CF1100
CF1200
COP1100
COP1200

INSTALLATION MANUAL

COOPER Fire

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Introduction

Introduction to the Manual

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

NOTICE

The operating system of the panel 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.

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Section 1

System Installation and Design

Introduction

The Panel 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.
The panels are available in either Single or Two Loop Configuration.

A loop connected and a network connected repeater panel is available (see equipment listing page 10)

A comprehensive range of ancillary devices is available to operate with the Panel, including Optical, 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 Panel system components has been specifically designed to operate as part of a Panel 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.

Project Planning

The following is a typical program and timetable for a Panel 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. Panel 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. The panel meets all the relevant requirements of BS5839 part 1: 2002. Installation planning is simplified by the fact that every addressable 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 Panel 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 200. this includes sensors, call points and all other addressable items (e.g. interfaces, loop repeaters etc.) When designing systems its recommended that allowances are made for future expansion, Short circuit isolators are incorporated into every loop device, including Smoke sensors, heat sensors, 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.

Repeater panels

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

Loop Loading System Verification

Loop load calculations should be carried out prior to instillation.

Compatible Equipment

COP range of system components		
Order Code	Description	Dimensions WXHXD (mm)
COP1100	1 Loop panel	495 x400 x 180
COP1200	2 Loop panel	495 x400 x 180
COP1100NC	1 Loop panel c/w network card	375 x 357 x 50
COP1200NC	2 Loop panel c/w network card	375 x 357 x 50
COP3000PR	Passive repeater loop connected	332 x 270 x 92
COP3000PRNC	Passive repeater network connected	332 x 270 x 92

COPP420	Optical smoke detector	101 Dia x 33D
COPH430	Multi mode heat detector	101 Dia x 43D
COPOH450	Combined photo thermal detector	101 Dia x 43D
CAB300	Common mounting base for analogue detectors	104 Dia x 22D
COPBGU	Flush Callpoint	85 x 85 x 30
COPBGU-S	Surface Callpoint	85 x 85 x 53
COPBGU-WP	Weatherproof Callpoint	108 x 108 x 65
COPBS	Sounder base	102 Dia x 40D
CASC	Cover for MAS850	102 Dia x 13D
COPWS	Wall sounder	105 x 105 x 95
COPWS-WP	IP66 Wall sounder	108 x 108 x 103
COPB	Add. Beacon	95 Dia x 50D
COPSBB	Sounder beacon base	115 Dia x 42D
COPSB	Wall sounder beacon	105 x 105 x 95
COPSBB-WP	Wall sounder beacon IP65	108 x 108 x 103
COPIO	3 Channel I/O device	147 x 88 x 57
COPMIO	1 Channel output unit (mains rated)	180 x 130 x 60
COPZMU	Zone monitor unit	150 x 89 x 58
COPSUM	Shop unit Interface	150 x 89 x 58
COPSI	Spur Isolator	112 x 41 x 33
COPSC	4 Way sounder circuit controller.	300 x 300 x 74

CF range of system components		
Order Code	Description	Dimensions (mm)
CF1100	1 Loop panel	495 x400 x 180
CF1200	2 Loop panel	495 x400 x 180
CF1100NC	1 Loop panel c/w network card	375 x 357 x 50
CF1200NC	2 Loop panel c/w network card	375 x 357 x 50
CF3000PR	Passive repeater loop connected	332 x 270 x 92
CF3000PRNC	Passive repeater network connected	332 x 270 x 92
CAP320	Optical smoke detector	101 Dia x 33D
CAH330	Multi mode heat detector	101 Dia x 43D
CAPT340	Combined photo thermal detector	101 Dia x 43D
CAB300	Common mounting base for analogue detectors	104 Dia x 22D
CBG370	Flush Callpoint	85 x 85 x 30
CBG370-S	Surface Callpoint	85 x 85 x 53
CBG370-WP	Weatherproof Callpoint	108 x 108 x 65
CAS380	Sounder base	102 Dia x 40D
CASC	Cover for MAS850	102 Dia x 13D
CAS381	Wall sounder	105 x 105 x 95
CAS381-WP	IP66 Wall sounder	108 x 108 x 103
CAB382	Add. Beacon	95 Dia x 50D
CASBB384	Sounder beacon base	115 Dia x 42D
CASB383	Wall sounder beacon	105 x 105 x 95
CASBB383-WP	Wall sounder beacon IP65	108 x 108 x 103
CSI350	Spur Isolator	147 x 88 x 57
CIO351	3 Channel I/O device	180 x 130 x 60
CZMU352	Zone monitor unit	150 x 89 x 58
CMIO353	1 Channel output unit (mains rated)	150 x 89 x 58
CSC354	4 Way sounder circuit controller.	112 x 41 x 33
CSUM355	Shop unit Interface	300 x 300 x 74
MCIM	Single channel input unit	35 x 18.5 x 63
MCOM	Single channel output unit	35 x 18.5 x 63
MCIM-C	Single channel input unit	35 x 18.5 x 63
MCOM-S	Single channel output unit	35 x 18.5 x 63
CGI420	4 - 20 mA Interface	147 x 88 x 57
MRIAD	Addressablen Remote Indicator	87 x 87 x 49

Equipment Compatibility

Sensors

Loop wired sensors must be of the Cooper soft addressed analogue type. Cooper conventional detectors can be connected via a Zone Monitor Unit or Shop Unit interface. The connection of other detector types via a Zone Monitor Unit or Shop Unit interface is not recommended,

Call points

Loop wired call points must be the Cooper series soft addressed analogue type, Cooper series conventional callpoints can be connected via a Zone Monitor Unit or Shop Unit interface.
The connection of other callpoint types via a Zone Monitor Unit or Shop Unit 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 an 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

There are Relay circuits built-in the standard Panel. Additional relays can be added to the system by using Cooper soft addressing, Single Channel or 3 Channel Input/Output Units.

Relays / Auto-dialers and auxiliary equipment

A wide variety of relays and other equipment can be connected to the system, but you should note the following constraints:

1) The Panel 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 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 Panel 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.

User configuration and maintenance facilities

The Panel 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

The Panel 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

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

The Panel 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 control panel will automatically scan the detection loop 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 the Panel is the ability to incorporate spurs of analogue devices which are fed from the 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 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 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

The Panel is designed to ensure simplicity of future expansion.
If an additional device is added after the system has been programmed, the Panel 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.

Multple Languages

The Panel supports a large number of languages as standard

Technical Specification

Power Specification

Mains Fuse	: 1.6A Slow Blow
Nominal Voltage	: 230 Vac + 10%, -15%
Nominal Current	: 75mA

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

Batteries

Number of Batteries	: 2
Manufacturer:	:YSP12-7
Capacity	: 7 Ah
Battery Fuse	: 4A Quick Blow (F4)
Maximum battery current;	: 3.5 Amps
Standby current (mA)	: 100 (1 loop)

Inputs

Addressable Loops

Max Number	: 1 or 2 (Panel depending)
Max Loop Load per loop	: 500 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	: 2
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
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	: <10 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

Technical Specification

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 the 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 the Repeater panels, mimic etc..
This output is short circuit protected

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Mechanical Specification

Weight including batteries	: 9 Kg
Weight excluding batteries	: 4 Kg
Dimensions (Standard batteries)	: 395mm(L) x 270mm(H) x 115mm(D)
Type of Material (backbox)	: Mild Steel (Power Coated)
Type of Material (Facia)	: PC/ABS
Flammability Rating	: UL 94 V0
Total Number of knockouts	: 11
Diameter of Knock out	: 20mm

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

Optional Functions as per EN54 P2&4

The Panel is Designed to the requirements 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 Sounder 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 2 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(relay).It is current limited to 30 mA.

Optional Functions as per EN54 P2&4

Under fault conditions or even if the Panel 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 Panel 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 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 Panel 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 site Installer.

Coincidence Detection (Option 7.12 of EN54 pt 2)

The Panel 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 Site Installer Software.

Alarm Counter (Option 7.13 of EN54 pt2)

The Panel has provision to record the number of instances that the CIE enters the fire alarm condition.
The information is available at access level 2.

TEST (Option 16 of EN54)

The Panels equipped with the test option and can be implemented by either Zone or Address.

Alarm Verification

The Panel has the facility for global alarm verification where the detector alarm decision is integrated over 30 seconds.

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.
2. The conductors should be 1.5mm minimum.
3. Multicore cable should not be used for detector wiring.
4. Different loops should NEVER be run within the same cable.
5. 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

Installation

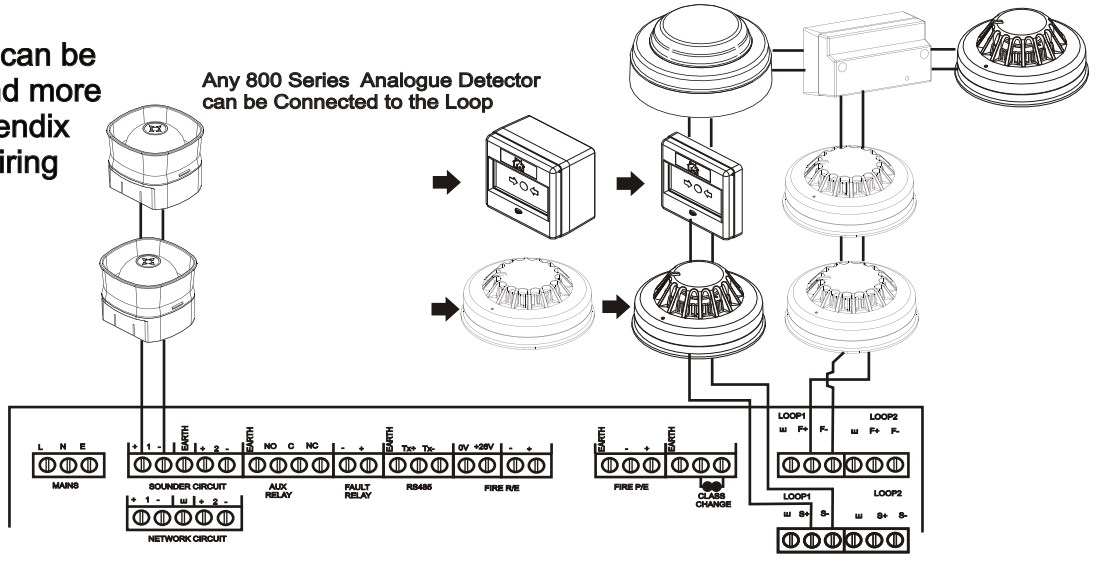
The panel should be installed in a clean, dry, reasonably well ventilated place, and not in direct sunlight. Temperatures in excess of +45°C and below -10°C may cause problems, if in doubt consult Technical Support. The panel should be located away from any potential hazard, in a position where it is 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 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.
- The Panel 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 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.

