R6000

INSTALLATION MANUAL

MENVIER

CE

0832 – CPD – XXXX

LPCB UKAS QUALITY MANAGEMENT 007

Introduction

Introduction to the Manual

This manual provides information on the installation, operation and maintenance of the Menvier R6000 System.

NOTICE

The operating system of the R6000 may be revised as a result of enhancements to the system software or hardware. Revisions to this manual will be issued and supplied on request and should be logged in the table supplied on the contents page.

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE
DISPOSE OF THE USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

Technical Help: 01302 303350
Service: 01302 303352
Sales: 01302 303303

R6000
Analogue Addressable Fire Detection System

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Section 1

System Installation and Design

Introduction

R6000 provides all of the sophisticated features required of a leading edge analogue addressable fire system along with the simple operation and neat installation demanded by installers and building users.

The panel can be flush or surface mounted and the generously sized metal back box allows ample facilities for rear or top cable entries.

In addition both passive and fully functional repeater panels are available.

A comprehensive range of ancillary devices is available to operate with R6000, including Optical, Ionisation, photo-thermal and heat detectors, base mounted and stand alone sounders (including an IP67 version) a loop powered beacon and a wide range of input and output interfaces.

Each of the R6000 system components has been specifically designed to operate as part of a R6000 system, this provides an assurance that the panel, the detectors, the interfaces and the ancillaries are all fully compatible with each other and that the full range of system functionality is supported by each device.

Each loop of a R6000 panel can accommodate up to 150 addresses.. To comply with EN54 requirements no more than 512 addresses should be connected to a single panel. Each panel can indicate upto 96 zones. Panels are available with upto 4 detection loops, up to 63 panels can be networked together to form a single system capable of operating with over 32,000 devices. Please note network systems fall outside the scope of EN54.

Project Planning

The following is a typical program and timetable for a R6000 installation project, once the initial order has been received:

1.   Project Meeting

Installer and user to be present; system specifications, schematic diagram and proposed circuit drawing to be available. R6000 Installation & Commissioning Guide to be provided.

2.   Equipment Fix

Typically 2 week's notice is required for equipment to be delivered. Cable to be installed and bases/back boxes to be fitted. Then fire detectors, call points, alarm sounders, isolator units and interface units to be installed.

3.   Address Schedule

Schedule of sensor locations to be completed by installer and returned to enable System programming.

4.   Auto Learn

Fire panel/repeater panels to be installed and terminated. System to be powered up by installer and auto learn mode activated (see Auto Learn section). System to be tested and verified by installer, prior to final commissioning.

5.   Final Commissioning

Minimum 2 weeks notice is required from receipt of Address Schedule and Commission request form. Cooper Lighting Service Engineer to attend site implement/oversee the final commissioning procedures (see Commissioning section), in conjunction with the installer.

System Design Guidelines

Guidelines

Systems should to the relevant local standards and codes of practice, for the UK this is BS5839 part 1. R6000 meets all the relevant requirements of BS5839 part 1: 2002. Installation planning is simplified by the fact that every addressable R6000 device contains an integral short circuit isolator. Care must be taken to ensure that local standards requirements regarding aspects such as loop coverage, area covered by a single spur and cable specification are observed.

There may be certain applications in which deviations from the code may be necessary and these must be listed on the commissioning certificate. (See commissioning section)

Loop lengths

The maximum permitted loop length is 2 km measured from the near to the far terminals on the R6000 Motherboard PCB. There is no minimum limit to loop length. Any wiring spurs off the loop must be included within the 2 km limit. On long loop runs, the lengths of wiring rises and falls (between floors, down to manual call points) must be included. Remember to include these especially when taking loop lengths from plan drawings.

Loop loading - total number of addresses

The total number of addresses per loop is 150. this includes detectors, call points and all other addressable items (e.g. MPU, MIO, loop repeaters etc.) When designing systems its recommended that allowances are made for future expansion, Short circuit isolators are incorporated into every R6000 loop device, including Smoke detectors, heat detectors, sounders, callpoints and interfaces. Therefore, no further fault protection is required , in the event of a single fault, none of the devices connected to the loop will fail to operate as the fault will be isolated by the two adjacent devices.
Spur connected devices downstream of a cable fault will cease to function.

R6000/PR repeater panels

Each repeater unit requires one address and consumes no more current from the loop than a smoke detector. The repeater also requires a local mains supply and incorporates battery backup.

Loop Loading System Verification

Unless a loop loading calculation has already been carried out, please contact our technical support department (01302 303350), before starting installation to verify that a proposed loop loading arrangement is acceptable.

Compatible Equipment

| DF6000 system components		
Order Code	Description	Dimensions (mm)
DF6000/1	1 Loop DF6000 Panel	495W X400H X 180D
DF6000/2	2 Loop DF6000 Panel	495W X400H X 180D
DF6000/4	4 Loop DF6000 Panel	495W X400H X 180D
DF6000/1/P	1 Loop DF6000 panel c/w integral printer	495W X400H X 180D
DF6000/2/P	2 Loop DF6000 panel c/w integral printer	495W X400H X 180D
DF6000/4/P	4 Loop DF6000 panel c/w integral printer	495W X400H X 180D
DF6000/1/G	1 Loop DF6000 Panel Graphite finish	495W X400H X 180D
DF6000/2/G	2 Loop DF6000 Panel Graphite finish	495W X400H X 180D
DF6000/4/G	4 Loop DF6000 Panel Graphite finish	495W X400H X 180D
DF6000/1/P/G	1 Loop DF6000 panel c/w integral printer Graphite finish	495W X400H X 180D
DF6000/2/P/G	2 Loop DF6000 panel c/w integral printer Graphite finish	495W X400H X 180D
DF6000/4/P/G	4 Loop DF6000 panel c/w integral printer Graphite finish	495W X400H X 180D
DF6000/COV	Hinged protective cover kit	
DF6000/PR	Passive repeater for DF6000	
MAS850	Sounder base	102 Dia X 40D
MASC	Cover for MAS850	102 Dia X 13D
MAS850LPS	Wall sounder	105L X 105H X 95D
MAS850LPS/WP	IP66 Wall sounder	108L X 108H X 103D
MAB870	Add. Beacon	95 Dia X 50D
MBG814	Flush Callpoint	85L X 85W X 30D
MBG813	Surface Callpoint	85L X 85W X 53D
MBG817	Weatherproof Callpoint	108L X 108W X 65D
MIO324	3 Channel I/O device	147 x 88 x 57
MIO1240	1 Channel output unit (mains rated)	180L X 130H X 60D
MIU871	Zone monitor unit	150L X 89H X 58D
MSU840	Shop unit Interface	150L X 89H X 58D
MSI850	Spur Isolator	112L X 41H X 33D
MPU424	4 Way sounder circuit controller.	300L X 300H X 74D
MAB800	Common mounting base for analogue detectors	104 Dia X 22D
MAP820	Optical smoke detector	101 Dia X 33D
MAI810	Ionisation smoke detector	101 Dia X 33D
MAH830	Multi mode heat detector	101 Dia X 43D
MAOH850	Combined photo thermal detector	101 Dia X 43D

Compatible Equipment

The range of compatible detectors for the R6000 system consists of the following:
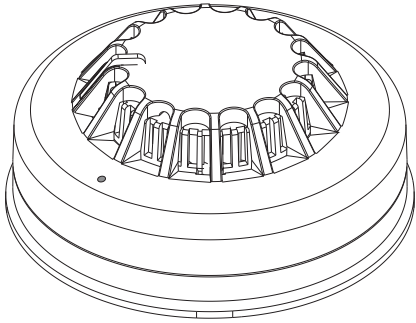
MAP820 Analogue Photoelectric Detector, this is the most commonly used detector and is most suitable for detecting slow burning fires.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the R6000 control panel.
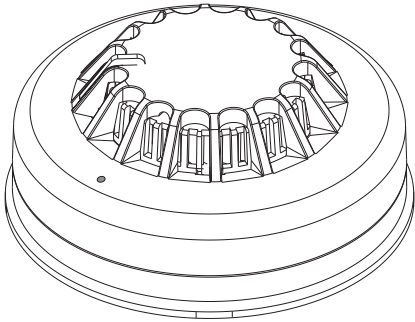
MAI810 Analogue Ionisation Detector, ionisation detectors are increasingly being replaced by photoelectric detectors on environmental grounds, Ionisation devices are however superior at detecting fires with very small smoke particles, such as from a fast burning fire.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the R6000 control panel.
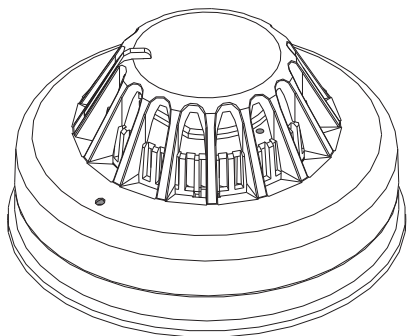
MAOH850 Analogue Photo/thermal Detector, this is a new addition to the Menvier range of detectors. It is the ideal detector for a multi-use environment as it has an excellent response to smouldering and fast burning fires. Photo/thermal detectors can be programmed for thermal only operation at certain times of day

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the R6000 control panel.
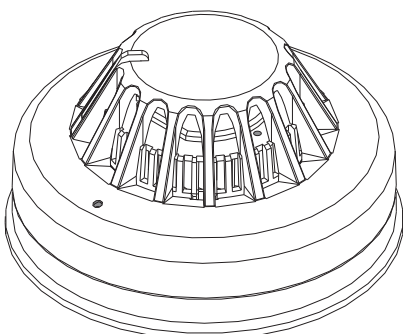
MAH830 Analogue Heat Detector,
Heat detectors are suitable for dusty environments or environments where smoke is likely to be present under normal operating conditions. The MAH830 can be programmed to operate in A1R,BS or CS mode of operation depending on the required application and sensitivity requirements.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the R6000 control panel.

Compatible Equipment

Compatible callpoints

The range of purpose designed callpoints for R6000 consists of a surface callpoint, a flush callpoint and a surface weatherproof callpoint.
A range of accessories is available including a hinged protective cover, Resettable element kit and a flush bezel.
The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the R6000 control panel.
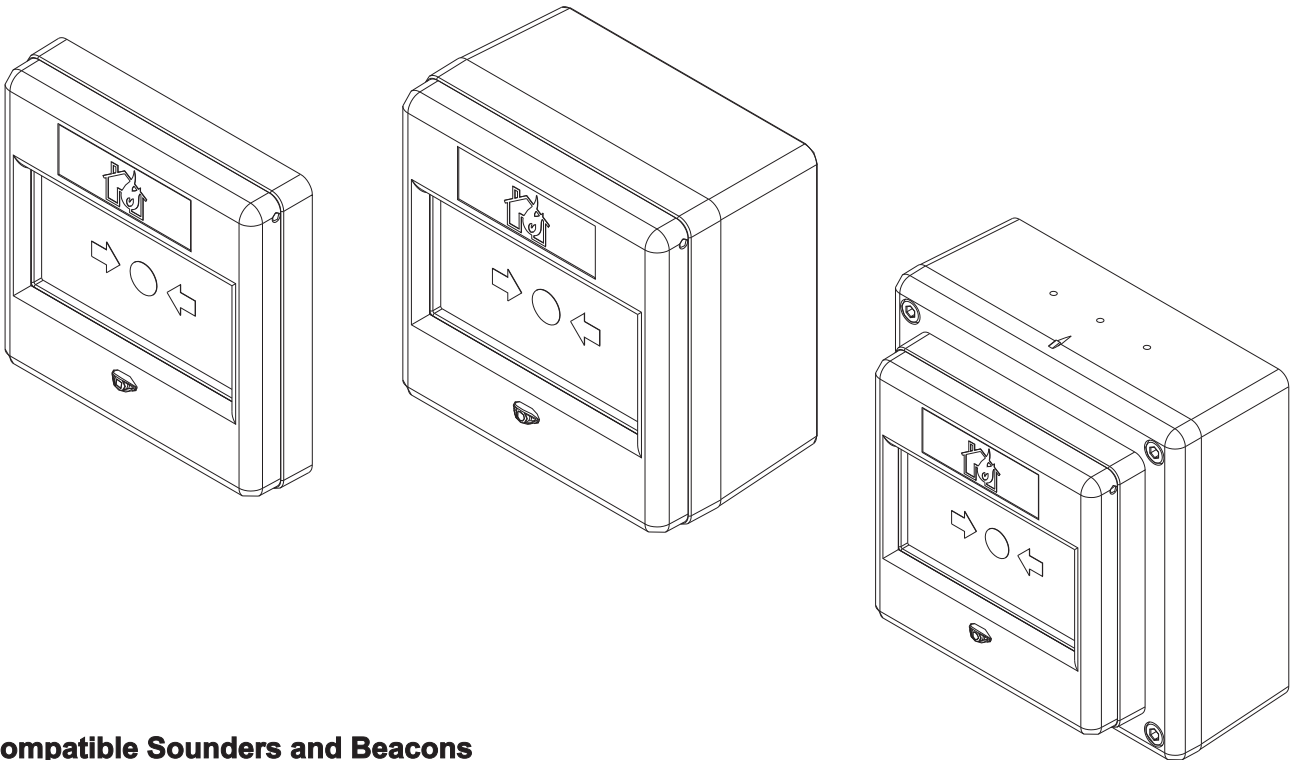

Compatible Sounders and Beacons

A wide range of loop powered sounders and beacons are available to operate with R6000 consisting of a combined sounder base with a maximum output of 95 dB(A), a standalone sounder with a maximum output of 100 dB(A) that is available in standard or weatherproof versions and a stand alone loop powered beacon.
For applications where a discreet dedicated sounder is required, a cover plate is available for the white base mounted sounder enabling it to be used as a stand alone wall or ceiling mounted sounder.
All of these devices are fully programmable via the sophisticated R6000 multi stage cause and effect programming facilities.

All sounders have multiple selectable volume settings, the volume setting is controlled by the R6000 panel and so can be altered without needing to access the sounder.

Compatible Equipment

Base sounder

The MAS850 has been designed specifically to complement the latest generation of Menvier soft addressed detectors.
it consists of a first fix bracket, and a main body which clips onto the bracket incorporating the sounder and a detector mounting base in a single composite assembly.
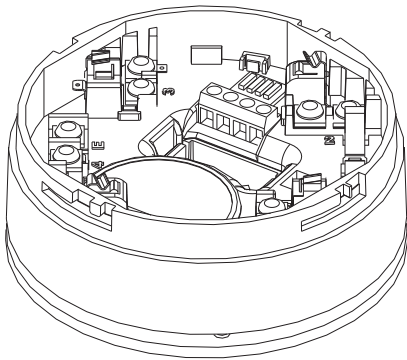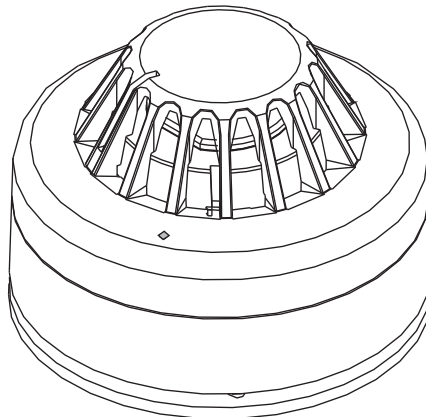
| MAS850 | MAS850 with detector fitted | MAS850 with MASC fitted |
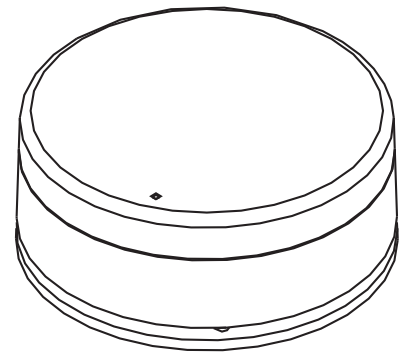
After the body has been clicked into place and connected, a detector or front cover is then added to complete a very simple quick and neat installation.
The cover enables the MAS850 to be used as a discreet stand alone wall or ceiling mounted device.
The sounder base design incorporates a mechanism that can be activated if required to lock either the detector or the cover into place to prevent unauthorised removal.

Dedicated Stand alone sounders

Stand alone sounders are ideal for applications where greater sound outputs are required than can be achieved with a base sounder or for applications requiring a higher level of resilience or ingress protection.
Two different versions are available standard version and an IP66 rated version.
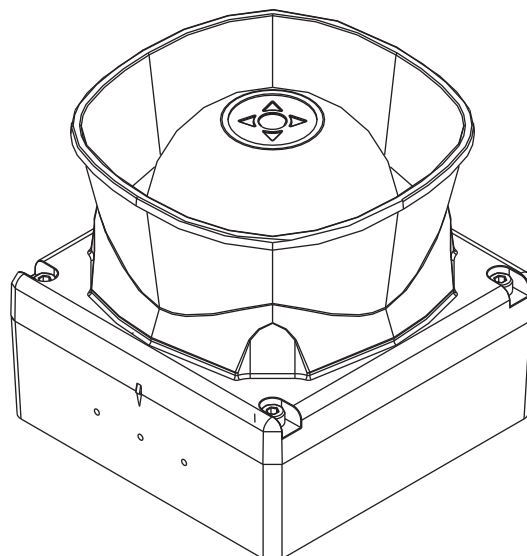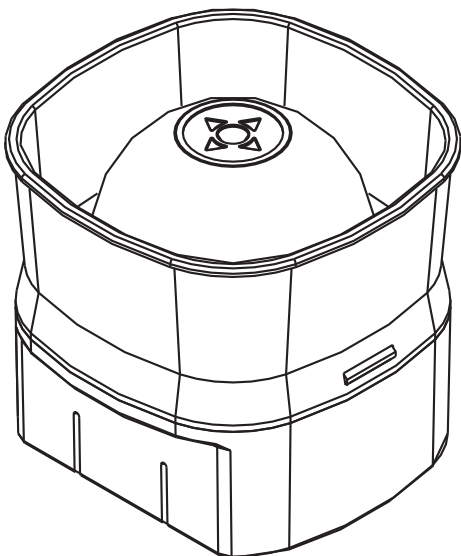
Compatible Equipment

Loop powered beacon

A loop powered flashing beacon is available for applications where visual alarm indication is required such as areas of high ambient noise or buildings which are used by people who are hard of hearing.
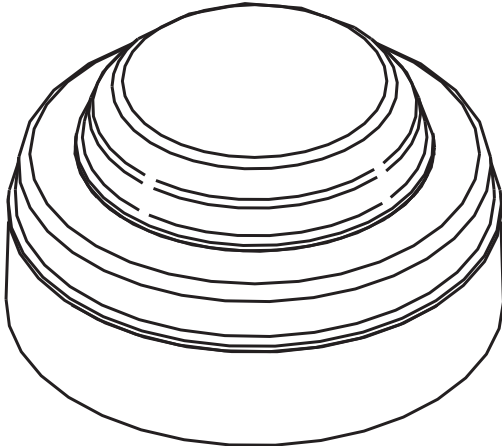
Interfaces

R6000 has been designed to be suitable for a wide range of applications, various interfaces have been developed to enable the simple integration of other fire systems or building control and safety systems. The following devices are available:

3 Channel I/O device. (MIO324)

MIO324 has 3 input channels and 3 output channels, it is used to monitor up to three separate inputs from equipment such as sprinkler flow switches and also to provide 3 separately controlled volt free output contacts which are intended to be used to control external equipment such as air handling plant or access control systems.
All inputs and outputs operate completely independently of each other and can be programmed using the sophisticated cause and effect capabilities of R6000 to operate either globally or in response to activation of specific devices or specific inputs.
Inputs are monitored for open and short circuits, a specific resistance is required to activate an alarm condition, fully open or short circuit conditions are monitored and generate a system fault signal.
Inputs are suitable for use as fire signal inputs such as from a sprinkler flow switch , however they can also be used to monitor non fire inputs such as external keyswitches.
Outputs are rated to switch a maximum of 1A resistive at 30V DC.
MIO324 fixes to a standard, deep, double gang back box and can be either surface or semi recess mounted.
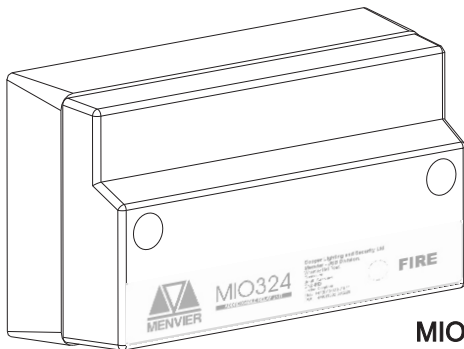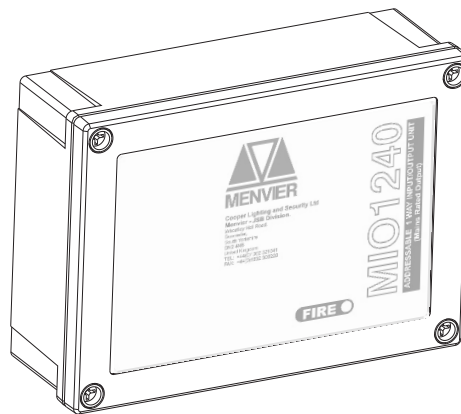
MIO324   MIO1240

1 Channel I/O device with mains rated switching capability (MIO1240)

MIO1240 is a single channel input / output unit, the output is capable of switching up to 1A at 230V AC.
Commonly used for applications such as door release controls and plant shut down signalling

The input is monitored for open and short circuits, a specific resistance is required to activate an alarm condition, fully open or short circuit conditions are monitored and generate a system fault signal.
The input is suitable for use as a fire signal input such as from a sprinkler flow switch, however it can also be used to monitor non fire inputs such as an external keyswitch.

Interfaces

Zone monitor unit (MIU871)

MIU871 is designed to enable a zone of compatible conventional detectors and callpoints to be connected into the R6000 loop, it is compatible with up to 20 Menvier conventional detectors connected via FXN520 bases.
Please refer to local standards e.g.BS5839 Pt1:2002 for details of the maximum allowable area to be covered by a single spur / zone. MIU871 fixes to a standard, deep, double gang back box and can be either surface or semi recess mounted. When semi recessed only the front section protrudes giving a maximum 29mm depth.
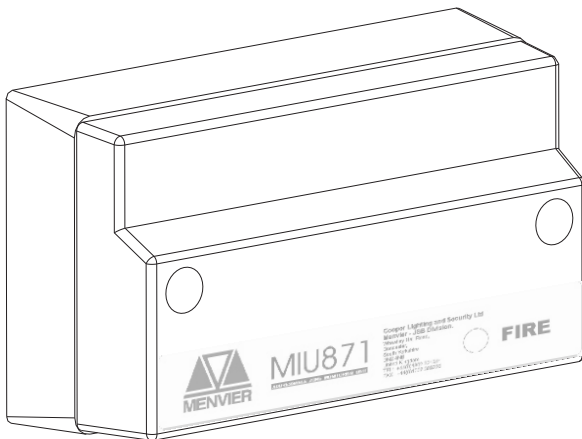
Shop unit Interface (MSU840)

MSU840 accepts a zone of conventional detectors plus an unlimited number of callpoints which can be connected to the same input as the detectors or a separate callpoint input if required.
It also has a 24V 1A rated relay output, and a facility to connect a power supply, which can then be monitored for fault.
In addition it has the facility to connect two circuits of conventional polarised sounders, which are monitored by means of an end of line resistor and powered in alarm conditions from the external power supply.
The sounder circuits can be programmed to operate in pulsed, continuous or time delayed mode.

Please refer to local standards e.g. BS5839 Pt1:2002 for details of the maximum allowable area to be covered by a single spur / zone

Interfaces

Spur Isolator (MSI850)

Enables soft addressing to work when the loop contains spurs, it controls the addressing operation so that when the system reaches a spur, all devices on the spur are allocated an address before it continues addressing the loop.
The device also incorporates a short circuit isolator.
Because each device contains a short circuit isolator only 1 is required at the start of each spur.

MSI850 is mounted on a standard deep double gang back box (supplied)

Please refer to BS5839 Pt1:2002 for details of the maximum allowable area to be covered by a single spur / zone
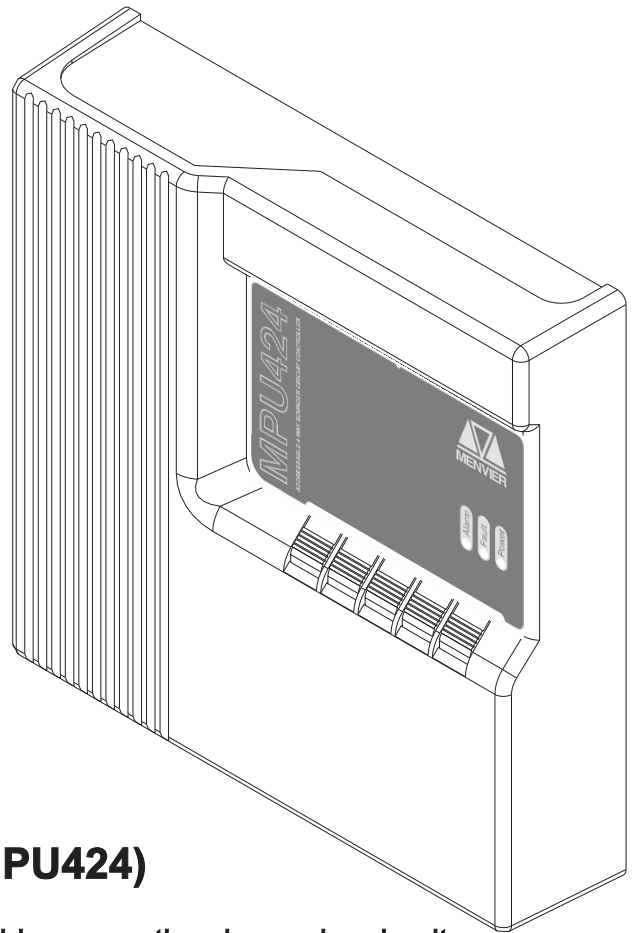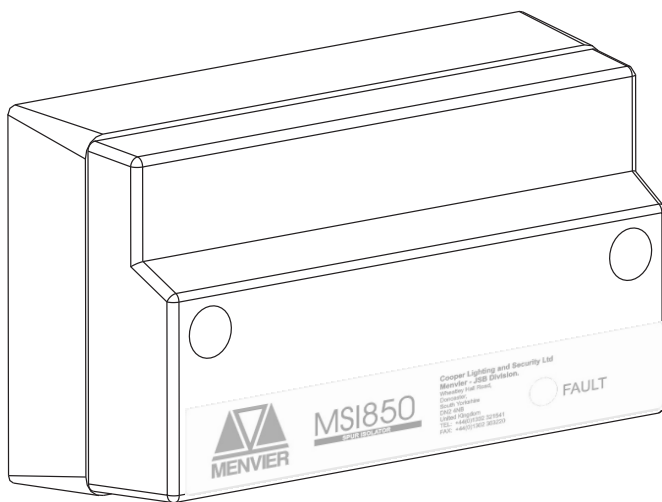
4 Way sounder circuit controller (MPU424)

MPU424 provides power for 4 separately controllable conventional sounder circuits, each circuit can be separately programmed.
MPU424 is designed to greatly simplify installation in applications where specialist sounders or beacons are required since it powers the sounders and allows full control of the sounder operation without having to wire the sounder back to the R6000 control panel.

A 4 way unit takes up a single address but each circuit can be independently controlled.
An MPU424 unit requires a local un-switched 230V supply and incorporates a back up battery to 24 hours of standby operation followed by a minimum of 30 minutes of full alarm ringing.
A standby of 72 hours can be achieved at the expense of reduced load capability.

Equipment Compatibility

Detectors
Loop wired detectors must be of the Menvier 800 series soft addressed analogue type. FXN500 series conventional detectors can be connected via an MIU871 interface. The connection of other detector types via an MIU871 interface is not recommended,

Call points
Loop wired call points must be the Menvier 800 series soft addressed analogue type, FX200 series conventional callpoints can be connected via an MIU871 interface. The connection of other callpoint types via an MIU871 interface is not recommended,

Sounders
Loop powered addressable sounders must be of the Menvier 800 series soft addressed analogue type.

