAL/SET button to select the MODE and using the DIAL/STEP button step on to the next MODE 2 (0010). Continue setting up the MODES with the relevant VALUES as shown on the chart.
- Perform this for the *originate* and *answer* modems.
- The modems are now set up and ready for connection.

Set-up the GENT Supervisor for Modem

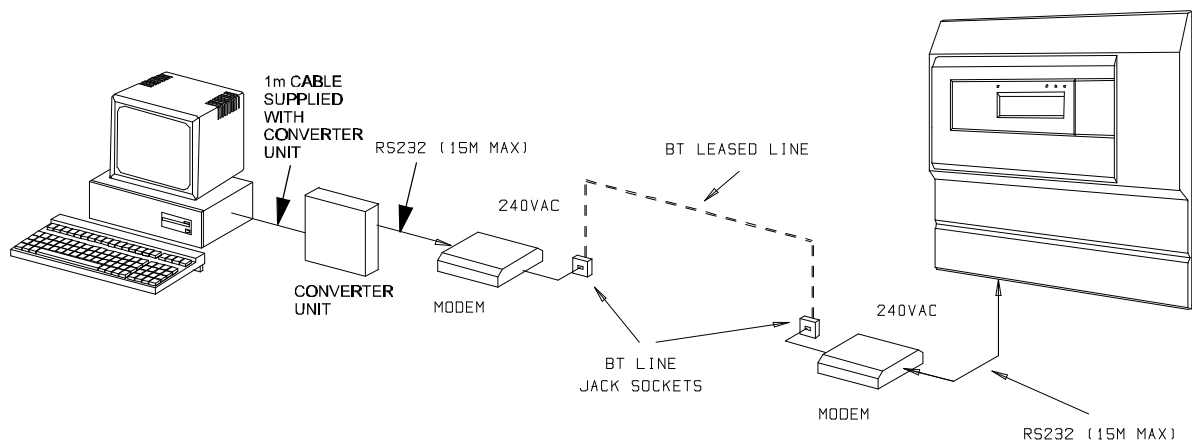
- Modify the configuration from within the **[Tools]** menu commissioning mode to acknowledge the use of the modem, ie remove the semi-colon (;) from the two relative lines:

```

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

```

Save the file



f1260

Figure 14-4 Modem to supervisor and control panel

Connect the modems

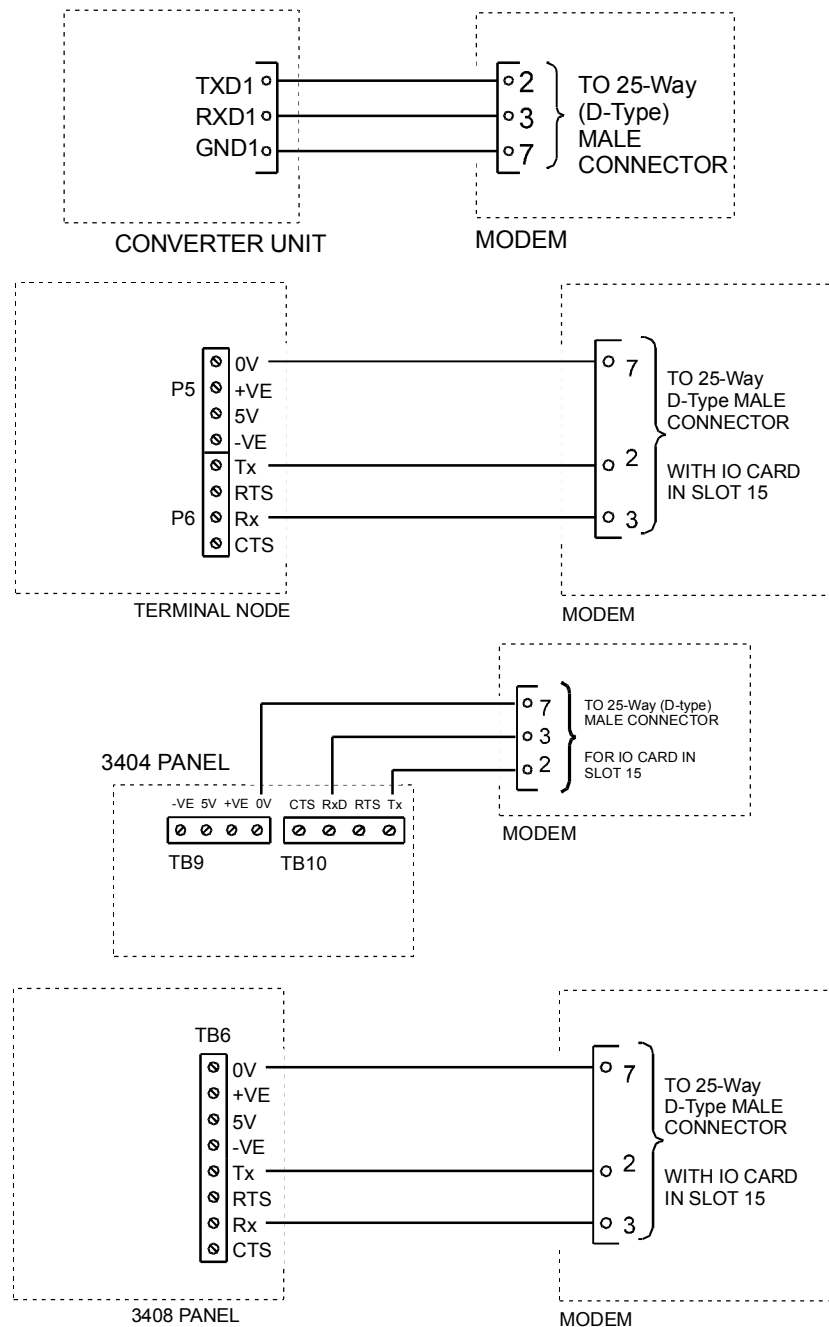


Figure 14-5 modem connections

f1144

- 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

Maps

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

- Control
- Setup
- Information
- Test / Engineering menus

Equipment

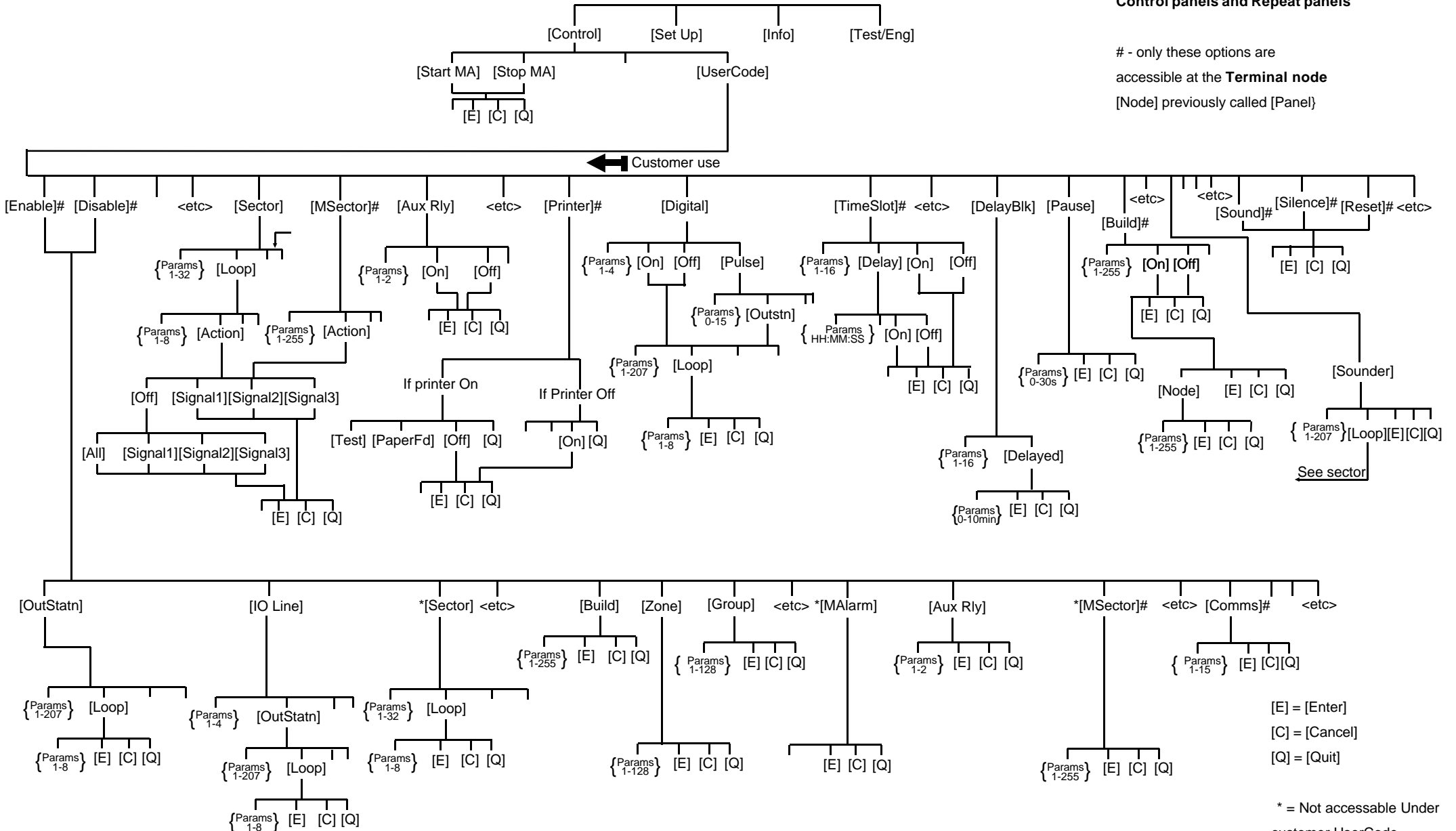
The equipment covered include:

- 1 - 4 Loop control panel
- 1 - 8 Loop control panel
- Repeat panel
- Terminal node

[Control] menu map V3.4X

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]

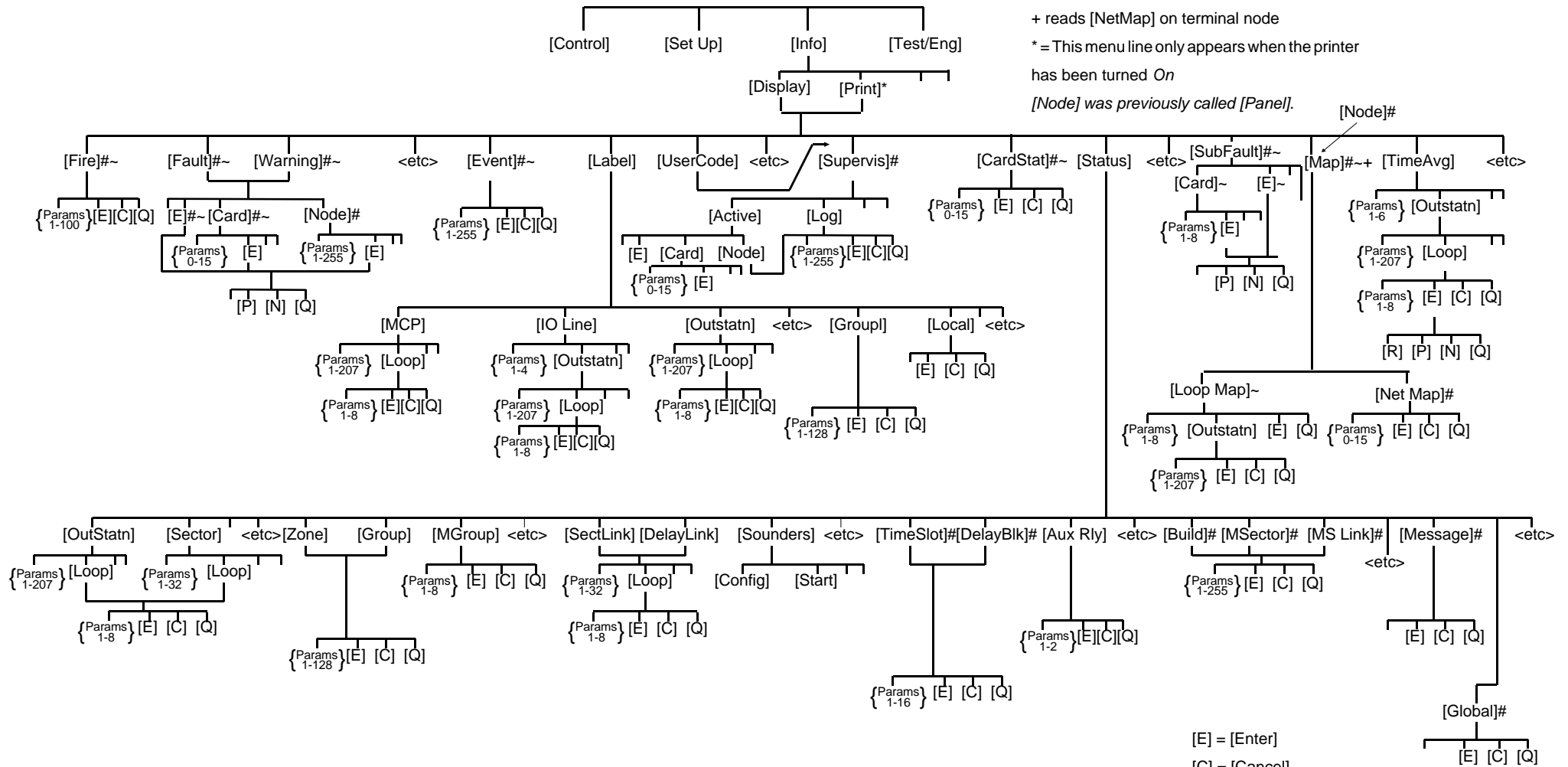


[E] = [Enter]
 [C] = [Cancel]
 [Q] = [Quit]

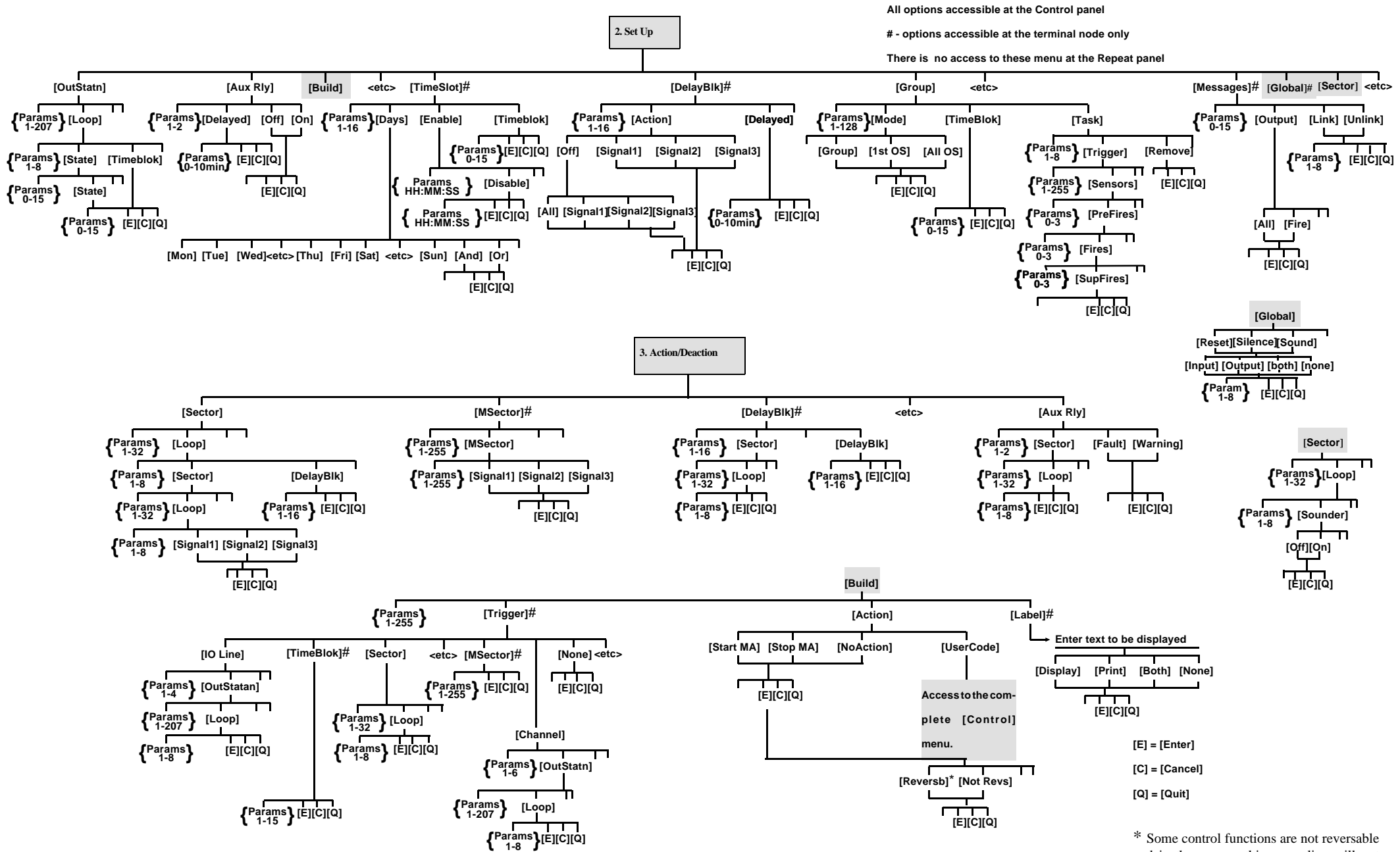
* = Not accessible Under customer UserCode

[Information] menu V3.4X

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].