This example can be seen again and more clearly in Appendix (A) System Wiring



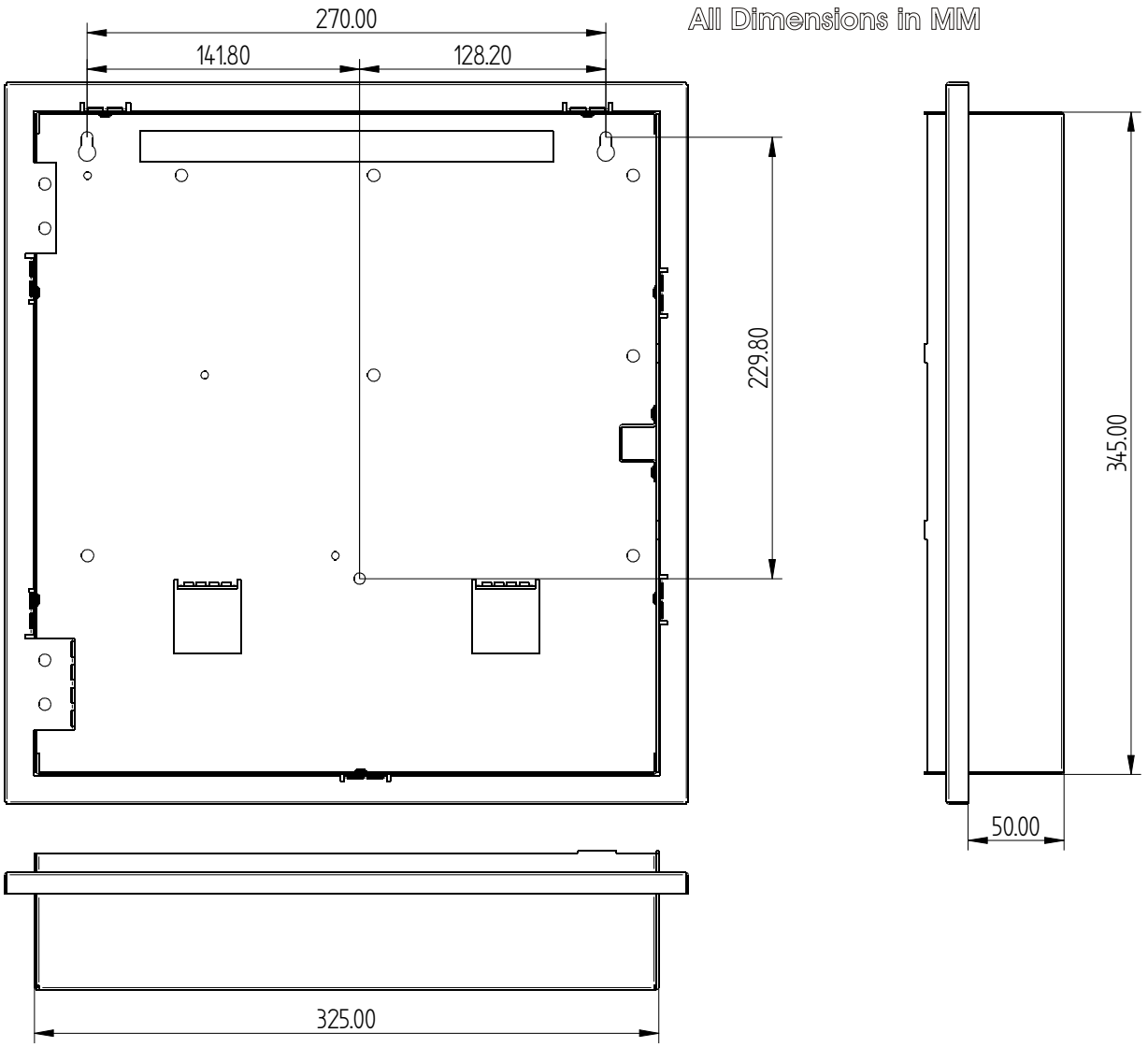
Fixing details

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 Backbox

The Panel can be surface mounted and recessed . To surface mount; drill three holes and fix the backbox to the wall using suitable screw fixings.



Installing Cabling

Once the backbox is mounted the next stage is to install the power and loop cables and fit the glands.

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) 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 Repeater Panels , Sounders Controller 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) The Zone Monitor Interface - Allows up to 20 conventional smoke detectors and unlimited Cooper call points.
2) The Spur Isolator Unit - Allows a zone of analogue Sensors and call points to be directly spurred off the loop.

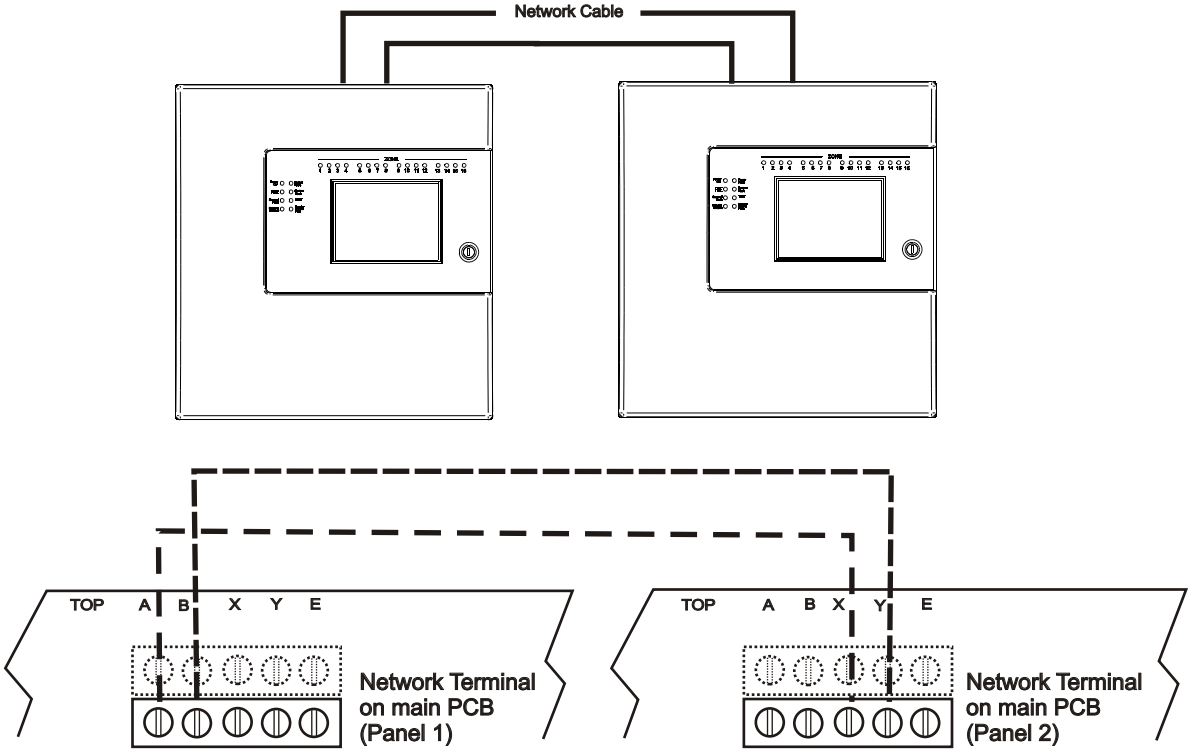
Networking

Up to One Hundred & Twenty Six Panels or repeaters can be networked together to operate as a single networked system. To achieve this each panel must be fitted with a network card (Optional Extra)
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.

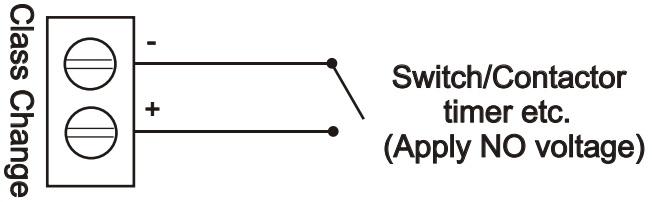
The recommended network cable for the network connection between panels is an enhanced Firetuf cable Manufactured by Draka cables (part number 910234.)
Screen continuity must be maintained throughout the entire network circuit including at each junction point. The screen should only be earthed at the 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. 102 Ω terminator should be fitted at the beginning and the end of the network. If the distance in the network exceeds 1KM the booster should be used. The booster requires 24V local supply, which can be connected to nearest Addressable Panel



Input/Outputs

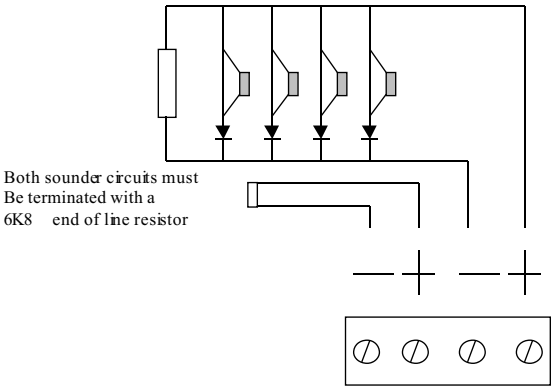
PANEL INPUTS
Class Change: (OPTION NOT REQUIRED BY EN54)
A pair of terminals are provided for class change. By shorting these terminals together (e.g. Switch, Time clock) the alarm will sound (Panel sounders + loop sounders only). The Panel will not indicate a Fire. The alarm will cancel when the short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

WARNING: NO VOLTAGE SHOULD BE APPLIED TO THIS INPUT



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



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 Panel 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

Functions: See User Manual for full details.

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 this 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, by loosening the screws behind printer door and opening the hinged front from the right hand side.

Disconnect the mains supply and check that the battery 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.

Every 5 Years

Replace sealed lead acid battery.

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

Printer Paper Order Code: OPTION NOT AVAILABLE

Section 2

Commissioning

Commissioning

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. This information can also be printed on the optional printer.

For details of how to access commissioning mode, please refer to page 64

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

Panel 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 Panel Sensor 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.

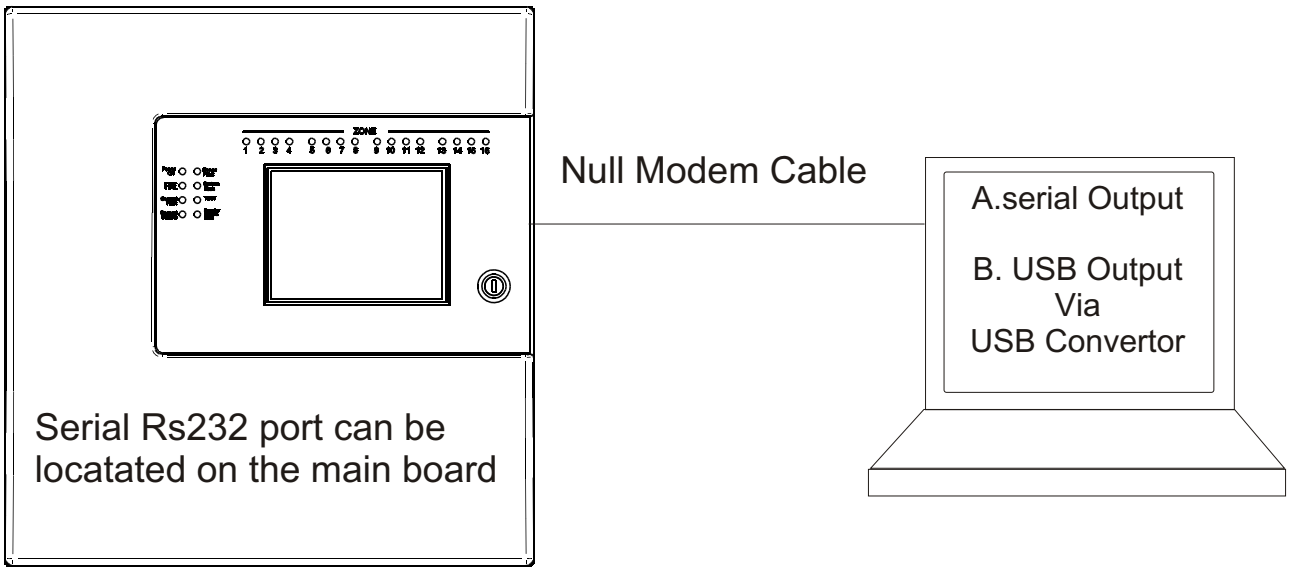
Up/downloading using PC Software

The PC Software enables the address, location text, device type and any comments to be downloaded to the panels.