Conventional sounders can also be connected either to the conventional sounder circuits at the panel or to the loop via a MPU424 addressable sounder controller interface providing they meet the following:
1) They are suitable for operation between 18V and 28V.
2) They are polarised and suppressed.
3) The total alarm load is less than the rating of the panel / Alarm Power Interface.

Note: It is possible to use devices outside these requirements if they are supplied with power from a separate source and switched via a suitable relay.

Relay circuits
Additional relays can be added to the R6000 system by using either MIO1240 or MIO324 relay units.

Relays / Auto-dialers and auxiliary equipment
A wide variety of relays and other equipment can be connected to the R6000 system, but you should note the following constraints:

1) R6000 provides monitored outputs to drive fire and fault relays mounted in external equipment. External relays should be suppressed. If a non-suppressed relay is used then a diode can be connected as shown in the wiring diagram in the appendix, to suppress any reverse EMF on the release of the relay which might cause the panel to malfunction.

2) A 24V DC output is provided at the panel to make it easy to connect ancillary equipment. Although the panel can supply a continuous quiescent load of up to 30mA, BS5839 precludes this practice and any ancillary equipment you connect should only consume power in the alarm or fault mode to meet the requirements of BS5839.

Equipment Compatibility

Additional instructions for electromagnetic compatibility

When used as intended this product complies with EMC Directive (89/336/EEC) and the UK EMC regulations 1992 (SI 2372/1992) by meeting the limits set by the standards BS 5406 (Pts 2&3) 1988, EN50130-4 immunity and EN 61000-6-3 emission requirements.

The following installation guidelines must be followed.
1. External cables must be connected using the cable entries or knockouts provided.
2. When routing external cables inside the product they must be
 a) Kept as short as possible
 b) Routed close to the housing
 c) Kept as far as possible from the electronics
Any modifications other than those stated in this manual, or any other use of this product may cause interference and it is the responsibility of the user to comply with the EMC and Low Voltage Directives.

System Overview

Simple user interface

The main element of the user interface with R6000 is a large (120mm x 90mm visible area) touch screen display, which provides comprehensive user information and also acts as a multifunctional keypad.

Comprehensive context sensitive help information is provided throughout the menus to assist unfamiliar users with system operation.

The R6000 touch screen display automatically reconfigures to suit the selected function, for example, if the change device text menu option is selected, the touch screen is automatically formatted as a full QWERTY keyboard to enable fast and simple text entry.

The use of the touch screen display enables a wide range of user and engineering facilities to be incorporated into the panel whilst still offering simple operation.

As well as a large format LCD display providing full system status information, the panel incorporates 96 traditional zone indication LED's to provide clear information about the status and spread of a fire even to a user who is completely unfamiliar with the operation of the system.
In addition there are a number of system status LED's designed to give clear status information to non technical users

User configuration and maintenance facilities

R6000 has comprehensive facilities for on site system configuration, whereby the user can add or remove simple devices or change device text directly via the panel, without the need for a service engineer to visit site. For initial configuration or major system changes special PC configuration software is available enabling Cooper Lighting and Security personnel to do this more efficiently than can be achieved using the system screen. Exiting configurations can be uploaded to the PC so that changes can be made to the existing system rather than having to revert to initial files.

Sophisticated sounder control facilities

R6000 has the ability to support highly complex ringing pattern requirements. Multistage cause and effect programming is possible whereby each addressable sounder or output interface can be programmed independently if required and can be set to respond to specific addresses, specific detection zones, specific panels on a networked system or standard global ringing.
The panel supports three separate sets of programming per sounder and each stage can be triggered differently For example, if a single detector is triggered the panel can

System Overview

be programmed such that the sounder nearest to the detector operates immediately and continuously, the remaining sounders in the affected zone operate in pulsed mode and the other sounders delay for a selectable period to allow the cause of the alarm to be investigated before global ringing commences.

Spur tolerant soft addressing

R6000 utilises intelligent soft addressing technology to greatly simplify the installation and commissioning processes.
Once the system has been installed and the autolearn menu selected, the R6000 control panel will automatically scan the detection loops and allocate each device with an address number corresponding with its position on the loop, this avoids the traditional need for manual addressing of the system devices which is time consuming and provides a potential for error.

A major innovation with R6000 is the ability to incorporate spurs of analogue devices which are fed from the main loop by utilising a spur isolator.
Whenever the panel detects a spur, it breaks from allocating address numbers to the loop wired devices, allocates address numbers to each of the devices on the spur in sequence and then continues to address the devices on the main loop.

Every R6000 analogue device incorporates an integral short circuit isolator ensuring maximum system integrity. A single short circuit will not disable any loop-mounted devices, the isolators in the devices each side of the short circuit will operate and the R6000 control panel will drive communication from both ends of the loop.
The spur isolator also incorporates a short circuit isolator such that in the event of a short circuit on the spur, the integrity of the main loop will not be compromised.
Please refer to local standards e.g. BS5839 Pt1:2002 for details of the maximum allowable are to be covered by a single spur.

Simple future expansion

R6000 is designed to ensure simplicity of future expansion.
If an additional device is added after the system has been programmed, the R6000 will allocate the next available address, it will not alter any of the existing address numbers allocation thus enabling simple updating of as fitted drawings etc.
Similarly if a device is removed, the relevant address is saved as a spare address for future use, the addresses of the remaining devices are not altered.

Integral Power Supply and Battery

The R6000 panel is designed for ease of installation, the power supply and battery are integral to the main control panel so only a single panel is required even on large 4 loop systems.

Technical Specification

Power Supply (Approved EN54 pt 4)

Mains

Nominal Voltage	: 230 Vac + 10%, -15%
Nominal Current	: 75mA
Maximum Current	: 750mA
Input Fuse R1	: NTC SG39 Imax 4Amp

Output Voltage including tolerances	: 26V	= 18.5 to 29.5Volts
	: 26V RAW	= 18.5 to 29.5Volts
	: 5Volt Output	= 4.6V to 5.5V
Ripple Voltages	: 26V	= 800mV
	: 26V RAW	= 800mV
	: 5Volt Output	= 430mV
Maximum Loadings	: 26V O/P	= 0.98A
	: 26V RAW O/P	= 1.7A $\Big\}$* I max b
	: 5V	= 0.5A
Standby Current (4 Loops Loaded)	: 26V	= 280mA
	: 26V RAW	= 150mA $\Big\}$* I max a
	: 26V	= 280mA
	: 26V RAW	= 150mA $\Big\}$* I min
	: 5V	= 43mA

R6000 is protected by an internal thermal device, this requires no maintenance

* I max a, I max b & I min = Current as specified in BSEN54-4 Published 2006 (Amendments 1 & 2)

Batteries

Number of Batteries	: 2
Manufacturer:	:YUASA NP12-12
Capacity	: 12 Ah
Battery Fuse	: 6.3A Anti-Surge (F4)
Maximum battery current;	: 3.5 Amps
Standby current (mA)	: 175 (4 loops), 125 (2 loops)
Maximum Charging Current to the Batteries	: 1.0amp
Float Voltage	: 27.4 Volts
Final Voltage	: 21.0Volts
Charging Characteristics	: Constant Voltage with 0.970A limit with temperature compensation
Maximum current drawn from the batteries when the mains is not available	: 3.5Amps
Deep Discharge Protection	: 20.6 Volts
Battery Internal Impedance Fault	: >0.5 ohms

Inputs

Addressable Loops

Max Number	: 1 - 4
Max Loop Load per loop	: 220 ma
Max Number of Addressable Devices per loop	: 150
Class Change	: Operated by external volt free contact

Outputs

Conventional sounder circuits

Number of sounder circuits	: 4
Total sounder Load	: 1.5 Amps
Sounder Circuit Fuses (F1/2/3/4)	: 1.6 Amp (Quick Blow)
End of line resistor	: 6k8

Fire Routing Equipment

Max Load	: 60 ma
Fused (PTC2)	: 100mA polyswitch

Technical Specification

End of Line resistor   : 6k8

Fire Protecting Equipment
Max Load   : 60 ma
Fused (PTC3)   : 100mA polyswitch
End of Line resistor   : 6k8
Fault Routing equipment
Max Load   : 30 ma
Fused (PTC1)   : 100mA polyswitch
End of Line resistor   : 6k8
Auxiliary Relays
The auxiliary relays provide fused volt free change over contacts. These contacts are not monitored.
Max Load   : 24 Volts 1 Amp
Fuse (PTC4)   : 1.35 Amps polyswitch
Auxiliary 24V Supply
Nominal Voltage   : 24 Volts ±10%
Fuse (PTC5)   : 100 mA Polyswitch
Maximum current   : 30 mA
This output is not to be used for Fire protecting equipment or Fire alarm routing Equipment
Any power taken from the alarm system will effect the standby duration
RS485 Port
This is a serial output port for driving R6000 Repeater panels, mimics etc..
This output is short circuit protected
Max Cable Length   : 2Km
Min Recommended cable size   : 1mm² (Screened)
RS232 Port
This is a serial output port for driving R6000 Repeater panels, mimic etc..
This output is short circuit protected

Mechanical Specification
Weight including batteries   : 18Kg
Weight excluding batteries   : 9Kg
Dimensions (Standard batteries)   : 495mm(L) x 395mm(H) x 180mm(D)
Type of Material (backbox)   : Mild Steel (Power Coated)
Type of Material (Facia)   : PC/ABS
Flammability Rating   : UL 94 V0
Total Number of knockouts   : 51
Diameter of Knock out   : 20mm

Anti-Tamper Cover (Optional)

Weight   : 250g
Material used   : Poly Carbonate
Flammability Rating   : UL 94 5VA

TERMINAL BLOCKS : DO NOT USE EXCESSIVE FORCE WHEN TIGHTENING THE SCREWS ON THE TERMINAL BLOCK

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE
DISPOSE OF THE USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

Optional Functions as per EN54 P2&4

R6000 is approved to EN54 Parts 2 & 4 including all the following options which can be selected as required

PANEL OUTPUTS

Panel Sounders: (OPTION 7.8 EN54 PT 2)

Two pairs of outputs are provided. ONLY polarised equipment should be used.
Ensure the polarity of the connections are observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.
The total alarm load across all sounder outputs = 1.5 Amp
All outputs are fused with 1.6 Amp Glass fuse   Alarm devices should be spread equally across the 4 sounder circuits.
WARNING: DO NOT EXCEED THE RATED OUTPUT CURRENT

OUTPUT FIRE ALARM ROUTING EQUIPMENT (OPTION 7.9 EN54 PT 2)

This output, which is fused, and monitored using a 6.8k end of line resistor, is used for the automatic transmission of the fire signals to fire alarm rOUTING equipment (e.g. Fire brigade). It operates by providing 24 Volt output to an auxiliary device (e.g. relay).
It is current limited to 30 mA using a resettable polyswitch. Class change and test conditions do not operate this output. If operated under a fire alarm condition, the indication will be displayed on the Touch screen display and will remain until the fire alarm is reset.
Ensure the polarity of the connections are observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.

OUTPUT TO FIRE ALARM PROTECTING EQUIPMENT (OPTION 7.10 EN54 PT 2)

This output, which is fused, and monitored using a 6.8k end of line resisters used for the transmission of the fire signals to controls for automatic fire protecting equipment (e.g. Door released units etc).It operates by providing 24 Volt output to an auxiliary device (e.g. relay).
It is current limited to 30 mA using a resettable. polyswitch. Class change and test conditions do not operate this output. If operated under a fire alarm condition , this output   remains energised until the fire alarm is reset.
Ensure the polarity of the connections is observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.

OUTPUT TO FAULT WARNING ROUTING EQUIPMENT (OPTION 9.4.1C EN54 PT 2)

This output, which is fused and monitored using 6.8k end of line resistor, is used for the transmission of fault signals to fault warning routing equipment This output is monitored using 6k8 end of line resistor and it current limited to 30 mA.Under normal condition it operates by providing 12vdc which can be connected directly to a 12v auxiliary device(

Optional Functions as per EN54 P2&4

relay).It is current limited to 30 mA.

Under fault conditions or even if the R6000 is powered down, this output will be switch to O volts. Ensure the polarity of the connections is observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.

Delays to outputs (Option 7.11 of EN54pt 2)

The R6000 has the option to delay the operation of panel sounders, the fire routing equipment output and the fire protecting Equipment. This delay is selectable using the R6000 site installer download software .The delay is configurable in increments of 1 minute up to a maximum of 10 minutes.

This delay can be enabled and disabled at access level 2.

The R6000 has the facility for a specific call point to override this delay by programming this call point via an input interface to provide an evacuate signal using R6000 site Installer.

Dependencies on more than one alarm signal - Type C (Option 7.12.3 of EN54pt 2)

The R6000 has the facility to inhibit the operation of the output sounders, Output to Fire routing equipment and the output of the fire protecting equipment until one more confirmatory signals are received from different zones. This feature is programmable using R6000 Site Installer Software.

Optional Functions as per EN54 P2&4

ALARM COUNTER : (OPTION 7.13 EN54 PT 2)

The panel records the number of instances that it enters the fire alarm condition. This is abbreviated in the touch screen by "AC" and it is displayed in the fire window at access level 2.This counter can only be reset by the manufacturer.

Optional Auxiliary Board VDS Requirement (Option not required by EN54)

This board can be connected to an Extinguishing system as well as a Fire Brigade Control Panel. This board has been tested and approved in according with DIN14661 and DIN 14675.
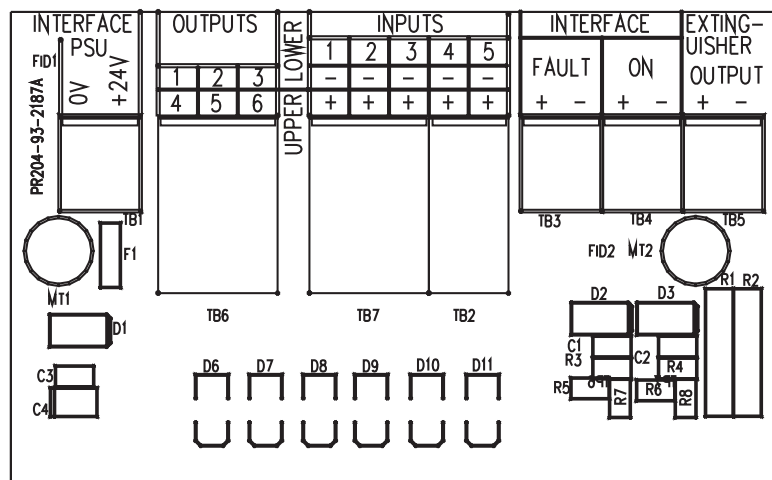
Inputs/Outputs to the Fire Brigade Panel

Outputs

Output 1: Fire Protecting Equipment operated "Extinguishing On"

This output is ON in alarm condition to indicate that the R6000 Control and indicating equipment has operated the fire protecting equipment (option 7.10 of EN54 pt2)

Output 2: Fire Routing Equipment operated "Fire Brigade Link"

This output is ON in alarm condition to indicate that the R6000 Control and indicating equipment has operated the fire routing equipment (option 7.9 of EN54 pt2).

Output 3: Disablement of Fire Protecting Equipment

This output is ON to indicate that the fire Protecting equipment has been disabled either by the R6000 Control and indicating equipment or the Fire Brigade Panel.

Optional Functions as per EN54 P2&4

Output 4: Disablement of the Fire Routing Equipment

This output is ON to indicator that the fire routing equipment has been disabled either by the R6000 Control and indicating equipment or the Fire Brigade Panel.

Output 5: Reset from Fire Alarm Condition

This output is ON to indicate that the R6000 control and indicating Equipment is in alarm condition. This output will remain on for at least 15mins after reset or when the reset has been activated from the Fire Alarm Brigade Panel

Output 6: Disablement of Sounders

This output is ON to indicate that the sounders have been disabled either by the R6000 control and indicating equipment or the Fire Brigade Panel/

Inputs

Input 1: Reset

This input is used to reset the control and indicating equipment

Input 2: Testing of Fire Routing Equipment

This input is used to test the output to the fire routing equipment

Input 3: Disablement of the Fire Routing Equipment

This input is used to disable the fire routing equipment if the R6000. Once the FRE is disabled from this interface, it can never be enabled from the R6000 control panel

Input 4: Disablement of the Fire Protecting Equipment

This input is used to disable the fire protecting equipment of the R6000. Once the FRE is disabled from this interface, it can never be enabled from the R6000 control panel

Input 5: Disablement of Sounders

This input is used to disable the sounders of the R6000. The disablement of sounders from the Fire Brigade Panel can be re-abled from the R6000 control panel only when the system is not Alarm State.

Optional Functions as per EN54 P2&4

German interface electrical characteristics:->

Inputs
The inputs are designed to be actioned in one of two ways, see list below:

First - a change in logic state ie. sWitch toggled on / off.
Second - logic pulse ie. nominal state logic high, then logic low > 200mS then return to logic high.

all inputs are held high via a weak pull up (logic high), the action of short circuiting any of the five inputs to there respective 0v will result in a logic low.

1: reset   -> logic pulse
2: FRE relay test   -> logic pulse
3: FPE disable   -> logic state change
4: FRE disable   -> logic state change
5: Acoustic disable -> pulse logic

Monitored Inputs
In Fault / Extinguisher Active

-> End Of Line resistor 3K3.
-> 680 Ohm across input to actiavte input

Relay Outputs
Normal status-> input sees a 3K3 resistor.
Active status-> input sees a 680 ohm resistor.

Outputs
1: Extinguisher released -> output high 26v
2: FRE operated
3: FPE disabled
4: FRE disabled
5: Panel in fire, will remain on after panel soft reset for > 15 minutes, or extinguish immediately with interface reset
6: disable all sounders.

Optional Functions not approved to EN54 P2&4

Italian Mode: (Option not required by EN54 pt2)

This mode can be programmed at access level 3. This relates to points 12.2(a) & 12.2(b) of the Internal Italian Ministerial Decree 9th April 1994 which states that in the event of a fire detection from 2 or more detectors or from an MCP there should be a 2 minute delay before output activation otherwise in the event of a fire detection from any one detector there should be a 5 minute delay before output activation, provided that the fire event is not acknowledged. These delays apply to siren activation as well as the shutting down/activation of other external equipment and additionally the legislation states that these delays should be adjustable depending on the type of activity being carried out within the building.

For example, if there was a fire detected from a single detector then we should start a 5-minute (adjustable) delay (T2). If however a fire is detected from a second detector or a call-point the delay should automatically revert to 2 minutes (adjustable) (T1). In this scenario the value of (T1) is critical. To keep things simple, let's assume that we set T1 = 2 minutes & T2 = 5 minutes.

Swedish Mode (Option not required by EN54 pt2)

This mode is programmed at access level 3. One of the Swedish requirements is that access level 2 & 3 is only avalailabe by the access of the keyswitch. The key switch is wired to the class change input.

Commission per loop (Option not required by EN54 pt2)

This mode is programmed at access level 3. This allows the commissioning engineer to auto learn one loop at the time

Alarm Verification (Option not required by EN54 pt2)

This mode is programmed at access level 3.This has the flexibility to delay the activation of detectors by 30 seconds.

In the event of an alarm from a detector, the led of the detector will be illuminated and no alarm will be displayed on the panel. The detectors are checked continuously for 30 seconds. If after this time, the detector is still in alarm, the output will be activated otherwise the detector will be reset.

Timer T1/T2 (Option not required by EN54 pt2)

This mode is set on at access level 3 and is a commonly used by Eastern European Countries.

In the event of a Fire the timer T1 can be set from 0 to 3 min where the alarm will be displayed on the panel and no output activation, if during this time the alarm is acknowledged then timer T2 can be set from 0-10 min where the alarm can be investigated and alarm reset.

However if timer T1 & T2 time out during alarm activation, the outputs will be activated.

Timer T1/T2 with Call point Override (Option not required by EN54 pt2)

This is similar to the above except a call point alarm will activate the output instantly

Cable & Wiring

Only the cable types listed below are allowable for loop connections.

1. Enhanced Fire TUF
2. Fire TUF™
3. FP200
4. MICC

When choosing your preferred cable type, you must take note of the following cable and wiring requirements.

1. The cable must be 2 core screened with an over sheath.
2. Maximum loop length with any of the above cables is 2KM
3. Maximum volt drop must be limited to 7 volts.
4. The conductors should be 1.5mm minimum an no larger than 2.5mm
5. Multicore cable should not be used for detector wiring.
6. Different loops should NEVER be run within the same cable.
7. Loop feeds and returns should never be used within the same cable.

Cable Resistance

Core Diameter	Typical FP200 Resistance
1.0mm²	18.1 Ohms/km/Core
1.5mm²	12.1 Ohms/km/Core
2.5mm²	7.41 Ohms/km/Core
4.0mm²	4.61 Ohms/km/Core

Cable Anchorage
The mains cable must be fixed securely using the cable clip provided.
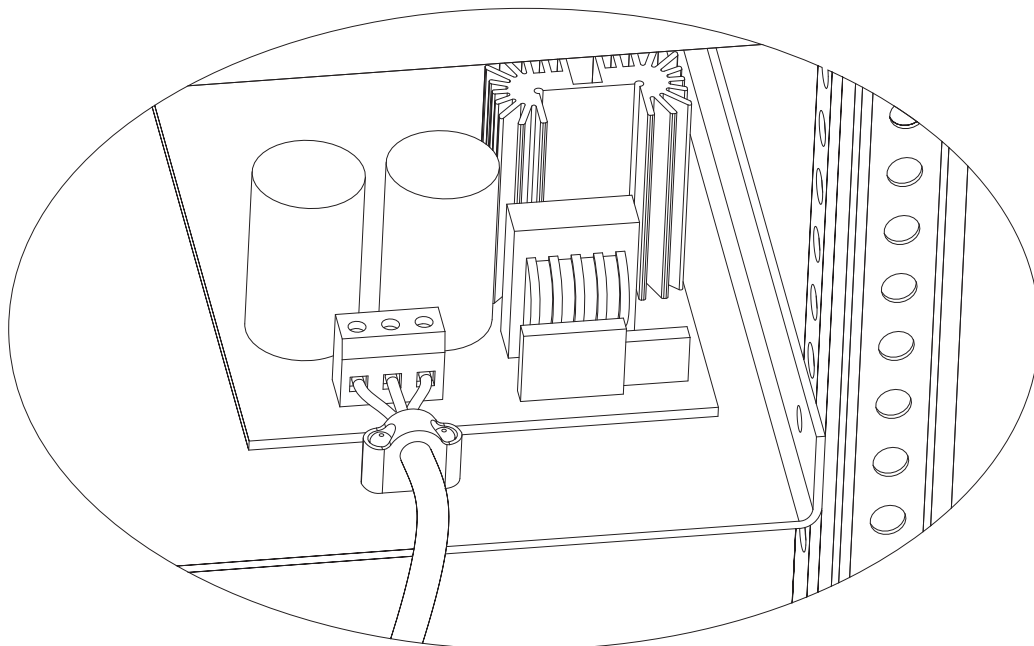
NOTE: The mains cable tail ends must be insulated to prevent dangerous conditions arising in the event of accidental switching on of the mains supply.

Installation

the panel should be installed in a clean, dry, reasonably well ventilated place, and not in direct sunlight. Temperatures in excess of 40°C and below 5°C may cause problems, if in doubt consult Cooper Lighting & Security. The panel should be located away from any potential hazard, in a position where it is readily accessible to authorised staff, and the fire services, ideally on the perimeter of a building near a permanent entrance. Mount the panel to the wall using the drill template provided. Do not drill through the panel to the wall as dust will contaminate the circuitry.

Installation Guide

● Never carry out insulation tests on cables connected to electronic equipment.

● DO NOT OVER TIGHTEN TERMINAL CONNECTOR SCREWS

● Always use the correct type of cables specifically designed for the operation of fire detection and alarm circuits.

● Always adhere to volt drop limitation when sizing cables

● Always observe polarity throughout. Non colour coded conductors should be permanently identified.

● Screen continuity must be maintained throughout the entire loop circuit including at each junction point and at each device, terminals are provided on each device to facilitate this.

● The screen should be earthed at the connection point provided at the R6000 panel and not at any other point. Both the loop start and the loop end must be connected to the appropriate earthing points.
Care must be taken to avoid connecting the screen to the earthed body of any metal devices, enclosures or cable containment. The screen or drain wire of the loop cables should not be considered as safety earth and therefore should not be connected to terminals marked with the earth symbol, except at the panel, and should not be insulated with green and yellow sleeving.

● R6000 utilises intelligent soft addressing technology to greatly simplify the installation and commissioning processes. Once the system has been installed and the autolearn menu selected, the R6000 control panel will automatically scan the detection loops and allocate each device with an address number corresponding with its position on the loop, this avoids the traditional need for manual addressing of the system devices which is time consuming and provides a potential for error.

● It is of vital importance that accurate details are kept of the exact wiring route in order to determine which address has been allocated to each device.

External Connections (Mains Supply)

The mains supply should be installed in accordance with the current edition of the IEE wiring regulations. Connection to the mains supply must be via an isolating device (e.g. an isolating fuse rated at 3Amps maximum) reserved solely for the fire alarm system. The cover should be coloured red and labelled "FIRE ALARM - DO NOT SWITCH OFF". The isolating protective device should be secure from unauthorised operation and ideally installed in a securely closed box with a breakable cover.

An additional warning label should be provided, depending on whether:-

a) The isolating protective device is fed from the live side of the main isolating device in which case the label on the isolating protective device, should read in addition - "WARNING: THIS SUPPLY REMAINS ALIVE WHEN THE MAIN SWITCH IS TURNED OFF". A further label should be placed on the main isolating device reading "WARNING: THE FIRE ALARM SUPPLY REMAINS LIVE WHEN THIS SWITCH IS TURNED OFF.

Or

b) If the isolating protective device is fed from the dead side of the main isolating device, a label should be fixed to the main isolating device reading "WARNING: THIS SWITCH ALSO CONTROLS THE SUPPLY TO THE FIRE ALARM SYSTEM".

Distributed Power Supplies
The above also applies to any distributed power supply (i.e. mains connections for R6000/PR repeat units MPU424 relay units, etc.)

Cable Segregation
All cables for the fire alarm system should be segregated from any other cables/wiring/services.

Wiring configurations
Spurs can be taken off the loop in the following ways:

1) MIU871 Addressable Interface - Allows up to 20 conventional smoke detectors and unlimited FX201 / 203 call points.
2) Direct Loop Spur Wiring - Allows a zone of analogue detectors and callpoints to be directly spurred off the loop

NOTE: The mains cable tail ends must be insulated to prevent dangerous conditions arising in the event of accidental switching on of the mains supply.

Networking

Up to sixty three R6000 panels or passive repeaters can be networked together to operate as a single networked system. To achieve this each panel must be fitted with a network card (supplied at additional cost.)

When operating as a networked system all fire and fault event information is displayed at every panel, silencing and resetting of alarms can also be carried out from any panel on a networked system if panels are suitably configured.

Networked panels are connected using a loop topology as illustrated.

Networked panels can be used as active repeaters, alternatively a low cost passive repeater is available.

This can either be connected a loop of an individual panel or it can be connected to the network.

The recommended network cable for the network connection between panels is an enhanced Firetuf cable Manufactured by Draka cables (part number 910234.)