[E] = [Enter]
 [C] = [Cancel]
 [Q] = [Quit]
 [P] = [Previous]
 [N] = [Next]
 [R] = [Repeat]



[Test/Engineer] menu map V3.4x

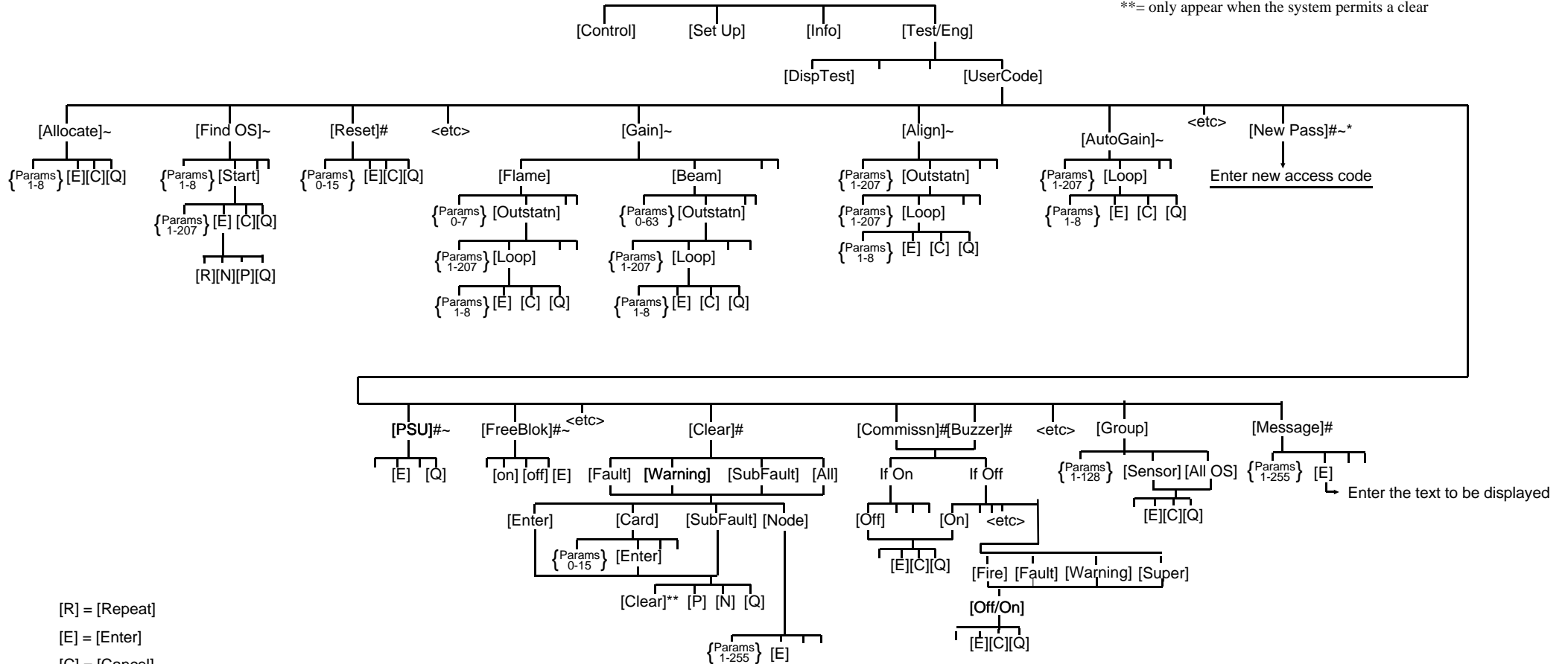
All options - accessible to control panel

~ - 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.

The messages are alphanumerically arranged to provide guidance:

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

Message..	mainly associated with..	meaning..	and possible rectification action.
A spurious FIRQ	IO Card / DKC / Backplane	An IO Card hardware glitch or noise on backplane	Clear and ignore single occurrences
A spurious IRQ	IO Card Backplane	An IO Card hardware glitch	Clear and ignore single occurrences
A spurious SWI3	IO Card Backplane	An IO Card hardware glitch	Clear and ignore single occurrences
A spurious NMI	IO Card Backplane	An IO Card hardware glitch	Clear and ignore single occurrences
A spurious SWI2	IO Card Backplane	An IO Card hardware glitch	Clear and ignore single occurrences
Access fault	Any Card	Card cannot talk to Local controller	Replace card if fault keeps reoccurring
ACTIA failed	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 n	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	-
Allocation started from end 2	Loop Processor Card	No devices found on End-1 or End 1 of loop is open circuit	Check the wiring to the first outstation or last outstation on the loop
Allocation : Too many	Loop Processor Card	Allocated more than 200 devices or the device is restricted for the particular software version	Replace incompatible devices ie:3300 used in 3400 system

Message..	mainly associated with..	meaning..	and possible rectification action.
Allocation : Tx fault	Loop Processor Card	Invalid reply from outstation	Check outstation. Also check cable routing and length (measure resistance and capacitance of cable)
Allocation : HW fault	Loop Processor Card	Loop breaker relay has not closed or serial line End-2 is faulty. The outstation may not be correctly fitted.	Check outstation connections
Allocation : Double Allocated	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	Loop Processor Card	Loop wiring is incorrect. A sub loop may have been wired on a spur	Check and rewire if necessary
Allocation : not ready	Loop Processor Card	As per message	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 OS is faulty	Loop Processor Card	Failure of communication to Repeat / Mimic panel software. The power supplies to the panels are not connected	If applicable connect the power supply and RESET the Master Repeat Card. If necessary replace the card/software
Back up	Memory (RAM) Card	Data is being copied from cards and stored on the RAM	-
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 indication Value = $V_{batt} \cdot 1/6 \times 256/5$
Battery discharged	Power supply	This indicates failure of battery load test. The value should be equal to or less than (Normal -9).	Check load test and the battery condition
Baud rate n at Card x	IO Card	Baud rate set by DIL switch has been read	If required, change the baud rate
Baud rate n	Network Card	Baud rate DIL switch setting has been read	If required, change the baud rate

Message..	mainly associated with..	meaning..	and possible rectification action.
Buffer full	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Buffers out of step	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Call point on interface unit operated/restored	Outstation	Mains powered interface input has been triggered by conventional MCP. Value of input is equal to or less than 6V	-
Call point operated/restored	Outstation	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
Call point is open cct	Outstation	Monitored base does not see end-of-line. Bad connection to MCP.	Check the internal wiring, there may be a loose connection
Call point short cct	Outstation	Call point contacts are short circuit	Check the call point contact and circuit internally.
Call point glass is broken	Outstation	Breakglass has been operated when disabled	Replace the glass?
Card found/lost	Any Card	The card has been found/lost (is locked out)	There may be a hardware fault on card or backplane. Investigate and rectify
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.	-
Card lost	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)
Chamber removed or Replaced	Outstation	Device chamber has been removed	Replacing the chamber will remove the indication

Message..	mainly associated with..	meaning..	and possible rectification action.
Clock changed / clock not set up	Local Controller Card	Time and date has been altered or no time entered	If necessary, set the clock using the set up menu
Comms Enabled/Disabled at card x	IO Card	Card communications has been enabled or disabled	If necessary, manually enable/disable the Comms using the control menu
Comms Enabled/Disabled	Network Card	Control panel has been isolated from network in echo node	-
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 active/deactive	Local Controller Card	Command build has been switched ON (active) or OFF (deactive)	If necessary switch ON/OFF the command build manually using the control menu
Comms supply Restored	Terminal node PSU	The 5V supply has been restored	-
Comms Supply Fault 1	TBA	TBA	TBA
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 1 at Card n	Network Card	TBA	Normally this message never appears
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) Value=Vreg x 1/10x256/5	-
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 mains supply
Detection Zone Disabled/Enabled at Card n	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

Message..	mainly associated with..	meaning..	and possible rectification action.
Detector on interface unit	Outstation	Mains powered interface input has been triggered by conventional detector. Value of input should be equal to or less than 10V	-
Earth 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 Disabled Aux relay	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
Excessive transmission error rate Too many errors: lost outstation or loop split	Loop Processor Card	There were more than 10 reply errors in one day (More than 16 reply errors will cause the outstation 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 (V3 Only)	Investigate the fire
Fast scan started	Datalogging	Fire sensor has selected a change on its input	The message is normally when the data logger is connected
Fault cleared warning cleared	Local Controller Card	Fault or warning has now gone	-
Fire reset	Local Controller Card	The Fire reset button has been pressed	-
Fire	Loop Processor Card	Pattern match is equal to a Fire or MCP operated or conventional detection on IO line of mains interface operated	-
Front cover open	IO Card / DKC	Button released on opening the front door of the control panel	Check the button and the micro switch if message does not appear
Full keyboard removed/fitted	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.

Message..	mainly associated with..	meaning..	and possible rectification action.
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 n	Network	High number of communication errors	TBA
Incompatible Card Version	Any Card	There is a card software conflict, that is V2 & V3 loop cards in the same panel	Fit compatible software
Interface input fault / restored	Outstation	IO line triggered fault	Check the wiring and restore input for normal operation
Interface Input Fire	Outstation	Fixed extinguishant IO line triggered a fire	Check the wiring and restore input for normal operation
Interface input S/C / restored	Outstation	The wiring is shorted. The value of input is equal to or less than 2V	Check the wiring and rectify to restore the input
Interface failed	IO Card	The interface timer chip has failed	Clear the fault and ignore on single occurrences Replace the card on multiple occurrences.
Interface output S/C / restored	Outstation	The value of output is equal to or less than 50%	Check the wiring and restore the output circuit
Interface input operated / released	Outstation	Fixed extinguishant interface unit input has been triggered	Follow the FE system reset procedure to release the input
Interface input O/C / restored	Outstation	The end-of-line is not seen.	Check the wiring Device may have been removed, if so refit the device to restore
Interface output o/c or restored	Outstation	The end-of-line is not seen The value of output is equal to or greater than 125%	Check the wiring Device may have been removed, if so, refit to restore
Interface input not reset	Outstation	The input line continues to trigger	Check devices on the IO line
Intermittent Fault	Any Card	A fault has been picked up by the local controller	Replace the appropriate card if the fault keeps reoccurring

Message..	mainly associated with..	meaning..	and possible rectification action.
Invalid task delay	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Invalid configuration	Loop Processor Card	Loop recovered with freeblocks ON	This is not allowed. Switch OFF the freeblocks and reallocate
Invalid message / reply received	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 occurrences and record in log book
Invalid message/reply	Network Card	The message/reply has not been understood from other panels	Ignore for single occurrences and record in log book
Invalid task stage	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
IO line enabled / disabled	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 Processor Card	TBA	TBA
Keypad not fitted	Local Controller Card	The control keyboard is not found	Check the connection to the simple keyboard
Last Univ Tx Failed at Card n	Network	TBA	This message is never displayed
Loop Started not ready	Loop Processor Card	As per message	Wait and if it takes longer than 10 minutes then reset the loop card
Loop map has changed	Loop Processor Card	The map is different to that previously allocated	Check and confirm difference with backup map

Message..	mainly associated with..	meaning..	and possible rectification action.
Loop power restored	Power supply	Normal loop supply restored: Normal = 202 (44V) Where: Value = $V_{supp} \times 1/11 \times 256/5$	-
Loop stopped	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 and replace if necessary
Lost slave Outstation	Loop Processor card	There is no reply on ends 1&2 of the outstation	Check the slave device connections and replace if necessary
Lost Command	Loop Processor Card	Lost FAB/SAB	Ignore single occurrences and record in log book
Lost outstation	Loop Processor Card	There is no reply on ends 1&2 of the outstation	Check the sensor connections
Magnetic switch operated	Outstation	Reset switch in base has closed	Check base and proximity of magnetic field
Main program not running	Any Card	Problem with software the watchdog will operate the local controller	Fatal 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 is necessary. This should Normally equal to 190 (60V) to get a restored message $Value = V_{second} \times 1/16 \times 256/5$
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	-

Message..	mainly associated with..	meaning..	and possible rectification action.
Master alarm o/c or s/c	Power supply	No end-of-line seen. The value is greater than 92 or The value is less than 37	Check the wiring to the master alarm circuit. 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 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 wiring
Memory corrupt	Outstation	EEPROM checksum failure	Replace outstation
Neighbour ACK Failed at card n	Network	TBA	-
Neighbour ACK Invalid at Card n	-	Repeated address	Check domain addresses are unique
Network initialised	Network Card	Successful network map with polled panels	-
Network starting	Network Card	Communication starting with other connected panels	-
Network wiring fault n	Network Card	Wiring is presumed to be o/c between panel n and panel n	Check the wiring
Network insecure / secure	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	The address set on the DIL switch has been read at the particular card	-
New domain address n at Card n	IO Card	The address set on the DIL switch has been read at the particular card	-
New address n	Network Card	The address set on the DIL switch has been read	-

Message..	mainly associated with..	meaning..	and possible rectification action.
NMI's missed	Loop Processor Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
No periodic interrupts	Any Card	Problem with software, the watchdog will operate the local controller	Fatal errors will activate a system reset Ignore single occurrence. Record event in log book
No response	Loop Processor Card	There is no communication with repeat or mimic panel software	Power-up the repeat or mimic panel
Node lost/restored	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	Network Card	Another panel on the network acknowledged	-
Node double allocated n	Network Card	Two network cards of same address	Keep address unique
Not enough RAM	Any Card	Not enough memory	Reset the card and ignore single occurrences. If necessary replace the card or add RAM
Nothing found	Loop Processor Card	No devices found on End 1 or End 2	Check wiring to loop end 1. Add outstation
OS replaced is faulty	Loop Processor Card	Tx fault re-finding outstation	Check connections to outstation / base, device type etc
Outstation mains failed/restored	Outstation	Failure of mains supply to mimic/repeat /mains powered interface unit.The value of rectified DC is equal to or less than 8V (failed) and is greater than 24V (restored)	Check mains supply connections and fuses

Message..	mainly associated with..	meaning..	and possible rectification action.
Outstation power too high/restored too low/restored	Outstation	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 outstation
Outstation replaced	Loop Processor Card	The outstation now communicating with the panel	-
Outstation battery O/C or restored	Outstation	Failure of fuse or wiring 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
Outstation enabled/disabled	Loop Processor Card	Outstation has been enabled or disabled manually or automatically	If necessary manually enable or disable the outstation
Outstation power Fault / Restored	Outstation	The failure of internal power supply rail	Replace the outstation
Outstation Fault / Restored	Outstation	There is a fault on the outstation.	Check the outstation.
Outstation battery fault/restored	Outstation	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
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	Check for system error
Panel Label Set up	Local Controller Card	Panel label has been set from the menu	-
Pattern	Loop Processor Card	Sensor has detected an interesting event eg fire/fault	-

Message..	mainly associated with..	meaning..	and possible rectification action.
Pointer corrupted	Loop Processor Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Pointer missing	Any Card	Software error	Fatal errors will cause a system reset Card fault should be ignored for single occurrence. Record the event in log book
Prefire	Loop Processor Card	Pattern match less than a Fire	-
Printer lost/fitted	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	Any Card	Checksum failure on EPROM at midnight	Clear and ignore single occurrences. Record in log book
Program runaway	Any Card	CPU has crashed	
Program not running	Any Card	Problem with software the watchdog will operate the local controller	Fatal errors will activate an automatic system reset Ignore for single occurrence. Record event in log book
Q buffer full	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Q buffer number	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book

Message..	mainly associated with..	meaning..	and possible rectification action.
RAM initialised	Memory (RAM) Card	Memory available verified	
RAM is write protected	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	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 n	Loop Processor Card	Successful recovery after a previous failure	-
Replaced outstation Wrong type	Loop Processor Card	Outstation is a different type	Check and confirm installation of correct type and reallocate. Back up to memory.
Scan error	Loop Processor Card	Invalid universal scan reply	Check loop length and screening
Sector enabled/disabled	Loop Processor Card	The sector(s) has been enabled or disabled automatically or manually	A manual enable is possible using the control menu
Sector actioned	Loop Processor Card	Sector is switched ON/OFF	-
Sensor out of specification	Loop Processor Card	Fault pattern has been matched	Check and replace the sensor if necessary
Shared memory hardware is faulty	Any Card	There are backplane problems	Remove all other cards than the LCC. See if problems persists Replace backplane if necessary
Short at card n	Loop Processor Card	Incorrect polarity (probably a short circuit) between loop end 1 and a device. The positive core may be down to earth.	There may be a wiring fault or the loop card may be faulty
Short at card n outstation n	Loop Processor Card	Incorrectly polarity (or short circuit) between device n and the next device. A number of devices have their loop breakers closed.	Investigate and remove the wiring fault.
slave micro failed	Loop Processor Card	Loop driver is watchdogged by loop processor	Reset and ignore single occurrence. Record in log book