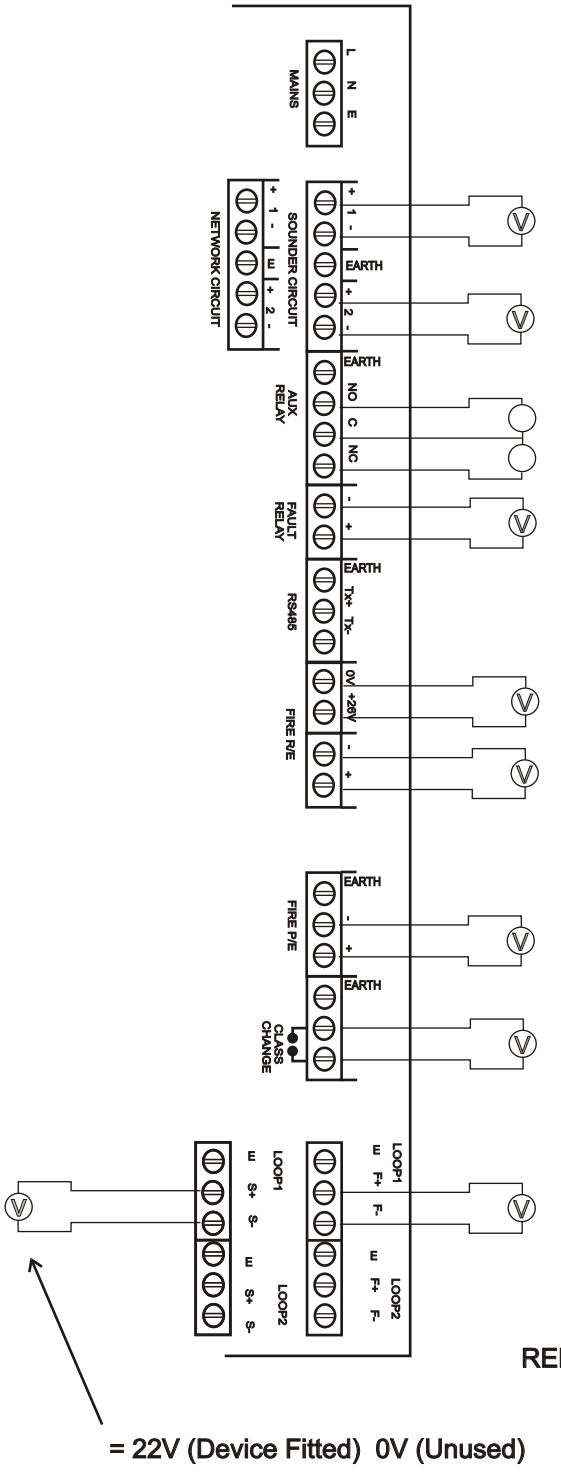
The software can download to all 126 networkable Panels.

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



= -0.6V Mon +28V Fire (Depends on Programming)

= -0.6V Mon +28V Fire (Depends on Programming)

} See Scope Plots for Monitoring Conditions

= O/C Normal S/C Fire

= S/C Normal O/C Fire

= 12V No Fault 0V (short CCT) Fault

= -O.6V-No Fire 28V Fire

= -O.6V-No Fire 28V Fire

= -O.6V-No Fire 28V Fire

} No Fires See Scope Plots for Monitoring Condition

= 28V (Open Circuit, No Input)

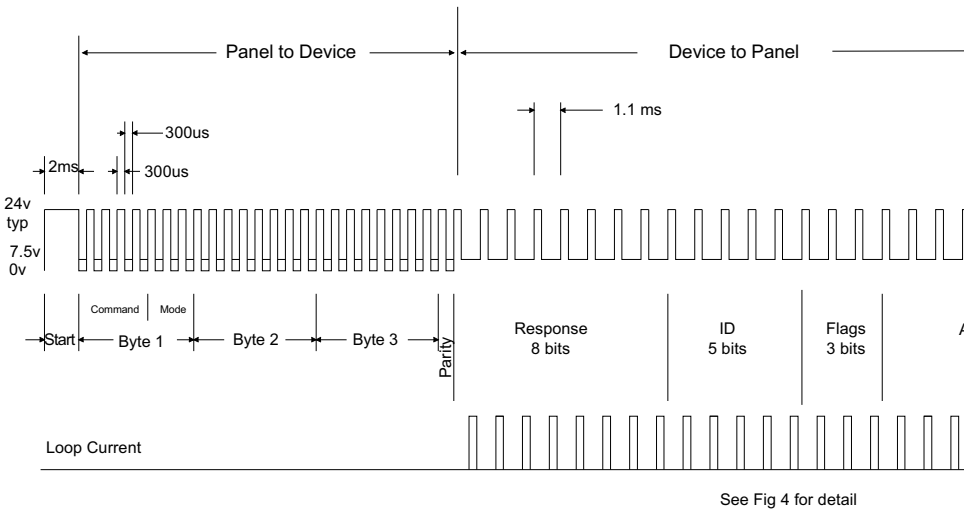
= 22V (Device Fitted) 0V (Unused)

REPEAT FOR LOOP 2

= 22V (Device Fitted) 0V (Unused)

Protocol Format

Fig. 1 Full Protocol Format **(Not including Repeaters)**



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.

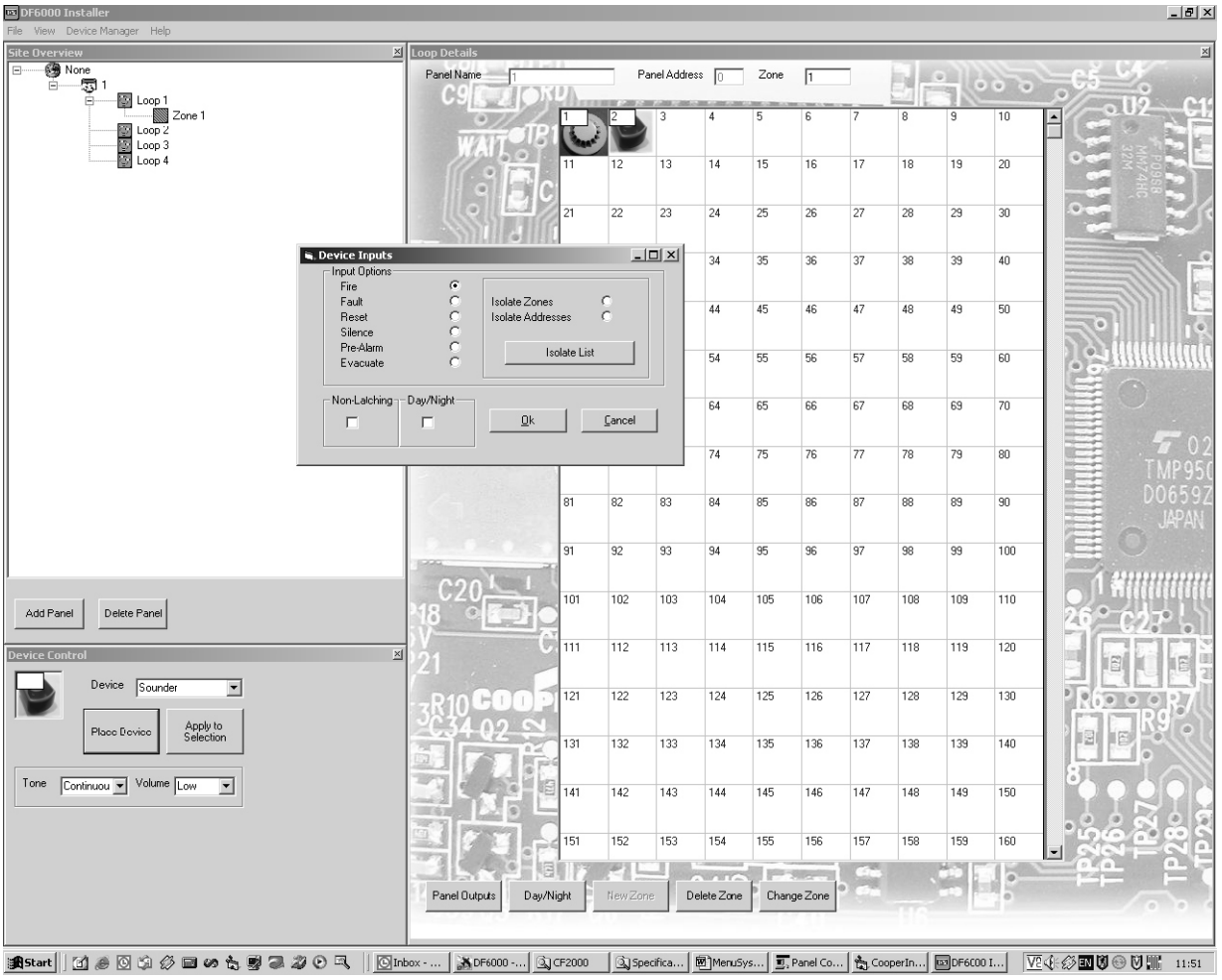
Alarm Interrogate Command:
This command is seen by all devices on the loop, so no address byte is required, and is periodically sent out during normal communications. This command allows any device experiencing an alarm condition to respond, with call points given the highest priority, reporting their 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; I/P to the 'out-board' side. 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 R?? on the Loop Driver Card; probe 0V clip to the 'in-board' side of the resistor; I/P to the '????????' side. 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.