Screen continuity must be maintained throughout the entire network circuit including at each junction point. The screen should only be earthed at the connection point provided at the first panel and not at any other point. The screen or drain wire of the network cable should not be considered as a safety earth and therefore should not be connected to terminals marked with the earth symbol, except at the panel, and should not be insulated with green and yellow sleeving

Where the network cable passes between buildings, screen continuity should not be maintained from building to building. A booster device must however be used irrespective of cable length and should be fitted at a suitable point in the link between buildings. The cable screen should be connected to the earth of one panel in each building.
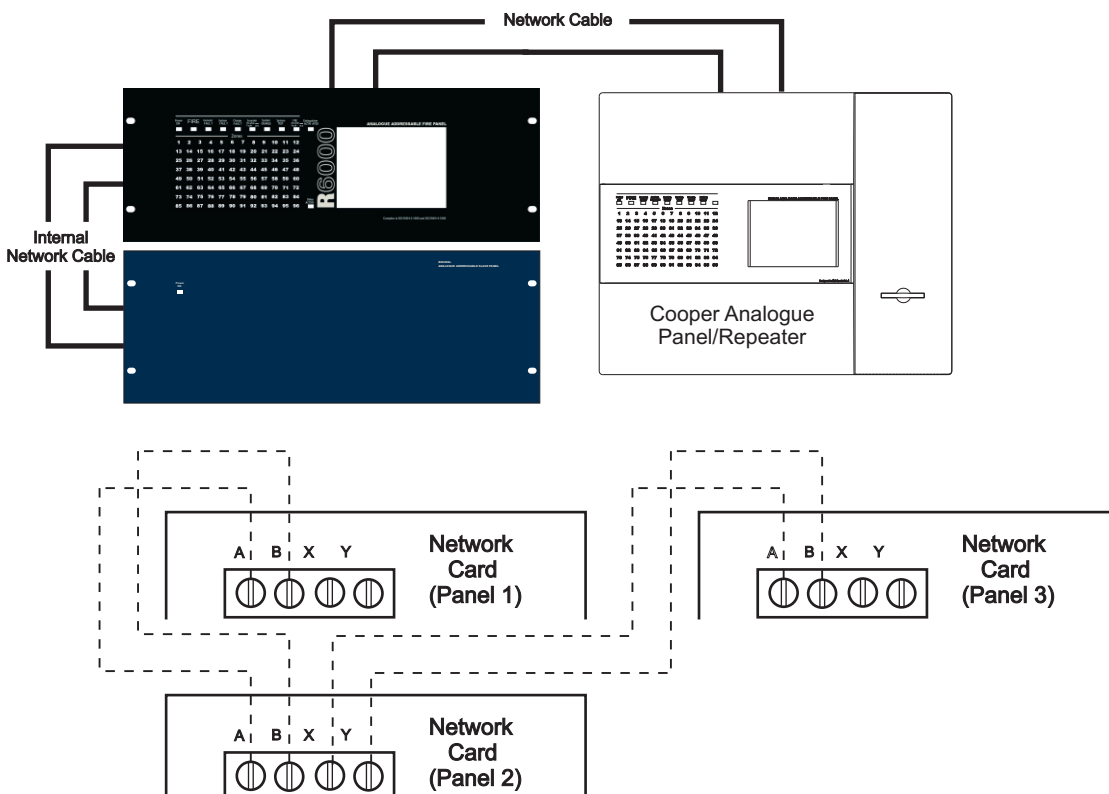
Input/Outputs

PANEL INPUTS

Class Change: (OPTION NOT REQUIRED BY EN54)
A pair of terminals are provided for class change. By shorting these terminals together (e.g. Switch, Time clock) the alarm will sound (Panel sounders + loop sounders only). The Panel will not indicate a Fire. The alarm will cancel when the short circuit is removed. If the short circuit is not removed the alarms will not cancel.

WARNING: NO VOLTAGE SHOULD BE APPLIED TO THIS INPUT
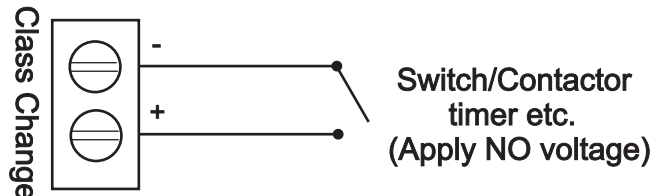
Switch/Contactor
timer etc.
(Apply NO voltage)

PANEL OUTPUTS

Panel Sounders: (OPTION 7.8 EN54 PT 2)
Two pairs of outputs are provided. ONLY polarised equipment should be used.
Ensure the polarity of the connections are observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.
The total alarm load across all sounder outputs = 1.5 Amp
All outputs are fused with 1.6 Amp Glass fuse   Alarm devices should be spread equally across the 4 sounder circuits.
WARNING: DO NOT EXCEED THE RATED OUTPUT CURRENT

All Sounders must be polarised
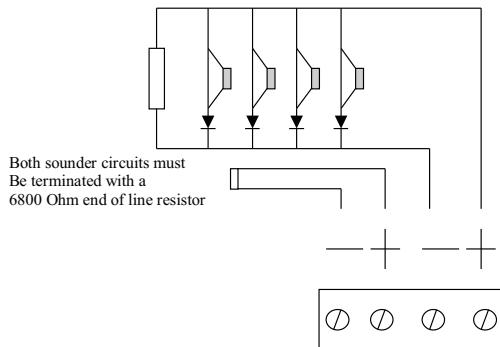
Both sounder circuits must
Be terminated with a
6800 Ohm end of line resistor

OUTPUT FIRE ALARM ROUTING EQUIPMENT (OPTION 7.9 EN54 PT 2)

This output, which is fused and monitored using a 6.8k end of line resistor, is used for the automatic transmission of the fire signals to fire alarm routing equipment (e.g. Fire brigade). It operates by providing 12 Volt output to an auxiliary device (e.g. relay).
It is current limited to 30 mA using a resettable polyswitch.
Class change and test conditions do not operate this output. If operated under a fire alarm condition, the indication will be displayed on the Touch screen display and will remain until the fire alarm is reset.
Ensure the polarity of the connections are observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.

Input/Outputs

OUTPUT TO FIRE ALARM PROTECTING EQUIPMENT (OPTION 7.10 EN54 PT 2)

This output, which is fused and monitored using 6.8k end of line resistor is used for the transmission of the fire signals to controls for automatic fire protecting equipment (e.g. Door release units etc).It operates by providing 24 Volt output to an auxiliary device (e.g. relay).
It is current limited to 30 mA using a resettable polyswitch.
Class change and test conditions do not operate this output. If operated under a fire alarm condition , this output remains activated until the fire alarm is reset.
Ensure the polarity of the connections is observed at all times and end of line resistors (6K8 5%) are fitted for correct operation. All activated devices must be polarised.

 OUTPUT TO FAULT WARNING ROUTING EQUIPMENT (OPTION 9.4.1C EN54 PT 2)

This output, which is fused and monitored using 6.8k end of line resistor is used for the transmission of fault signals to fault warning routing equipment This output is monitored using 6k8 end of line resistor and it current limited to 30 mA.
Under normal conditions it operates by providing 24vdc which can be connected directly to a 24v auxiliary device(relay).It is current limited to 30 mA.
Under fault conditions or even if the R6000 is switched off, this output will switch to 0 volts. Ensure the polarity of the connections is observed at all times and end of line resistors (6K8 5%) are fitted for correct operation.

Auxiliary Relay (OPTION NOT REQUIRED BY EN54)
This output is a volt free contact, which is protected by a polyswitch. It is rated at 24 Volts 1Amp. If operated under a fire alarm condition , this output will remain energised until the fire alarm is reset

AUXILIARY DC OUTPUT (OPTION NOT DEFINED BY EN54)

A 24 Vdc output is provided. This output is protected by a polyswitch. This output can be used to power fire or fault auxiliary equipment. Please ensure that all equipments connected to this output will only draw current when a fire condition exists.

WARNING:- DO NOT EXCEED THE RATED OUTPUT CURRENT

Mimic Output (OPTION NOT REQUIRED BY EN54)

This RS485 output is used to send data to a mimic display or a repeater panel. The maximum distance is 2km.

Maintainance

Daily Inspection
Check that only the green "POWER ON" indicator shows. Inspect for any fault indication. Notify any faults to a system supervisior.

Weekly Test
Check indicators.
Press Supervisor mode on the top left of the touch screen. Enter passcode. Select "others" tab. Press the button labeled weekly test, confirm you wish to perform the test and the amber "System Test" LED will light. The panel will stay in the weekly test mode for 5mins before resetting. During the weekly test, trigger a smoke detector or call point and check the fire panel registers the device and illuminates the correct zonal indicator. Trigger a different device every time a weekly test is performed ensuring devices are tested in rotation until all have been checked. It is advisable to develop a detailed a building plan highlighting devices and locations to aid testing. The panel will reset automatically once the 5mins have elapsed. If no devices are triggered during the weekly test the panel will abort the test and reset after 5mins. Record weekly test in the table provided in the log book.

Quarterly
Check all previous log book entries and verify that remedial action has been taken. Carry out the weekly test. Visually examine the batteries and their connections. Disconnect the mains supply and check that the batterry is capable of supplying the alarm sounders, by operating a call point.

Annual Test
As Weekly Test and Quarterly Test above. Additionally test all sensors and call points and check operation.

Every 2-3 Years
Replace or return the smoke detectors for cleaning to ensure correct operation and freedom from false alarms. Special equipment is required for cleaning smoke detectors. Consult Cooper Lighting and Security.

Every 5 Years
Replace sealed lead acid battery.

Servicing: Cooper Lighting and Security can offer a regular servicing contract. Further copies of this log book are obtainable from:-

Cooper Lighting and Security, Service Division, Wheatley Hall road, Doncaster DN2 4NB. Telephone 01302 303352

Cleaning: When cleaning the panel, use a moist cloth. Do not use solvents or harsh abrasives.

Section 2

Panel Assembly Information

Fixing details

Read all the installation instructions before commencing with the installation. The installation of this panel must be carried out by a suitably qualified /trained person. The installation must comply with IEE wiring regulations and with BS5839 part 1 2002

The electronic components within the fire panel are Static Sensitive. Do not touch the electronics directly.

Mounting the Unit in Rack

The R6000 display panel should be fitted into the front of a 19" rack using four suitable screws.

The main tray should be fitted in behind the display in a location that allows easy access to its cable connection points, using four suitable screws into the racks side rails.
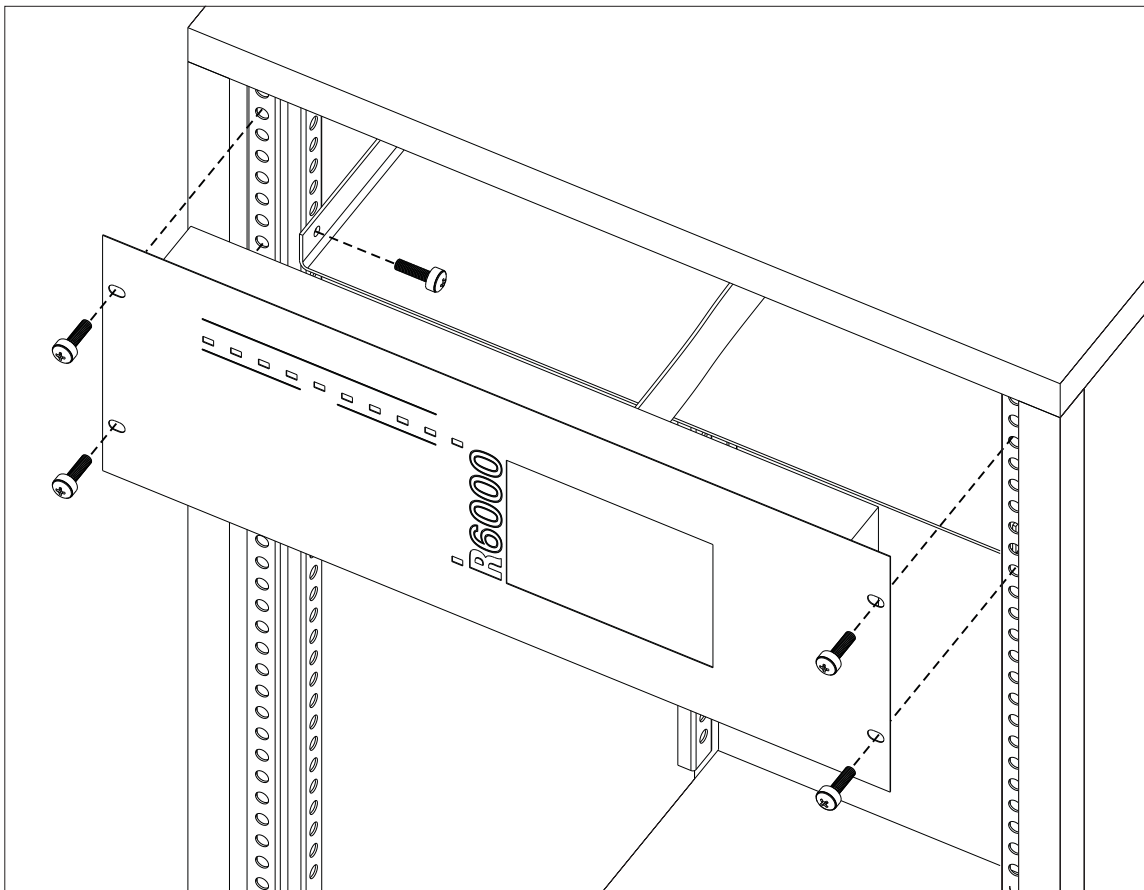
Section 3

Commissioning R6000

Commissioning R6000

Commissioning mode

Walk test mode allows a single engineer to test the various detectors and call points on a system without always having to return to the panel either to reset the system or silence the alarms. When in COMMISSIONING MODE, the system operates as normal except that when a detector or call point goes into alarm, the alarms only operate for a few seconds and then will silence. The panel then tries to reset the device automatically and, if successful, the alarms are operated again for a few seconds and the installation engineer can move on to the next detector. After a full test has been carried out the engineer can check the order in which the detectors/call points were operated using the DISPLAY LOG mode.

When the panel is in "Walk Test Mode" the control panel inserts a different code into the log and also onto the print-out. This is to distinguish between when a device has been tested in "Walk Test Mode" and when a device has been triggered while in normal operation.
The following differences will occur:
a) When in the LOG mode, "One man walk test"" will appear on the display followed by the address text and device type.
b) On the printout a "One man walk test" message will appear will appear followed by the address text and device type.
C)During a real fire "FIRE !" Will appear on the display followed by the address text and device type.

Configuration

DB Level Check

R6000 includes the facility to test and set the system sounders with the minimum amount of disturbance. In sounder test mode, the sounders will sound for 30 seconds on then 30 seconds off. This facility can be accessed via the engineering menu.

Detector LED Flashing

The R6000 detector flashing function is used to allow a visual inspection and confirmation that the fire panel is in communication with the installed system devices. This facility can be accessed via the engineering menu and can be switched on or off at any time as required.
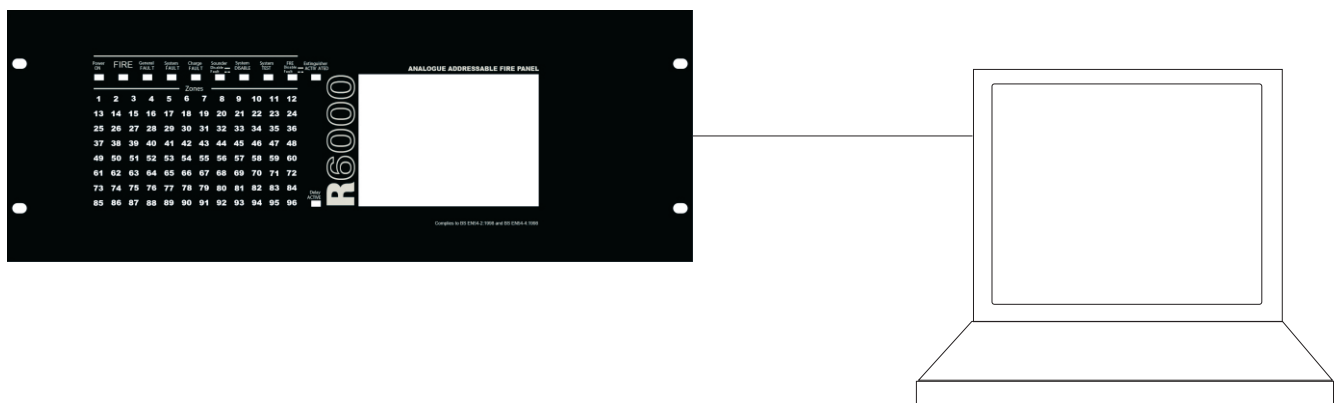
Up/downloading using PC Software

The PC Software enables the address, location text, device type and any comments to be downloaded to the R6000 panels.
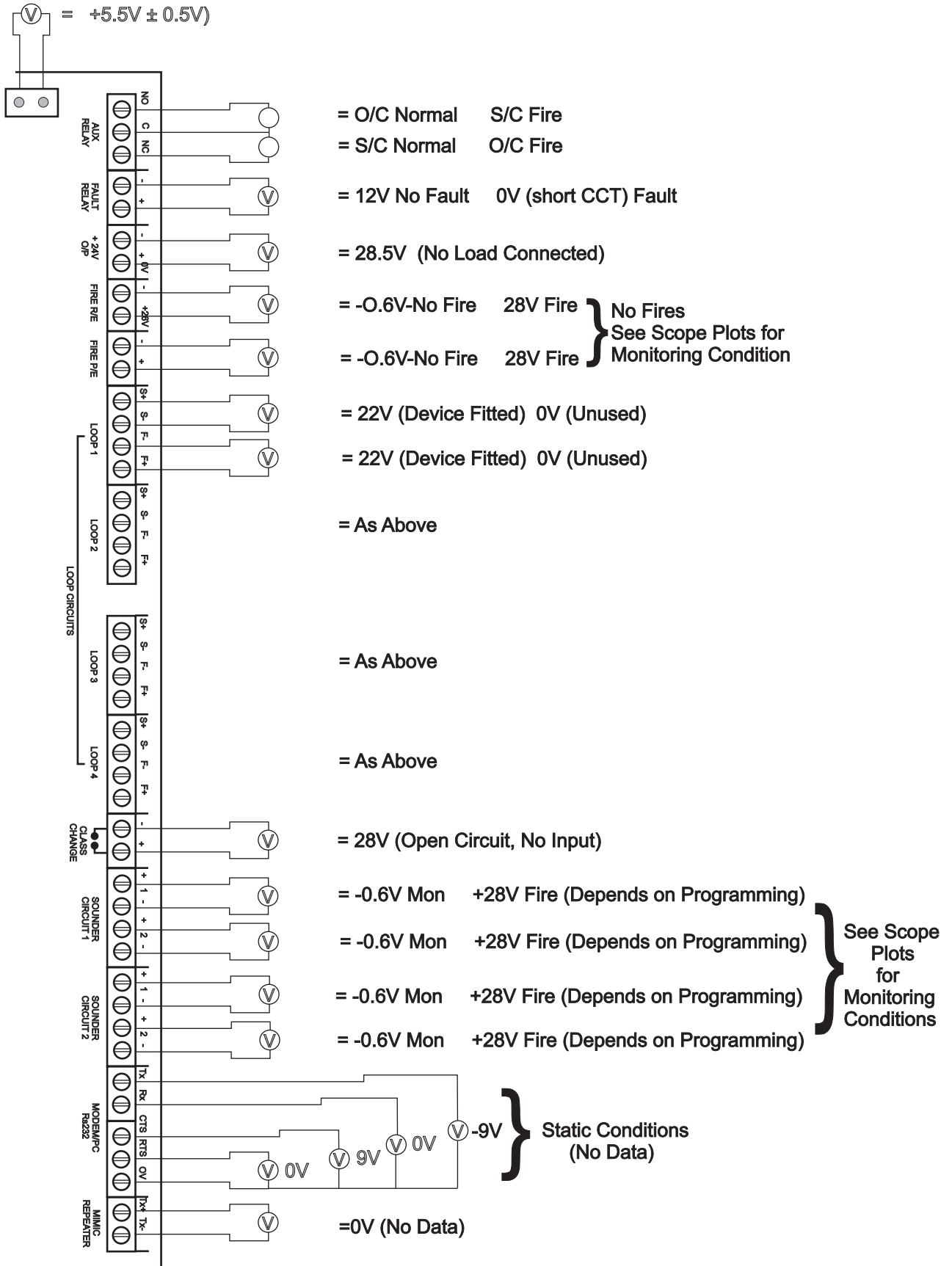
The software can download to all 63 networkable Panels.

The PC is connected to each Panel on the network in turn. All data for the Panel is downloaded.

For networked systems, panels are identified by panel number, P1, P2 etc.

Panel Fault Finding

$\text{(V)} = +5.5V \pm 0.5V)$

AUX RELAY (NO, C, NC)
= O/C Normal   S/C Fire
= S/C Normal   O/C Fire

FAULT RELAY (-, +)
= 12V No Fault   0V (short CCT) Fault

+24V O/P (-, + 0V)
= 28.5V (No Load Connected)

FIRE R/E (-, +28V)
= -0.6V-No Fire   28V Fire

FIRE P/E (-, +)
= -0.6V-No Fire   28V Fire
} No Fires
See Scope Plots for
Monitoring Condition

LOOP 1 (S+, S-, F-, F+)
= 22V (Device Fitted) 0V (Unused)
= 22V (Device Fitted) 0V (Unused)

LOOP 2 (S+, S-, F-, F+)
= As Above

LOOP CIRCUITS

LOOP 3 (S+, S-, F-, F+)
= As Above

LOOP 4 (S+, S-, F-, F+)
= As Above

CLASS CHANGE (-, +)
= 28V (Open Circuit, No Input)

SOUNDER CIRCUIT 1 (+ 1 -, + 2 -)
= -0.6V Mon   +28V Fire (Depends on Programming)
= -0.6V Mon   +28V Fire (Depends on Programming)

SOUNDER CIRCUIT 2 (+ 1 -, + 2 -)
= -0.6V Mon   +28V Fire (Depends on Programming)
= -0.6V Mon   +28V Fire (Depends on Programming)

} See Scope Plots for Monitoring Conditions

MODEM/PC Rs232 (Tx, Rx, CTS, RTS, 0V)
-9V
9V
0V
0V
} Static Conditions (No Data)

MIMIC REPEATER (Tx+, Tx-)
= 0V (No Data)

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Protocol Format

Fig. 1 Full Protocol Format   (Not including Repeaters)

Panel to Device — Device to Panel

1.1 ms

300us

2ms 300us

24v typ
7.5v
0v

Command Mode

Start Byte 1 Byte 2 Byte 3 Parity Response 8 bits ID 5 bits Flags 3 bits

Loop Current

See Fig 4 for detail
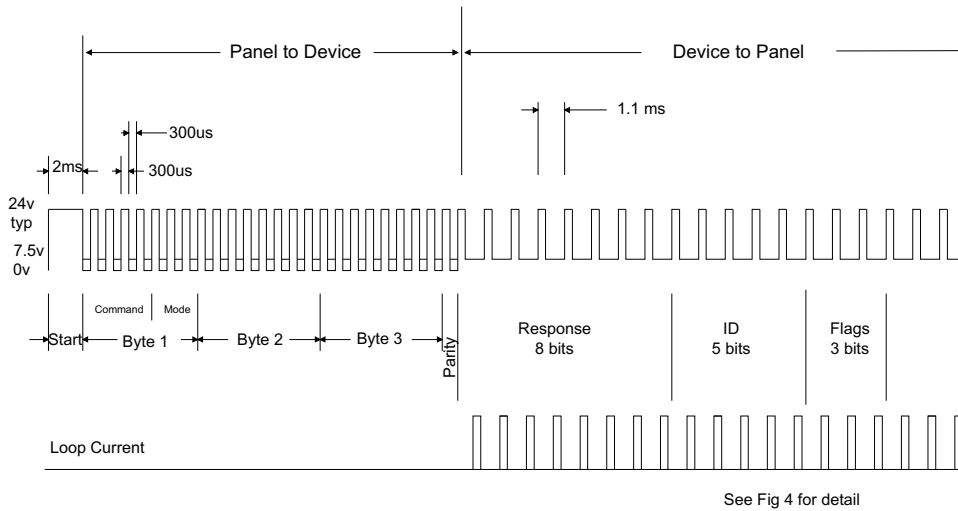
Each Packet of Comms above must be separated by a gap of 20ms minimum where the line is held at 24v

Normal Communications to Devices:
With the command bits set for the 'Normal' command and the MSB of the three mode bits set at 0, this shortened version of the Normal communications to each device allows the analogue reply or status from each device to be read. This format of communication is generally used throughout all background supervision of the addressable loop.

Alarm Interrogate Command:
This command is seen by all devices on the loop, so no address byte is required, and is periodically sent out during normal communications. This command allows any device experiencing an alarm condition to respond, with call points given the highest priority, reporting their address. This causes the control panel to break off from general background supervision of the loop and focus directly on the device in question.

Full Protocol Format:
With the command bits set for the 'Normal' command and the MSB of the three mode bits set at 1, the long version of the Normal communications can be sent to any device. This would normally be done by the panel following a response to the Alarm Interrogate command, allowing the panel to check the device address, ID and confirm that the analogue reply, or status, is truly an alarm condition before actioning the panel sounder outputs, for example.

Viewing the Voltage and Current waveforms at the panel:
Loop 1: Using a Digital Storage Oscilloscope, connect one channel to R34 on the Loop Driver Card; probe 0V clip to the 'in-board' side of the resistor. This will display the loop current. Connect the other channel to Loop 1, S+ terminal on the main mother board. DO NOT connect the 0v clip of this probe.

Loop 2: Using a Digital Storage Oscilloscope, connect one channel to R36 on the Loop Driver Card; probe 0V clip to the 'in-board' side of the resistor. This will display the loop current. Connect the other channel to Loop 2, S+ terminal on the main mother board. DO NOT connect the 0v clip of this probe

PC Comissioning Software
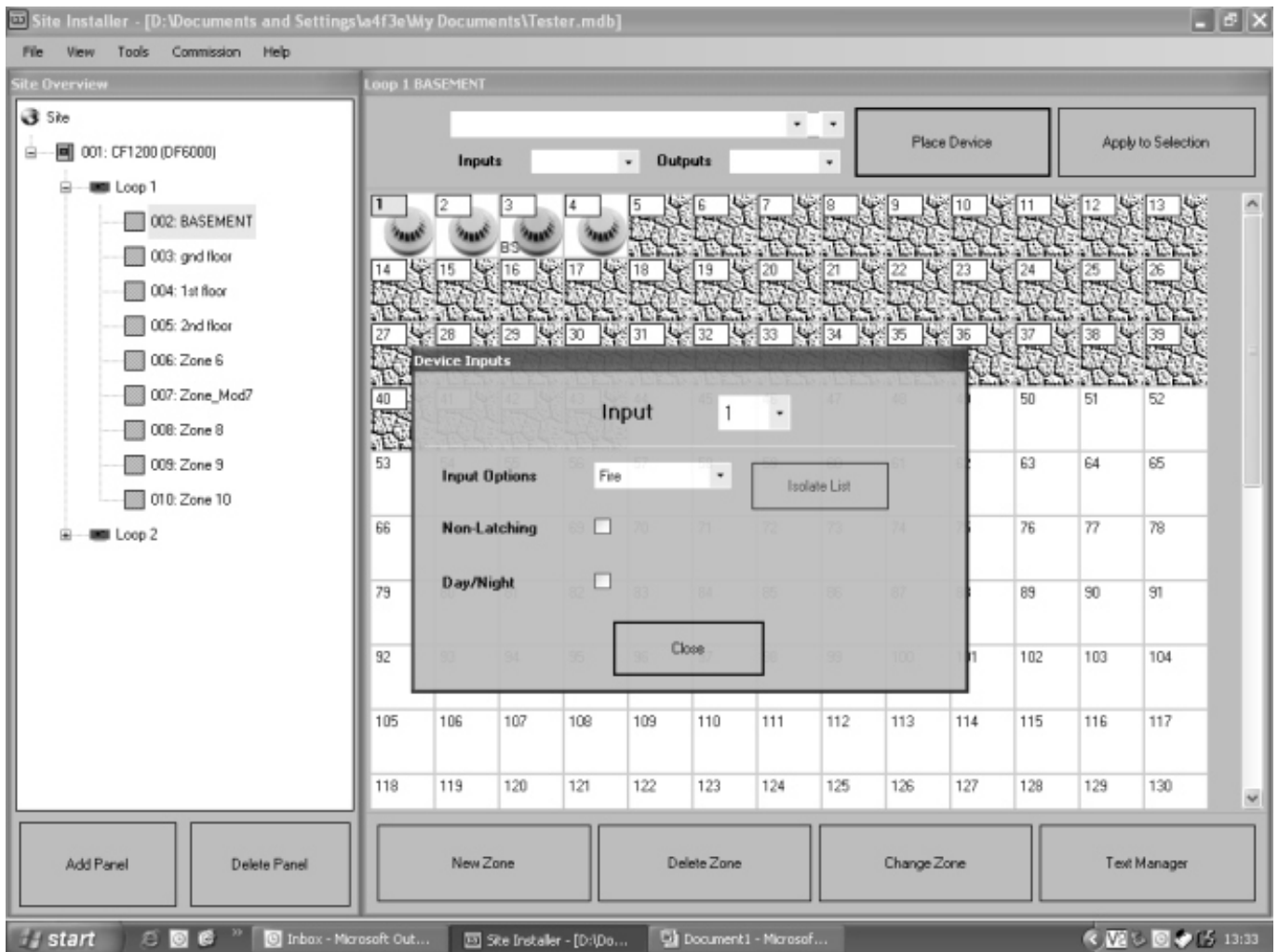
Device Input Programming

Fire   -> panel reports fire from device.
Fault   -> panel reports fault from device.
Reset   -> panel resets.
Silence   -> silence all currently active sounders.
Pre-Alarm   -> panel reports pre-alarm from device.