Message..	mainly associated with..	meaning..	and possible rectification action.
Slave Outstation Replaced	Loop Processor Card	Slave type outstation has been replaced	-
Spurious acknowledgement.	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Spurious FAB	Loop Processor Card	Outstation has FAB but shouldn't have any	Ignore single occurrence. Panel will remove the indication
Stack too deep	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Stack overflow	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Sub fault	Loop Processor Card	Condition pattern has been matched	Check condition codes
Superfire	Loop Processor Card	Pattern match is: equal to greater than a Fire	-
System Printer Lost at Card n	IO Card (Printer option)	TBA	TBA
System stopped / started	Local Controller Card	Backplane link moved causing the system to stop	The link should not be normally accessed
System Printer at Card n	TBA	TBA	TBA
Task stuck	Any Card	Software error	Fatal errors will activate a system reset Ignore single occurrence. Record the event in log book
Test set found / removed	Loop Processor Card	Remote allocation unit has been found connected to the system	Disconnection of the test set will bring about a removed message

Message..	mainly associated with..	meaning..	and possible rectification action.
Too many errors n	Network Card	Up to 6 communication errors in a row	Check wiring and cable screen. There may be faults with the installation.
Two master has the same address	IO Card / DKC	Two PCs have been given the same address	Each PC must have a unique address
Two controller at Card n	TBA	TBA	TBA
Unable to claim buffers	Any Card	System too busy	Wait or reset card if stuck. Record in log book
Unrecoverable Tx fault	Loop Processor Card	More than 3 reply errors in a row	Check the outstation connections and replace if necessary.
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	Loop Processor Card	Loop short circuit after the particular device	Check wiring and device after indicated outstation
Wiring changed - ground break	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	Loop Processor Card	No reply received from an outstation at End-2 of loop	Check wiring, there can be other obscure reasons
Wiring changed part short	Loop Processor Card	Less than 80 ohms between the +ve and 0V of loop wiring	Check wiring and device after
Wrong card type	Any Card	Card in wrong slot ie loop card in slot 15	Move the cards to the right location
Zone enabled / disabled	Local Controller Card	The zone has been enabled or disabled automatically or manually	If necessary, manually enable or disable the zone

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Appendix C

Configuration guidelines for standalone system

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 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 (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

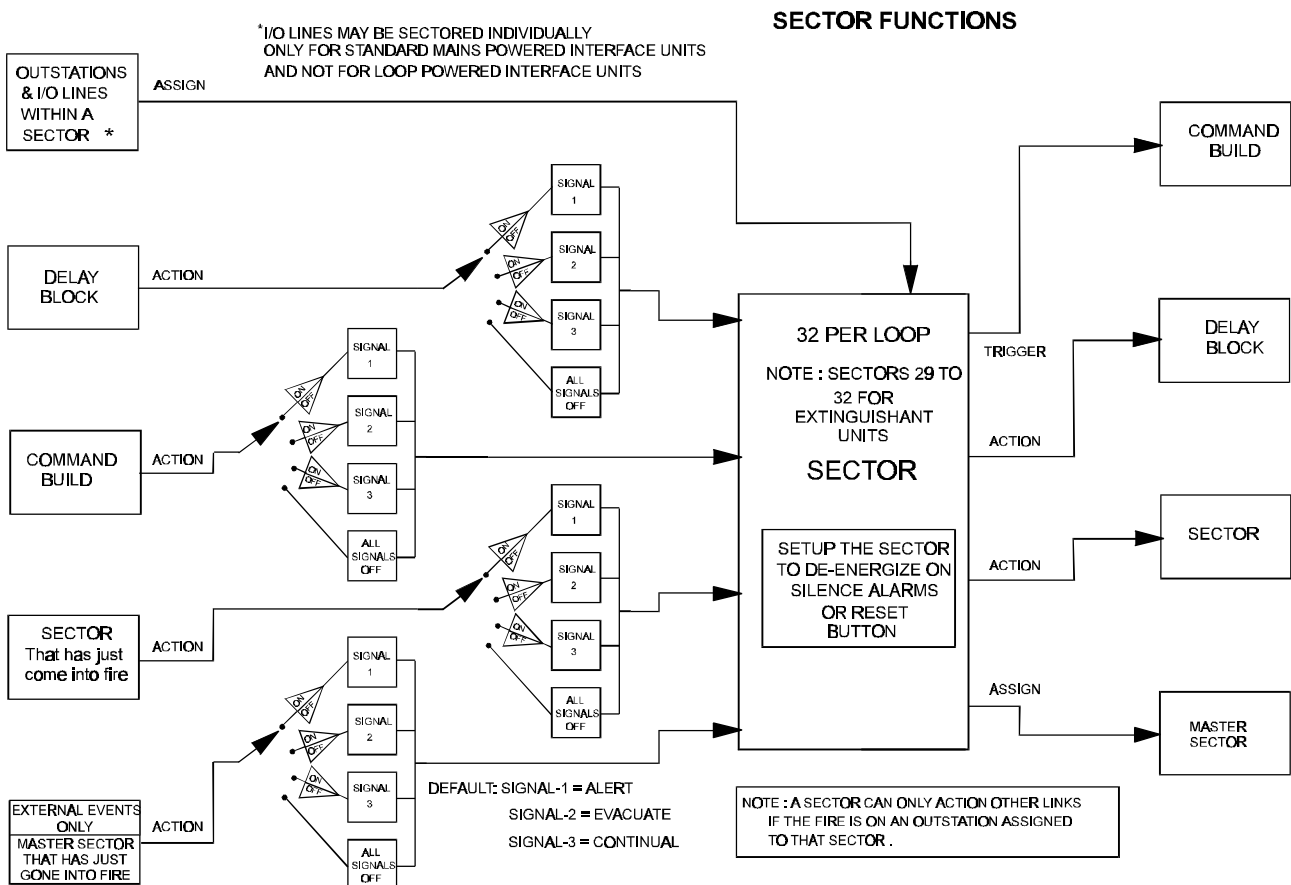


Figure C-1 Sector functions
cdm33

- 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.

- an 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 operation is also referred to as a flag set sector. This is a sector that is configured using [Sector] -> [Sounder] -> [On].
 - When the sector is configured for integral sounder operation, a fire event detected by the *optical heat sensor sounder* (OHS) in the sector will ONLY operate the local sounder (of the OHS).

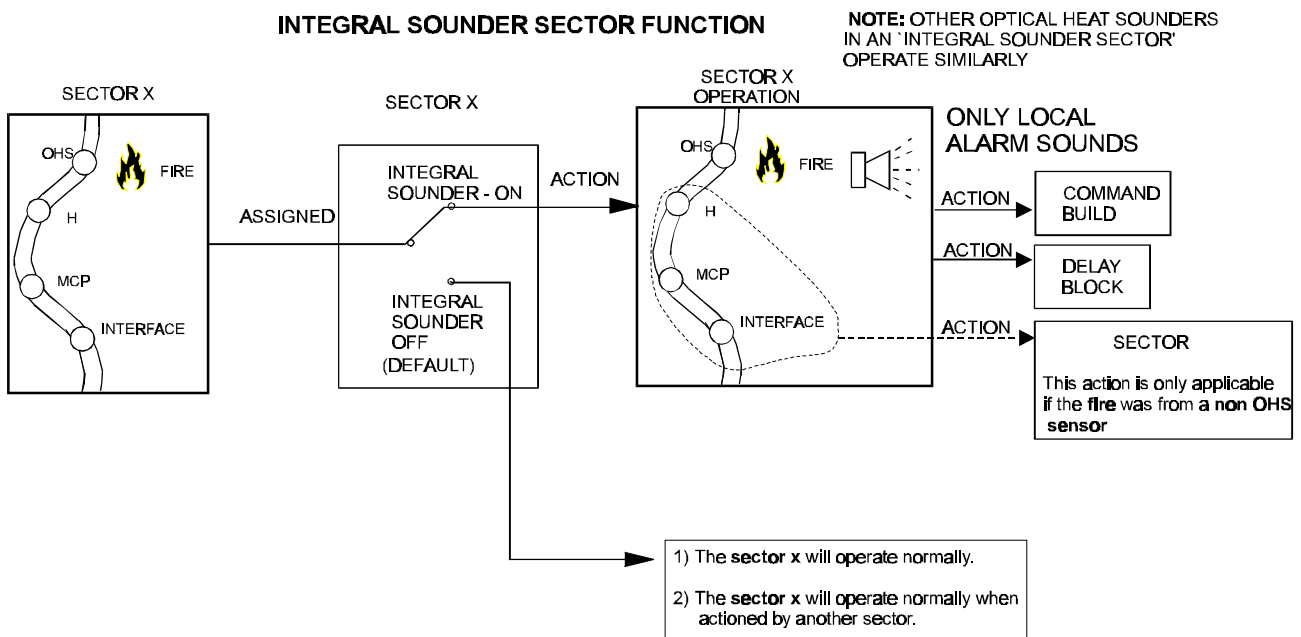


Figure C-2 Flag set sector
cdm47

- 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 automatically assigned **sectors 29**.

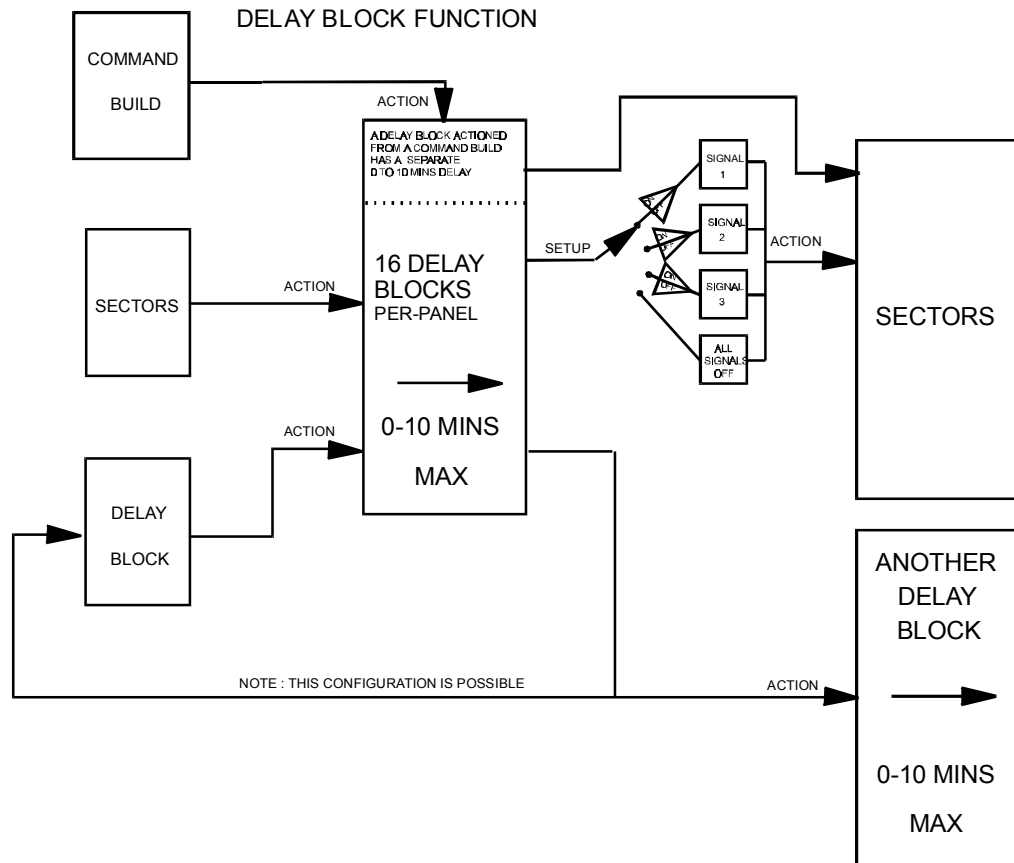
- To assign a default fire plan** To manually configure the default fire plan using the set up menu:
- Assign all outstation and IO lines to sector 1
 - and then action all sectors (except extinguishant sectors) on all sectors to signal 2

- 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



f1263

Figure C-3 Delay block functions

- 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:
 - sector 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

TIMESLOTS & TIMEBLOCKS FUNCTIONS

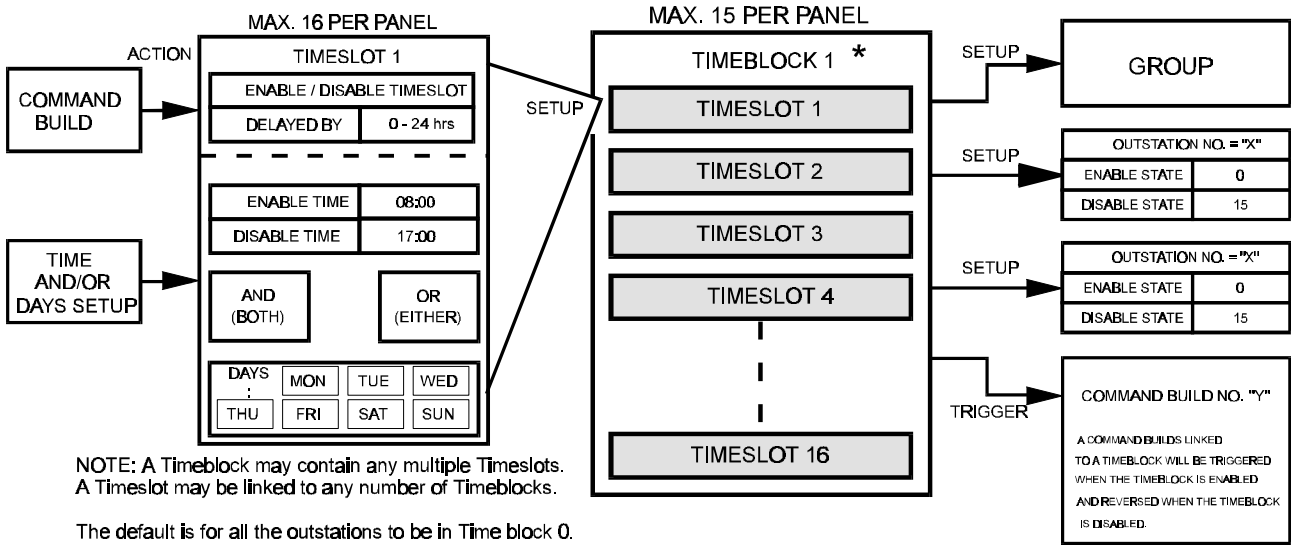


Figure C-4 Time slot and Time block functions

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.

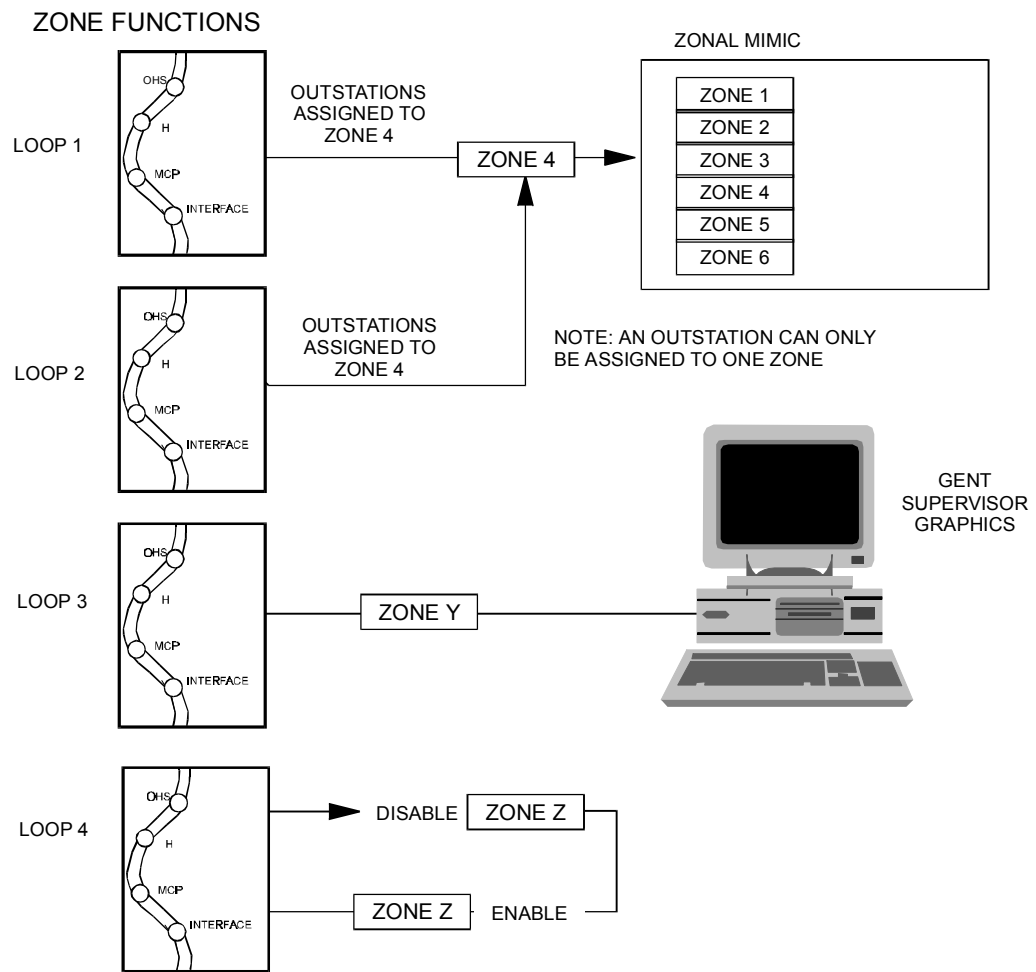
- a time slot can be:
 - triggered automatically
 - switched ON / OFF manually
 - or switched ON / OFF by Command build
- it performs an action immediately or after a delay of 0 to 24 hours.
- There can be up to 16 time slots per panel
- each time slot has to be given an Enable time and a Disable time
- 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

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 state any group tasks linked to it is also disabled.