Day / Night
devices affected :

Optical-Heat -> mode changes between heat or optoheat mode

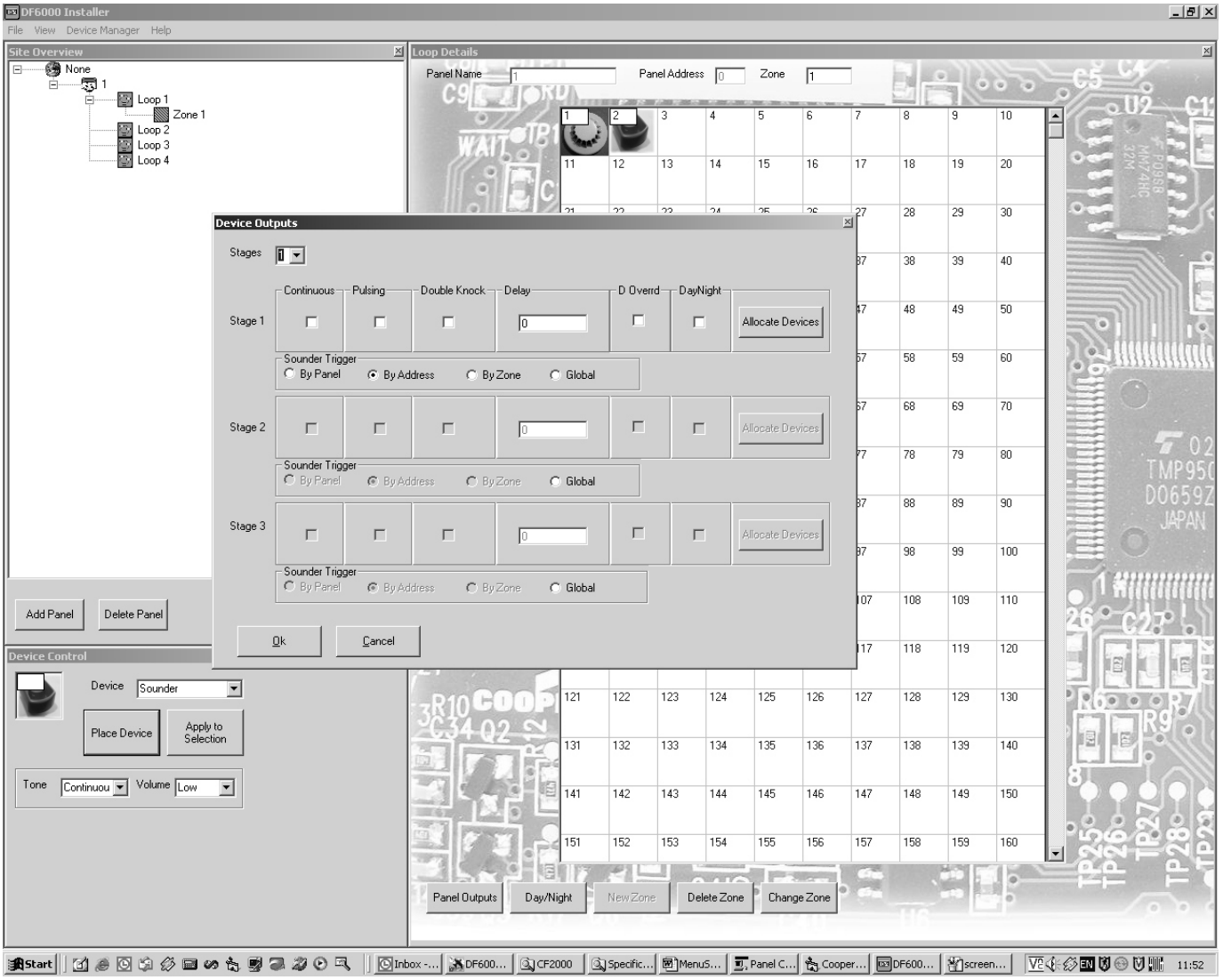
Heat -> mode changes between Heat A1R and Heat CS

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



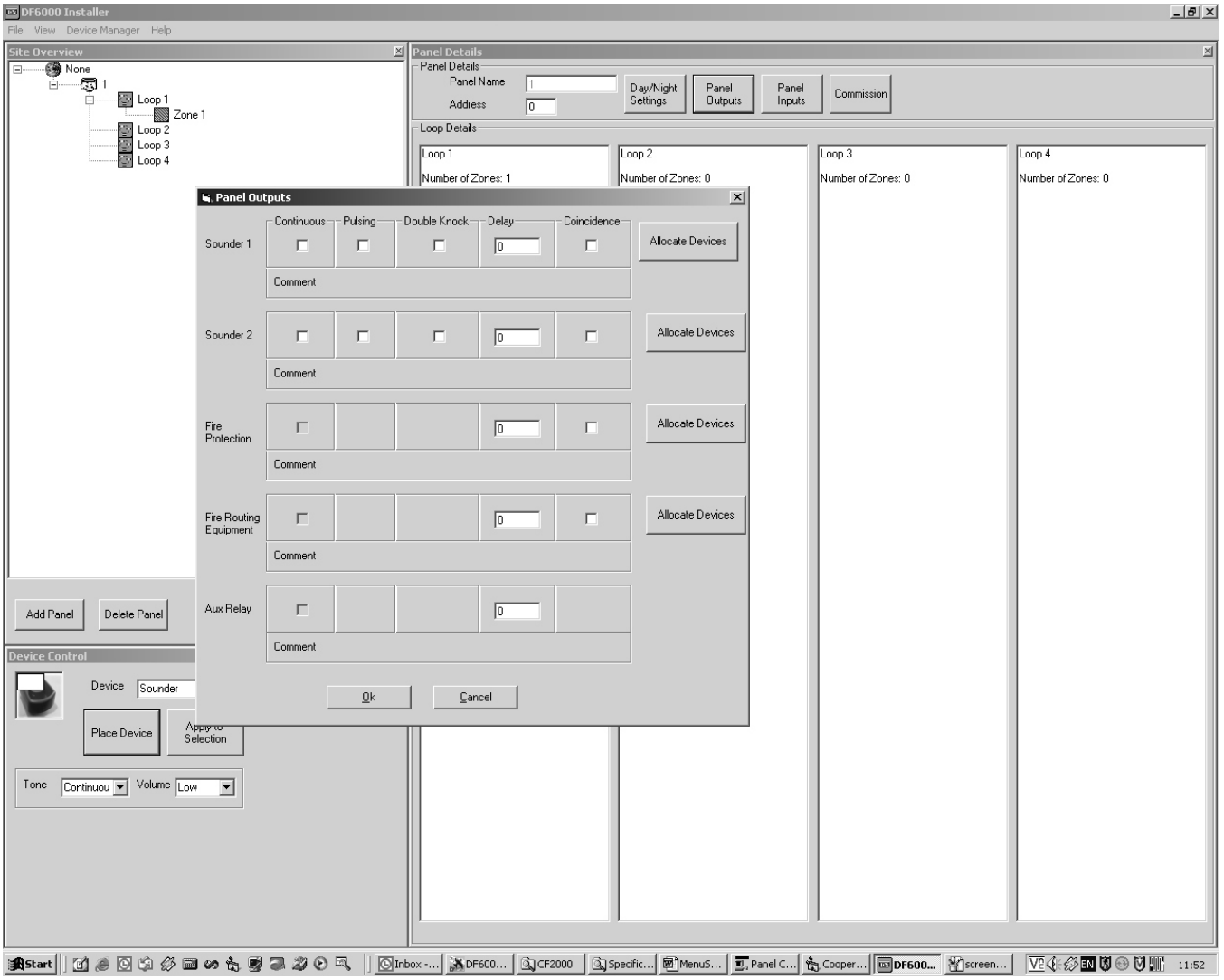
Device Outputs

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.

D 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.

DayNight
See coincidence detection below

PC Comissioning Software



Panel Outputs

Coincidence detection

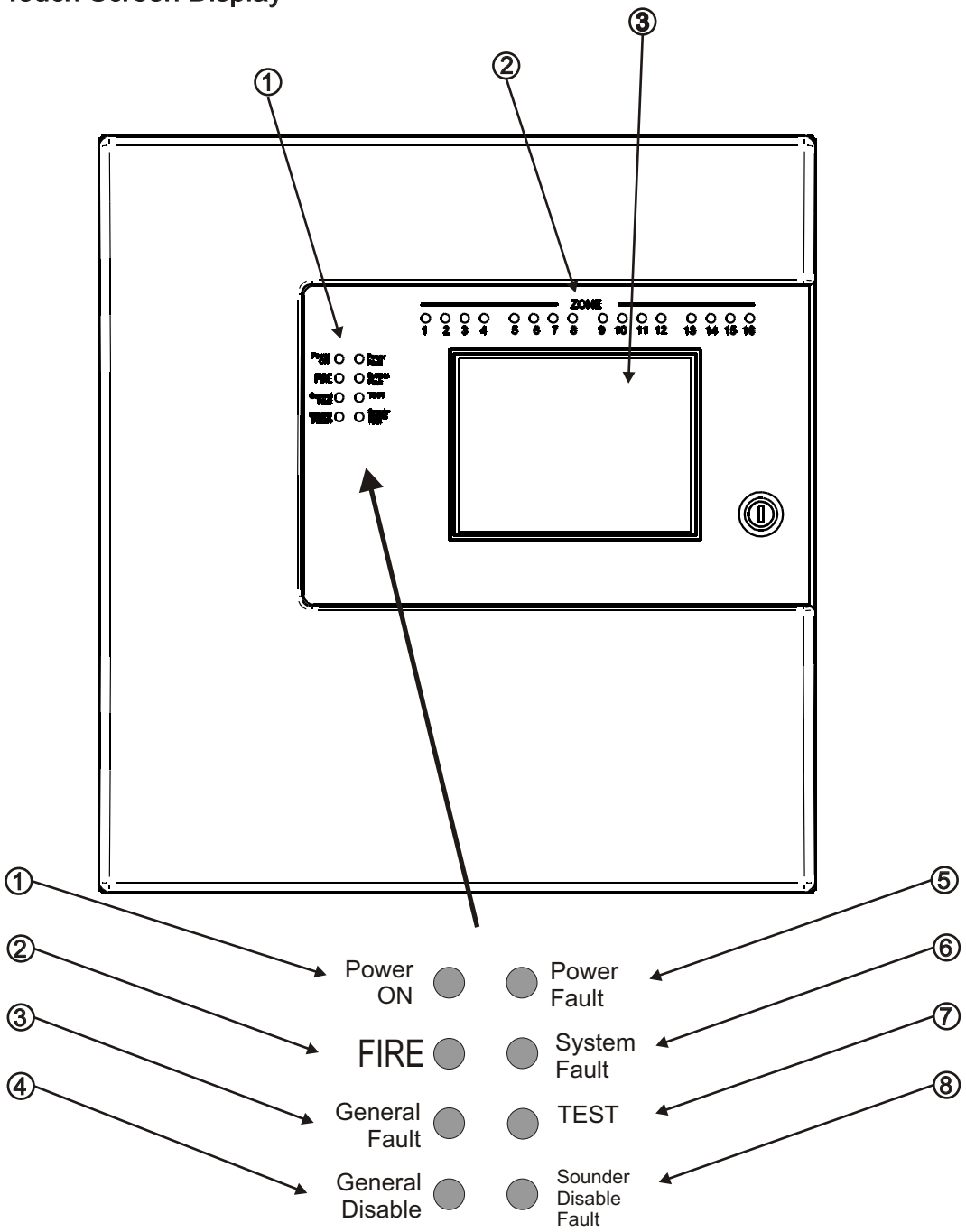
Each panel output can be assigned a unique list of zones derived from the zones available on the loop, to activate this output, two unique zones from this list have to be be in fire or alternatively any zone outside this list will trigger the output also. When the 'coincidence' box is checked - the 'Allocate device' button allows the user to populate this list.