Non-Latching-> device won't latch in alarm condition, used in conjunction with isolates.

Isolate Zone / Address

user can define between zones or addresses to be isolated on activation of the device.
The isolate list button enables the user to enter upto 8 unique zones or addresses.

If non-latching has been enabled, Isolated devices can be un-isolated as the triggered device returns to normal operation. (a call point keyswitch is an example for this application)

PC Comissioning Software
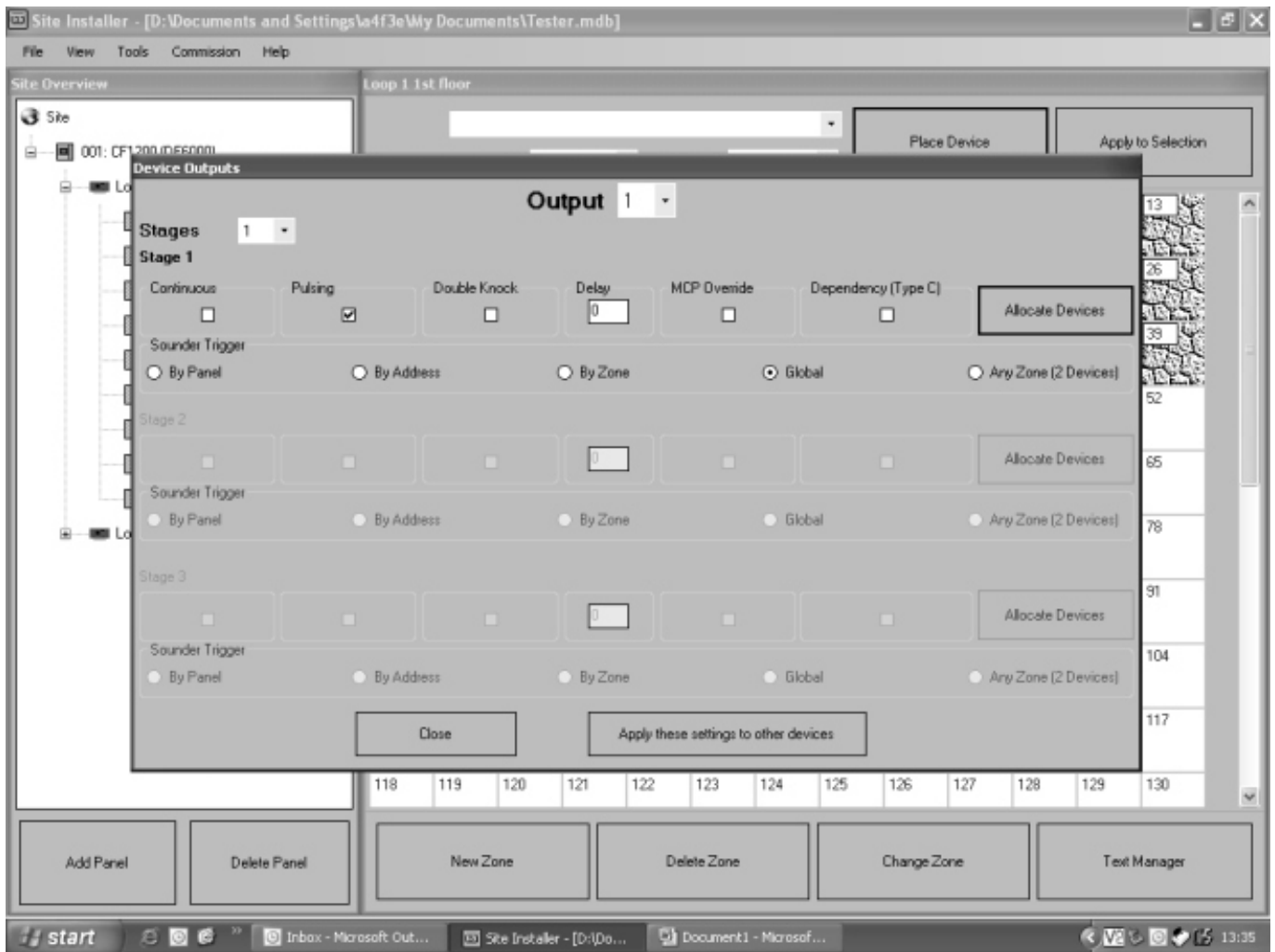

Device Outputs

Delay configuration
The output of a device when triggered can be delayed - based on a user defined value in minutes.
This programming option is enabled when a value other than zero is entered inside the 'Delay' window.

MCP Override
This option is a manual intervention override, when enabled (check in box) the delay can be overridden from any call point on the loop when triggered.

PC Comissioning Software
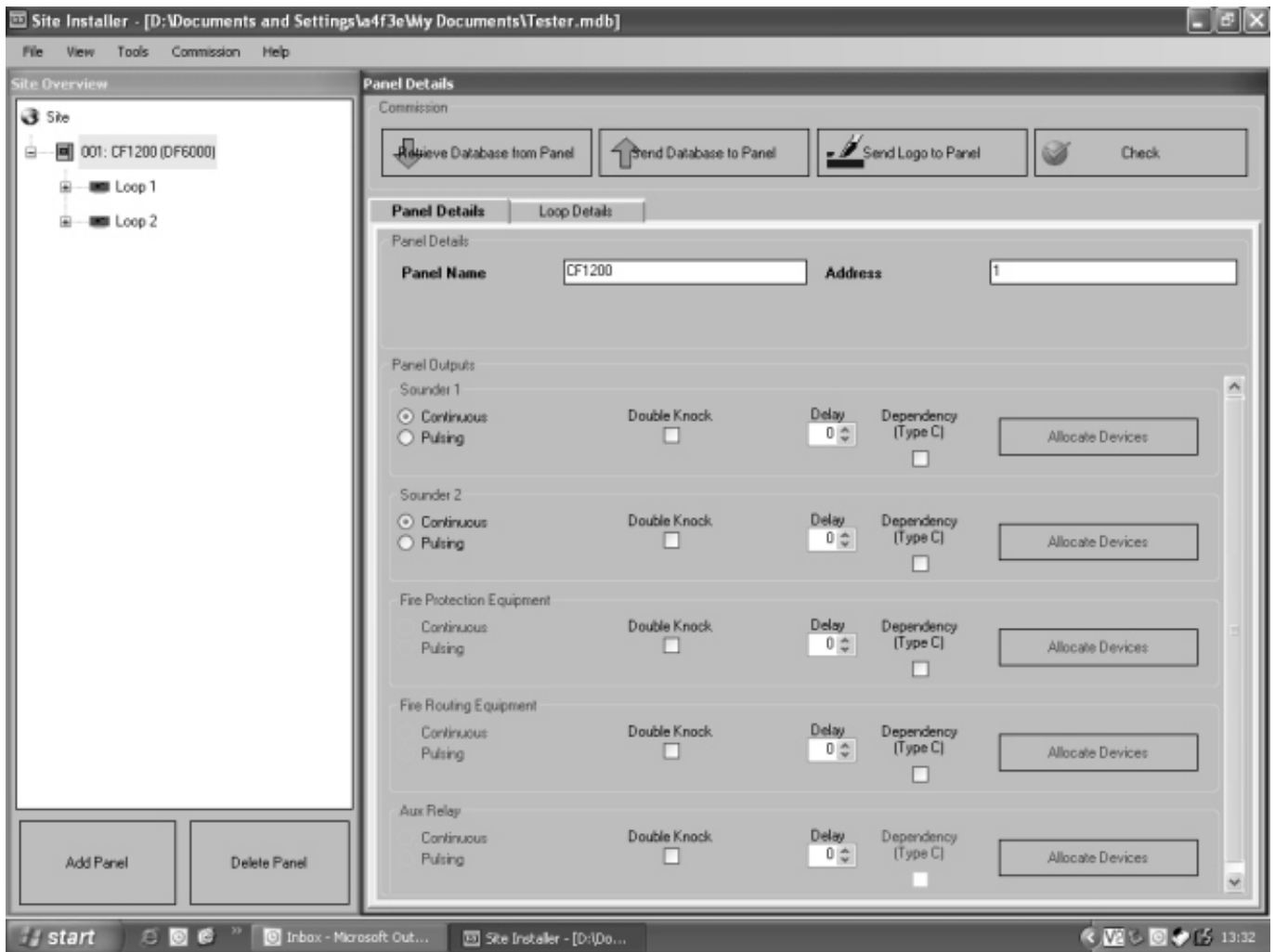
Panel Outputs

Dependencies on more than one alarm signal - Type C
**(Option 7.12.3 of EN54pt 2)**
Each panel output can be assigned a unique list of zones derived from the zones available on the loop,   to activate this output, two unique zones from this list have to be in fire or alternatively any zone outside this list will trigger the output also. When the 'dependence' box is checked - the 'Allocate device' button allows the user to populate this list.

Section 4

Panel Controls & Indicators

Panel Controls & Indicators

1. System LED's
2. Zonal LED's
3. Touch Screen Display
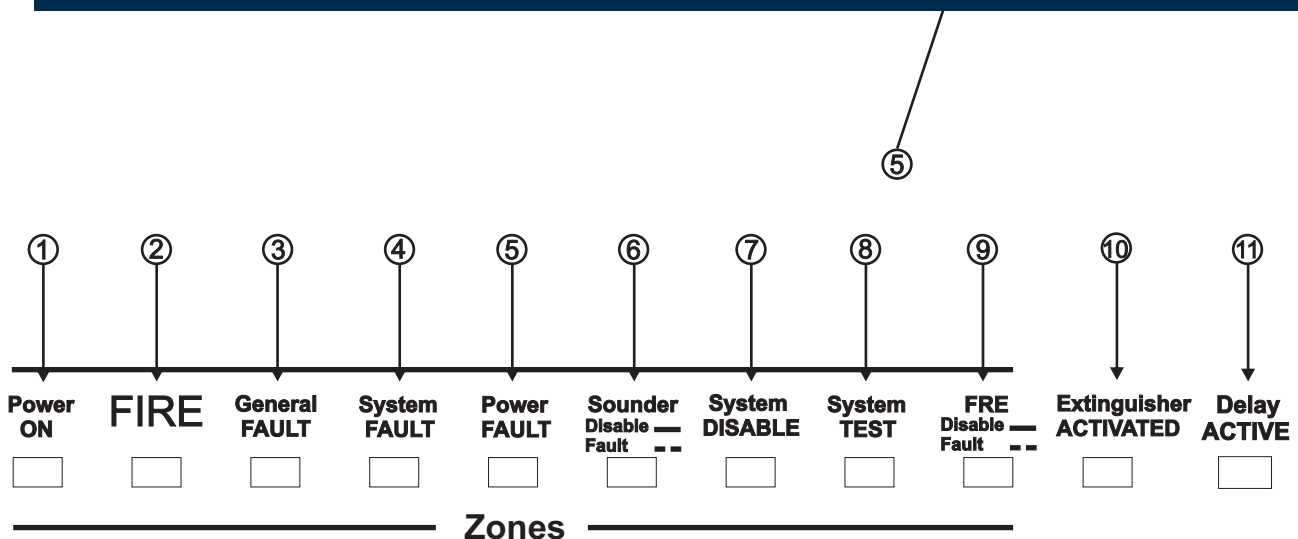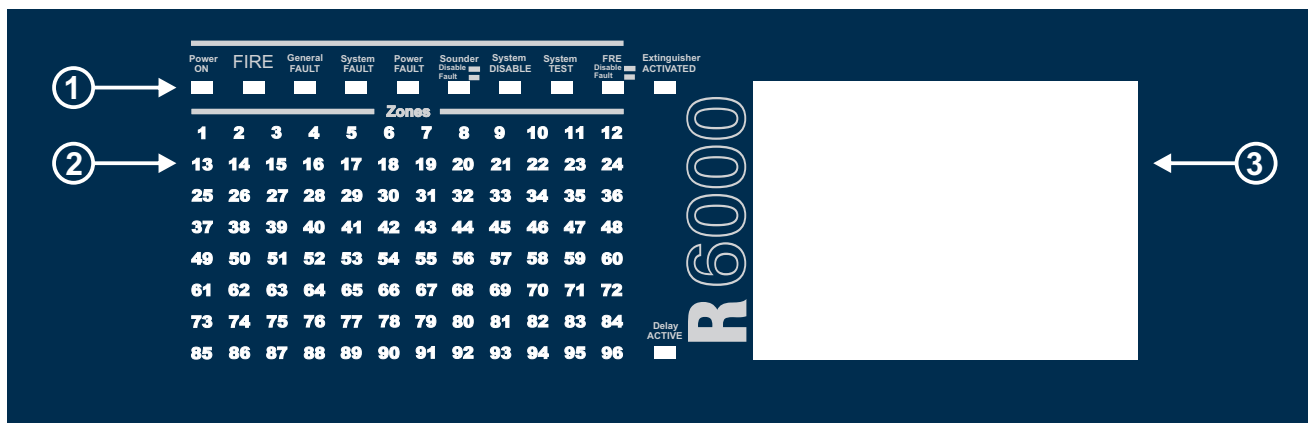
LED	Name	Function	Action
1	Power On	Shows Panel is On	Check Indicator is Illuminated
2	Fire	Indicators Panel has Detected a Fire	Impliment Fire Action Procedure
3	General Fault	Monitors Devices for Faults e.g. Smoke detectors/Sounders	Report to System Supervisor
4	System Fault	Monitors Fire Panel for Faults	Report Fault to Service Dept
5	Power Fault	Monitor Internal Battery Charger	Report Fault to Service Dept
6	Sounder	Monitors Sounder Circuits/Indicates Disablement of this Output	Report Fault to Service Dept
7	System Disable	Part of the System has been Disabled	Report to System Supervisor
8	System Test	Supervisor/Engineer is Testing the System	Check with System Supervisor
9	FRE	Monitors the FRE Circuit/Indicates Disablement of this Output	Report Fault to Service Dept
10	Extinguisher Activated	Display Activatiion of Extinguishers (If Option Fitted)	Check with System Supervisor
11	Delay Active	Delays on Outputs Active	Check with System Supervisor

Touch Screen Display

Supervisor FRE Off	Fires 0	Pre Alarms 0	Faults 0	Disabled /Test

System Healthy
XX Zones Active

Tuesday
dd-mm-yyyy

16:25.25
BST On

MENVIER

The Touch Screen is a multi-function display consisting 320x240 dots featuring high intensity backlighting. In normal operation, the display indicates as above with the backlighting off.

During an event on the system the display shows the FIRST EVENT and LAST EVENT plus other events as space allows.

The last 2 lines are normally used to display the total number of events, but they are also used for scrolling fire conditions, faults, pre alarms or disabled devices independently or for displaying a reduced menu when in fire condition.

When an event occurs the Touch Screen backlighting comes on unless there is a mains power supply fault.

Use the Touch Screen to scroll through all active events on the system by using the SCROLL UP and SCROLL DOWN buttons (available at access level 1). You can display the contents of the log and also view details of any fires, faults, pre-alarms,faults or disablements.. When displaying the system menu on the Touch Screen, the last 5 lines of the display are shown in reverse text.

Panel Operation

R6000 is operated via a backlit touch screen. The default fire screen is shown below.
From this screen all the panels functions can be operated. The first time you touch the
screen the backlight will illuminate the panel.

Supervisor FRE Off	Fires 0	Pre Alarms 0	Faults 0	Disabled /Test

System Healthy
XX Zones Active

Tuesday
dd-mm-yyyy

16:25.25
BST On

MENVIER

Pressing a field will highlight it and forward to the next screen as shown below.

Touch the screen here to view details

Supervisor FRE Off	Fires 1	Pre Alarms 0	Faults 0	Disabled / Test

System Healthy
10 Zones Active

Tuesday
dd-mm-yyyy

16:25.25
BST On

MENVIER

Supervisor FRE Off	Fires 1	Pre Alarms 0	Faults 0	Disabled / Test

First Fire   Meeting Room 1, Building 1, 1st floor
Loop: 1, Zone: 2, Type: Optical (150)

Total Fires= 1   [Print All] [Help]

Tuesday
Dd-mmm-yyy
16:25.25
BST On

Public Access Level 1

Public access level does not require an access code and allows anybody to review the functions outlined below.
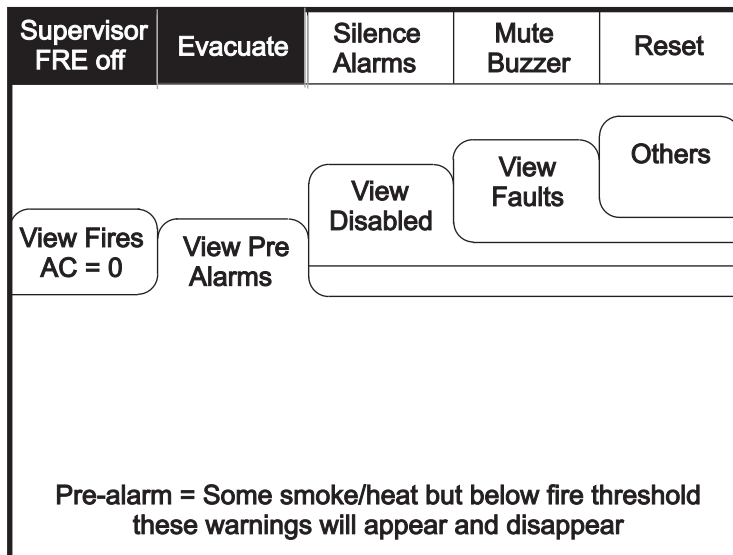
Public Access Level

Supervisor FRE off	Fires 0	Pre Alarms 0	Faults 5	Disabled / Test

System Healthy
10 Zones Active

Tuesday
dd-mm-yyyy

16:25.25
BST On

MENVIER

Supervisor FRE off	Fires 1	Pre Alarms 0	Faults 0	Disabled / Test

First Fire — 12:26:23 Device 1, Zone 1
Lp: 1, Ad:1, Z:1, Opto/thermal, [69]

Total Fires= 1 | Print All | Help

Tuesday
dd-mm-yyyy
16:25.25
BST On

Supervisor FRE off	Fires 0	Pre Alarms 6	Faults 0	Disabled / Test

Show Addresses	Show Zones	Show I/O	Show Test Zone

Print All | Help

001 Device 2, Zone 1
Loop 1, Zone: 1, Type : Opto/thermal

002 Device 3, Zone 1
Loop 1, Zone: 1, Type : Opto/thermal

003 Device 4, Zone 1
Loop 1, Zone: 1, Type : Opto/thermal

004 Device 5, Zone 1
Loop 1, Zone: 1, Type : Opto/thermal

Supervisor FRE off	Fires 0	Pre Alarms 6	Faults 0	Disabled / Test

Print All | Help

001 03-Jun-03 12:51 Warning! : Device1
Lp: 1, Ad: 1, Z: 1, Opto/thermal [69]

002 03-Jun-03 12:51 Warning! : Device2
Lp: 1, Ad: 2, Z: 1, Opto/thermal [69]

003 03-Jun-03 12:51 Warning! : Device3
Lp: 1, Ad: 3, Z: 1, Opto/thermal [69]

004 03-Jun-03 12:51 Warning! : Device4
Lp: 1, Ad: 4, Z: 1, Opto/thermal [69]

005 03-Jun-03 12:51 Warning! : Device5
Lp: 1, Ad: 5, Z: 1, Opto/thermal [69]

Supervisor FRE off	Fires 0	Pre Alarms 6	Faults 5	Disabled / Test

Print All | Help

001 12:31:59 Fault! : Device1
Lp: 1, Ad: 1, Z: 1, Opto/thermal [0]

002 12:32:59 Fault! : Device2
Lp: 1, Ad: 2, Z: 1, Opto/thermal [69]

003 12:33:59 Fault! : Device3
Lp: 1, Ad: 3, Z: 1, Opto/thermal [69]

004 12:34:59 Fault! : Device4
Lp: 1, Ad: 4, Z: 1, Opto/thermal [69]

005 12:35:59 Fault! : Device5
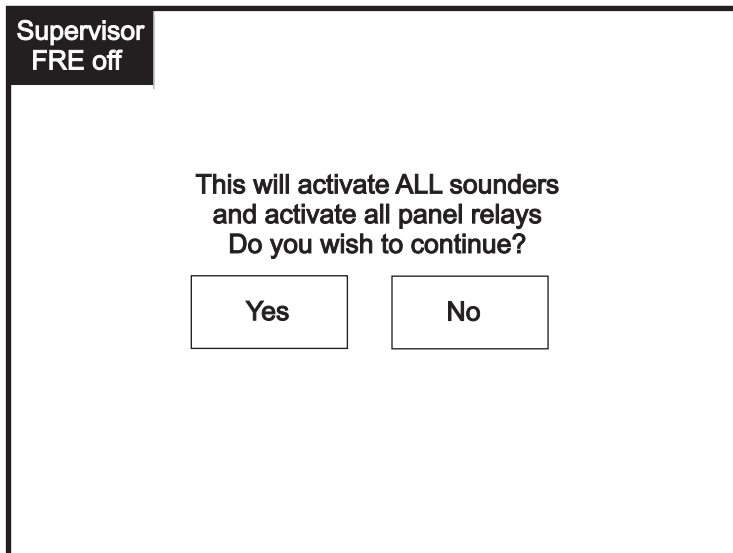Lp: 1, Ad: 4, Z: 1, Opto/thermal [69]

Evacuate (Access Level 2)

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

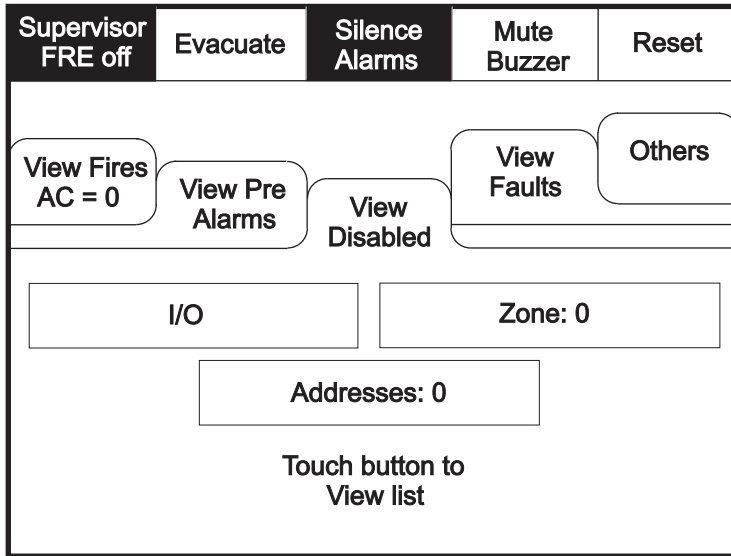Enter the Supervisor Mode Passcode and select "Evacuate" on the menu at the top of the screen.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 0   View Pre Alarms   View Disabled   View Faults   Others

Pre-alarm = Some smoke/heat but below fire threshold these warnings will appear and disappear

Select "Yes" to evacuate the building.

Supervisor FRE off

This will activate ALL sounders
and activate all panel relays
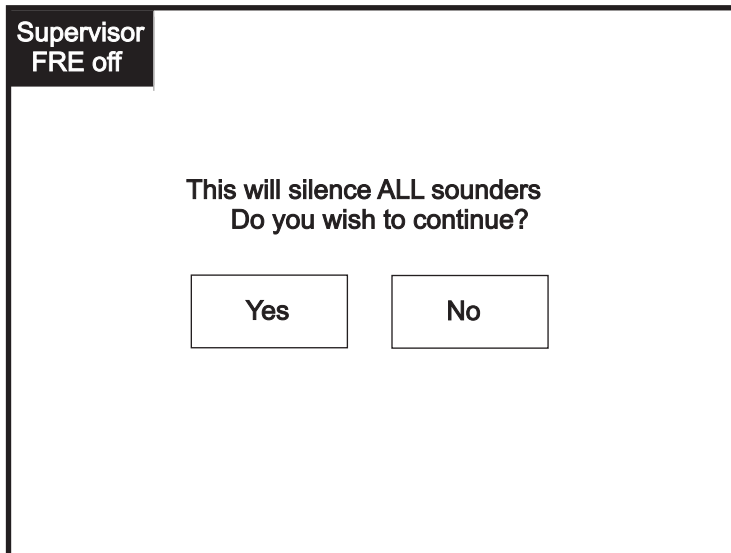Do you wish to continue?

Yes	No

Silence Alarms

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

Enter the Supervisor Mode Passcode and select "Silence Alarms" button as the top of
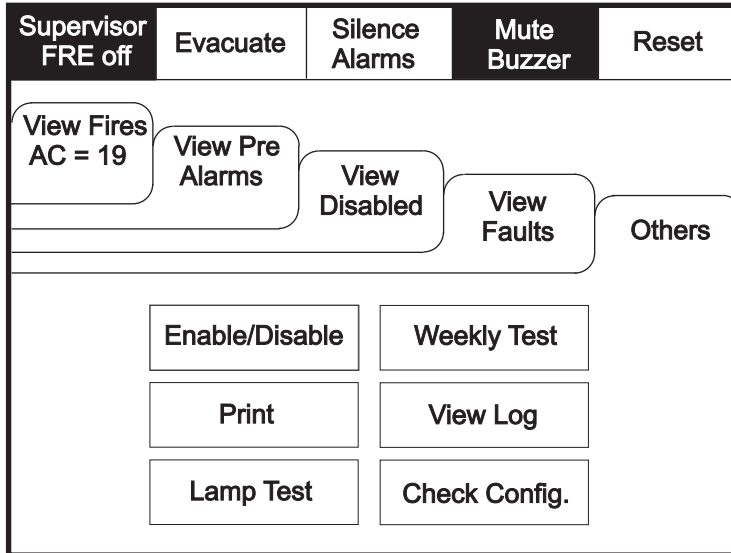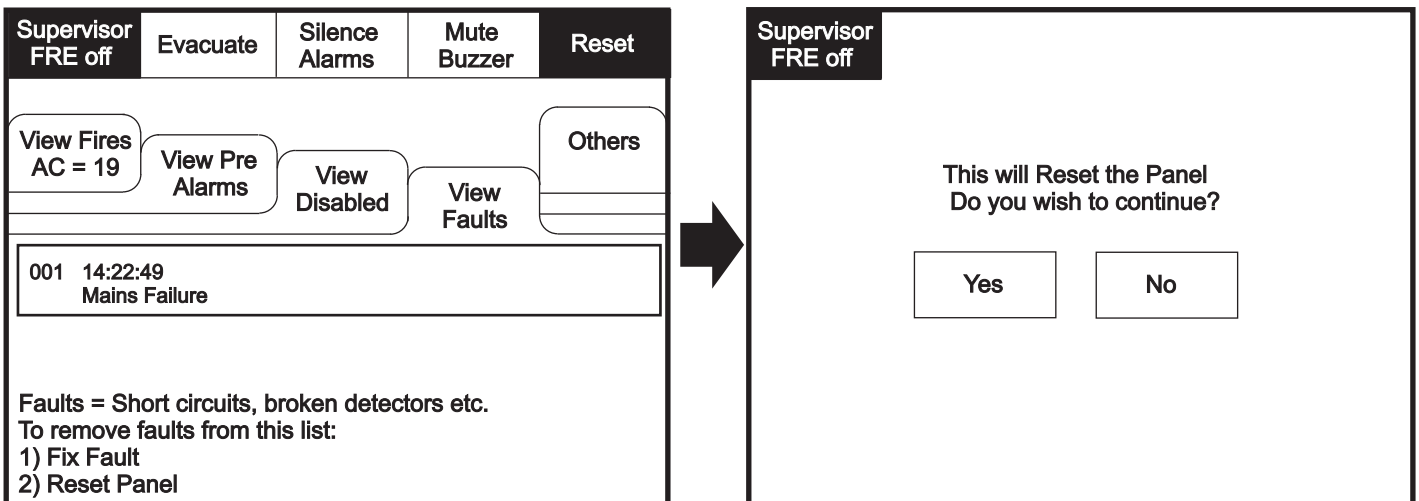
Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 0   View Pre Alarms   View Disabled   View Faults   Others

I/O	Zone: 0

Addresses: 0

Touch button to View list

Select "yes" to silence Alarm.