Zones



f1265

Figure C-5 Zone functions

- 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 GENT 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 GENT 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

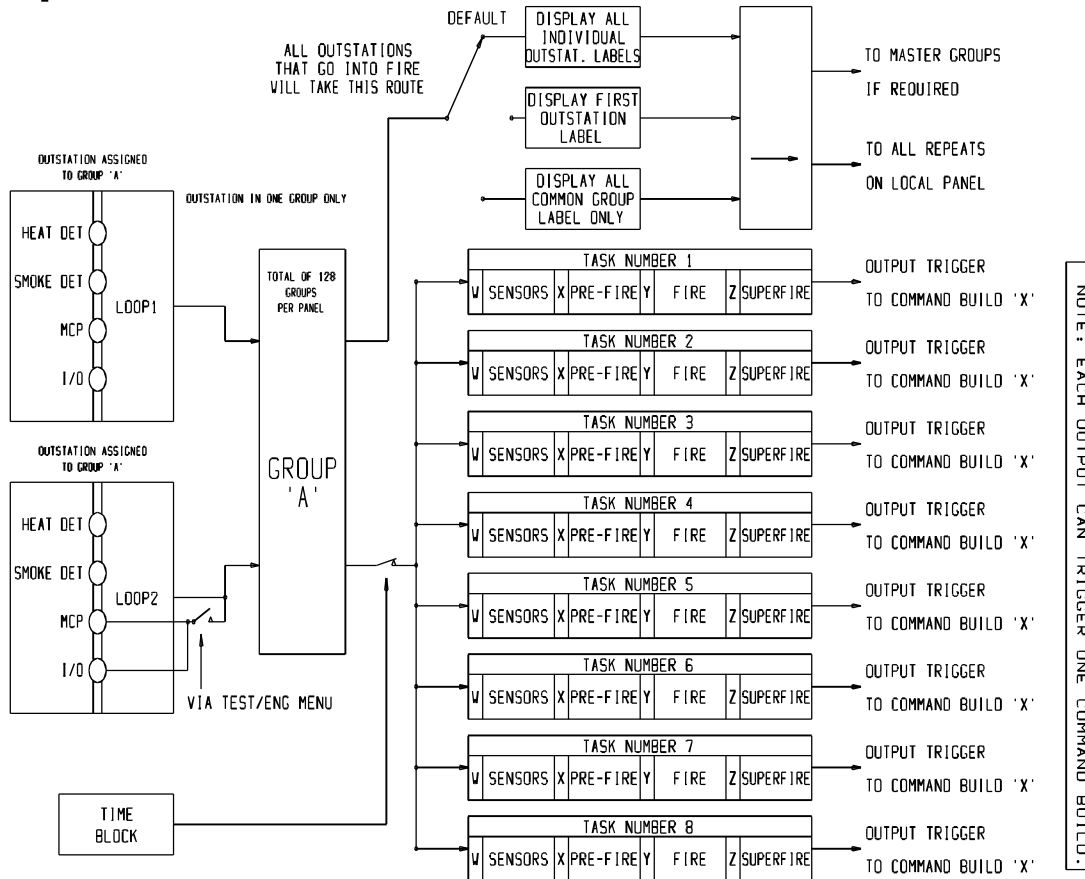


Figure C-6 Group functions
cd71

- 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

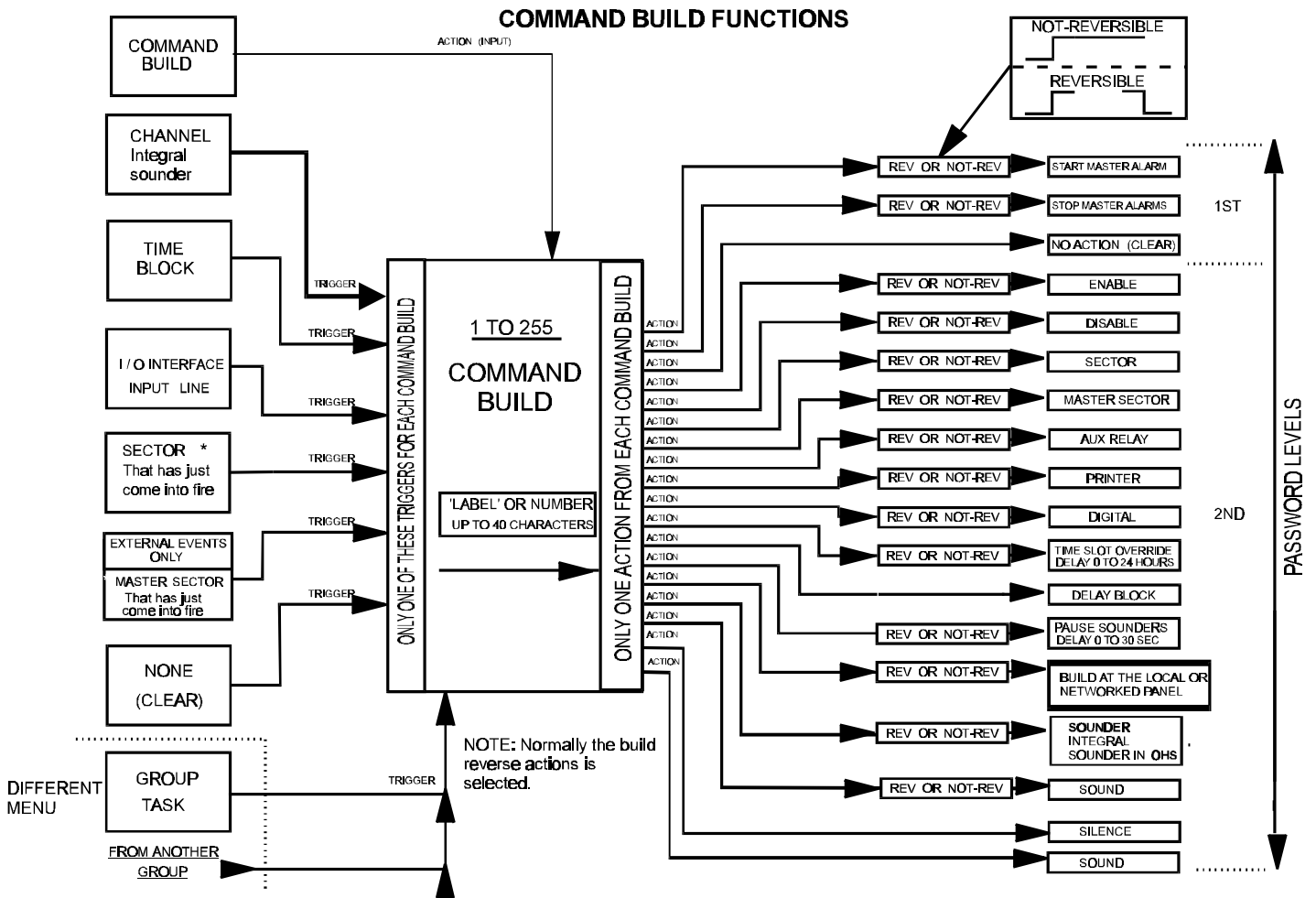


Figure C-7 Command build functions
cdm50

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	00	4F	25	00	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

Configuration guidelines for Network options

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

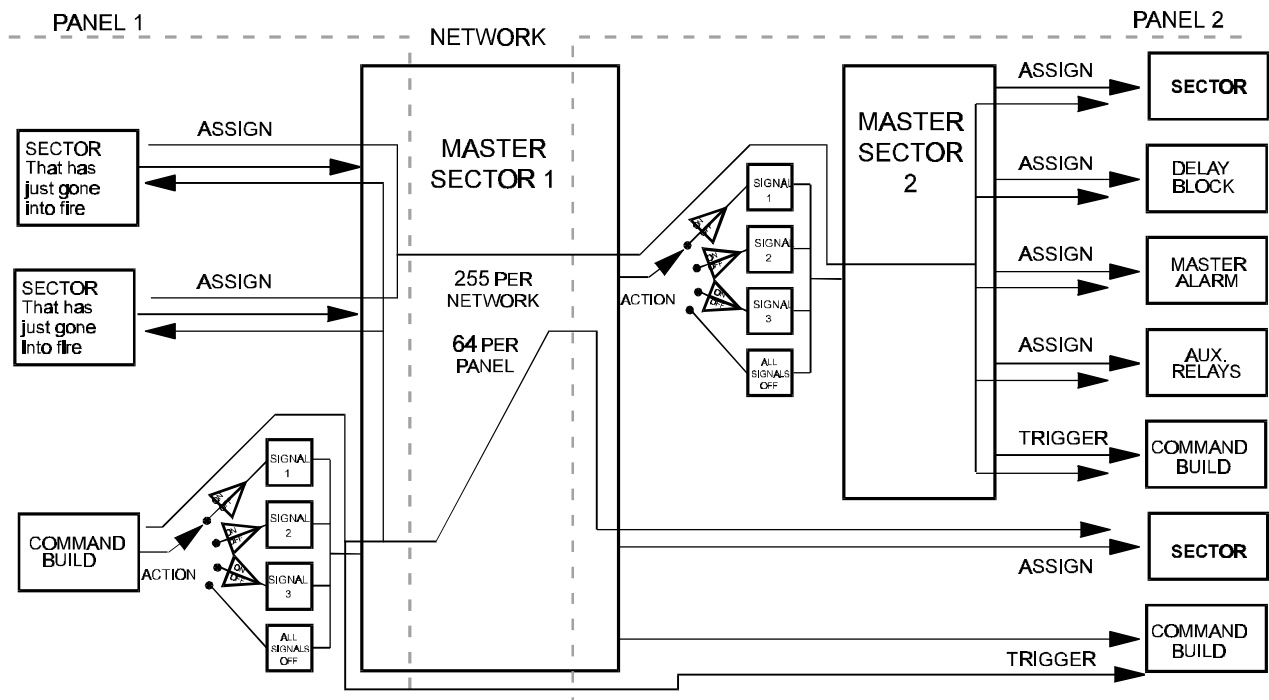


Figure D-1 Master sector functions

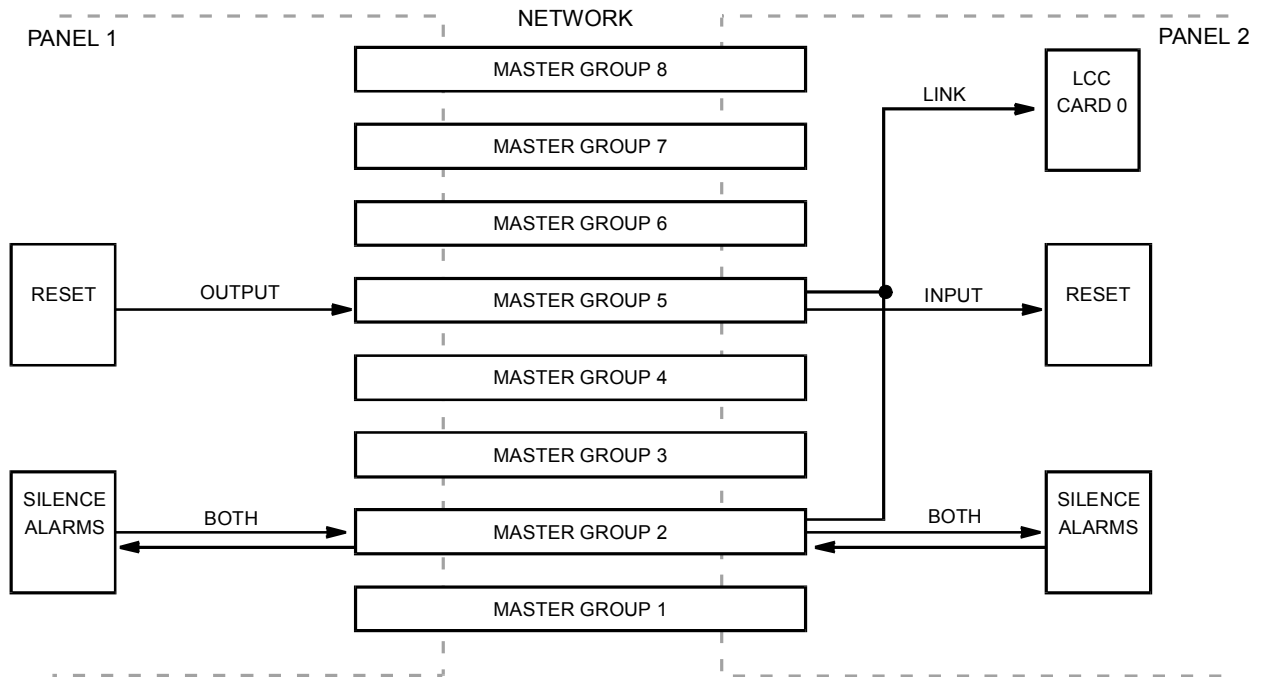
f1268

- 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 will only stop by global Silence Alarms by Panel Silence Alarm.

Master Groups

MASTER GROUP FUNCTIONS



f1269

Figure D-2 Master group functions

- 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.

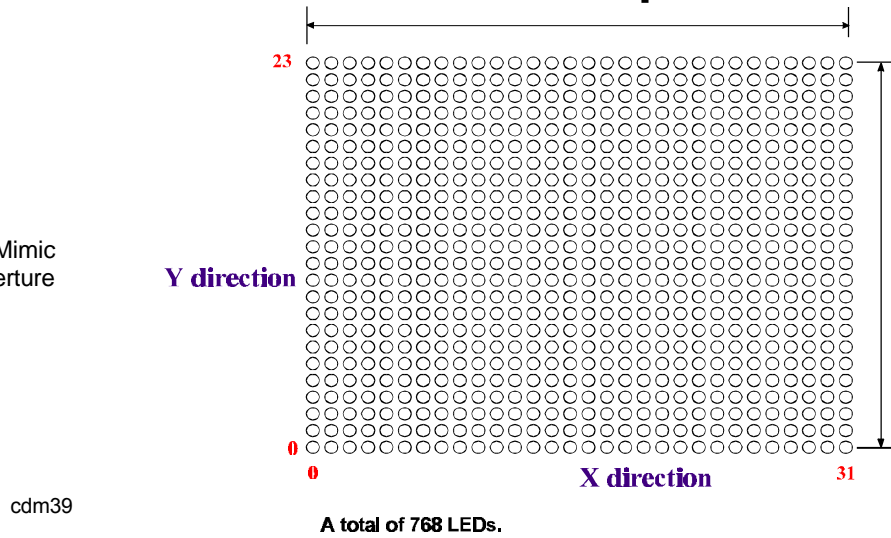
NOTE: The Group 0 contains all panel events and fire resets and therefore must always be assigned to a Master Group.