Section 3

Panel Controls & Indicators

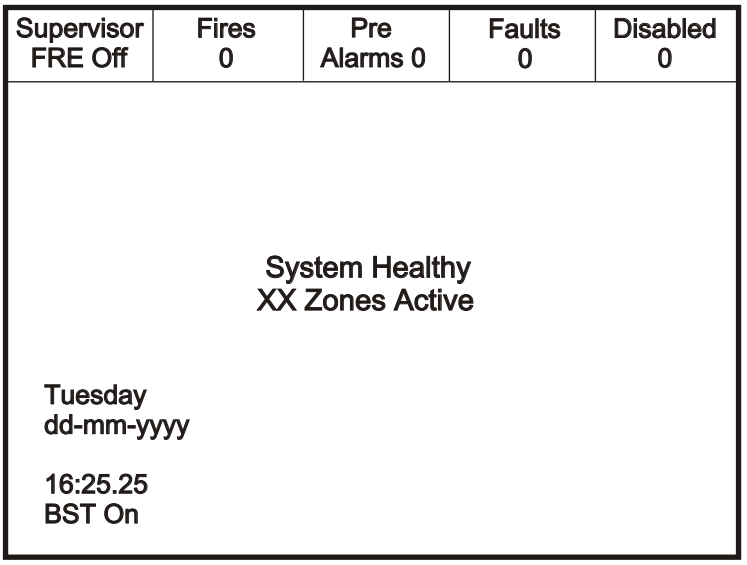
Panel Controls & Indicators

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	General Disable	Monitors Fire Panel for Faults	Report Fault to Service Dept
5	Power Fault	Monitor Internal Battery Charger	Report Fault to Service Dept
6	System Fault	Monitors Fire Panel for Faults	Report Fault to Service Dept
7	Test	Supervisor/Engineer is Testing the Systems	Report to System Supervisor
8	Sounder	Indicates the Sounder Status	Check with System Supervisor

Touch Screen Display



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.

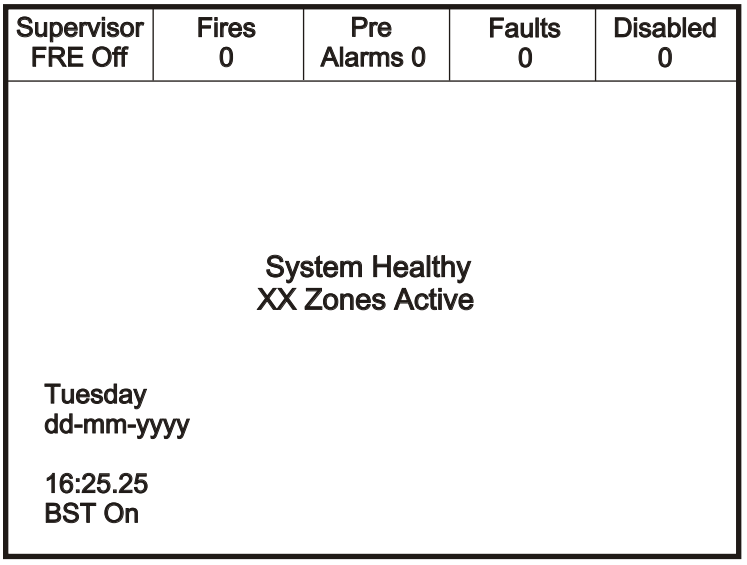
The last 2 lines are normally used to display the total number of events, but they are also used for scrolling fire conditions, faults, pre alarms or disabled devices independently or for displaying a reduced menu when in fire condition.

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

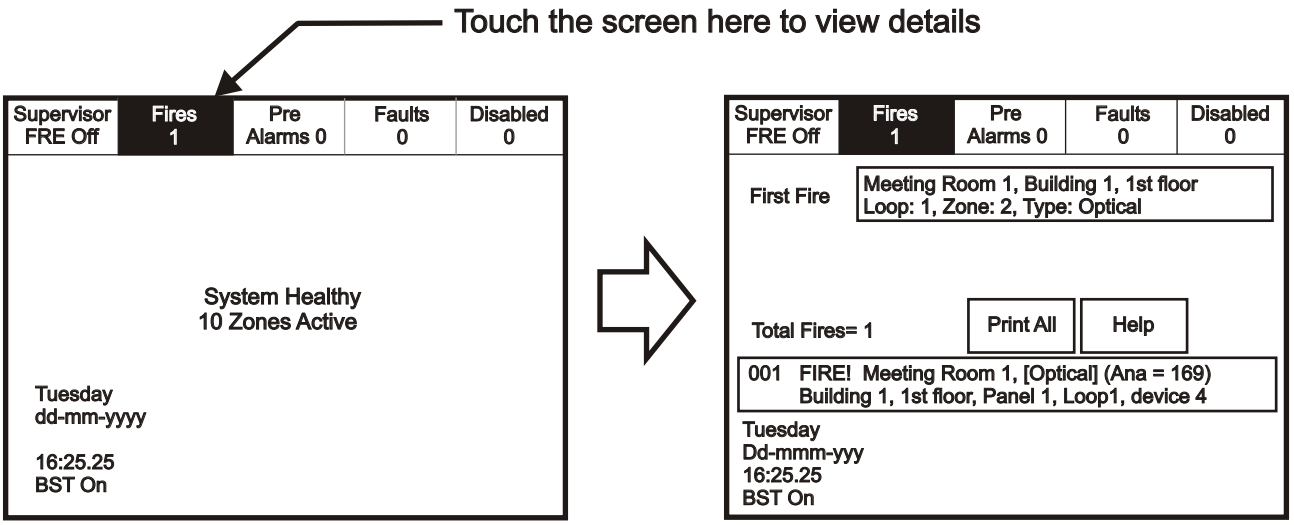
Use the Touch Screen to scroll through all active events on the system by using the SCROLL UP and SCROLL DOWN buttons (available at access level 1). You can display the contents of the log and also view details of any fires, faults, pre-alarms,faults or disablements.. When displaying the system menu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

Panel Operation

The Panel 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.

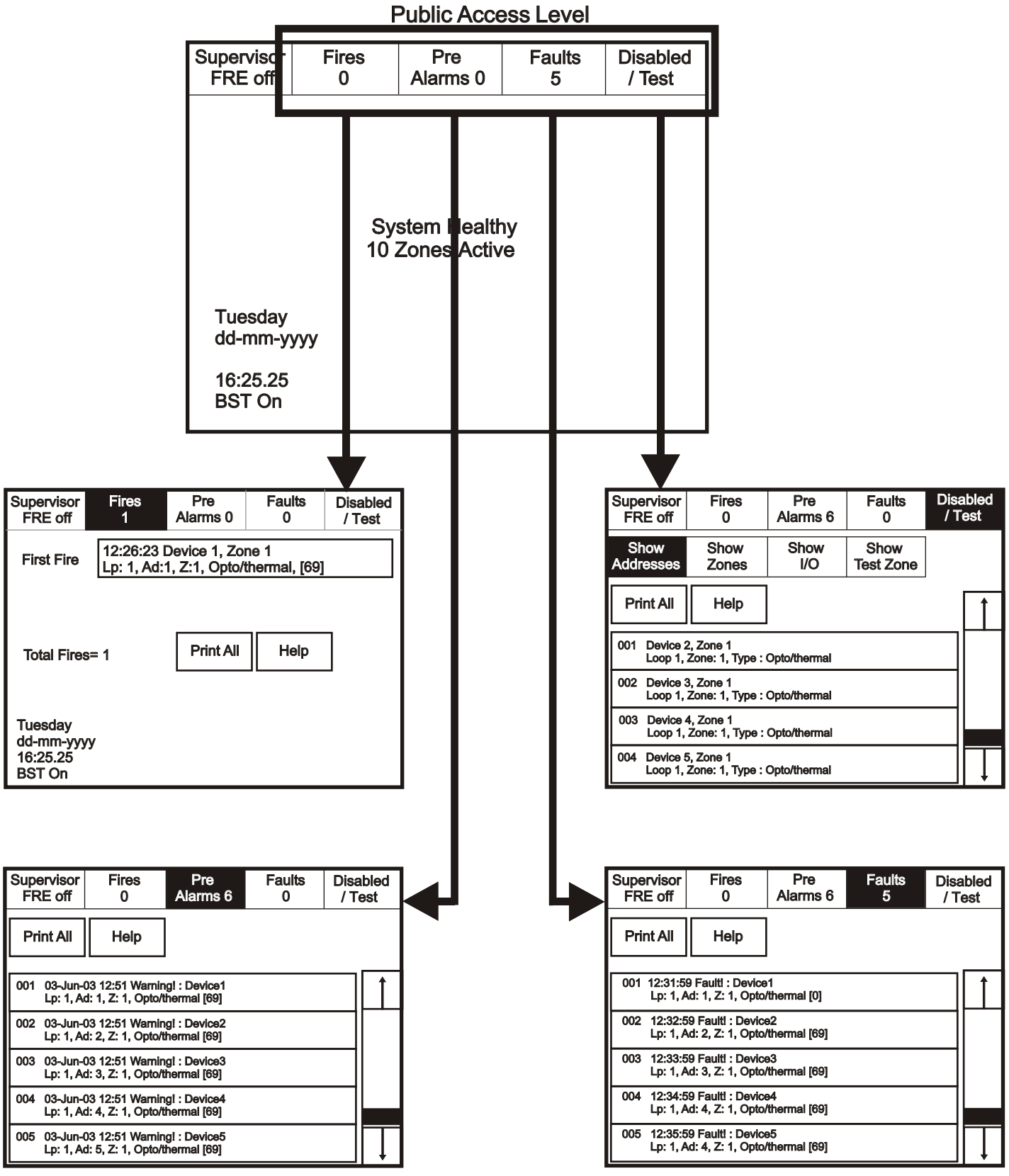


Pressing a field will highlight it and forward to the next screen as shown below.



Public Access Level 1

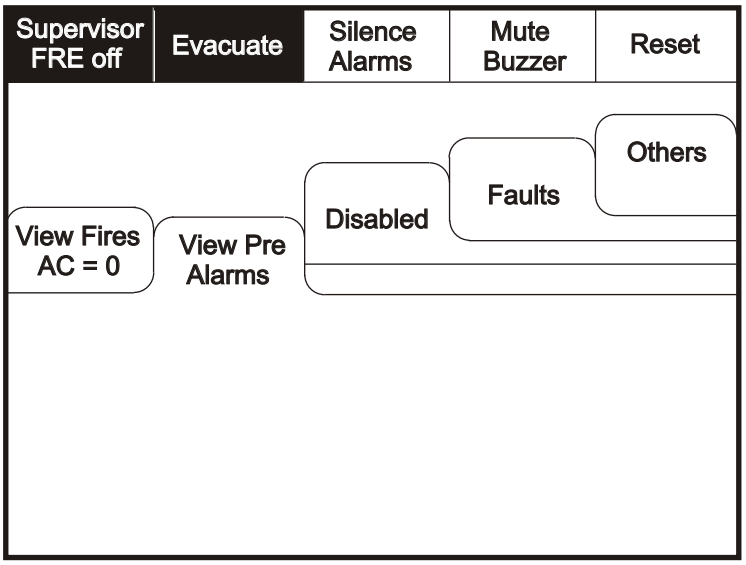
Public access level does not require an access code and allows anybody to review the functions outlined below.