Supervisor FRE off

This will silence ALL sounders
Do you wish to continue?

Yes	No

Mute Buzzer

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

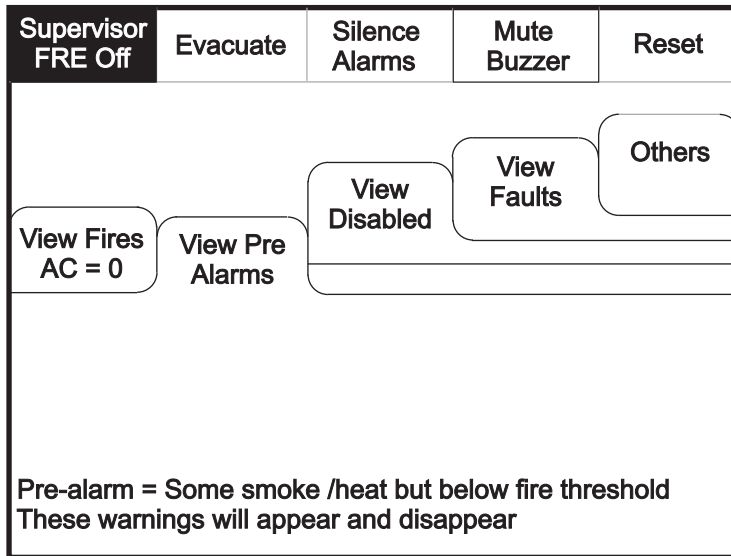Enter the Supervisor Mode and Select "Mute Buzzer" from the Top Menu

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 19 | View Pre Alarms | View Disabled | View Faults | Others
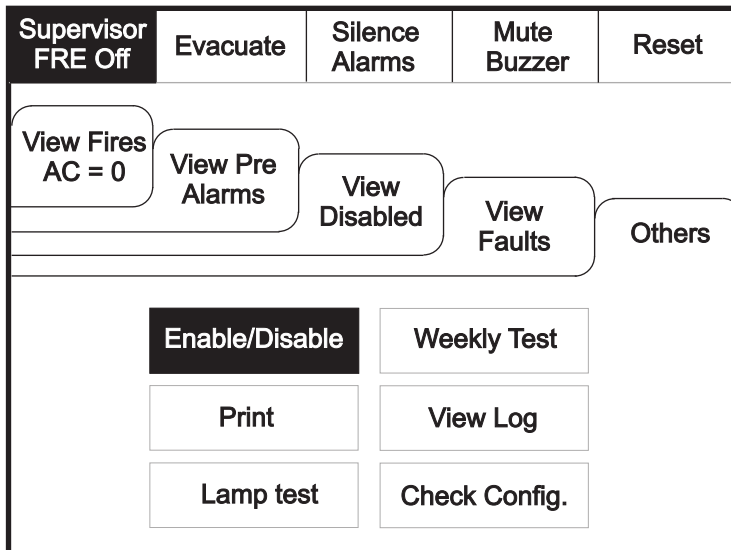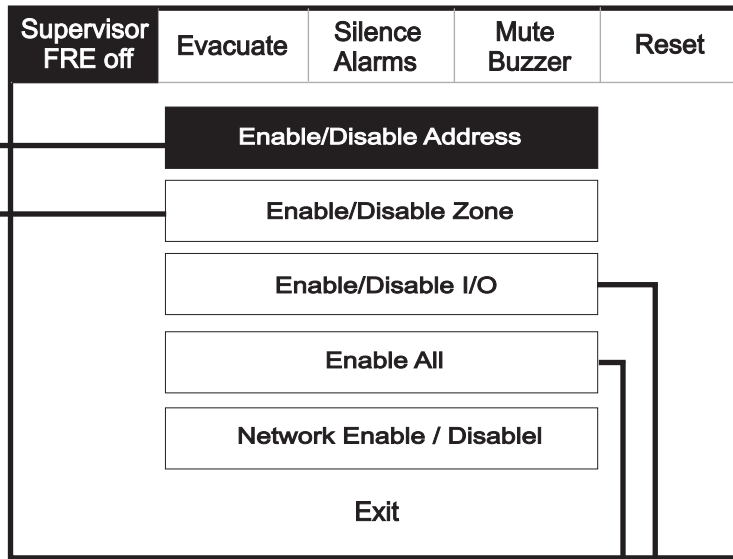
Enable/Disable	Weekly Test
Print	View Log
Lamp Test	Check Config.

Reset

Enter the Supervisor Mode and Select "Reset" from the top Menu. Select "Yes" to reset the panel.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 19 | View Pre Alarms | View Disabled | View Faults | Others

001   14:22:49
        Mains Failure

Faults = Short circuits, broken detectors etc.
To remove faults from this list:
1) Fix Fault
2) Reset Panel

Supervisor FRE off

This will Reset the Panel
Do you wish to continue?

Yes	No

Pre-Alarms

Enter the Supervisor Mode and Select "Pre-Alarms" tab.

Supervisor FRE Off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 0   View Pre Alarms   View Disabled   View Faults   Others

Pre-alarm = Some smoke /heat but below fire threshold
These warnings will appear and disappear

A pre-alarm is shown when a detector appears to register heat or smoke but in a quantity that is insufficient to warrant an alarm.
Pre-alarm may indicate a build up of dirt in a smoke detector which can be interpreted by the detector as smoke presence.

Disabled Devices

Enter the Supervisor mode and Select the "Disabled" tab.

Supervisor FRE Off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 0   View Pre Alarms   View Disabled   View Faults   Others

I/O	Zone: 0

Addresses: 0

Touch button to
View list
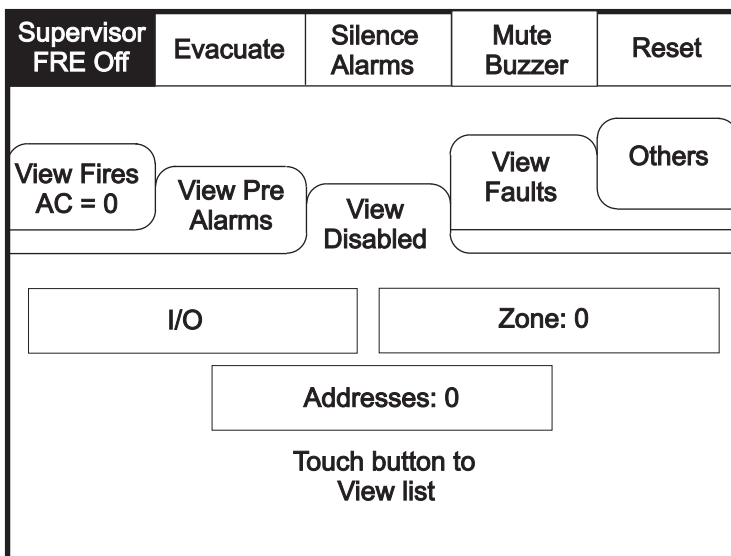
The individual buttons show which devices and the number of devices which have been disabled. Press one of the buttons to display detailed information for a particular category

Faults

Enter Supervisor Mode Passcode and select "Faults" tab.

Supervisor FRE Off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 0   View Pre Alarms   View Disabled   View Faults   Others

Pre-alarm = Some smoke /heat but below fire threshold
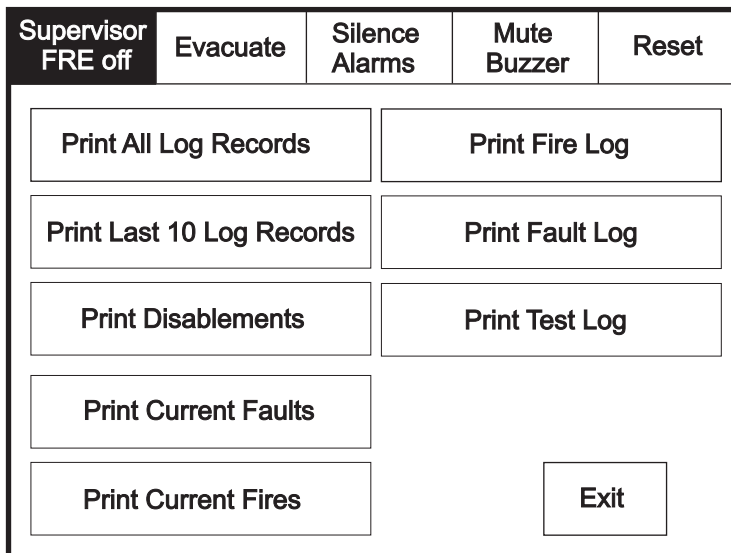These warnings will appear and disappear
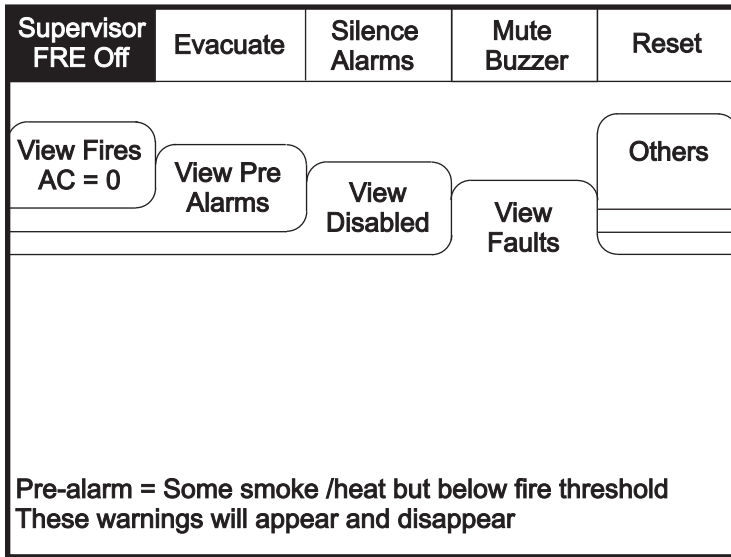
Enable/Disable (others Menu)

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

Enter the Supervisor Mode passcode and select the "Others" tab.

Supervisor FRE Off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 0   View Pre Alarms   View Disabled   View Faults   Others

Enable/Disable	Weekly Test
Print	View Log
Lamp test	Check Config.

Enable/Disable (others Menu) Cont.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Enable/Disable Address

Enable/Disable Zone

Enable/Disable I/O

Enable All

Network Enable / Disablel

Exit

The Enable/Disable feature allows the operator to disable part or a whole system by the sub menus shown on the left.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset
Show All	Show Detectors	Show Alarms	Show I/O Units	Exit

001	Device 1, Zone 1 / Loop: 1, Zone: 1, Type: Opto/thermal	Enabled
002	Device 2, Zone 1 / Loop: 1, Zone: 1, Type: Opto/thermal	Disable
003	Device 3, Zone 1 / Loop: 1, Zone: 1, Type: Opto/thermal	Disable
004	Device 4, Zone 1 / Loop: 1, Zone: 1, Type: Opto/thermal	Enabled
005	Device 5, Zone 1 / Loop: 1, Zone: 1, Type: Opto/thermal	Disable

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Exit	Touch "Enabled" button to Disable / Touch "Disabled" button to Enable	
Zone 001 Zone 1		Enabled
Zone 002 Zone 2		Disabled
Zone 003 Zone 3		Disabled
Zone 004 Zone 4		Enabled

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Fire Protection: Enabled	
Fire Routing: Enabled	
Delayed:Enabled	Input: Disabled
Aux Relay: Enabled	Sounder 1: Enabled
Fault Relay: Enabled	Sounder 2: Disabled

Exit

Supervisor FRE off

Enable all Devices?
Do you want to continue?

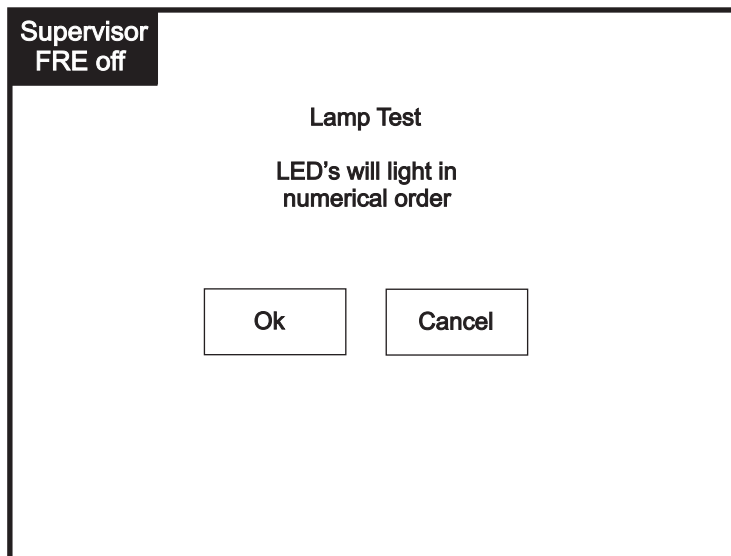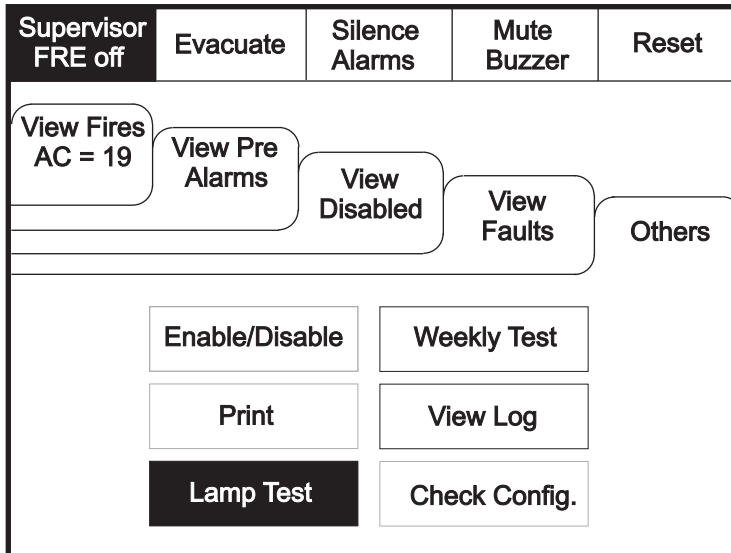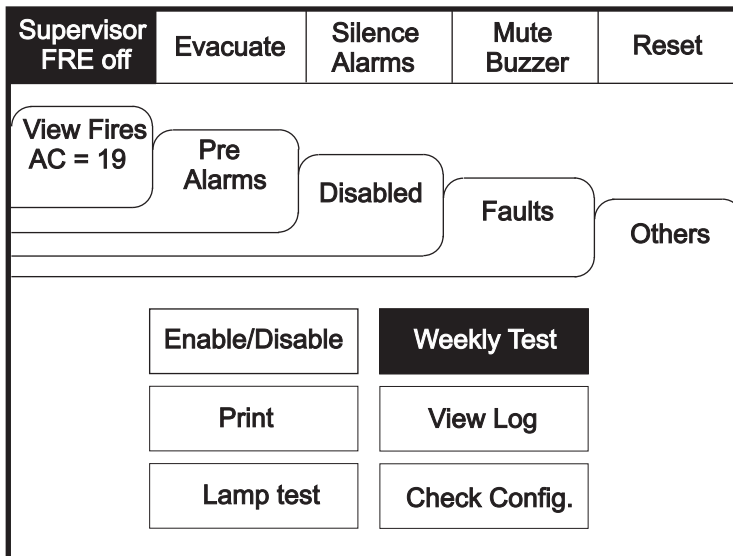| Yes	No

Print
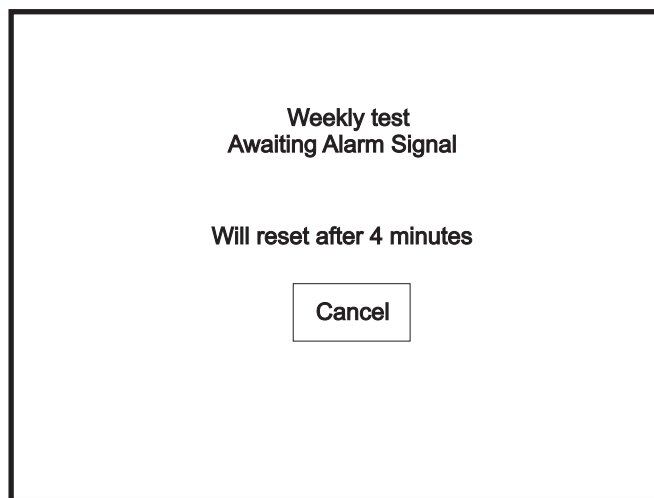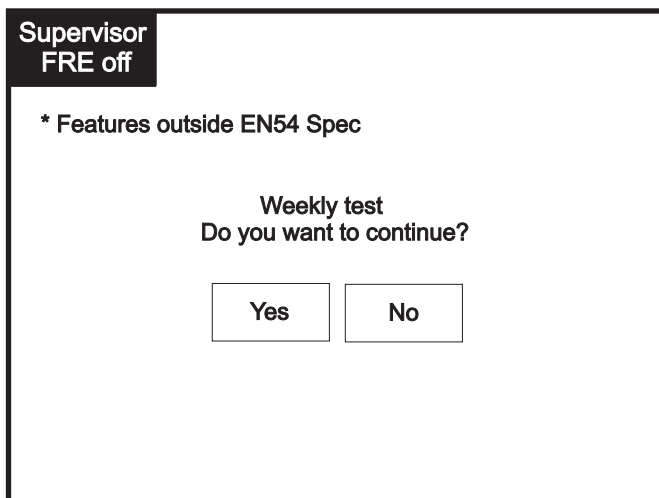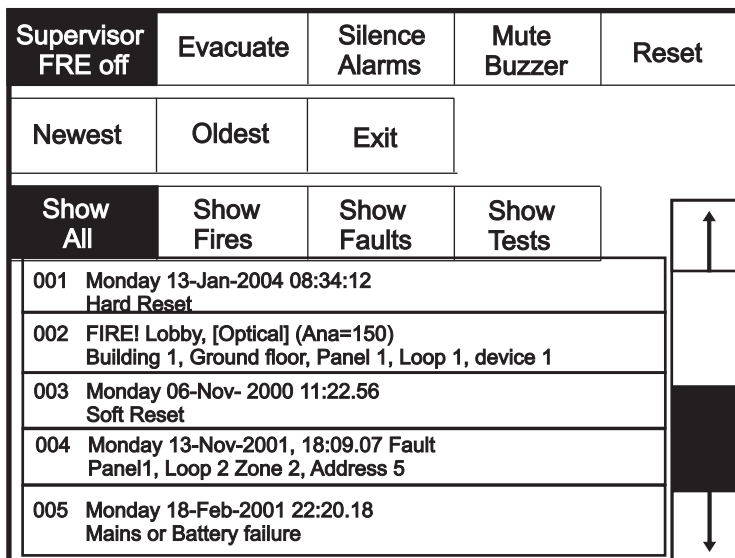
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

Enter the Supervisor Mode and Select the "Others" Tab. Press "Print"

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 19 | View Pre Alarms | View Disabled | View Faults | Others

Enable/Disable	Weekly Test
Print	View Log
Lamp test	Check Auto Config.
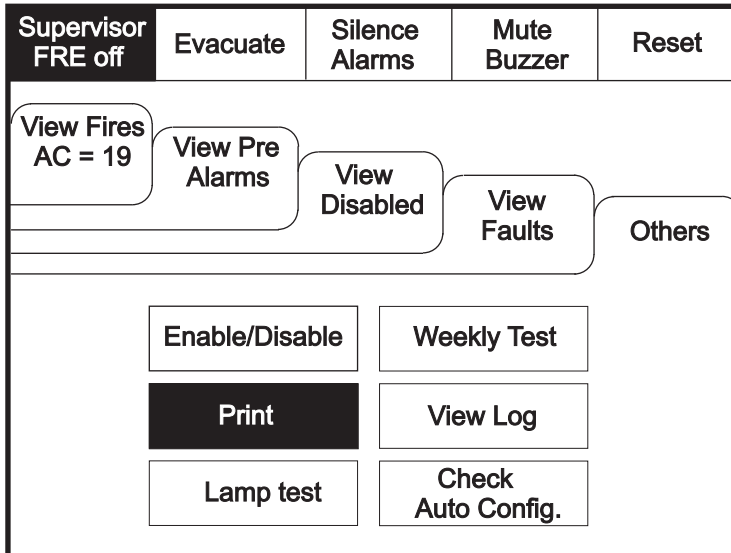
Select the Information You wish to Print from the Buttons Listed.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Print All Log Records	Print Fire Log
Print Last 10 Log Records	Print Fault Log
Print Disablements	Print Test Log
Print Current Faults	
Print Current Fires	Exit

Lamp Test

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

Enter the Supervisor Mode and Select the "Others" Tab. Press "Lamp Test"

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 19 | View Pre Alarms | View Disabled | View Faults | Others

Enable/Disable	Weekly Test
Print	View Log
Lamp Test	Check Config.

Supervisor FRE off

Lamp Test

LED's will light in numerical order

Ok	Cancel

Weekly Test
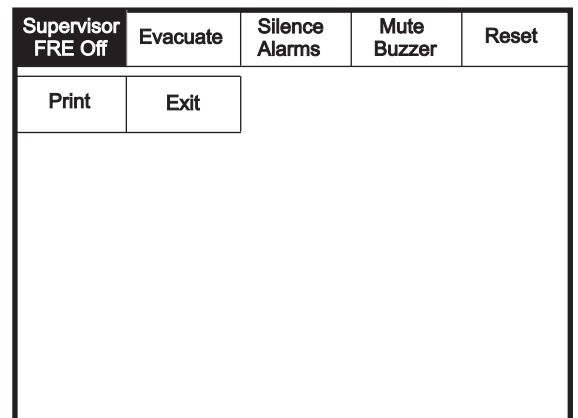
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode. Select the others tab as shown below. Press Weekly test.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 19

Pre Alarms

Disabled

Faults

Others

Enable/Disable	Weekly Test
Print	View Log
Lamp test	Check Config.

Weekly test is now in progress.

Supervisor FRE off

* Features outside EN54 Spec

Weekly test
Do you want to continue?

Yes	No

➡️

Weekly test
Awaiting Alarm Signal

Will reset after 4 minutes

Cancel

The panel will automatically return to the system healthy screen once the weekly test has been completed.

Viewing Events

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

Enter the Supervisor Mode Passcode. Select the "Others" tab and press View Log.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

View Fires AC = 19 | Pre Alarms | Disabled | Faults | Others

Enable/Disable	Weekly Test
Print	View Log
Lamp Test	Check `Config.
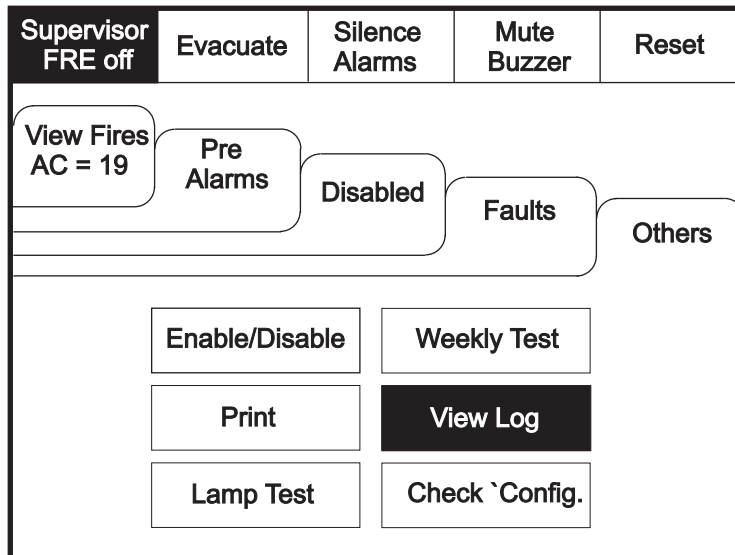
Use the scroll bar to view the list of upto 1000 events.

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Newest	Oldest	Exit

Show All	Show Fires	Show Faults	Show Tests

Events can be sorted by selecting from the sort option menu.

001   Monday 13-Jan-2004 08:34:12
         Hard Reset

002   FIRE! Lobby, [Optical] (Ana=150)
         Building 1, Ground floor, Panel 1, Loop 1, device 1

003   Monday 06-Nov- 2000 11:22.56
         Soft Reset

004   Monday 13-Nov-2001, 18:09.07 Fault
         Panel1, Loop 2 Zone 2, Address 5

005   Monday 18-Feb-2001 22:20.18
         Mains or Battery failure

The R6000 event log stores up to 1000 events including, fires, faults, resets and address changes. Once the maximum 1000 events has been reached R6000 will automatically overwrite the oldest event every time a new event is stored. The event log can only be reset by an approved service engineer.
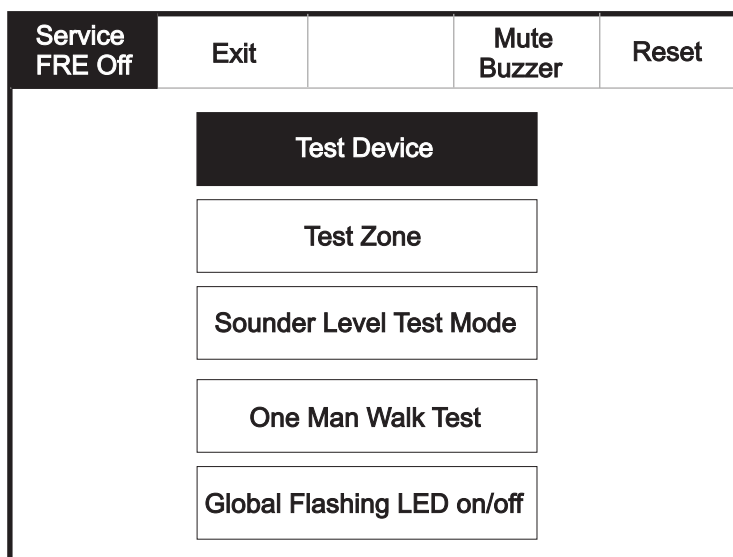
Check Auto Config

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.
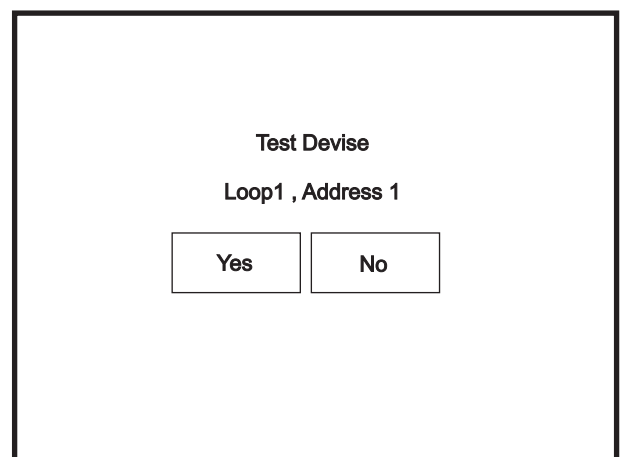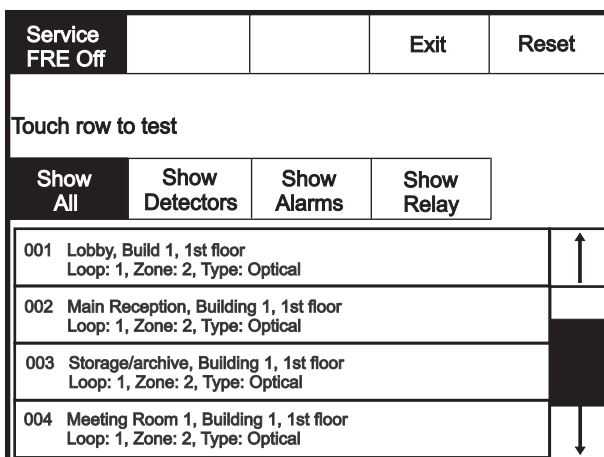
Enter the Supervisor Mode and Select the "Others" Tab. Press Check Auto Config. This feature will scan the loop and pinpoint the exact location of any break in the loop wiring and will also identify any changes in the loop configuration (e.g. New devices added or changed device types).