Appendix E

Mimic Configuration

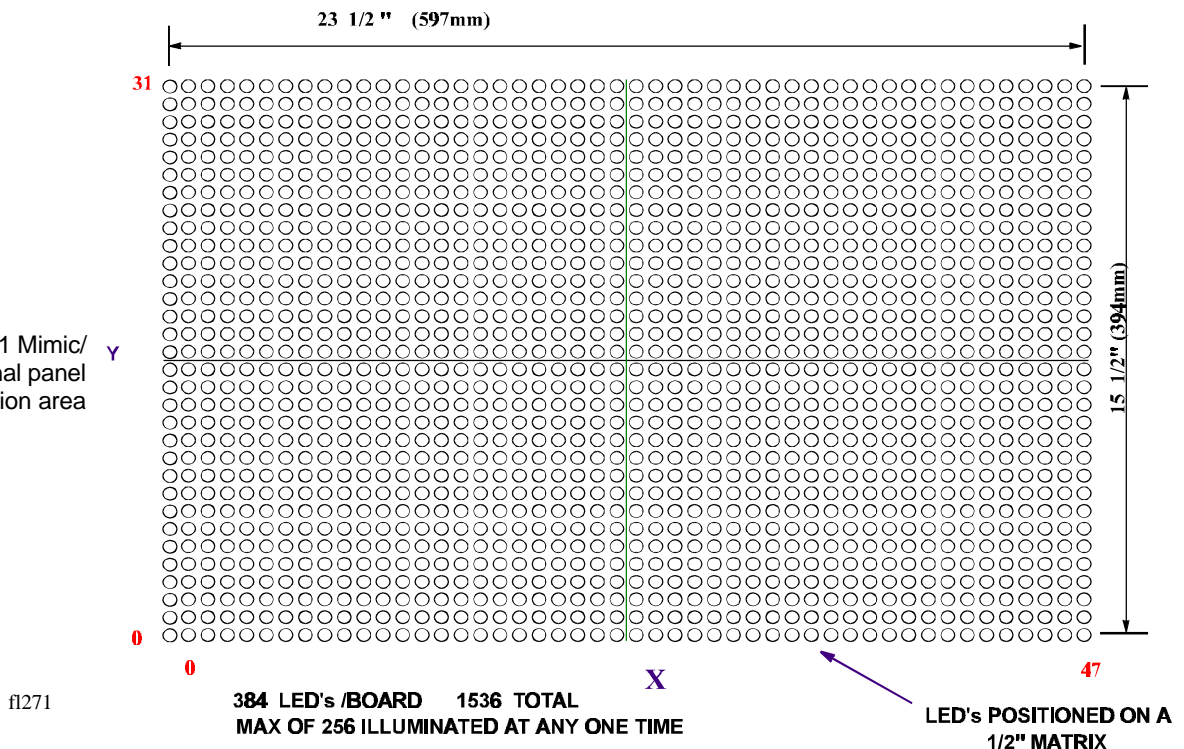
Illumination area of the A4 Mimic panel

Figure E-2 A4 Mimic panel aperture



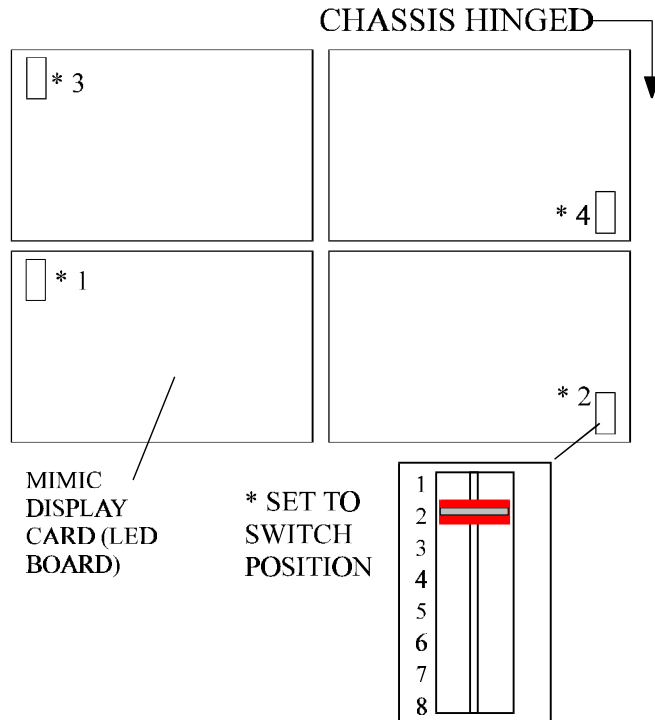
Illumination area of the A2 Mimic panel

Figure E-1 Mimic/ Zonal panel Illumination area



LED boards

Figure E-3 LED board address settings (factory set)

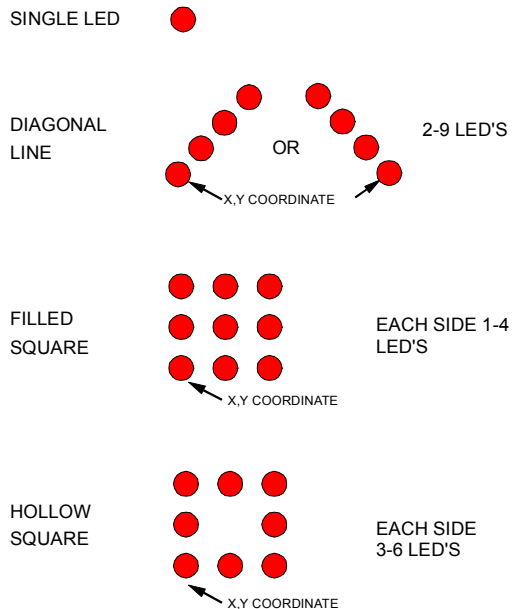


cdm37

Set Actions shapes

Figure E-4 Standard shapes of illumination

SET ACTION PATTERNS



f1272

Characters, Fire and Clock

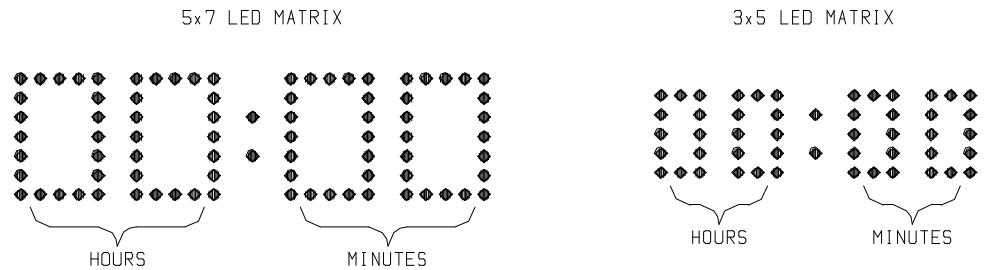
THE FOLLOWING CHARACTERS
MAY BE DISPLAYED ON **3x5**
or **5x7** MATRIX

SPACE ! " # \$ % & ' () * + , - .
\ 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D . . . Z [£] ^ _ a b c d
. . . z { | }