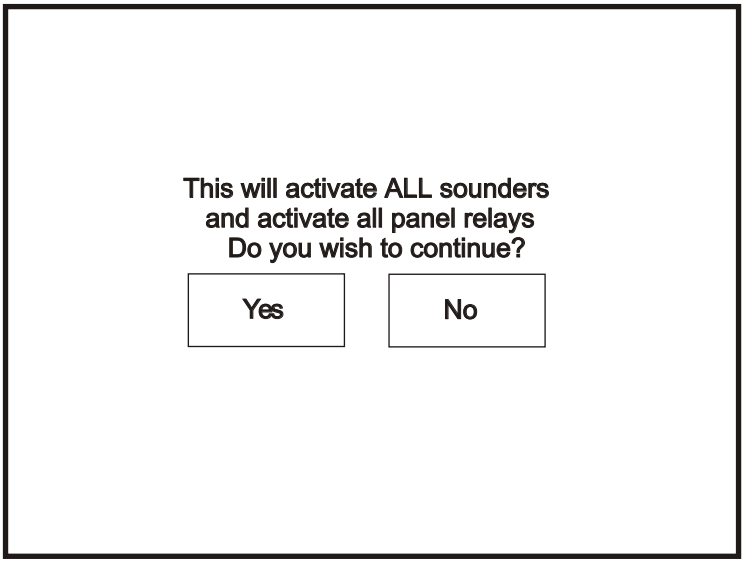
Evacuate (Access Level 2)

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.



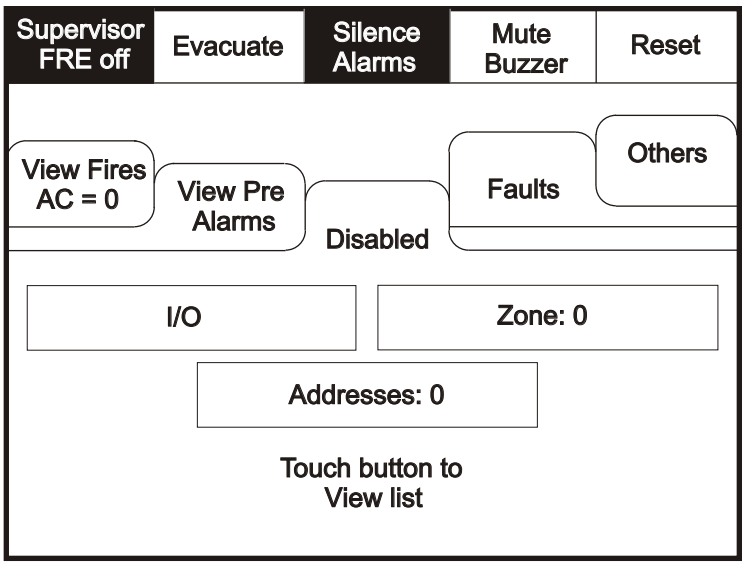
Select “Yes” to evacuate the building.



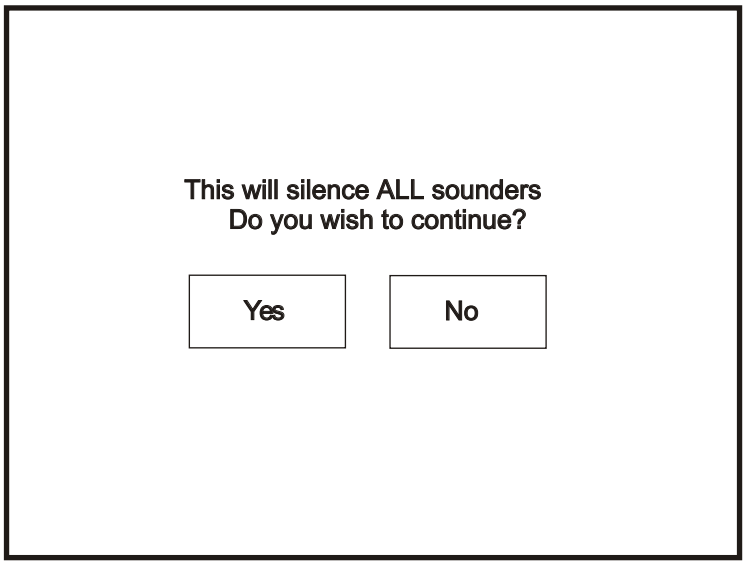
Silence Alarms

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 the screen.



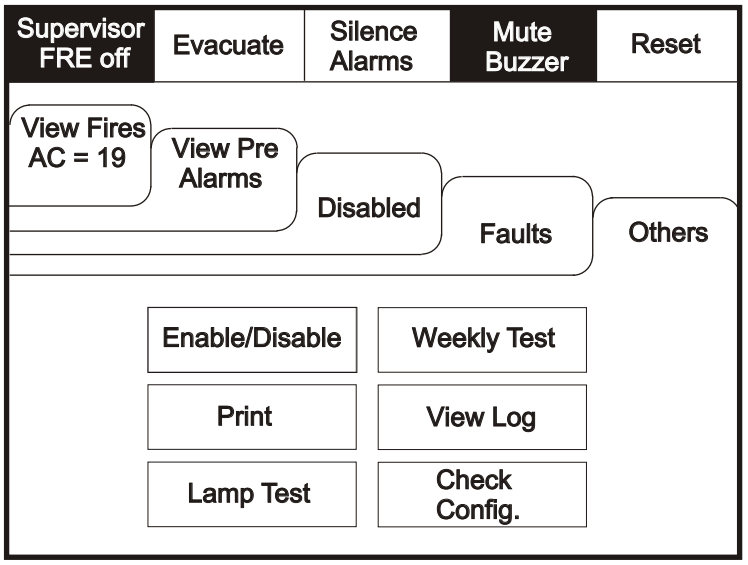
Select “yes” to silence Alarm.



Mute Buzzer

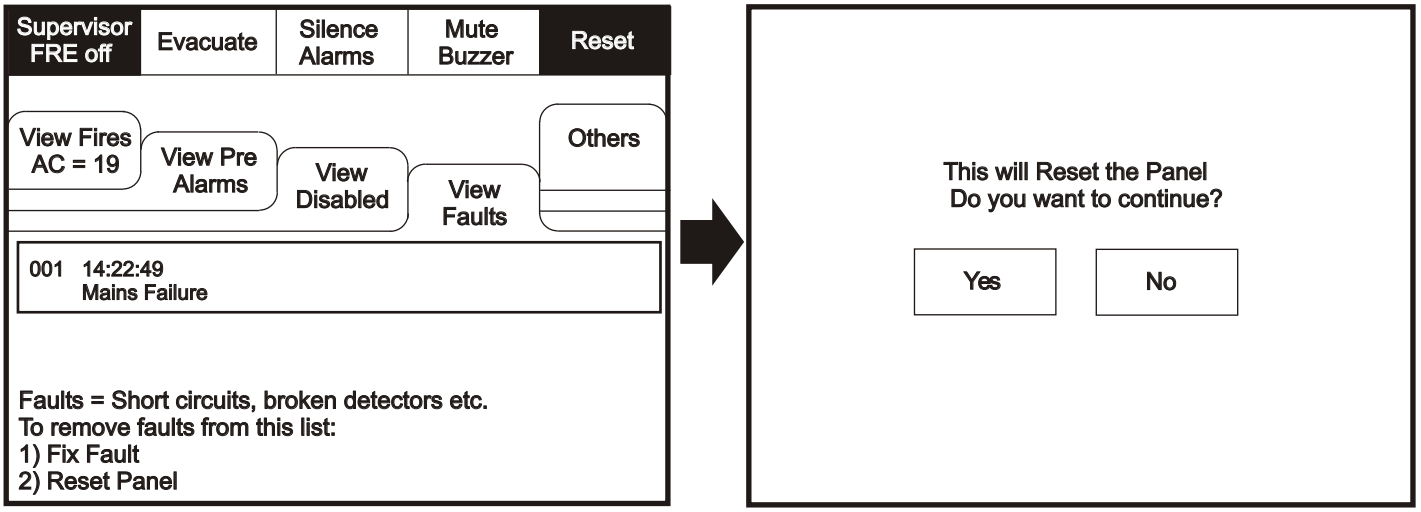
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the passcode.

Enter the Supervisor Mode and Select “Mute Buzzer” from the Top Menu



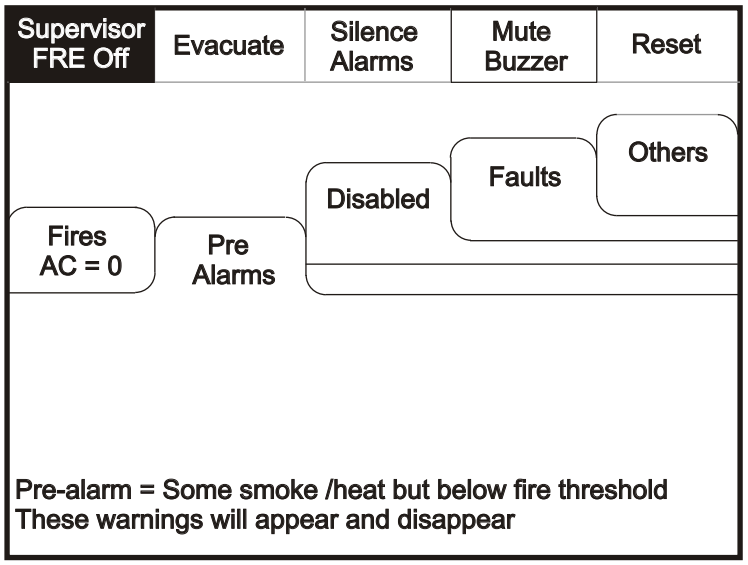
Reset

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



Pre-Alarms

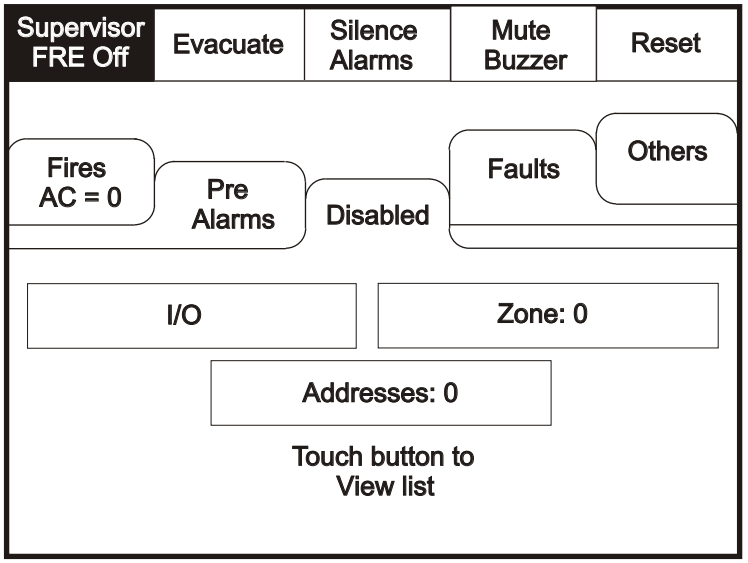
Enter the Supervisor Mode and Select “Pre-Alarms” tab.