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Fires AC = 0
View Pre Alarms
View Disabled
View Faults
Others

Enable/Disable	Weekly Test
Print	View Log
Lamp test	Check Config.

Supervisor FRE Off

Check Auto Config

Replace Device

Exit

Supervisor FRE Off

Check Auto Config

Yes	No
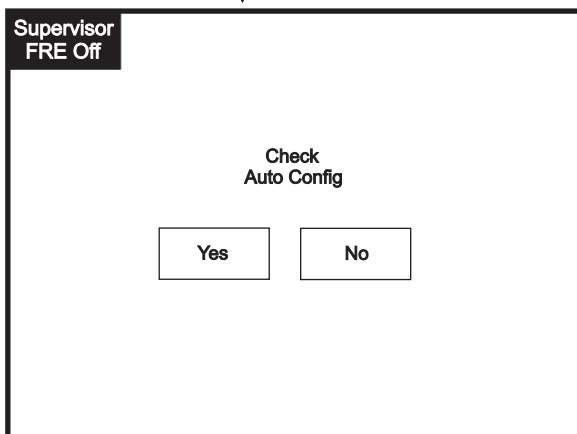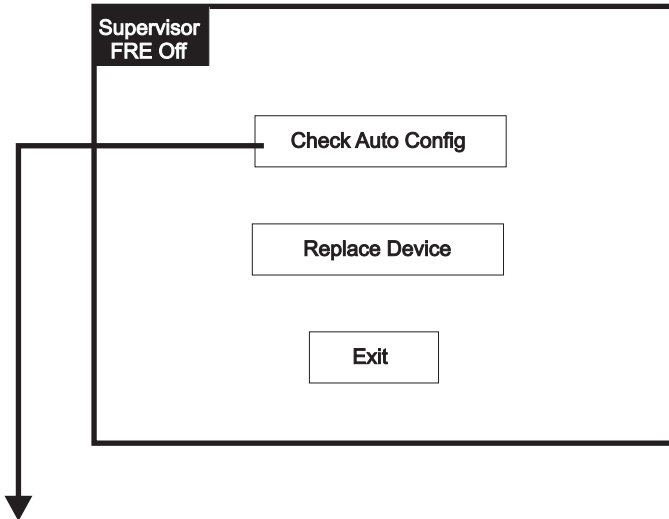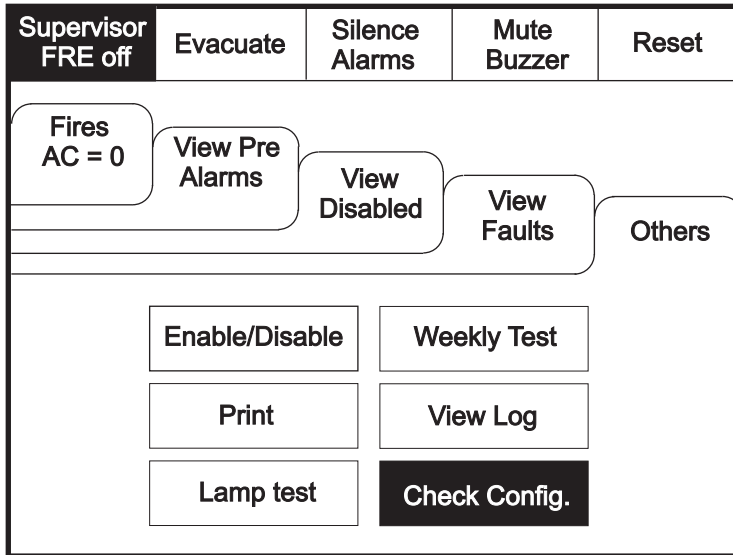
Press the Supervisor Mode button at the top left of the screen.

Supervisor FRE Off	Evacuate	Silence Alarms	Mute Buzzer	Reset
Print	Exit			

Replace Device

Replace device enables an existing device to be replaced with a new device without losing the existing text and sounder programming.
Replace a single device then use use the replace device menu to allocate an existing address to the new device

Supervisor FRE off	Evacuate	Silence Alarms	Mute Buzzer	Reset

Fires AC = 0 | View Pre Alarms | View Disabled | View Faults | Others

Enable/Disable	Weekly Test
Print	View Log
Change Device	**Check Auto Config.**

Supervisor FRE Off

Check Auto Config

Replace Device

Exit

Supervisor FRE Off

Select a Loop

Loop 1

Loop 2

Exit

Supervisor FRE Off

Enter Loop 1 Address

0	1	2	3
Del	4	5	6
Ok	7	8	9

Exit

Test Device (Access Level 3)
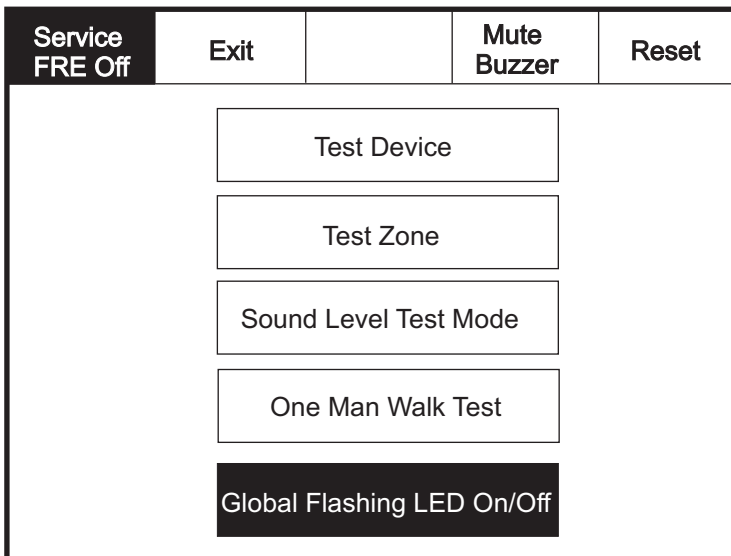
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the service mode touch the supervisor button and enter supervisor passcode.

Service FRE Off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Enter the Service mode. Select "Test".

Service FRE Off	Exit		Mute Buzzer	Reset

Test Device

Test Zone

Sounder Level Test Mode

One Man Walk Test

Global Flashing LED on/off
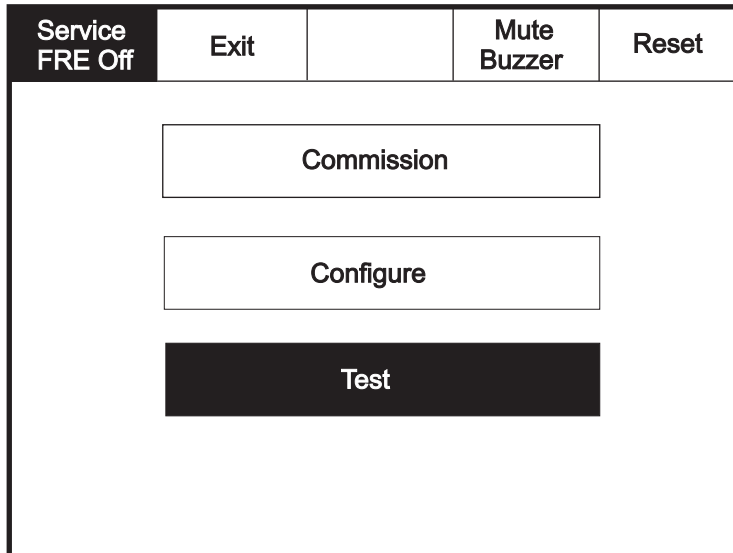
Select the "Test Device" button.

Touch row to select device to test.

Service FRE Off			Exit	Reset

Touch row to test

Show All	Show Detectors	Show Alarms	Show Relay

001 Lobby, Build 1, 1st floor
      Loop: 1, Zone: 2, Type: Optical

002 Main Reception, Building 1, 1st floor
      Loop: 1, Zone: 2, Type: Optical

003 Storage/archive, Building 1, 1st floor
      Loop: 1, Zone: 2, Type: Optical

004 Meeting Room 1, Building 1, 1st floor
      Loop: 1, Zone: 2, Type: Optical

Test Devise

Loop1 , Address 1

Yes	No

Test Zone

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.
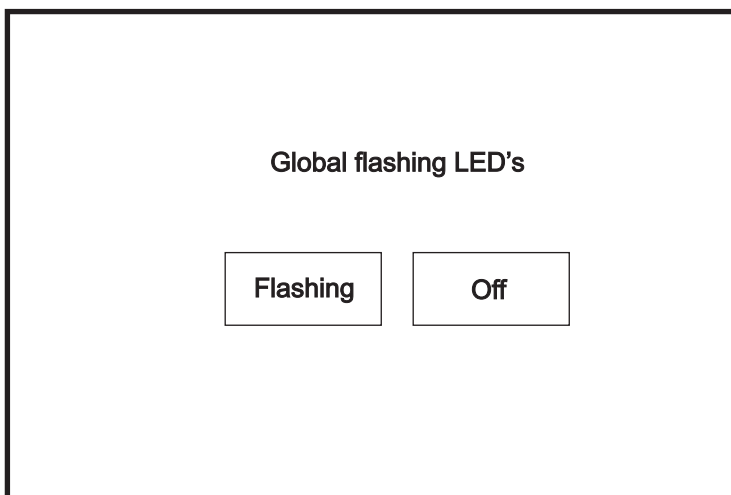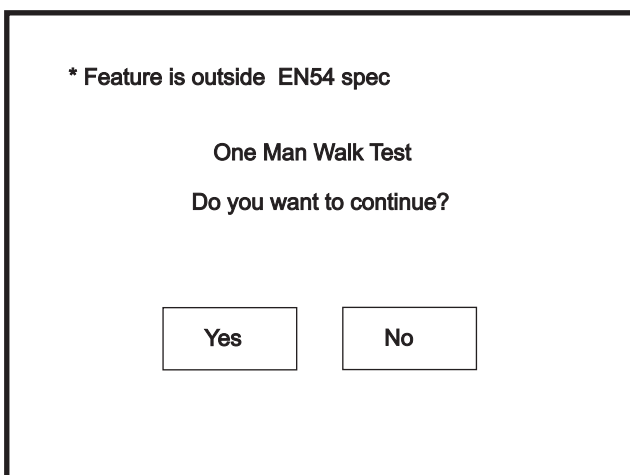
Enter the Service Mode, Select "Test" and on the Screen Shown Below Press "Test Zone"

Service FRE Off	Exit		Mute Buzzer	Reset

Test Device

Test Zone

Sounder Level Test Mode

One Man Walk Test

Global Flashing LED on/off

Service FRE Off			Exit	Reset

Touch "-" Button to place a zone into test mode
Touch "-" Button to remove a zone from test mode

Zone 001 Building 1, Ground	-	↑
Zone 002 Building 1, 1st floor	Test	
Zone 003 Building 1, 2nd floor	-	
Zone 004 Packing & Stores	-	
Zone 005 Building 2, basement	-	↓

Sounder Level Test Mode

Enter the Service Mode and Select Test. From the Test Menu Select "Sounder Level Test Mode"

Service FRE Off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Test Device

Test Zone

Sound Level Test Mode

One Man Walk Test

Global Flashing LED On/Off

Sound Level Test Mode

Do you want to continue?

Yes   No

Sound Level Test Mode

All sounders will now pulse
15 seconds on, 30 seconds off

Touch "Stop" button to stop test

Stop

Global Flashing LED On/Off

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Test.

Service FRE Off	Exit		Mute Buzzer	Reset

Commission

Configure
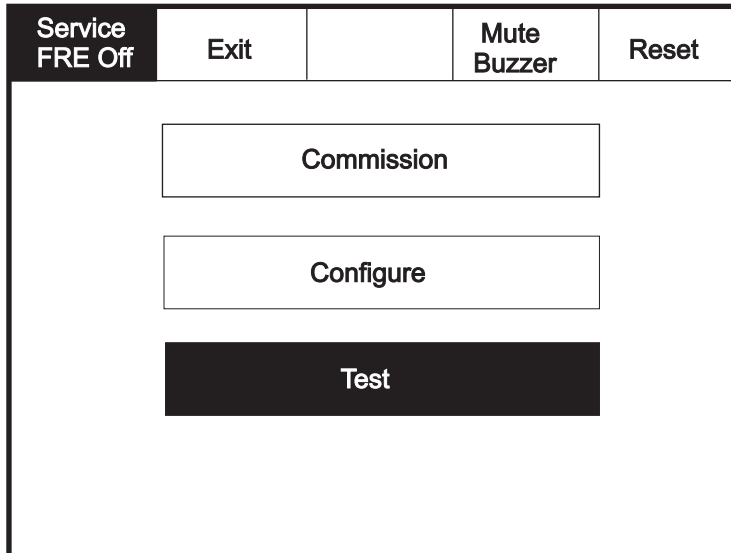
Test

If global LED flashing is set to on, all device LED's will pulse intermittently to confirm correct communication.

Service FRE Off	Exit		Mute Buzzer	Reset

Test Device

Test Zone

Sound Level Test Mode

One Man Walk Test

Global Flashing LED On/Off

Select "Global Flashing LED On/Off" from the Test Menu Screen.

Global flashing LED's

Flashing	Off

One Man Walk Test

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Test.

Service FRE Off	Exit		Mute Buzzer	
		Commission		
		Configure		
		Test		

Service FRE Off	Exit		Mute Buzzer	Reset
		Test Device		
		Test Zone		
		Sound Level Test Mode		
		One Man Walk Test		
		Global Flashing LED On/Off		
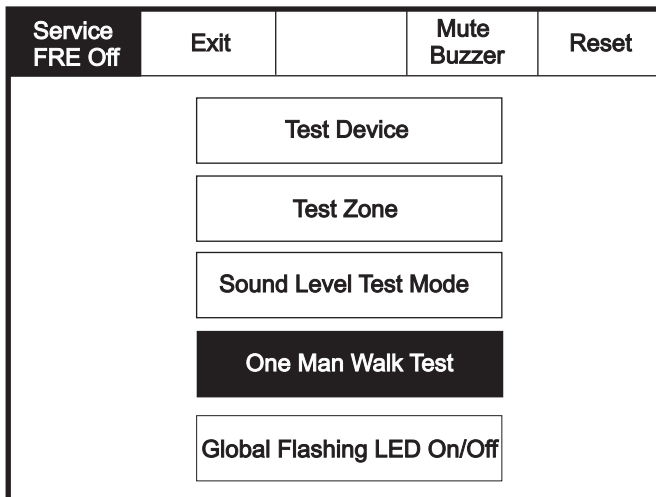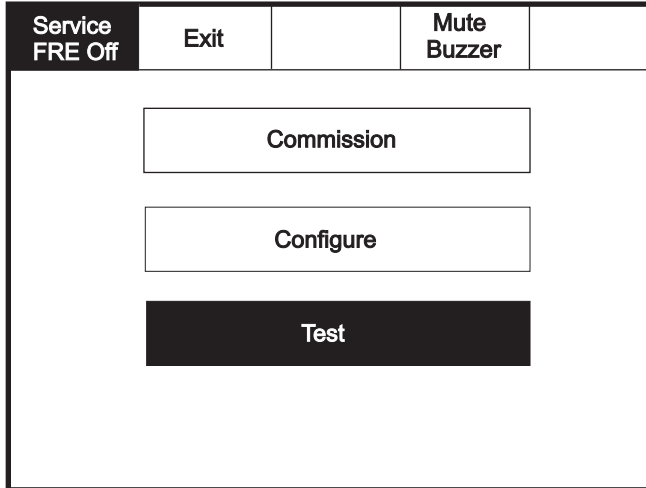
Select "One Man Walk Test" from the Test Menu Screen.

---

* Feature is outside EN54 spec

One Man Walk Test

Do you want to continue?

Yes	No

One Man Walk Test

Awaiting Alarm Signal

Stop

Commission: Load CDR from Laptop

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission..

Service	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Load CDR from Laptop	Analogue Level
Download CDR to Laptop	Printer Settings
Auto Learn	Change Panel Number
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Select "Load CDR from Laptop" from the Commission Menu"

Load CDR from Laptop

This will erase the current CDR
Do you want to continue?

Yes   No

After pressing "Yes" click commission on the PC download software.

Important:

Do not click commission before pressing "Yes" on the "Load CDR" screen.

Commission: Download CDR to Laptop

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.

Service	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Load CDR from Laptop	Analogue Level
Download CDR to Laptop	Printer Settings
Auto Learn	Change Panel Number
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Select "Download CDR from Laptop" from the Commission Menu Screen.

Download CDR to Laptop

Start PC program

Press "OK" to continue
or "Cancel" to exit

OK	Cancel

Commission: Auto Learn

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.

Service FRE off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Select "Auto Learn" from the Configure Menu Screen.

Load CDR from Laptop	Analogue Level
Download CDR to Laptop	Printer Settings
Auto Learn	Change Panel Number
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Service FRE Off	Exit	Auto Learn

Do you want to continue ?

No

Pre Address - Autolearn

Yes - Autolearn All Loops

Important:

Activating autolearn will erase all existing programming, text and configuration data.

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Erase Log

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.

Service FRE off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Load CDR from Laptop	Analogue Level
Download CDR to Laptop	Printer Settings
Auto Learn	Change Panel Number
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Select "Erase Log and Reset" from the Configure Menu Screen.

This will delete all log entries
Do you want to continue

Yes	No

System Details

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission, then Press "System Details".

Service FRE off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Load CDR from Laptop	Analogue Level
Download CDR to Laptop	Printer Settings
Auto Learn	Change Panel Number
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Service FRE off	Print	Exit		Reset

Program	V3.02.01
Program Data	22/01/08
Program Checksum	0xAA95524
CDR	V0.5
CDR Checksum	0xF7D95E
Loop Controller 1	V2.1.4
Loop Controller 2	V0.0.0
Panel Number	0
Total Panels	1
Total Addresses	13
Total Zones	4

Page 1   Page 2   Page 3

Service FRE off	Print	Exit		Reset

	Loop 1	Loop 2	Loop 3	Loop 4
Optical	0	0	0	0
Ionisation	13	14	0	0
Thermal A1R	0	0	0	0
Opto/Thermal	0	0	0	0
Thermal BS	0	0	0	0
Thermal CS	2	1	0	0
Call Point	0	0	0	0
Alarm	0	0	0	0
I/O Units	0	0	0	0

Page 1   **Page 2**   Page 3

Service FRE off	Print	Exit		Reset

	Loop 1	Loop 2	Loop 3	Loop 4
SCU	0	0	0	0
Voice Annunciator	13	14	0	0
Repeater	0	0	0	0
ZMU/{SUM	0	0	0	0
Beam Detector	0	0	0	0
Technical Timer	2	1	0	0
Access Control	0	0	0	0
Emerg.Light.Module	0	0	0	0
Carbon Monoxide	0	0	0	0

Page 1   Page 2   **Page 3**

Analogue Level

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission then press "Analogue Levels".

Service FRE Off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Load CDR from Laptop	**Analogue Level**
Download CDR to Laptop	Printer Settings
Auto Learn	Change Panel Number
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Service FRE off	Exit	Goto		Reset

Show All	Show Detectors	Show Optical	Show Ionisation	Show Thermal

001 Device 1, Zone 1
Loop: 1, Zone: 1, Type: Opto/thermal

002 Device 2, Zone 1
Loop: 1, Zone: 1, Type: Opto/thermal

003 Device 3, Zone 1
Loop: 1, Zone: 1, Type: Opto/thermal

004 Device 4, Zone 1
Loop: 1, Zone: 1, Type: Opto/thermal

005 Device 5, Zone 1
Loop: 1, Zone: 1, Type: Opto/thermal

Note
Go to command can be used to jump to a specific address

Enter Address
....

Loop 1	0 - 13
Loop 2	0 - 0
Loop 3	0 - 0
Loop 4	0 - 0

Cancel

1	2	3
4	5	6
7	8	9
ok	0	←

Change Panel Number

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.
Enter the Service Mode and Select Commission then press "Change Panel Number"

Service FRE Off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Service FRE Off	Exit		Mute Buzzer	Reset

Load CDR from Laptop	Analogue Level
Download CDR to Laptop	Printer Settings
Auto Learn	**Change Panel Number**
Erase Log and Reset	Number of Panels in Network
System Detail	Screen Cover
Load logo from PC	Italian Mode

Change Panel Number

0
....

1	2	3
4	5	6
7	8	9
ok	0	←

Cancel

Number of Panels in Network

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.
Enter the Service Mode and Select Commission then press "Number of Panels in

Service FRE Off	Exit		Mute Buzzer	Reset
		Commission		
		Configure		
		Test		

Service FRE Off	Exit		Mute Buzzer	Reset
Load CDR from Laptop			Analogue Level	
Download CDR to Laptop			Printer Settings	
Auto Learn			Change Panel Number	
Erase Log and Reset			**Number of Panels in Network**	
System Detail			Screen Cover	
Load logo from PC			Italian Mode	

Number of Panels
in Network
1
....

1	2	3
4	5	6
7	8	9
ok	0	←

Cancel

Screen Cover

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.
Enter the Service Mode and Select Commission then press "Screen Cover"

Service FRE Off	Exit		Mute Buzzer	Reset
		Commission		
		Configure		
		Test		

Service FRE Off	Exit		Mute Buzzer	Reset
Load CDR from Laptop			Analogue Level	
Download CDR to Laptop			Printer Settings	
Auto Learn			Change Panel Number	
Erase Log and Reset			Number of Panels in Network	
System Detail			**Screen Cover**	
Load logo from PC			Italian Mode	

Service FRE off	Exit			Reset
		Installed		
		Not Required		

Programming I/O and Sounders

To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Configure.

Service FRE off	Exit		Mute Buzzer	Reset

Commission

Configure

Test

Select "Programming I/O and Sounders"" from the Configure Menu Screen.

Service FRE off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change Pascode	

Service FRE off	Exit			Reset

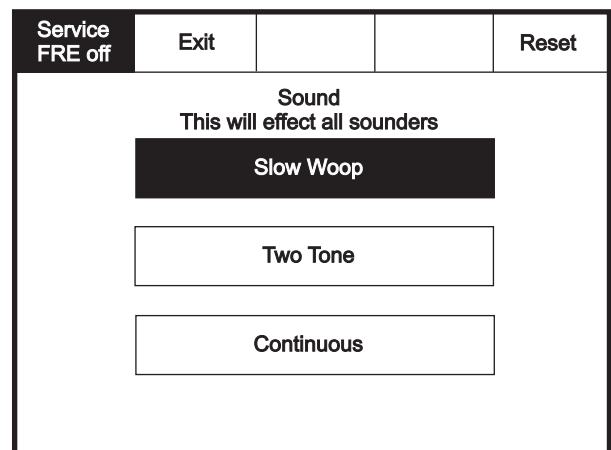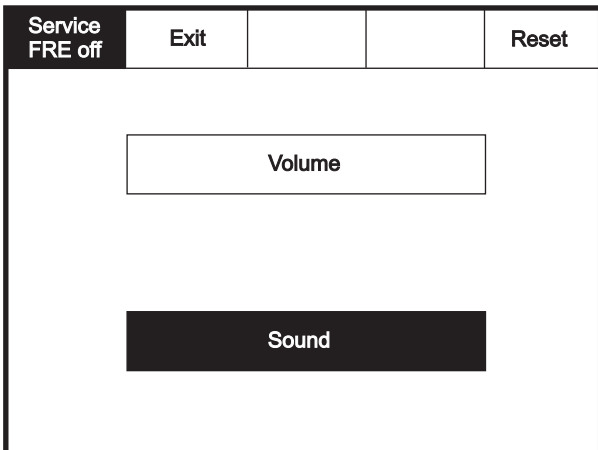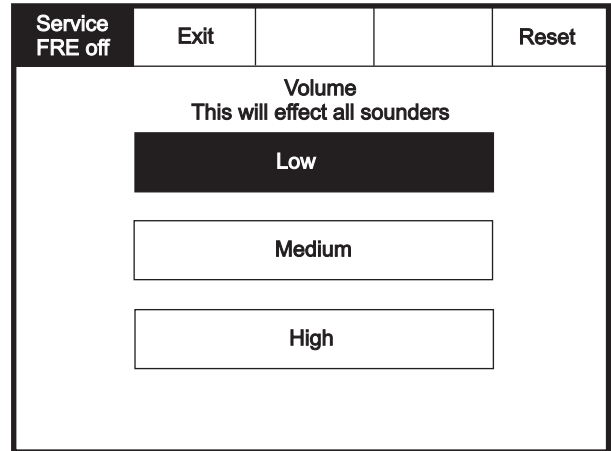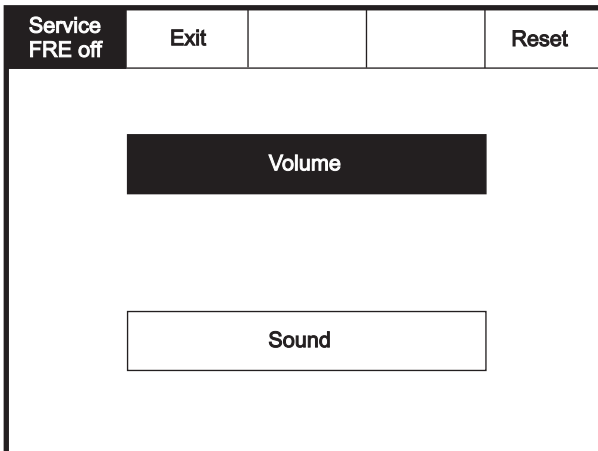| T1	Panel Outputs
T2	Auxiliary Board
T1/T2 Call Point Overide	Alarm Verification Feature

Press panel outputs - NOTE Interface Inputs/Interface Outputs are only used in certain export markets

Sound Settings

Touch sound settings .