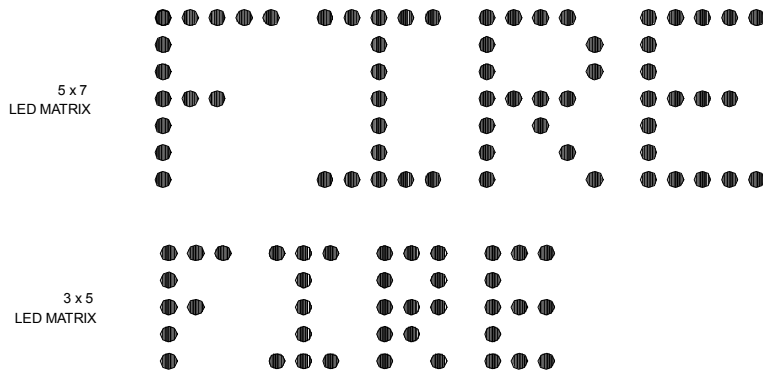
THE FOLLOWING CHARACTERS
CANNOT BE
SATISFACTORILY DISPLAYED
ON A **3X5** MATRIX

" # \$ % & ' * , \ ? @ £ m w { | }

CLOCK DISPLAY



FIRE MESSAGE



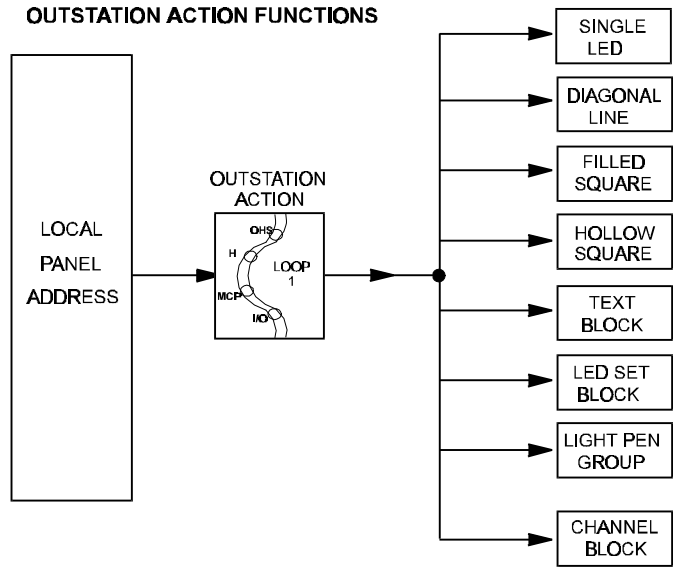
f1273

Figure E-5 Character set

Outstation actions

Figure E-6 Outstation actions

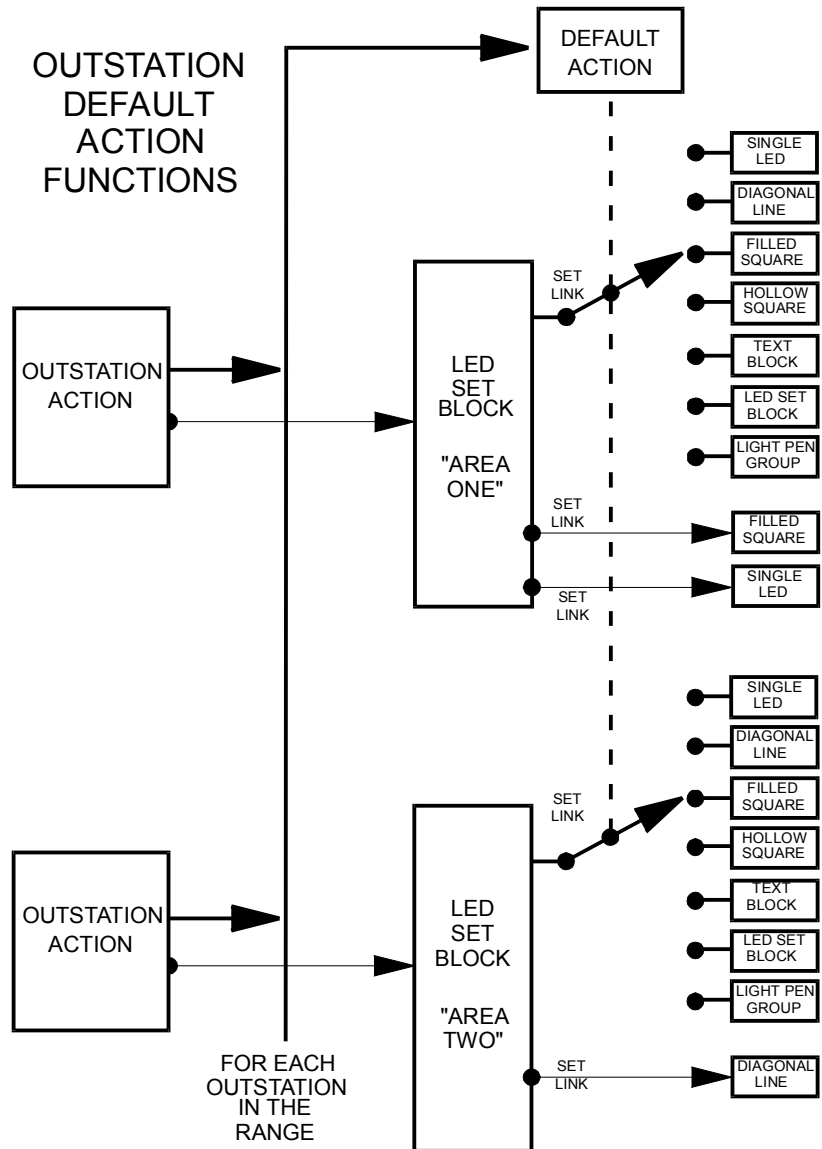
f1279



Outstation default actions

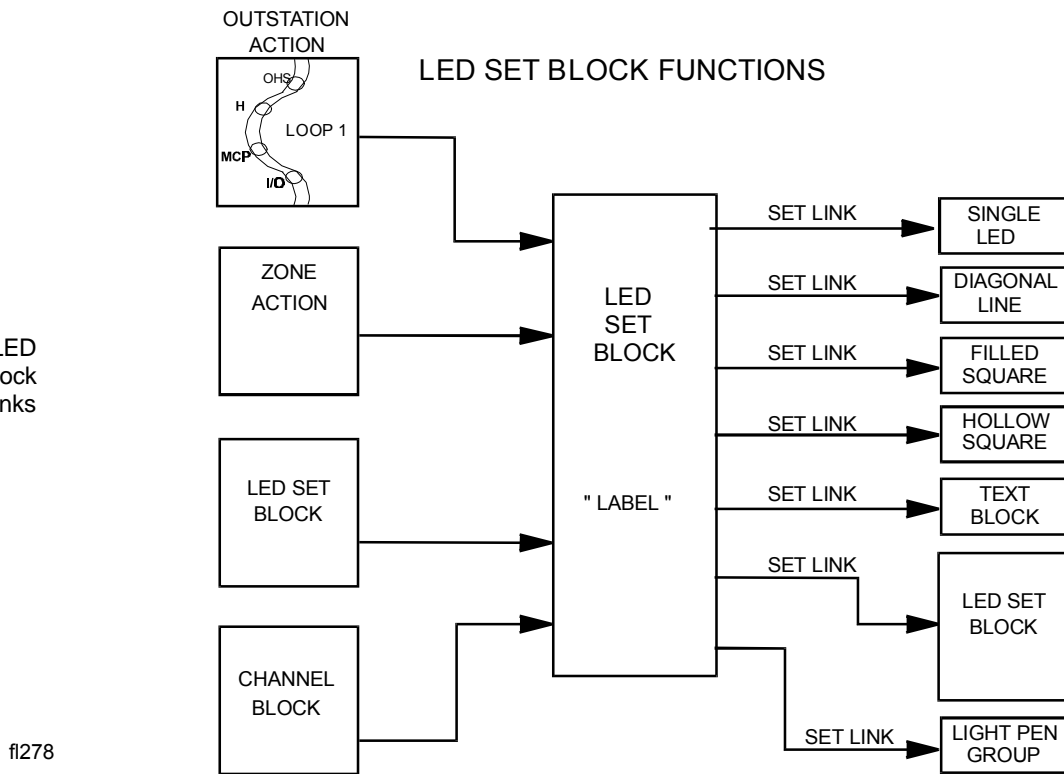
Figure E-7 Outstation default actions

f1280



LED Set block

Figure E-8 LED set block actions and links



Channel Block

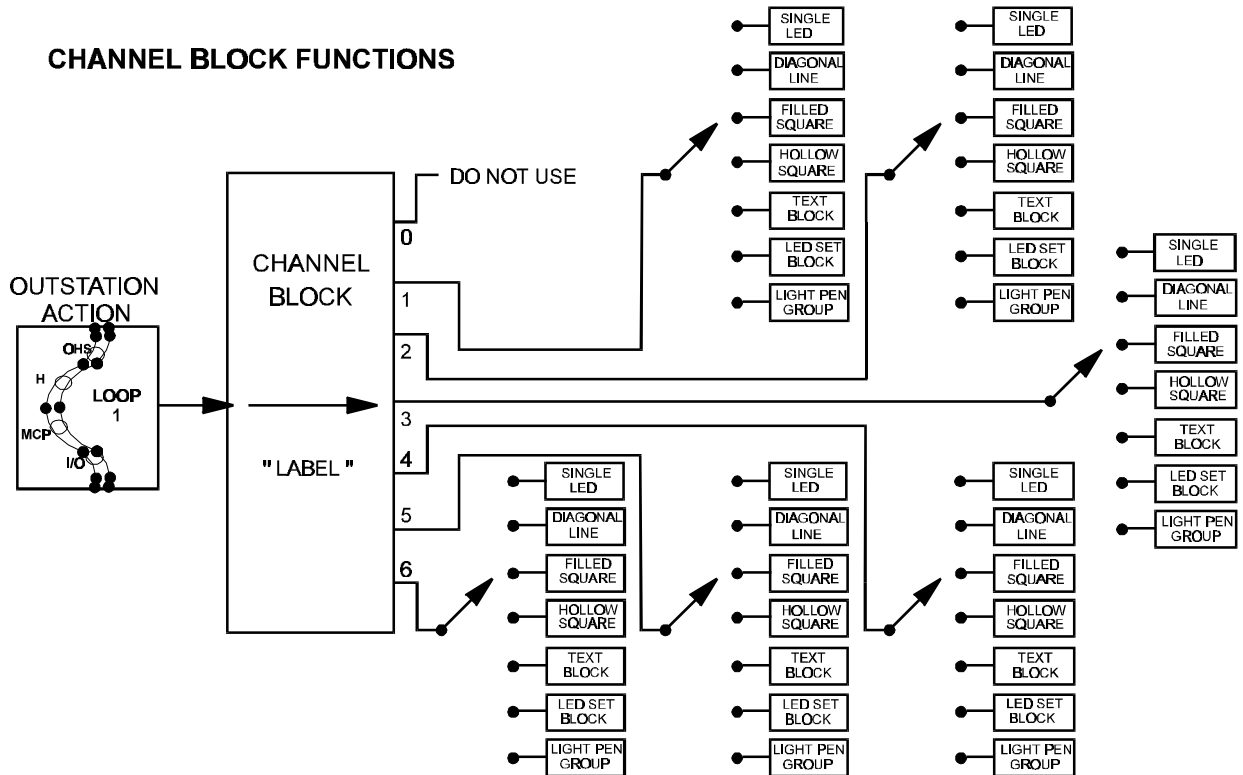
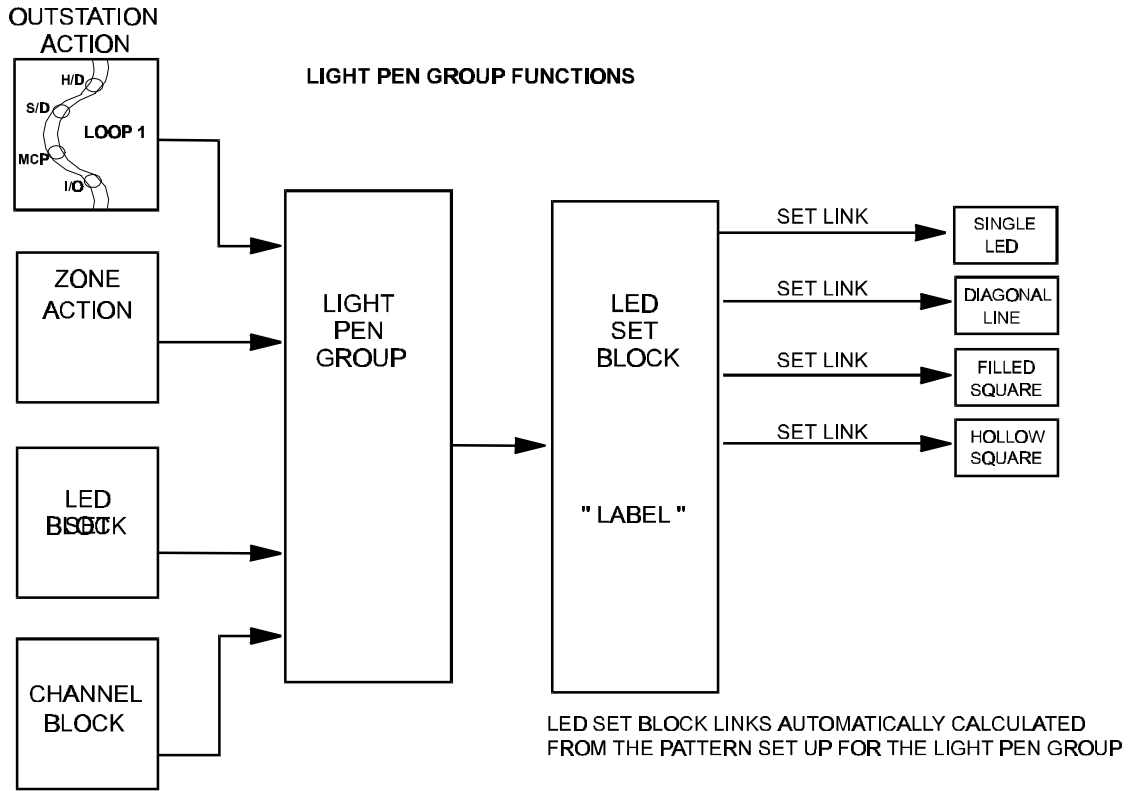


Figure E-9 Channel block actions

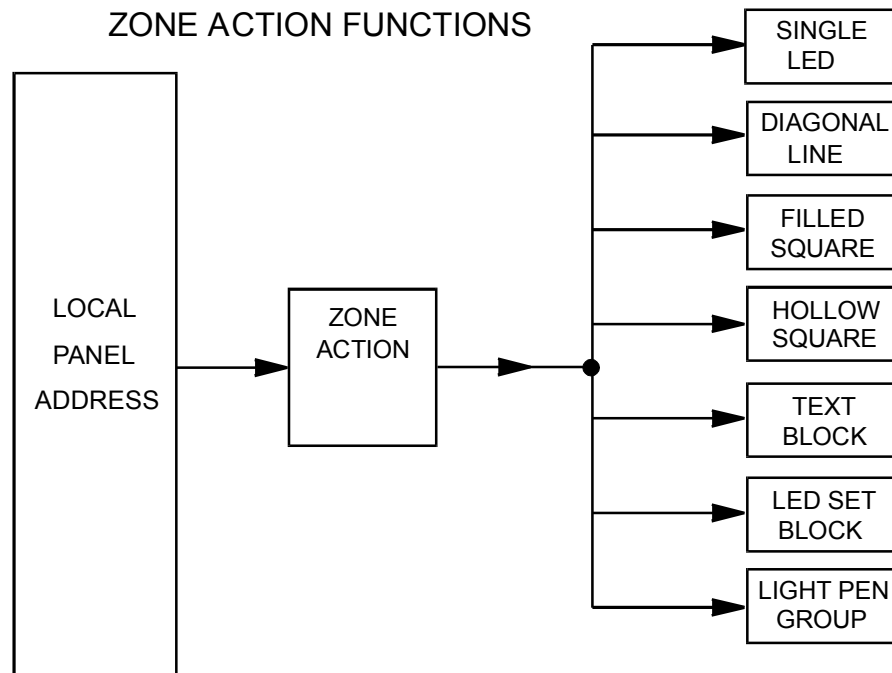
Light pen group



f1276

Figure E-10 light pen group

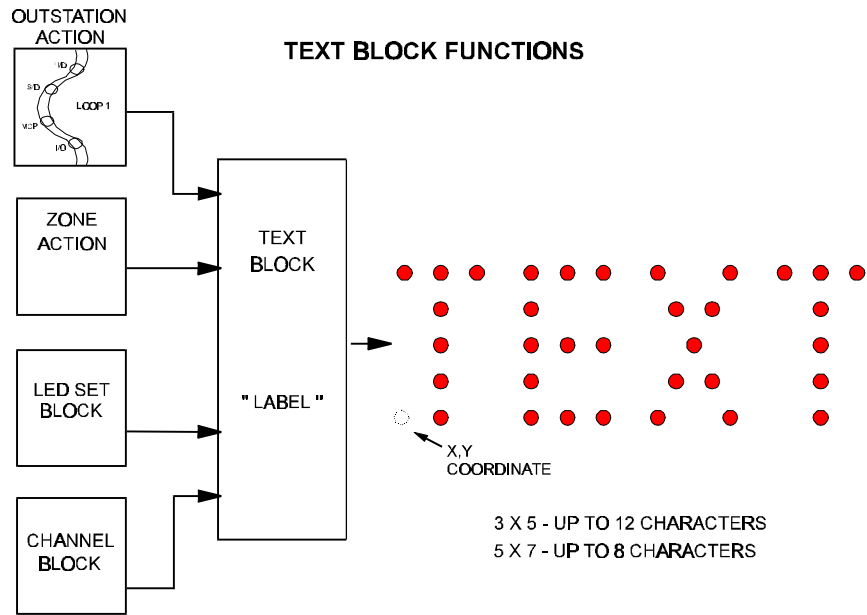
Zone actions



f1275

Figure E-11 Zone actions

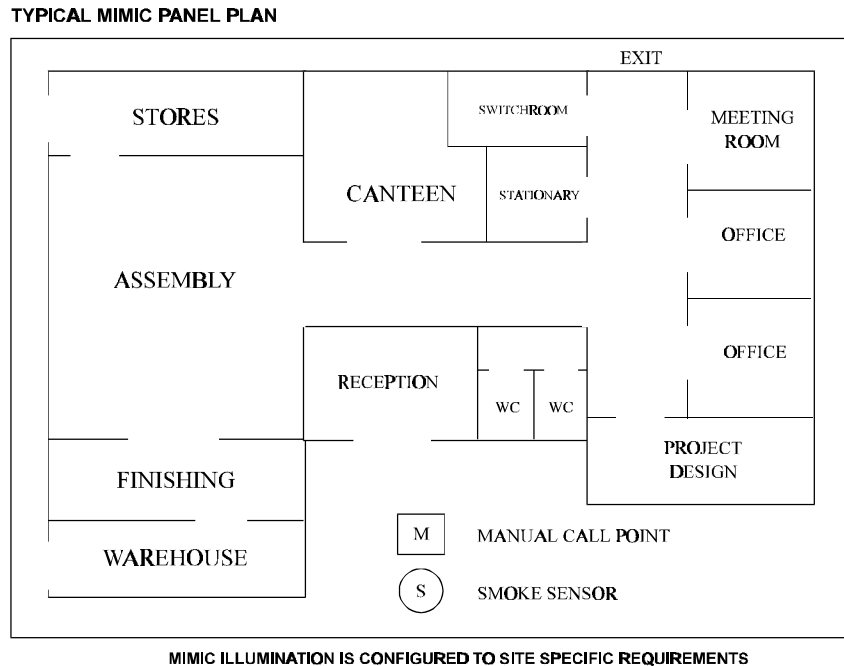
Text block



f1274

Figure E-12 text block

Typical mimic plan

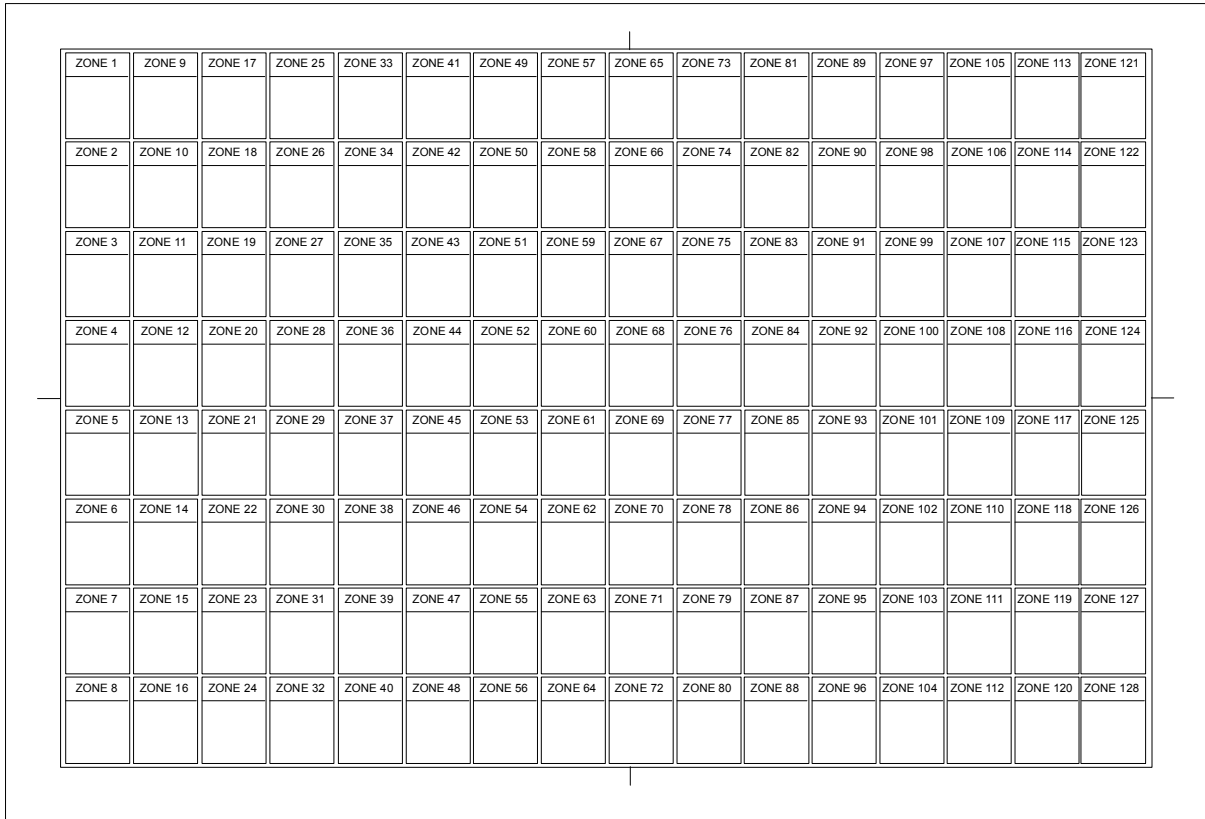


f1281

Figure E-13 Typical mimic plan

Zonal Mimic plan

ZONAL PANEL LAYOUT



f1282

Figure E-14 zonal mimic plan

Appendix F - V3.4X Upgrade

Where is the upgrade applicable

This upgrade is applicable to existing **network System 3400 with GENT Supervisor(s)**, where the connected control panel or terminal node has **version 3.3x** or earlier software.

Why is the upgrade required

This upgrade is required to allow generation of the **data** that tells the cards in a control panel or terminal node on *where to route replies to supervisor messages*.

Pre V3.4X software

With the pre-upgrade software the message routing data is not retained on the cards when a change is made to the Gent supervisor **master address** or when the connected control panel is **powered down and powered up** again.

How are Supervisor messages routed to cards

The cards in the control panel and terminal node affected are:

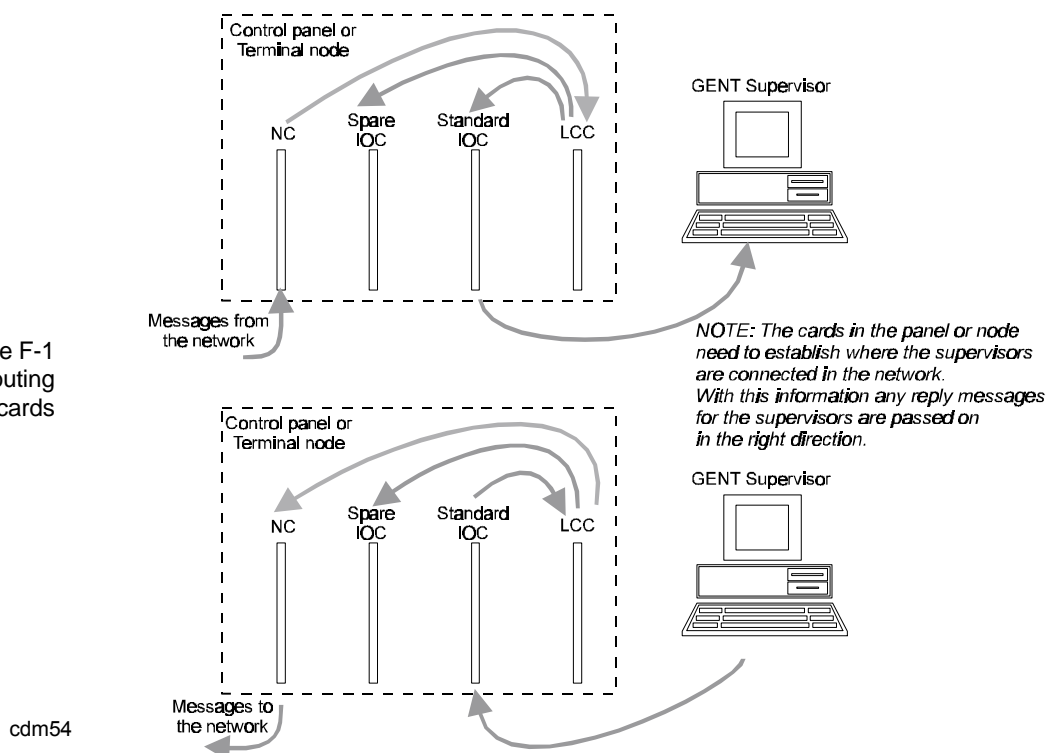
Local controller card

This card stores the **domain number** (master address) of each supervisor on the network. It also stores the **card numbers** each supervisor is accessed through (ie the network card and IO card).

Network and IO cards

These stores contain the **domain number** (master address) of each supervisor on the network that it cannot access directly.

Figure F-1
Message routing
between cards



What should be done

All the control panels and terminal nodes in the network need a software **upgrade** to **version 3.4X** on Local controller card, Input output card and Network card.

NOTE: *The version 3.4X software allows the IOC and NC to be backed up to the memory card.*

What is needed to do the upgrade

- LCC version 3.4X chip
- IOC version 3.4X chip
- NC version 3.4X chip
- commissioning computer** with **labeller configurer** software version 3.34
- password** to gain access to engineers menu.

How to upgrade a system

- a) First power-down the **main Gent supervisor** to the network.
- b) Determine the socket location of cards in the control panel or terminal node, use the **[CardStat]** option in the **[Info]** menu.
- c) If it is a control panel that is connected to the Gent supervisor, then retrieve the system configuration. This is done using the **commissioning computer** with **V3.34 labeller configurer** software.

NOTE: *It is important to retrieve the system information of the control panel and not rely on previously saved configuration held on disk.*

- d) Power-down the control panel or terminal node connected to the Gent supervisor.
- e) Remove the **input output card(s), local controller card and network card** from the control panel or terminal node and exchange the respective **chips** on the cards. Then refit the cards in the panel or node

(Save) Option

NOTE: *With version 3.4X software the [Save] option under [Setup] is not available with engineers password but is available with customer password to backup changes made to the labels.*

- f) Power-up the control panel or terminal node.

- For control panel only** g) Transmit the configuration from the **commissioning computer** to the **control panel**. This will restore the original system configurations and label information to the upgraded cards.