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

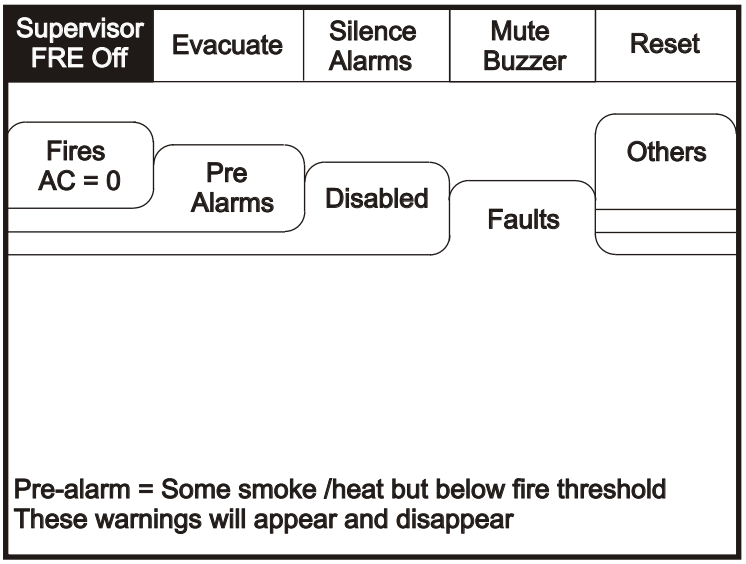
Enter the Supervisor mode and Select the “Disabled” tab.



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

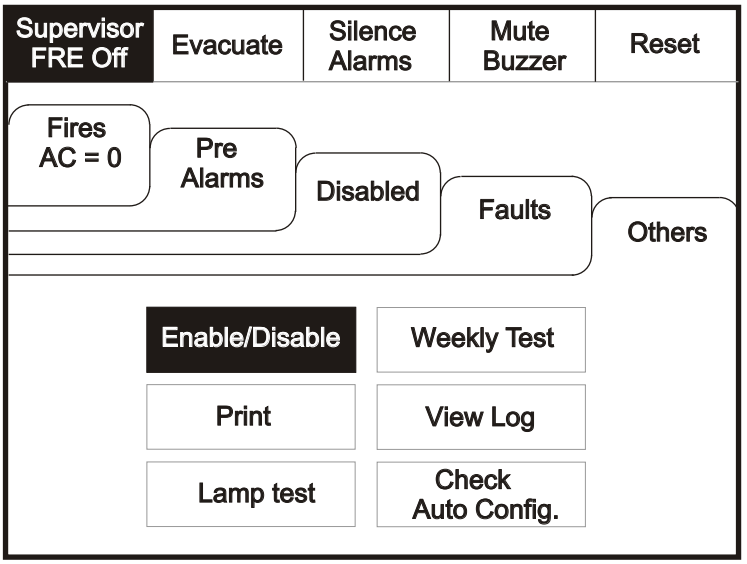
Enter Supervisor Mode Passcode and select “Faults” tab.



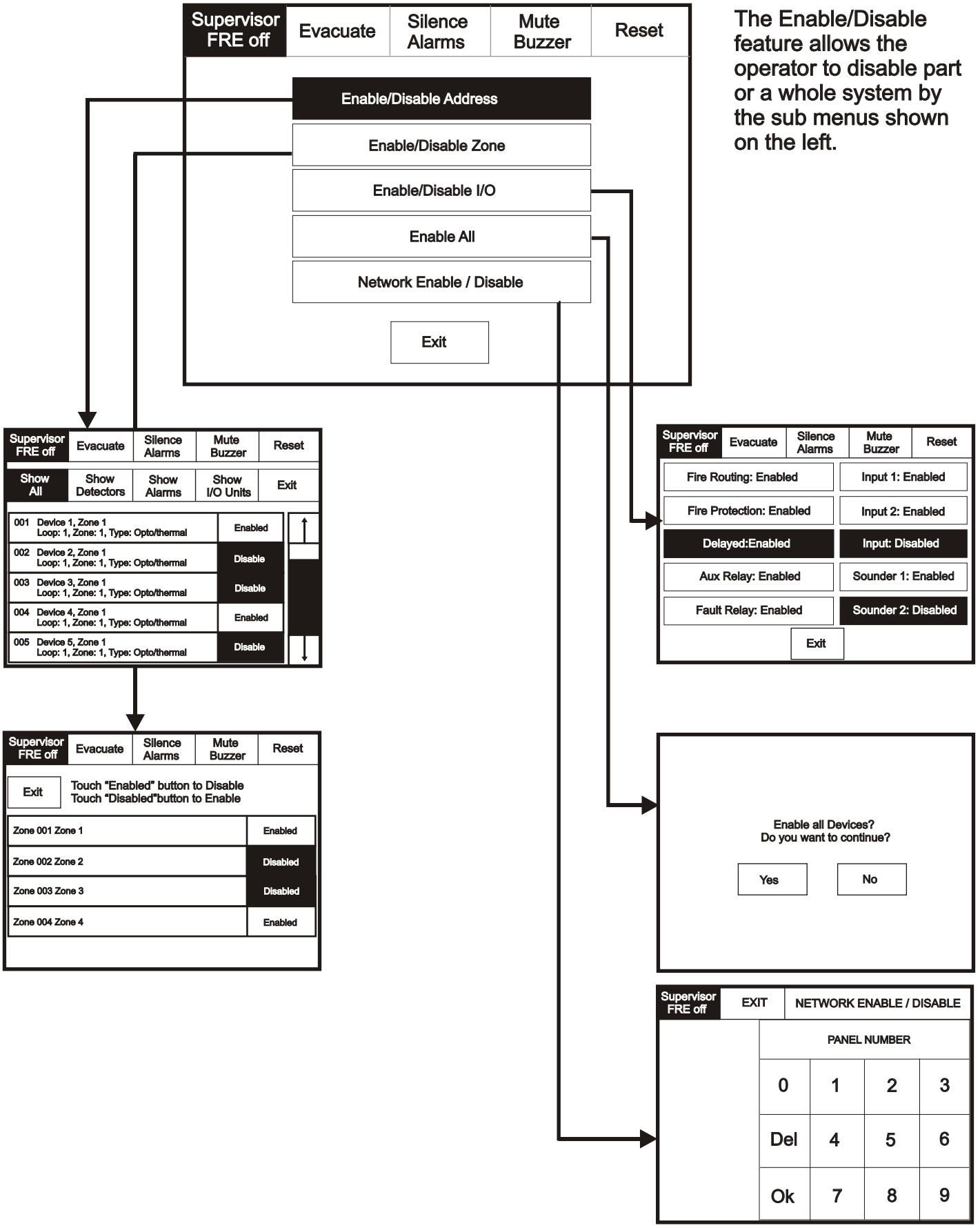
Enable/Disable (others Menu)

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.



Enable/Disable

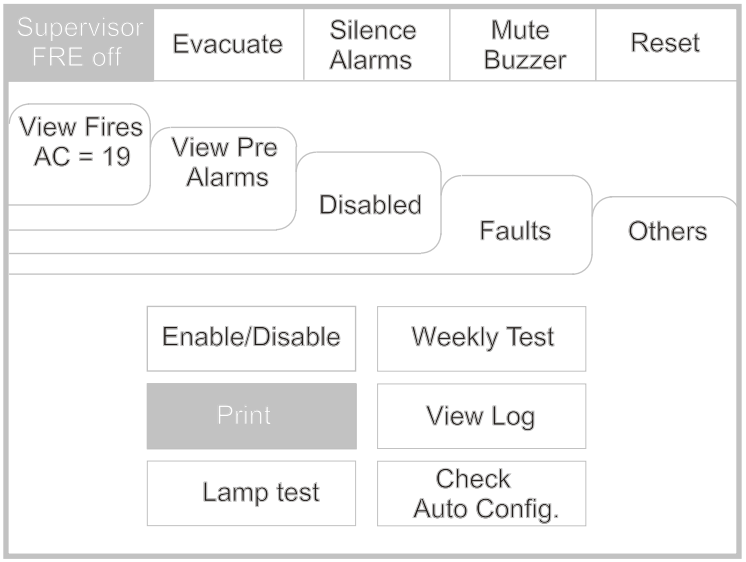


The Enable/Disable feature allows the operator to disable part or a whole system by the sub menus shown on the left.

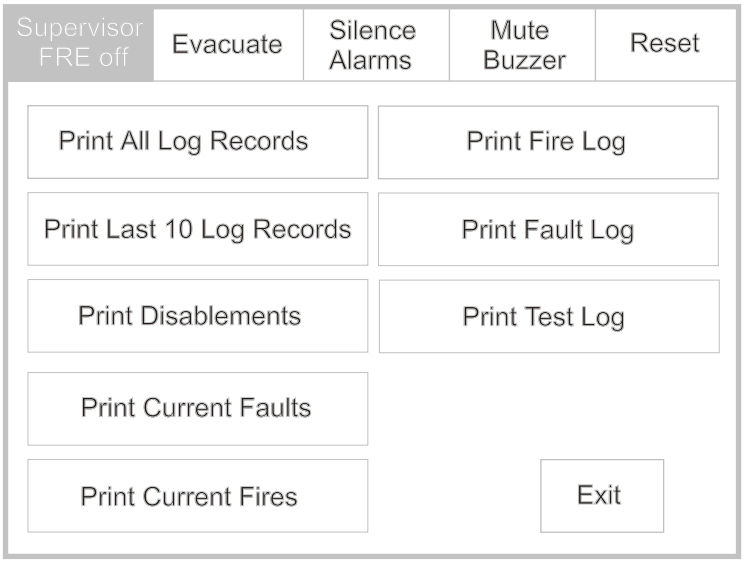
Print (function not availible)

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”



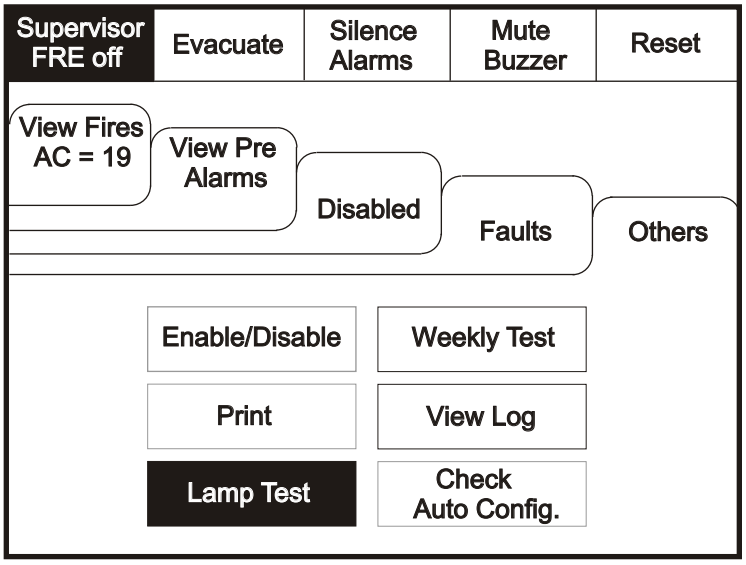
Select the Information You wish to Print from the Buttons Listed.