Service FRE off	Exit			Reset
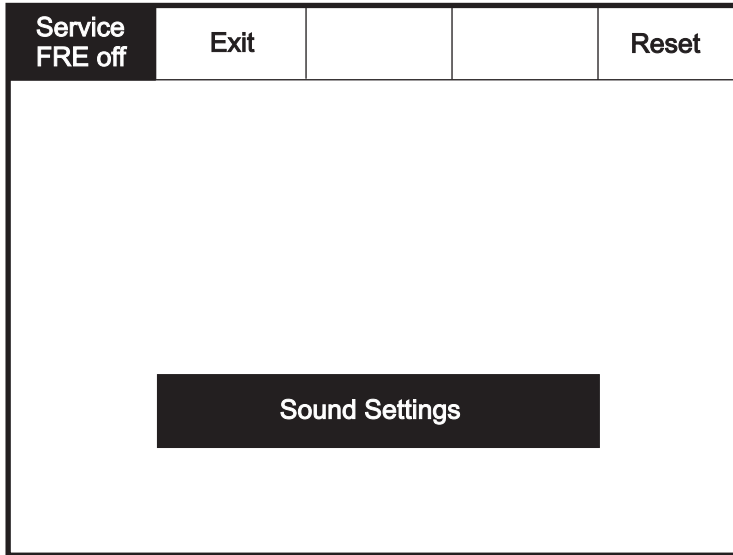
Sound Settings

Selections from the screens below will become the global settings for all loop sounders.

Service FRE off	Exit			Reset

Volume

Sound

Service FRE off	Exit			Reset

Volume
This will effect all sounders

Low

Medium

High

Service FRE off	Exit			Reset

Volume

Sound

Service FRE off	Exit			Reset

Sound
This will effect all sounders

Slow Woop

Two Tone

Continuous

Change Date/Time

Enter the Service Mode and Select Configure. Select Change Date/Time.

Service FRE Off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change Passcode	

Set the Time Using the Buttons Shown Below.

Service FRE Off	Ok	Cancel		Reset

Current Time:

10:16:12

+1 Hour	+10 Mins	+1 Mins
-1 Hour	-10 Mins	-1 Mins

BST On

Current Date:

Wednesday
dd-mmm-yyyy

+1 Day	+1 Month	+1 Year
-1 Day	-1 Month	-1 Year

Change Text

Enter the Service Mode and Select Configure. Select "Change Text"

Service FRE Off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change Passcode	

Press "Change Address Text"

Service FRE Off	Exit		Mute Buzzer	Reset

Change address text

Change zone text

Change Panel Text

Select the Address you wish to change and edit using the keyboard

Service FRE Off	Exit		Reset

Show All	Show Detectors	Show Alarms	Show I/O Units

001	Device 1, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal
002	Device 2, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal
003	Device 3, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal
004	Device 4, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal
005	Device 5, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal

Name for address 1

Address1 ....

1	2	3	4	5	6	7	8	9	0
Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	
CAPS	Z	X	C	V	B	N	M	,	.
OTHER		SPACE		OK		CANCEL			

Change Zone Text

Enter the Service Mode and Select Configure. Select "Change Text"

Service FRE Off	Exit		Mute Buzzer	Reset
Programming I/O and Sounders		Add/Delete		
Change Date/Time		Configure Heat Detectors		
Change Text		Network		
Configure Zones		Language		
Change Passcode				

Press "Change Zone Text"

Service FRE Off	Exit		Mute Buzzer	Reset
Change address text				
Change zone text				
Change Panel Text				

Select the zone you wish to Change and Edit Using the Keyboard

Service FRE Off				Reset
Exit				
Zone 001 Zone 1				
Zone 002 Zone 2				
Zone 003 Zone 3				
Zone 004 Zone 4				

Enter the name for Zone 2

Zone 2

1	2	3	4	5	6	7	8	9	0
Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	
CAPS	Z	X	C	V	B	N	M	,	.
OTHER	SPACE		OK	CANCEL					

Change Panel Text

Enter the Service Mode and Select Configure. Select "Change Text"

Service FRE Off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change Passcode	

Press "Change Panel Text"

Service FRE Off	Exit			Reset

Change address text

Change zone text

Change Panel Text

Correct Panel Text

R6000 ⟵

1	2	3	4	5	6	7	8	9	0
Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	

CAPS	Z	X	C	V	B	N	M	,	.

OTHER	SPACE	OK	CANCEL

Configure Zones

Enter the Service Mode and Select Configure. Select "Configure Zones"

Service FRE Off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change Passcode	

Service FRE Off			Exit	Reset

Touch row to configure

Zone 001 Zone 1

Zone 002 Zone 2

Zone 003 Zone 3

Zone 004 Zone 4

Select Zone into which device will be added

Service FRE Off	Exit	Goto		Reset

Show All	Show Detectors	Show Alarms	Show I/O Units	Show Selected

001 Device 1, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal	In Zone	↑
002 Device 2, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal	In Zone	
003 Device 3, Zone 1 Loop: 1, Zone: 1, Type : Opto/thermal	In Zone	
004 Device 4, Zone 2 Loop: 1, Zone: 2, Type : Opto/thermal	-	
005 Device 5, Zone2 Loop: 1, Zone: 2, Type : Opto/thermal	-	↓

Touch the dash to move the device into the selected zone.

Change User Code

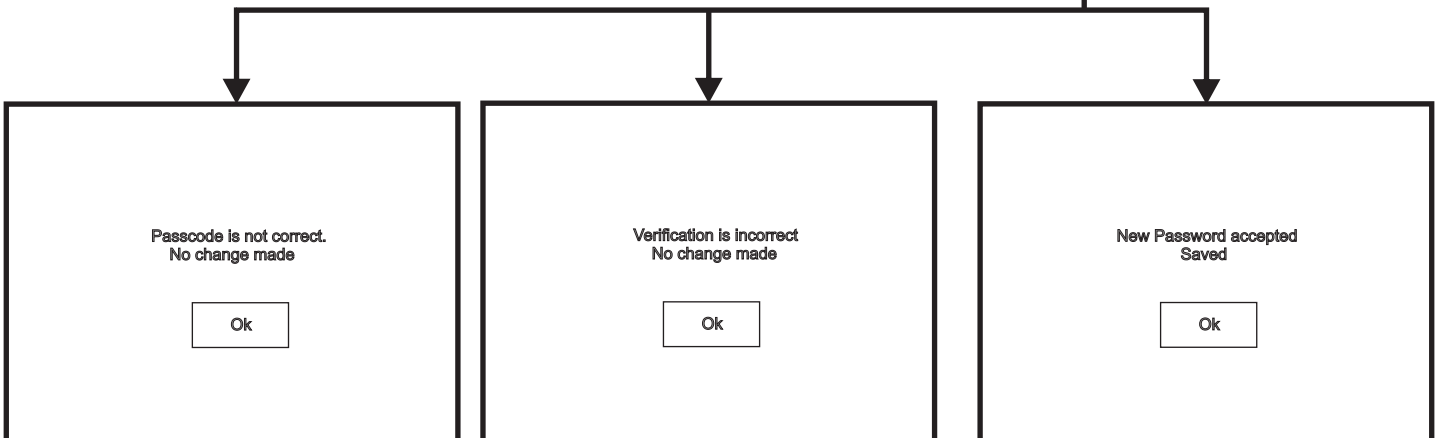Enter the Service Mode and Select Configure. Select "Change User Code"

Service FRE off	Exit			Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change PassCode	

Service FRE off	Exit		Mute Buzzer	Reset

Change Engineering code

Change User code

Please enter Passcode:

....

New Code:

....

Verify New Code:

....

Cancel

1	2	3
4	5	6
7	8	9
ok	0	←

Passcode is not correct.
No change made

Ok

Verification is incorrect
No change made

Ok

New Password accepted
Saved

Ok

Add Zone

Enter the Service Mode and Select Configure. Select "Add Zone"

Service FRE off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	**Add/Delete**
Change Date/Time	Configure Heat Detectors
Change Text	Network
Configure Zones	Language
Change Passcode	

Service FRE Off	Exit			Reset

Add Zone

Delete Zone

Add Device

Delete Device

Add Zone ?

Yes	No

Delete Zone

Enter the Service Mode and Select Configure, select "Add/Delete" then "Delete Zone"

Service FRE Off	Exit			Reset

> Add Zone
>
> **Delete Zone**
>
> Add Device
>
> Delete Device

Service FRE Off				Reset

Select Zone to be Deleted

Exit	Touch row to delete

Zone 001 Zone 1

Zone 002 Zone 2

Zone 003 Zone 3

Zone 004 Zone 4

Confirm or Cancel Deletion

Delete Zone 2?

Yes	No

Add Device

Enter the Service Mode and Select Configure, select "Add/Delete" then "Add Device"

Service FRE Off	Exit			Reset

Add Zone

Delete Zone

Add Device

Delete Device

Service FRE Off				Reset

Loop 1

Loop 2

Loop 3

Loop 4

Exit

Select a Loop to Add a New Device

Loop 2

Scanning Loop

Exit

Confirm New Device and Loop

Delete Device

Enter the Service Mode and Select Configure, select "Add/Delete" then "Delete Device"

Service FRE Off	Exit			Reset

Add Zone

Delete Zone

Add Device

Delete Device

Service FRE Off	Exit	Goto		Reset

Touch row to delete

001 Device 1, Zone 1
Loop: 1, Zone: 1, Type : Opto/thermal

002 Device 2, Zone 2
Loop: 1, Zone: 2, Type : Opto/thermal

003 Device 3, Zone 1
Loop: 1, Zone: 2, Type : Opto/thermal

004 Device 4, Zone 2
Loop: 1, Zone: 2, Type : Opto/thermal

005 Device 5, Zone 1
Loop: 1, Zone: 1, Type : Opto/thermal

Select a Device to Delete

Delete Device 3?

Device 3
Loop 1, Address 3, Device Type Opto/thermal

Yes	No

Confirm or Cancel Deletion

Configure Heat Detectors

Enter the Service Mode and Select Configure. Select "Configure Heat Detectors"

Service FRE off	Exit		Mute Buzzer	Reset

Programming I/O and Sounders	Add/Delete
Change Date/Time	**Configure Heat Detectors**
Change Text	Network
Configure Zones	Language
Change Passcode	

Select a Device to Configure

Service FRE Off	Exit	Goto		Reset

Touch row to configure

001 Device 1, Zone 1 Loop: 1, Zone: 1, Type : Thermal A1R
002 Device 2, Zone 2 Loop: 1, Zone: 2, Type : Thermal A1R
003 Device 3, Zone 1 Loop: 1, Zone: 2, Type : Thermal A1R
004 Device 4, Zone 2 Loop: 1, Zone: 2, Type : Thermal A1R
005 Device 5, Zone 1 Loop: 1, Zone: 1, Type : Thermal A1R

Select appropriate detector class

Service FRE Off				Reset

Thermal A1R

Thermal BS

Thermal CS

Exit

Network

Enter the Service Mode and Select Configure. Select "Network", This menu defines whether messages are broadcast across the network or remain local.

Service FRE off	Exit		Mute Buzzer	Reset
Programming I/O and Sounders		Add/Delete		
Change Date/Time		Configure Heat Detectors		
Change Text		Network		
Configure Zones		Language		
Change Pascode				

Service FRE Off	Exit	Receive message over network
	Reset	Network
	Evacuate	Network
	Silence	Network
	Fire	Network
	Fault	Network
	Pre-Alarm	Network

Password Protection

```
┌─────────────────────────────────────────────┐
│ Service                                      │
│ FRE Off        1   2   3                     │
│                                              │
│ Please enter Passcode                        │
│ ..........................   4   5   6       │
│                                              │
│                7   8   9                     │
│                                              │
│     ┌────────┐                               │
│     │ Cancel │  ok  0  ←                     │
│     └────────┘                               │
└─────────────────────────────────────────────┘
```

The Menvier R6000 system has password protection which restricts access to the
DISABLE Menu and to TEST/COMMISSIONING MODE. The password is a four digit
code and the default number is 2214 for access level two and 143243 for access level
three. The password entry screen is accessed via the supervisor mode button. Press
supervisor mode and the password entry screen will be displayed, type in the passcode
and press Ok. If the wrong password is entered three times further access to the
system is denied.

Section 5

Appendix

Spur Isolator MSI850

Installation

1.   Fit the unit in position.
2.   Connect the unit according to the diagram below.

Notes:
A Spur Isolator must be used when making spurs from the analogue addressable panel loop. Without this unit, the self addressing features of the system will not function correctly.
No addressing of the interface is required. See control panel operation for details.

Standard Connections
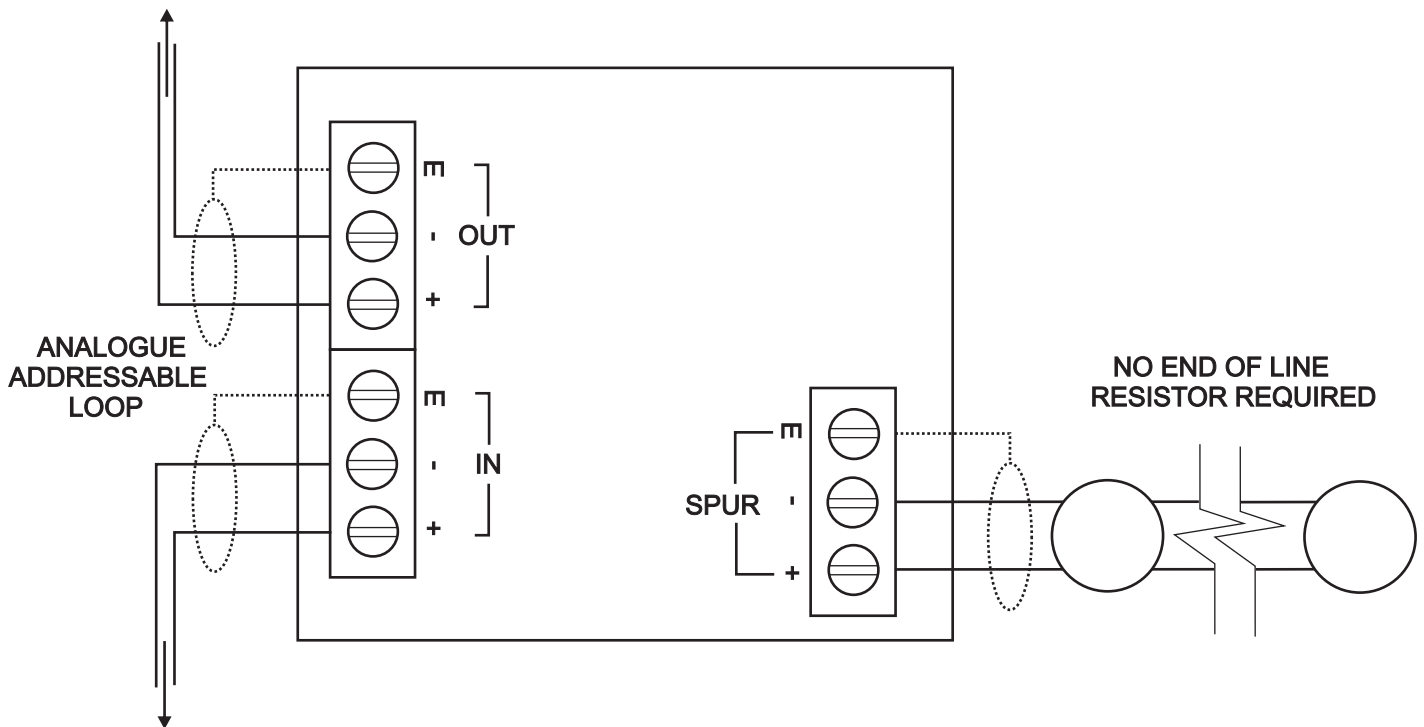
Notes:
1.   Only connect cable screen to its adjacent earth terminal.
2.   For maximum spur length / load see BS5839 Pt1:2002.
3.   This unit can only be used with Cooper MAB800 and FXN720 detector bases and compatible detectors.

4 Way Sounder Controller MPU424

Installation

1. Remove the cover of the unit.
2. Fit the back-plate in position and pass the wires into it taking care not to damage the circuit board.
3. Connect the unit according to the diagram below.

Notes:
No addressing of the interface is required. See control panel operation for details.
This unit requires a permanent 230V AC supply.

Standard Connections
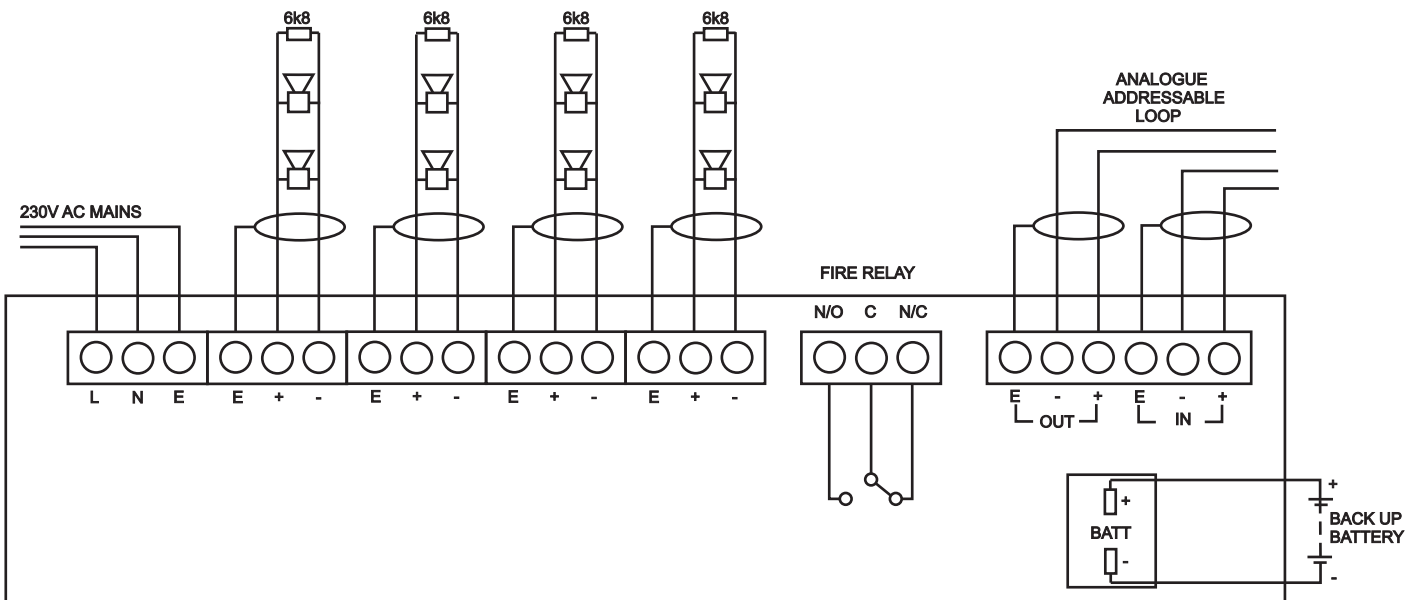
Notes:
1. Only connect cable screen to its adjacent earth terminal.
2. The end of line resistors must always be fitted, even if the sounder circuits are Unused
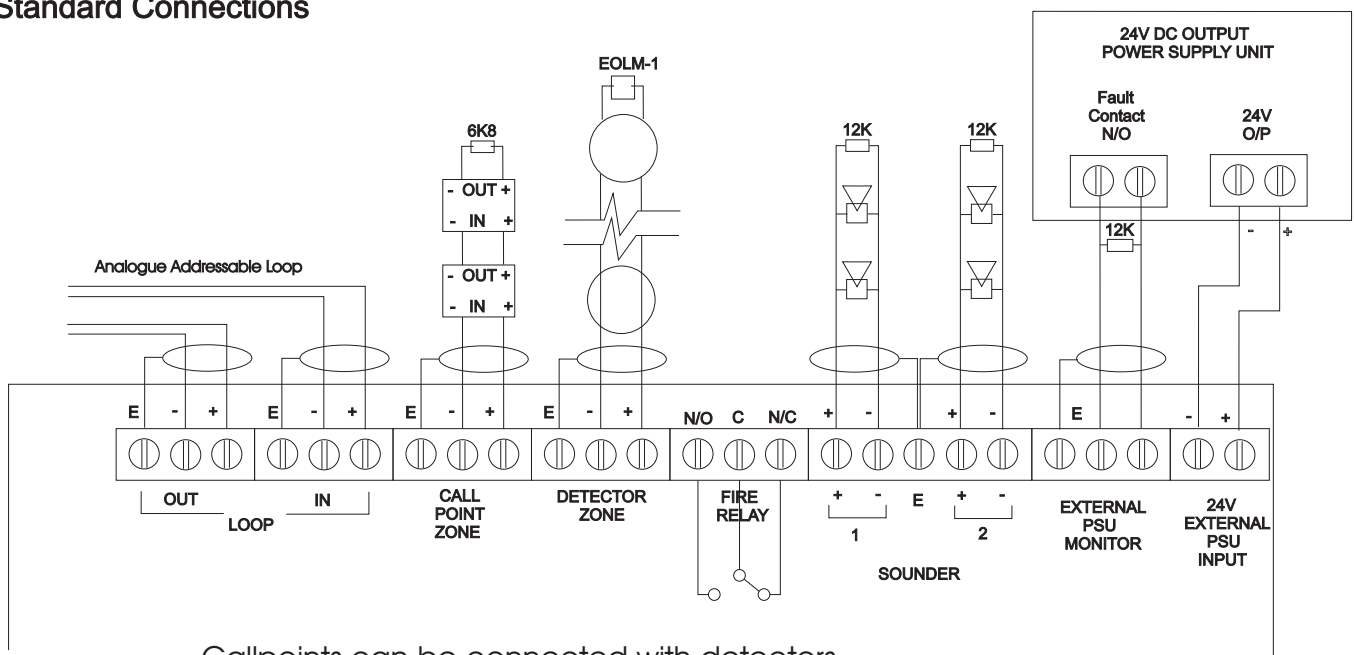
Zone Monitor Unit MIU871

Installation

1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting back-box.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according to the diagram below.

Notes:
No addressing of the interface is required. See control panel operation for details.

Standard Connections

Callpoints can be connected
with detectors on detector
zone if preferred
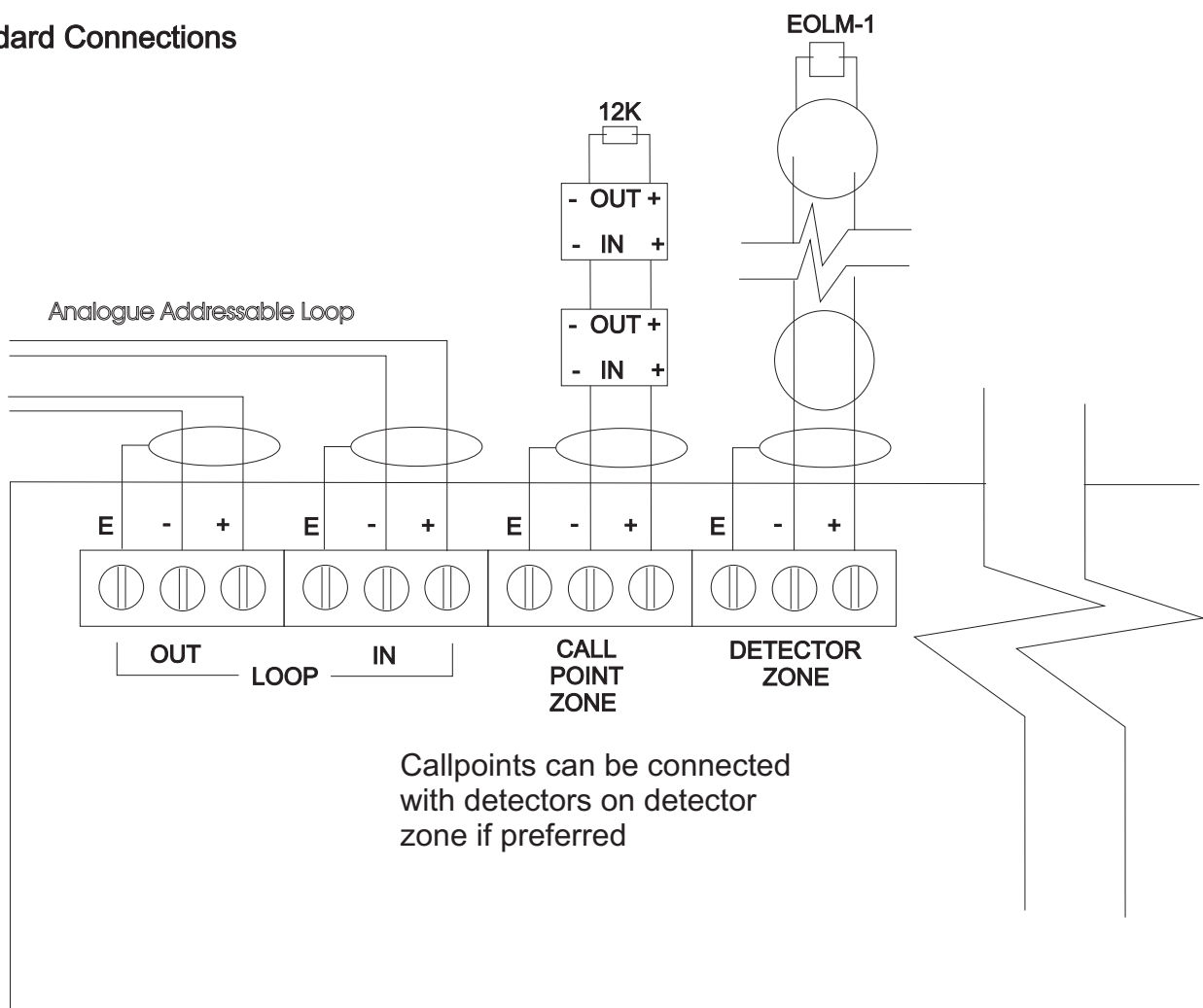
Notes:
1. This unit can only be used with JSB FXN520 detector base and compatible detectors.
2. Only connect cable screen to its adjacent earth terminal.
3. The end of line resistor must always be fitted, even if the spur is unused.
4. Maximum spur length - See BS5839 Pt1:2002 for Zone Coverage.
5. Maximum number of call points allowed is unlimited.
6. Detector zone end of line device is EOLM-1 (supplied)
7   Callpoint zone has end of line resistor

Shop Monitor Unit MSU840

Installation

1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting back-box.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according to the diagram below.

Notes:
No addressing of the interface is required. See control panel operation for details.

Standard Connections

Callpoints can be connected with detectors
on detector zone if preferred

Notes:
1. This unit can only be used with FXN520 detector base and compatible detectors.
2. Only connect cable screen to its adjacent earth terminal.
3. The end of line resistor must always be fitted, even if the spur is unused.
4. Maximum spur length - See BS5839 Pt1:2002 for Zone Coverage.
5. Maximum number of call points allowed is unlimited.
6. Detector zone end of line device is EOLM-1
7. Callpoint zone has end of line resistor

1 way Input Output Unit MIO1240

Installation
1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting back-box.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according the diagram below.

Notes:
No addressing of the interface is required. See control panel operation for details.

Standard Connections
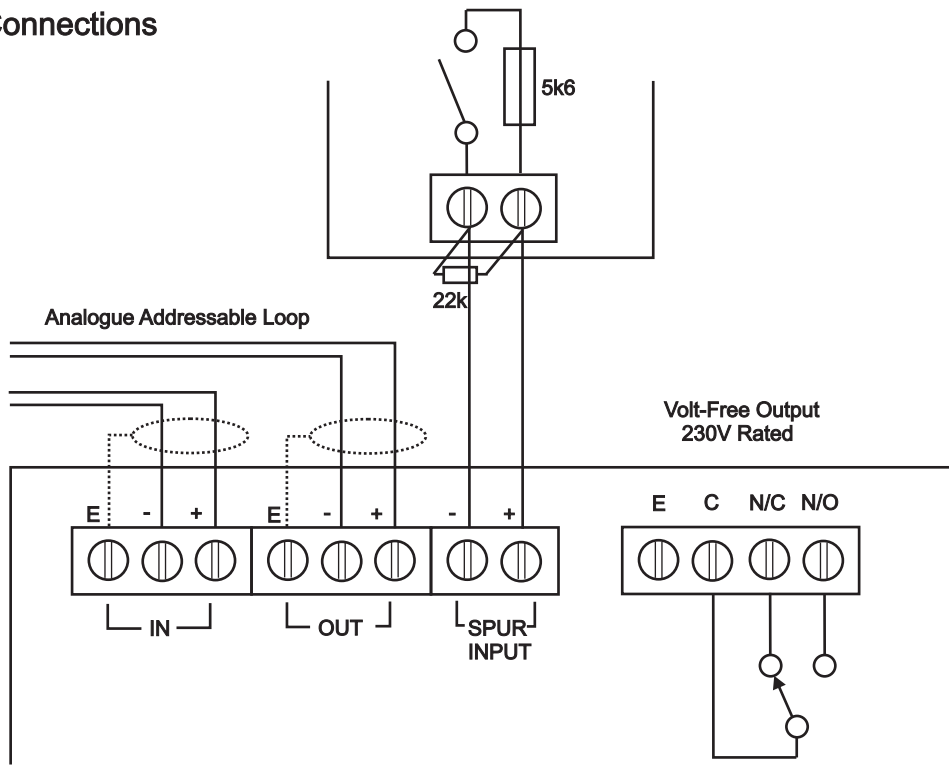
Notes:
1. Only connect cable screen to its adjacent earth terminal.
2. The end of line resistor must always be fitted, even if the spur is unused.