Address settings

NOTE: It is important to ensure the addresses are set correctly on the **network card** and the **IO card(s)**, see control panel power up section. Any changes switch settings will cause error messages in the network, however the messages will be removed as the network is upgraded.

- h) Power-up the GENT Supervisor and check that it has been seen by the connected control panel or terminal node.
- i) Repeat the above procedure on the next connected **control panel/terminal node** until all panels in the network have been upgraded. Ensure at least **5 minutes** is allowed before powering up the next Supervisor.

NOTE: On power-up of the last panel in the network, check that each panel displays a message to confirm the network is initialised.

- j) Check to ensure the network map is correct. This is done using the **[Map] [Net Map]** option in the **[Info]** menu.

To change master address

- k) **Disconnect** the Gent Supervisor from control panel or terminal node. **Power-up** the Supervisor and set the **master address (64 to 127)** in the *commissioning configuration* window.

Power-down the Gent Supervisor and reconnect it to the control panel or terminal node. Now **power up** the supervisor. At the Supervisor look for system events registration as the panel or node is found.

Message routing printout

- l) Print out the message status of card 0 (LCC), card 13 or 6 (NC) and card 15 (IOC). Use **[Status] ->[Message]** option in the **[Info]** menu, see Figure F-2.

Back up to memory

- m) The data in all the **cards** in the control panels/terminal nodes must be saved, using **[Back up]** option in the **[Setup]** menu. Backup cards:

- Local controller
- Loop processor(s)
- Input output card(s)
- Network card

Once this is done, write protect the memory card using **[Protect]->[Enable]** in the **[Setup]** menu.

See also figure F-1

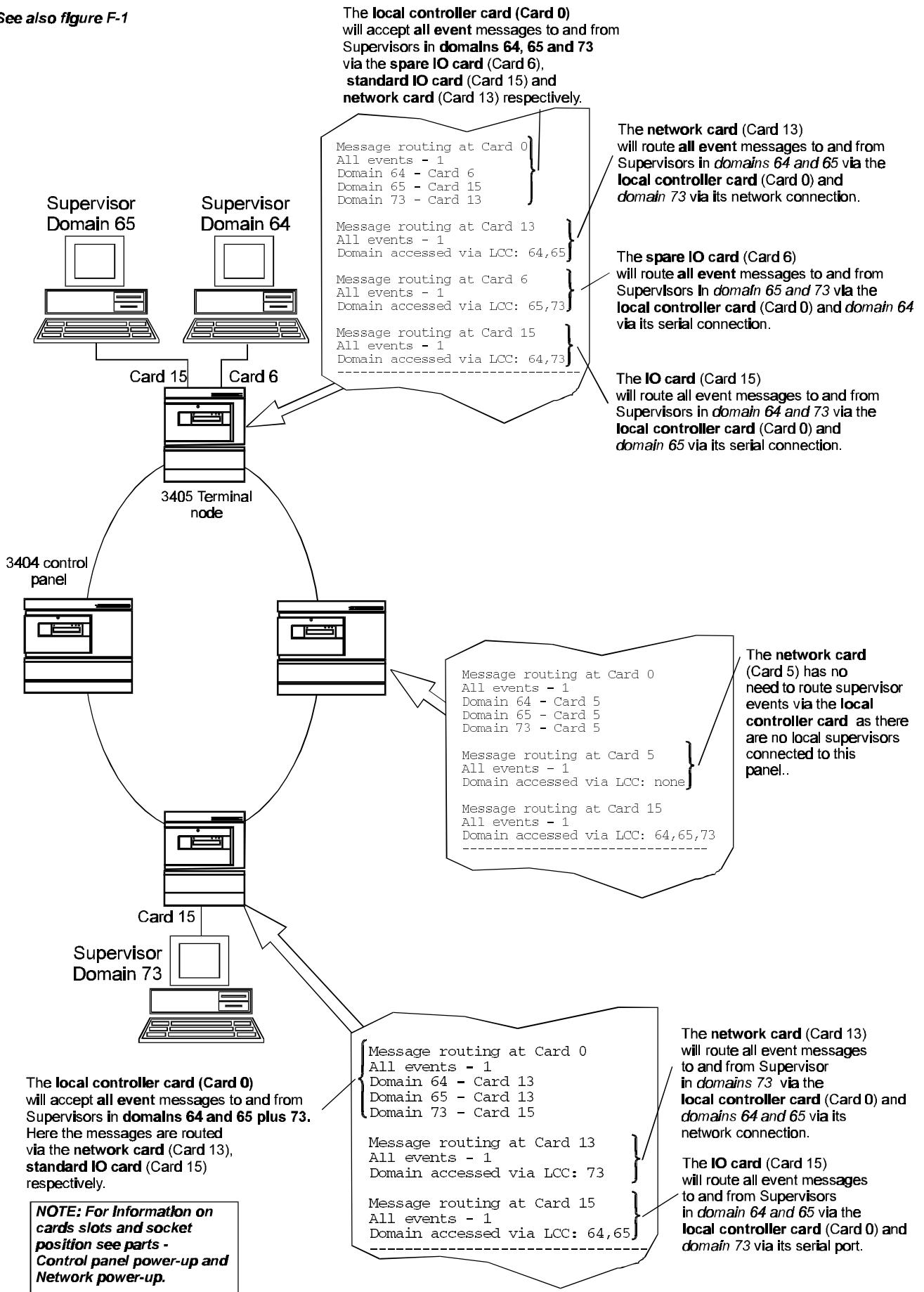


Figure F-2 Printouts of message routing
cdm53

Appendix G

Service Request Interface (SRI)

The Service Request Interface (SRI) is a unit that connects a **3400 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 carrying 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 number** 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.

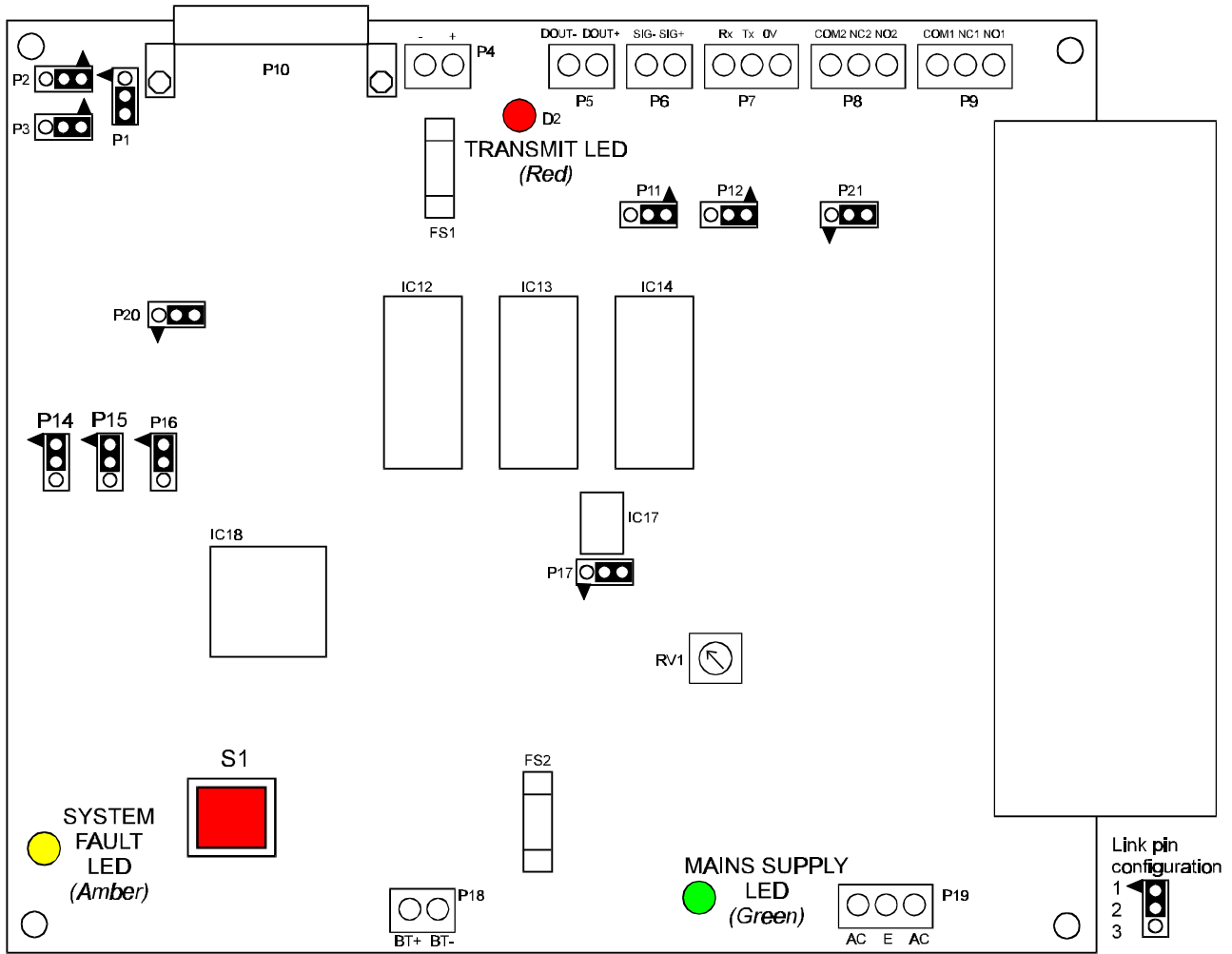
How to check for TONE or PULSE exchange

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.**

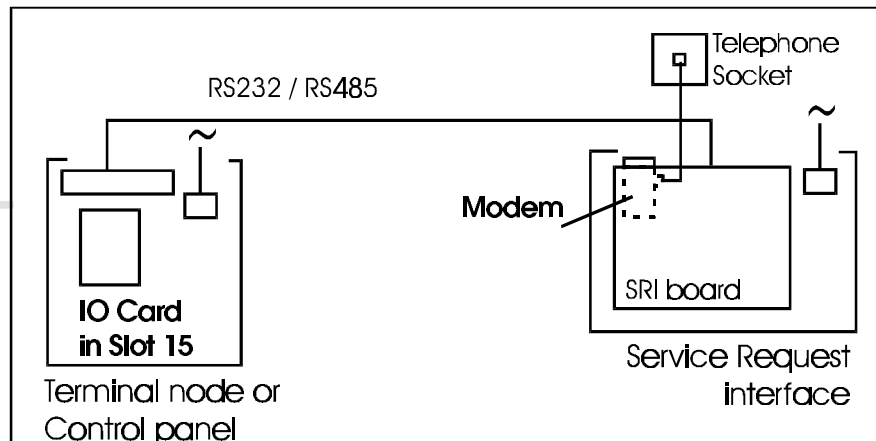
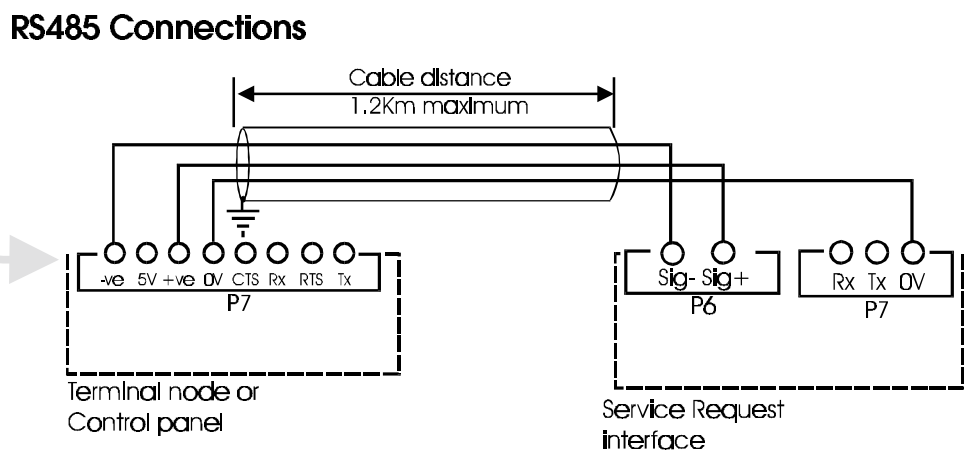
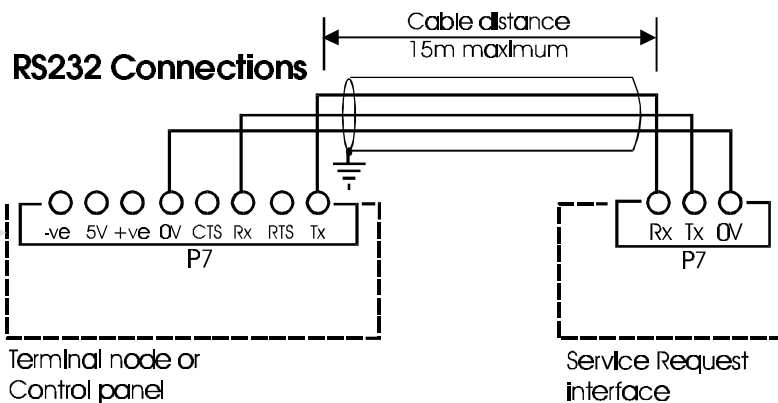


Figure G-2 Wiring the SRI unit



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

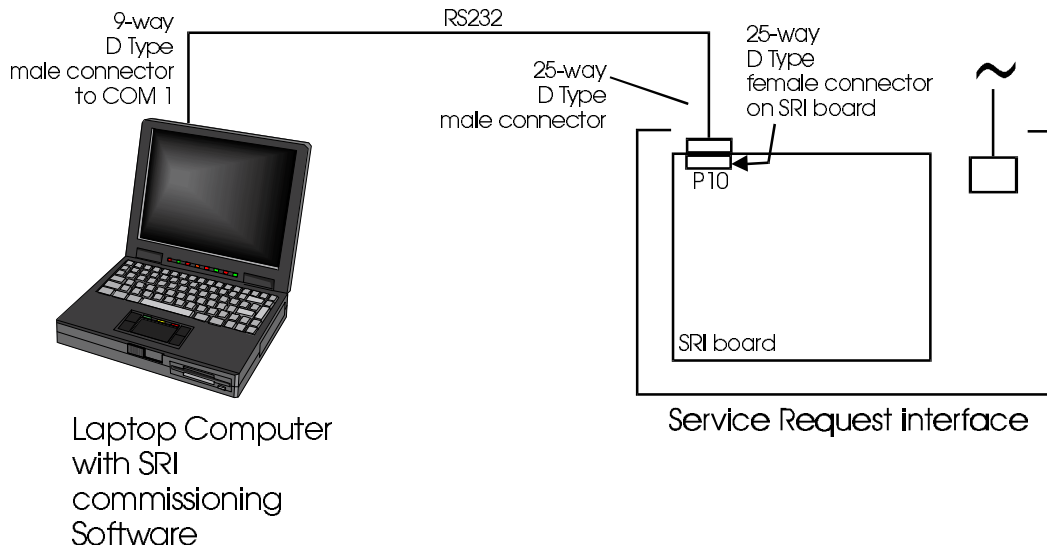
The SRI board has an **EEPROM Chip - IC12** which holds the data to allow its Modem to talk to the **Central Station**. The EEPROM Chip is programmed using the Commissioning computer with the following data:

- 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

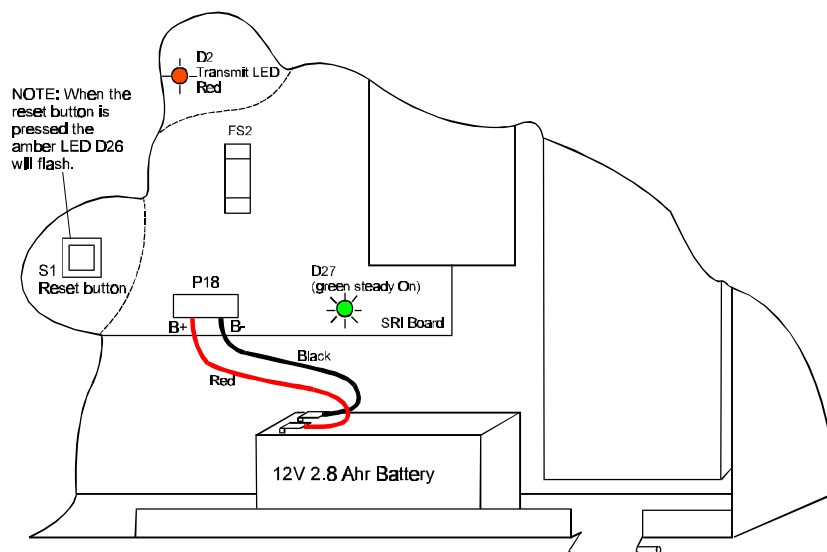
- Ensure SRI mains and battery are disconnected.
- Disconnect the 25-way ribbon cable from **P10** on the SRI board.
- P14 link on SRI board**
 - Set the **commissioning mode link P14** on the SRI board to **pins 2-3**.
 - Power up the commissioning computer
- 9-25 ways lead**
 - Fit the **9 to 25 way 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