Detector Base Wiring MAB800

Supply Voltage   18 - 30 V DC
Cable Size   0.5 - 2.5mm²
Recommended cable types   FIRETUF,FP200 or MICC
Mounting Hole Centres   50 - 80mm
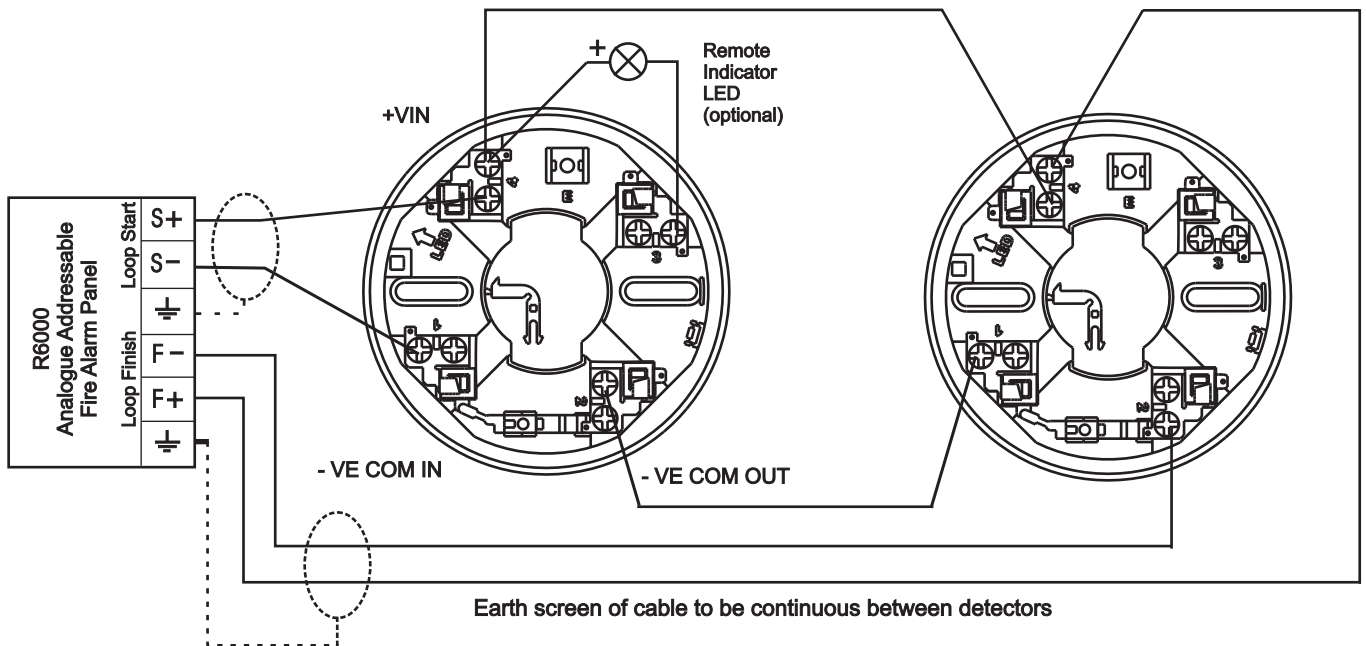
Wiring Hints

- Each terminal is suitable for clamping up to 2 wires
- Clamping of 2 wires of very different diameters under one screw is not recommended.
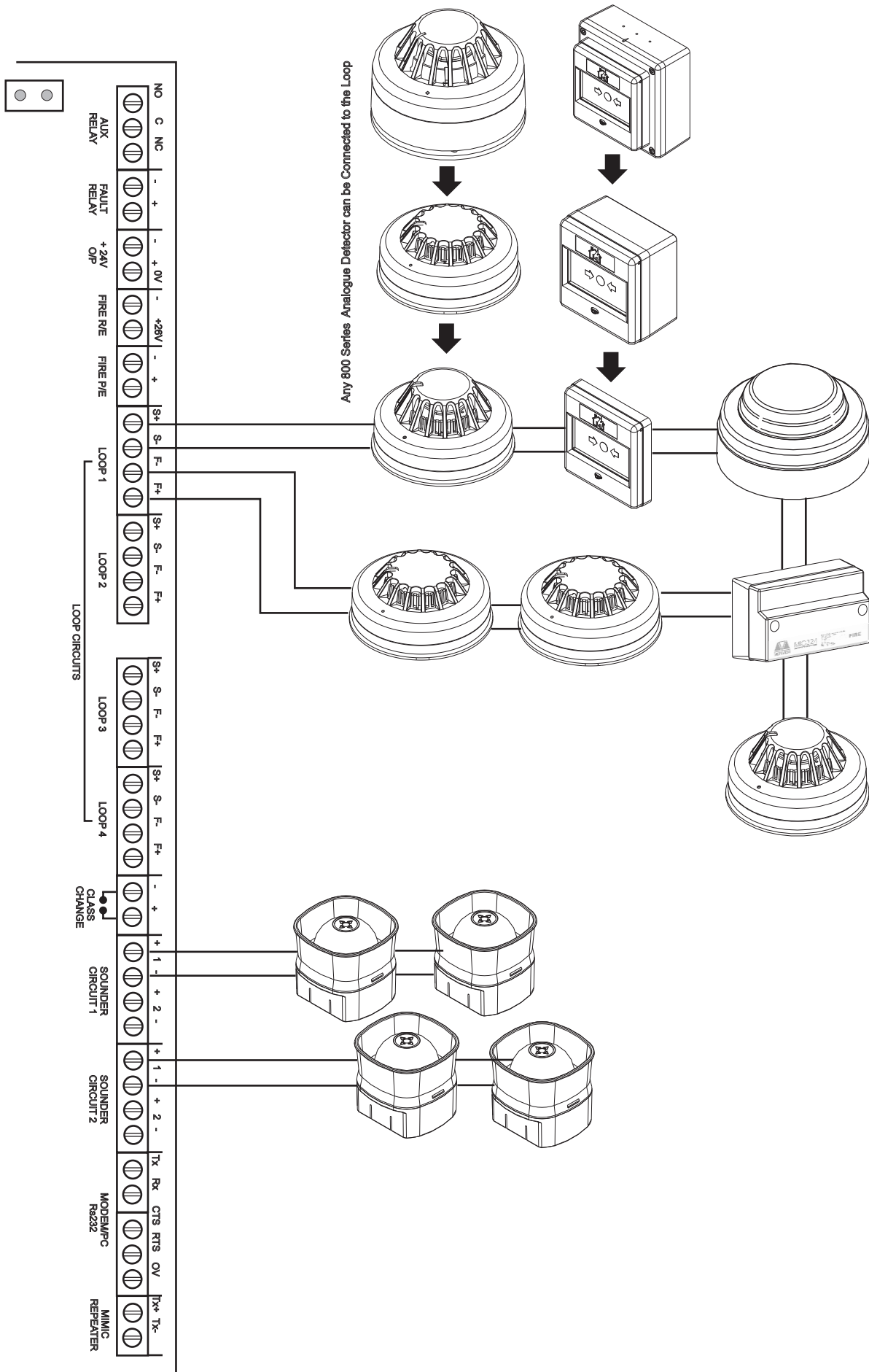- Suitable for mounting to mounting boxes with 50-80mm fixing centres.

General

If difficulty is experienced when mounting the detector, this may be due to the following:

- Wiring causing an obstruction - move or shorten wires.
- Although the base is tolerant to uneven mounting surfaces, a very uneven surface may cause the base to deform when the mounting screws are tightened down - loosen screws to reduce this or slide base to a more flat position.

WARNING: DO NOT USE HIGH VOLTAGE TESTERS WHEN DETECTORS OR CONTROL PANEL ARE CONNECTED TO THE SYSTEM.

Earth screen of cable to be continuous between detectors

System Wiring

Any 800 Series Analogue Detector can be Connected to the Loop

Terminal labels (left panel, top to bottom):

AUX RELAY — NO, C, NC

FAULT RELAY — -, +

+24V O/P — -, + 0V

FIRE R/E — -, +26V

FIRE P/E — -, +

LOOP 1 — S+, S-, F-, F+

LOOP 2 — S+, S-, F-, F+

LOOP 3 — S+, S-, F-, F+

LOOP 4 — S+, S-, F-, F+

LOOP CIRCUITS

CLASS CHANGE — -, +

SOUNDER CIRCUIT 1 — + 1 -, + 2 -

SOUNDER CIRCUIT 2 — + 1 -, + 2 -

MODEM/PC RS232 — Tx, Rx, CTS, RTS, 0V

MIMIC REPEATER — Tx+, Tx-

IP66 Wall Sounder MAS850LPS/WP

Installation

1.Drill required holes for the cable gland fixing

2.Drill out the required fixing holes

3.Fix to mounting surface using two suitable screws

Connections

WARNING: Do NOT use high voltage testers if ANY equipment is connected to the system. Earth scrreen must be continuous along entire length of loop.

Analogue Addressable Loop
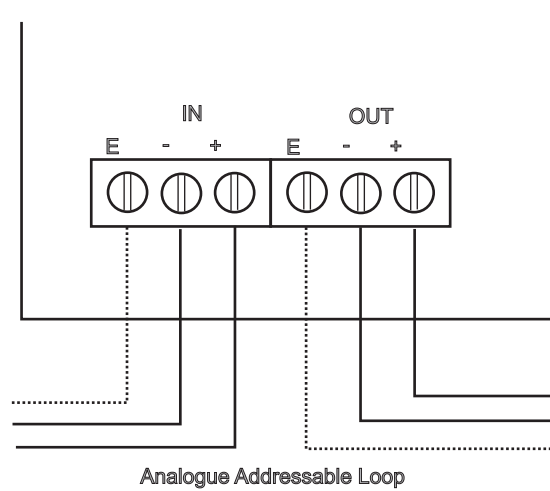
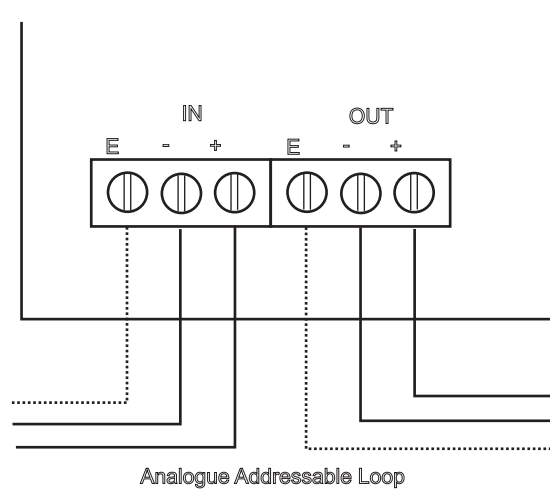# Internal wall Sounder MAS850/LPS

Installation

     1.Fix to mounting surface using two suitable screws - the rear gasket fits underneath the base and the sounder gasket fits inside the base.

Connection

WARNING: Do NOT use high voltage testers if ANY equipment is connected to the system. Earth scrreen must be continuous along entire length of loop.

```
              IN              OUT
         E    -    +     E    -    +
        ┌─────────────┬─────────────┐
        │ (○) (○) (○) │ (○) (○) (○) │
        └─────────────┴─────────────┘
```

Analogue Addressable Loop

NOTE

Care should be taken to ensure the cable does not put stress on the circuit board

Base Sounder (MAS850 + MASC)

Supply Voltage	: 17 ~ 32 Vdc
Cable Size / type	: 0.5 ~ 2.5mm/ FIRETUF, FP200 or MICC
Standby current	: < 320 uA
Operating temperature	: -10 to +55 degrees C (95%RH)
Sound output @ +/-3dB	: Low volume : 84dB @ <4mA
(set by panel)	: Medium volume : 92dB @ <8mA
	: High volume : 95dB @ <12mA
Tones	: Continuous 910Hz
(set by panel)	: Pulsed 910Hz / 0Hz pulse 1Hz
	: Two tone 610 / 910Hz @ 1Hz cycle
	: Slow whoop 500-1200Hz in 3.5 seconds / 0.5secs gap
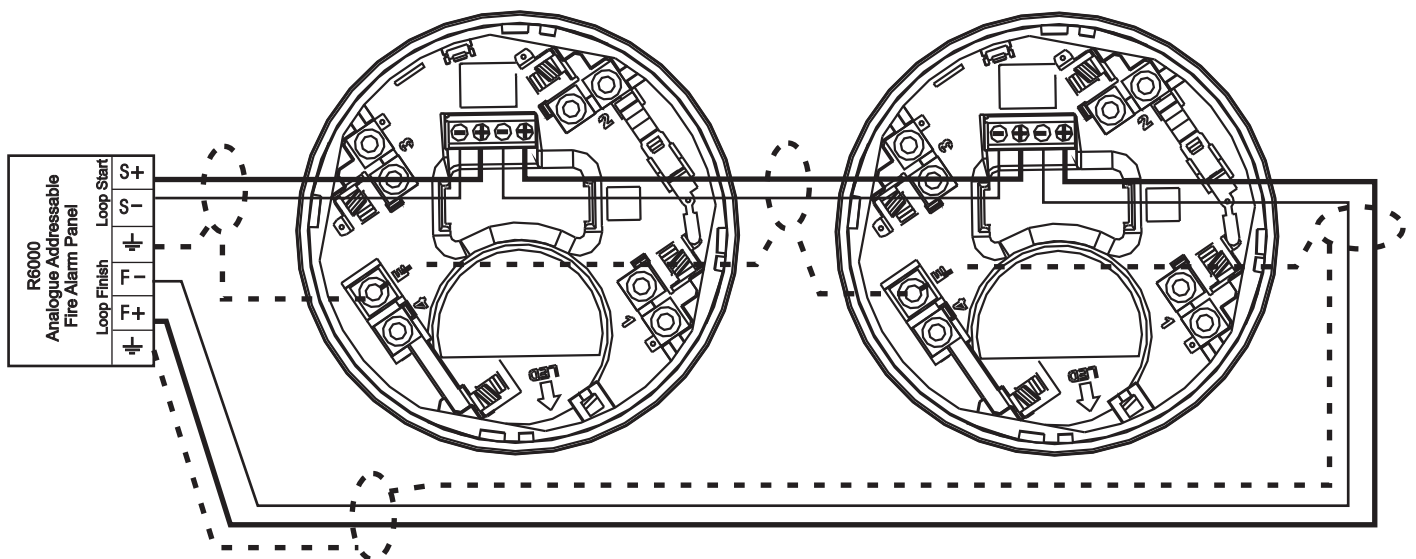
3 way Input output unit MIO324

Installation

1.   Separate the two halves of the unit.
2.   Drill out (or knock out) the required cable entries in the surface mounting back-box.
3.   Fit the back-box in position and pass the wires into it.
4.   Connect the unit according to the diagram below.

Notes:
No addressing of the interface is required. See control panel operation for details.

Standard Connections
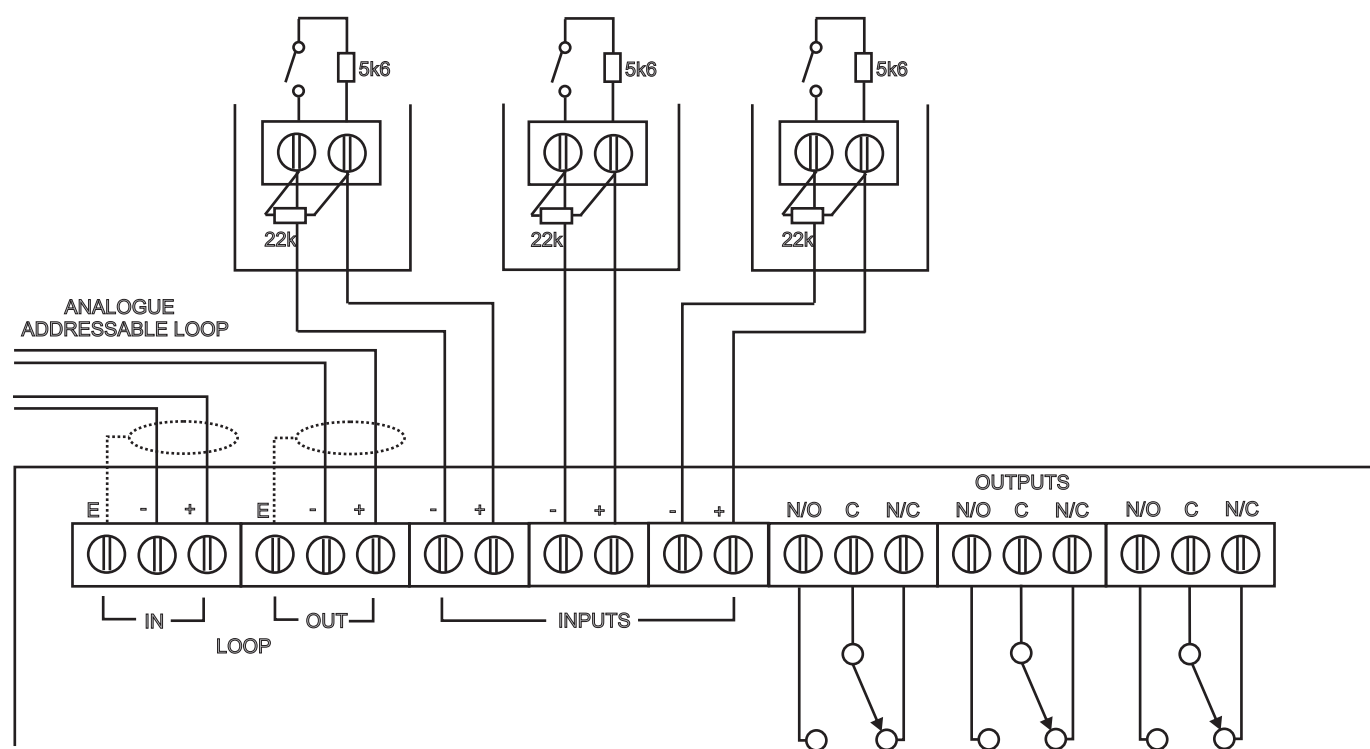
Notes:
1.   Only connect cable screen to its adjacent earth terminal.
2.   The end of line resistor must always be fitted, even if the inputs are unused.
3.   Monitored inputs can detect open or short circuit faults.
4.   Output relays are volt-free contacts and are not monitored.
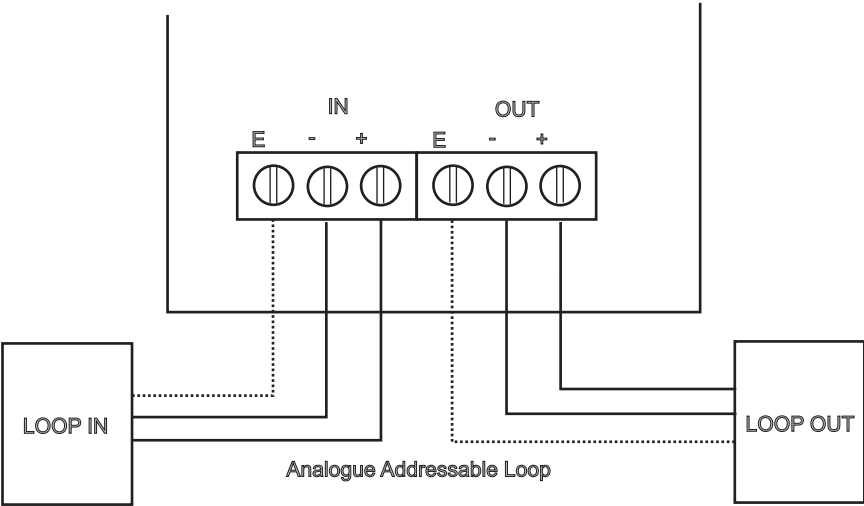
Loop Powered Beacon (MAB870)

Connection Details

Earth screen of cable to be continuous between beacons

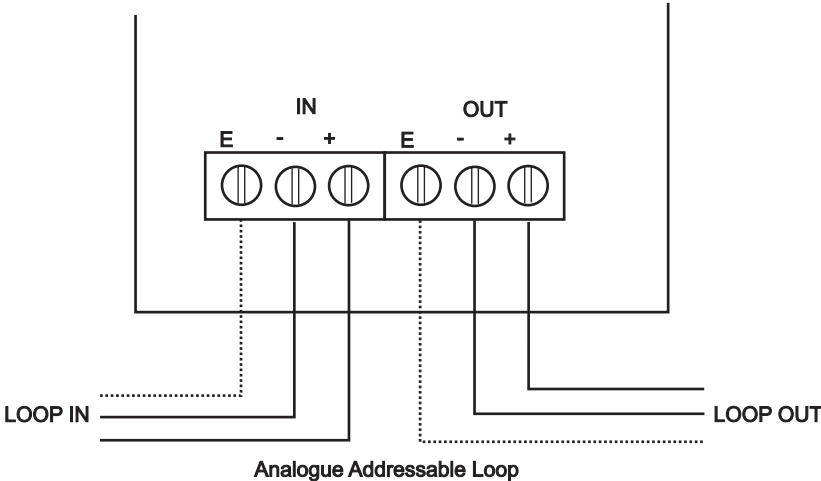Warning:

Do NOT use high voltage testers if any equipment is connected to the system.
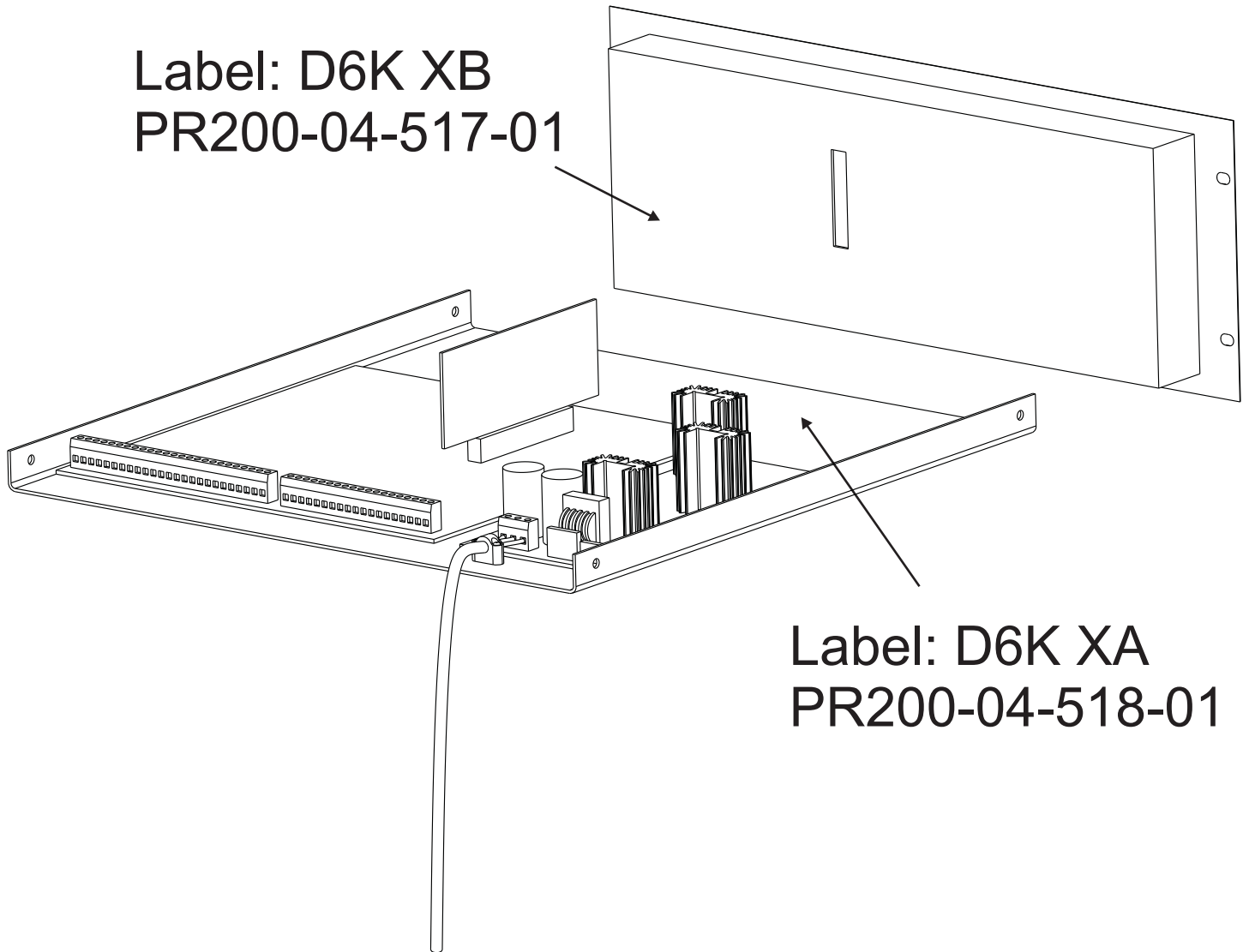
```
                    IN              OUT
                E   -   +       E   -   +
```

Analogue Addressable Loop

LOOP IN

LOOP OUT

Call Point

IN   OUT

E   -   +   E   -   +

LOOP IN

LOOP OUT

Analogue Addressable Loop

En54 Product Spec Label

Note: X=2 on a 2 Loop Panel
      X=4 on a 4 Loop Panel

Label: D6K XB
PR200-04-517-01

Label: D6K XA
PR200-04-518-01

Battery Disposal Instructions

Although batteries contain lead and small amounts of antimony and arsenic, they are safe if handled according to the accompanying guide. The battery cells must not be dismantled as this involves several hazards, which are best handled under controlled conditions, using specialised equipment. No attempt should be made to repair any batteries; they should be treated as disposable when they have outlived their use.

Batteries must be disposed of in accordance with current waste disposal and pollution legislation and in particular; The Environment Protection Act 1990, Special Waste Regulation 1996. It is recommended that the following authorities are contacted before any attempt is made to dispose of batteries; Environment Agency Local office, Local Authority Environmental Health or Waste Handling department.

CE Marking

CE

0832 – CPD – 1060   714h/01

Cooper Lighting and Safety Ltd
Wheatley Hall Road
Doncaster
South Yorkshire
DN2 4NB

09

EN 54-2 1997 & A1:2006

R6000
Control and indicating equipment for fire detection and fire
alarm systems for buildings
EN 54-2 Clause

Options Provided

7.8   Output to fire alarm devices
7.9.1   Output to fire alarm routing equipment
7.10.1   Output to automatic fire protection equipment (type A)
7.10.2   Output to automatic fire protection equipment (type B)
7.11   Delays to outputs
7.12.3   Dependencies on more than one alarm signal-Type C
7.13   Alarm counter
8.9   Output to fault routing equipment
9.5   Disablement of each point
10   Test condition

Other technical data: see Doc. PR200-04-513 held by the
manufacturer

CE

0832 – CPD – 1060   714h/01

Cooper Lighting and Safety Ltd
Wheatley Hall Road
Doncaster
South Yorkshire
DN2 4NB

09

EN 54-4 1997 & A1:2002 A2:2006

R6000
Power supply equipment for fire detection and fire alarm
systems for buildings

Other technical data: see Doc. PR200-04-513 held by the
manufacturer