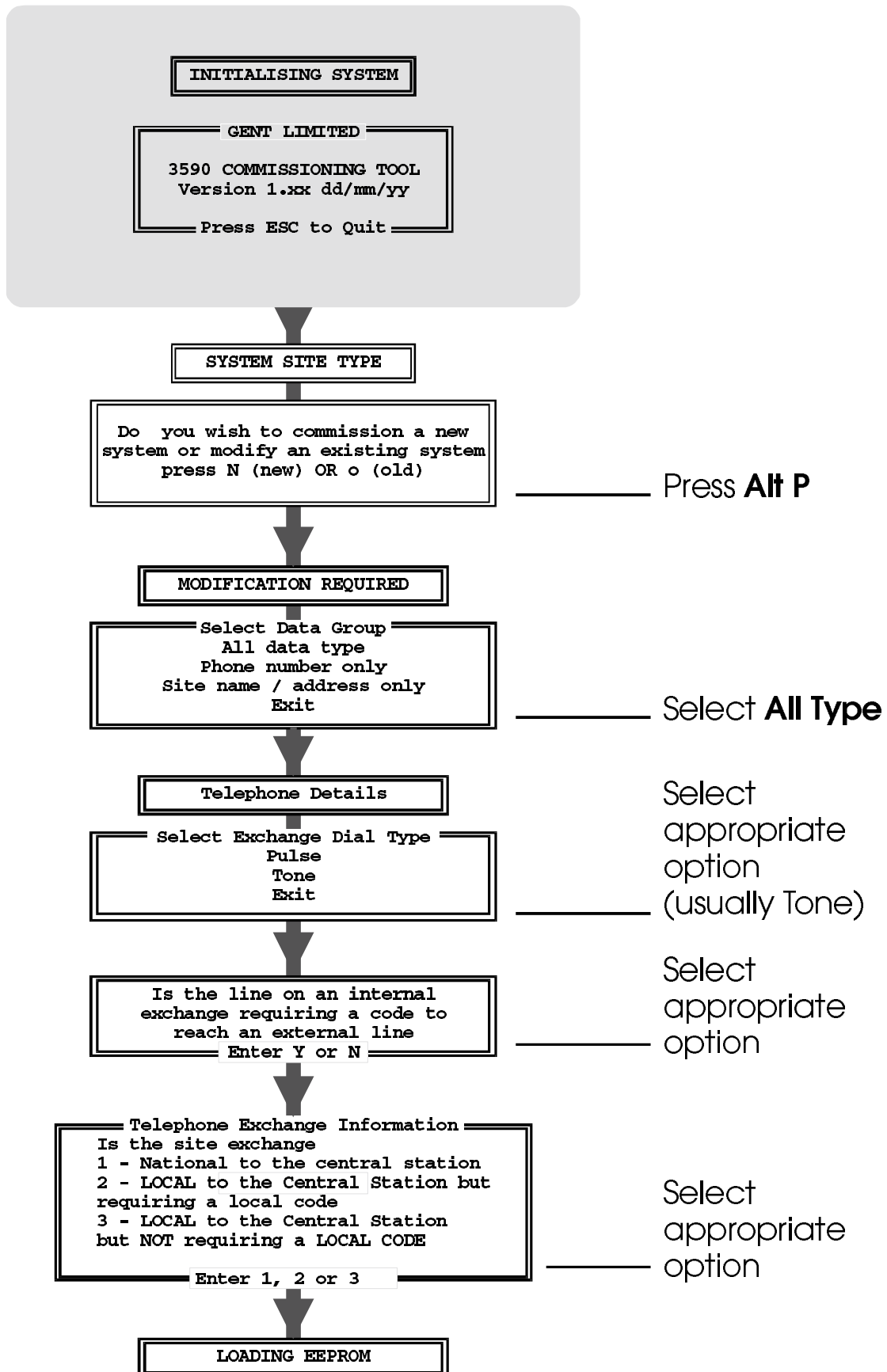
- Powering up the SRI unit**
 - Power-up the SRI unit and reset it by pressing **Reset button S1**. Wait for about 20 seconds and run the SRI software on the commissioning computer.

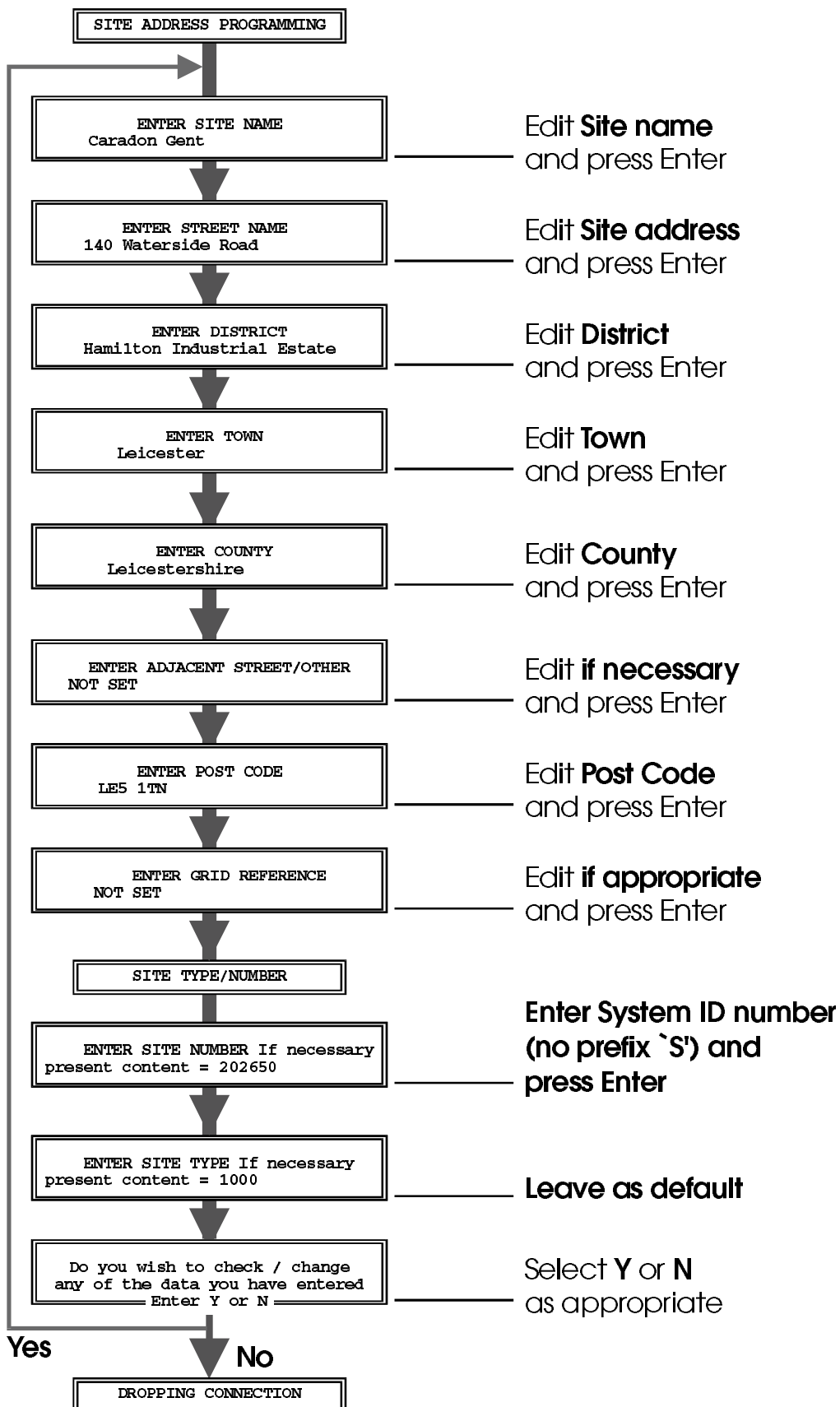


cdm306

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 <i>general purpose buffer string</i> 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.

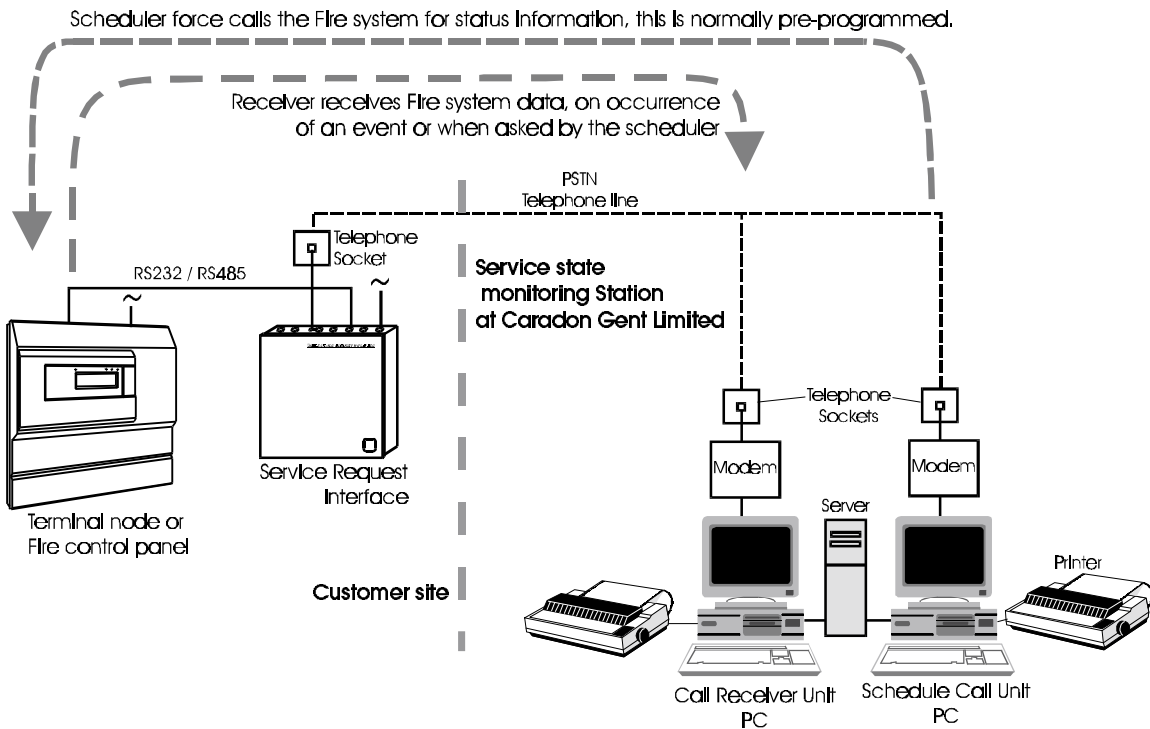


Figure G-5 Site to central station connections

cdm312

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System 3400 (with 34000 devices)

Introduction

This section lists parts used in the Systems 3400 (with 34000 devices) and system 3500. For further details on the availability of the parts, contact Gent.

NOTE: Only the V3 parts listed here are compatible with version 3 plus systems.

Control and indicating equipment

Control Panels * - first fix products

13404-12V3+	1 - 4 Loop panel set V3+
& *13404-80V3+	1 - 4 Loop panel back and front cover V3+ (1st fix)
13408-12V3+	1 - 8 Loop panel set V3+
& *13408-44	1 - 8 Loop panel rack (1st fix)
13408-45	1 - 8 Loop panel Plinth (for floor standing)

NOTE: All fire alarm control panels are supplied with **one loop processor card** as standard.

13495-24	1 - 4 Loop panel battery pack - 8 off 12V @ 6Ah
13495-48	1 - 8 Loop panel battery pack - 4 off 12V @ 24Ah
09406-06	1 - 4 Loop panel /Mimic weather resistant case
13404-82M2	1 - 4 Loop panel inner box assy, inc printer & keyboard
13408-40	1 - 8 Loop panel Termination unit
13408-41	1 - 8 Loop panel Control unit
13408-42	1 - 8 Loop panel Power supply charger
13408-43	1 - 8 Loop panel Battery box

Terminal node	13505-01	Terminal node (for use in secure network)
	& 13505-80	Backbox (front cover (M2))

Repeat and Mimic Panels	13450-01V3	Repeat panel, no printer
	& *13450-80M2	Repeat panel backbox and front cover (1st fix)
	13450-02V3	Repeat panel, with printer
	& *13450-80M2	Repeat panel backbox and front cover (1st fix)

13450-81V3	Repeat panel inner box assy, no printer & keyboard
13450-82V3	Repeat panel inner box assy, C/W printer & keyboard
13460-01V3	Mimic panel C/W drawing

NOTE: The Mimic repeat panel plan and programmed EPROM details must be advised at the time of ordering.

13460-02V3	Zonal mimic panel
13495-01	Mimic / repeat battery pack 1 - off 12V @ 6Ah
19222-01	Printer paper
09406-06	1 - 4 Loop panel /Mimic weather resistant case
09410-06	Repeat panel weather resistant case
13496-01M2	Panel key for Mark II
34604-G1	A4 Mimic Brown (Grey brown RAL8019) panel set 34614-G1 A4 Mimic Display Brown 34624-01 A4 Mimic Control Unit
34604-B1	A4 Mimic Grey (Squirrel Grey RAL7000) panel set 34614-B1 A4 Mimic Display Grey 34624-01 A4 Mimic Control Unit
34604-64ZK	A4 Mimic Zonal kit
3604-SPK	A4 Mimic Site plan kit

Cards

13430-11V3+	Local controller card V3+ (LCC)
13431-01V3	Loop processor card (LPC)
13433-01V3	1 - 4 Loop panel RAM card
13433-03V3	1 - 8 Loop panel RAM card
13501-01	Secure network card
13432-03V3	I / O card V3
13532-50	Universal I / O card V3
13532-52	Remote printer I/O card
13532-53	Slave I/O card

Sensors and Accessories

Sensors	34710	Optical heat sensor
	19271-01	Optical chamber
	34770	Optical heat sensor sounder
	19271-01	Optical chamber
	34780	Heat sounder
	19274-01	Heat sounder chamber
	34720	Heat sensor
	19272-01	Heat chamber
	34730	Ionisation sensor
	19273-01	Ionisation chamber
	34729	Environmentally protected Heat sensor
	34740	Beam Sensor Pair
	34741-01	Angle Bracket with base
	34741-90	IP65 Angle baracket with base
34741-03	Parallel bracket with base	
34740-01	Beam sensor transmitter	
34740-02	Beam sensor receiver	
34741-02	Base for 34740 Beam	
07012-31	Conventional Flame detector	
34760	Duct sensor (inc 17908-05 Probes and Slave LED unit)	
Tools	17918-22	Sensor chamber Extractor cup (32000 & 34000)
	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 (32000 & 34000)
	Terminal Plate	34700
19279-01		Semi-flush sensor mounting kit
07700-21		Base for Conventional flame detector
T Breaker and Slaves	34701	T breaker Unit
	34702	Slave LED unit
	34703	Slave Relay unit

Alarm sounders

34202	2 way electronic sounder
34203	3 way electronic sounder
34213	Environmentally protected sounder 3-way electronic sounder
34777	Repeat sounder

Manual call points (MCP) 2-way

	34800	Surface mounted MCP
	34807	Surface mounted keyswitch MCP
	34842	Surface mounted MCP with cover
	34812	Surface mounted water resistant MCP
	19289-01	MCP flush fixing plate
	34852	Surface mounted water resistant MCP with cover
	34829	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	34440	Mains powered fire alarm interface
	34441	Card for mains powered 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	34450	Loop powered fire alarm interface
	34451	Card for loop powered interface
	19245-05	Interface line module -up to 4 can be fitted in a loop powered fire alarm interface
	34454	4 way keyswitch door for loop powered interface

1- Channel Loop powered	#34410	Loop powered zone module
	#34415	Single Channel Interface (Loop Powered)
Rack	13445-80	Rack interface back box
	13445-05	Rack interface
	13445-06	Interface rack keyswitch door
	13445-15	4 way interface line module assembly
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)
	# -	Not available at time of issue
Fix Extinguishant	#34460	Loop powered fixed extinguishant interface
	#34461	Card for loop powered extinguishant interface
	# -	Not available at time of issue

Manuals & Accessories

13499-23	Installation manual V3.3X (for system 3400 with 34000)
13499-26	Operating manual V3.3X (for system 3400 with 34000)
13563-011	GENT Supervisor Operator's Manual

GENT Supervisor

PC	13563-10	PC for the GENT Supervisor
Graphics only	13564-01	Graphics software
Text only	13565-01	Information mode software

	13565-04	Configuration mode software
Accessories	13563-03	A4 text printer with cable and paper
	13563-05	Light pen accessory
	4214-006	Fan fold paper (for 13563-03)
	4214-054	A4 paper 5 reams (for 13563-04)

NOTE: *The Gent Supervisor graphics software requires custom graphics pages*

Converter / Compactor / UPS

13547-14	Uninterrupted power supply (55 minutes standby)
13547-15	Uninterrupted power supply (14 minutes standby)
13563-02	Converter unit (RS232/RS485)
13548-03	Compactor unit (1 to 8 - RS232)
13563-01	Modem (pairs)