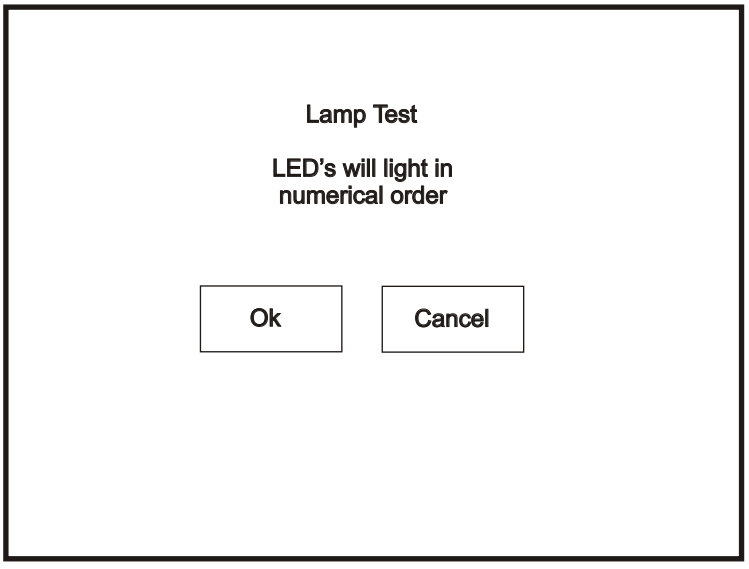


Lamp Test

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.

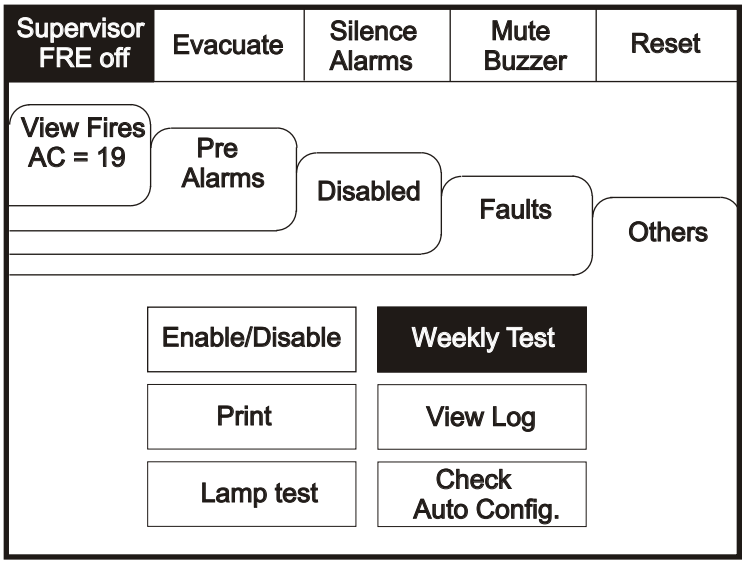
Enter the Supervisor Mode and Select the “Others” Tab. Press “Lamp Test”



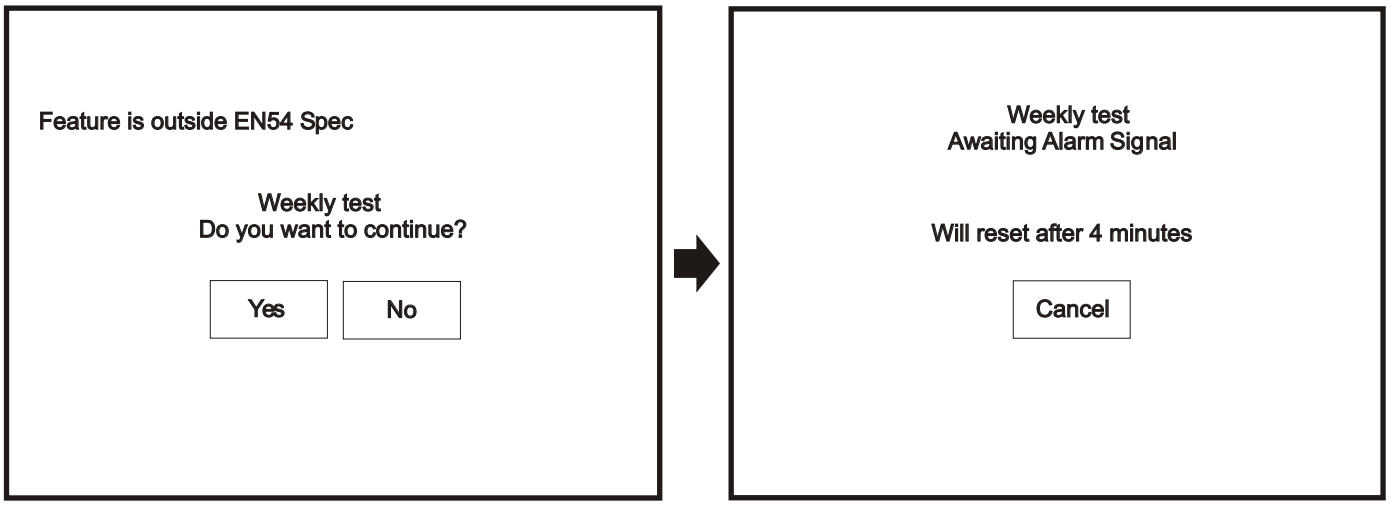


Weekly Test

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.



Weekly test is now in progress.

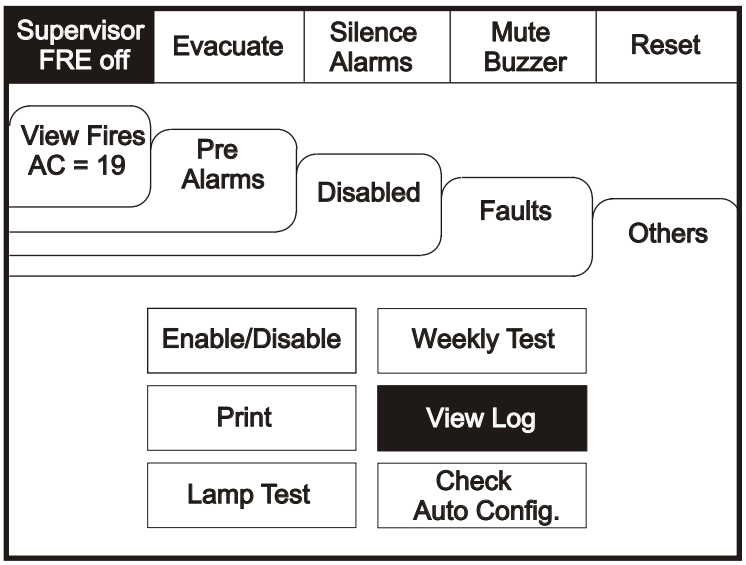


The panel will automatically return to the system healthy screen once the weekly test has been completed.

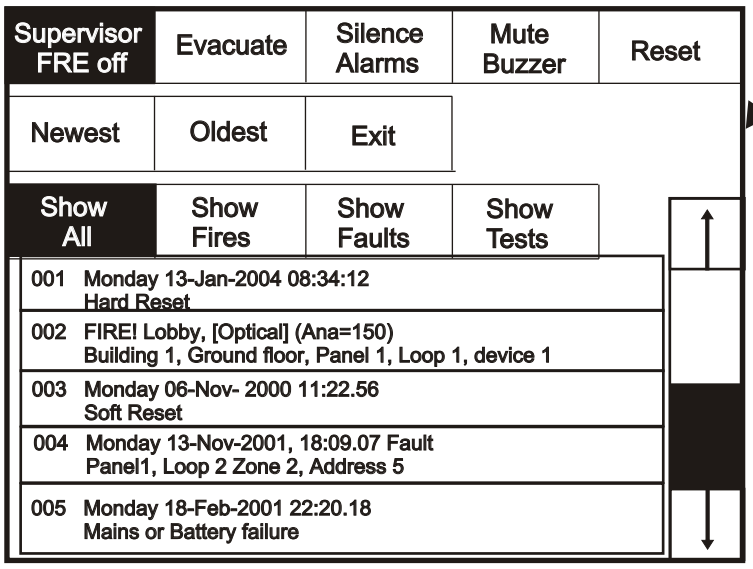
Viewing Events

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.



Use the scroll bar to view the list of upto 1000 events.



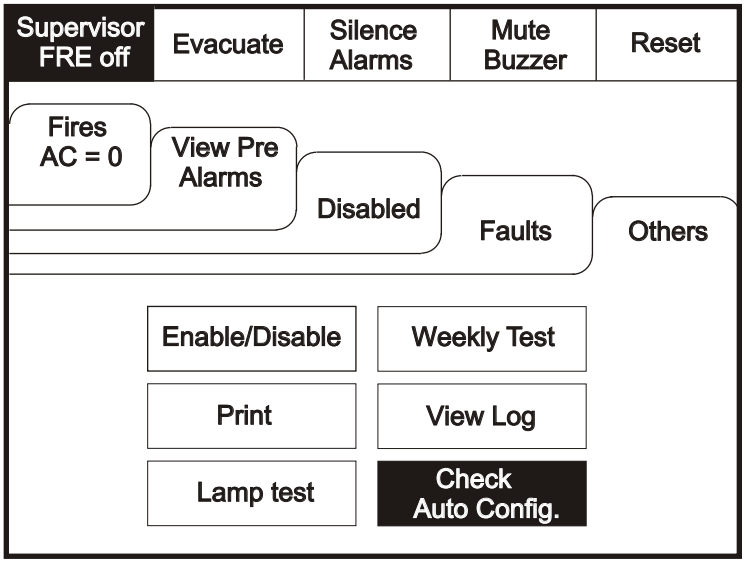
Events can be sorted by selecting from the sort option menu.

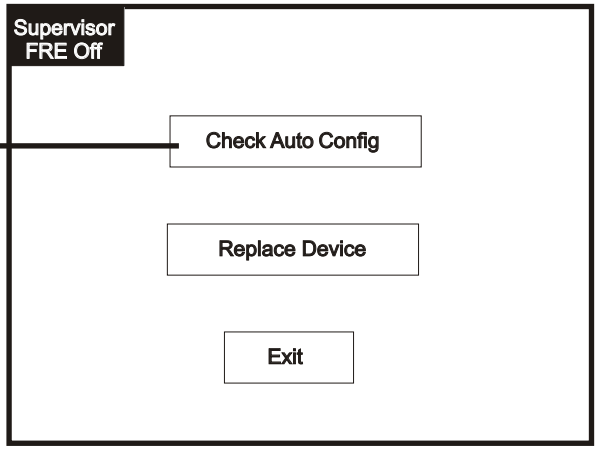
The Panel event log stores up to 1000 events including, fires, faults, resets and address changes. Once the maximum 1000 events has been reached Panel will automatically overwrite the oldest event every time a new event is stored. The event log can only be reset by an approved service engineer.

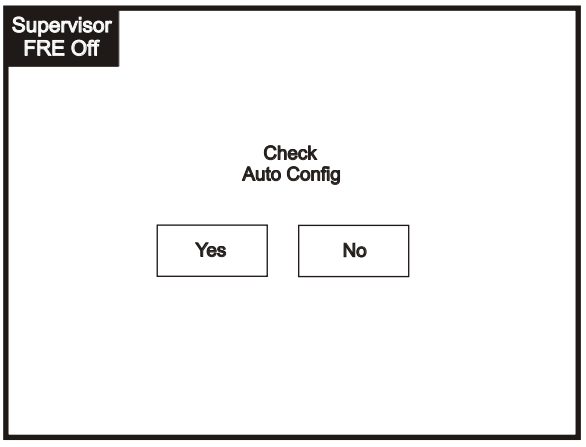
Check Auto Config

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.

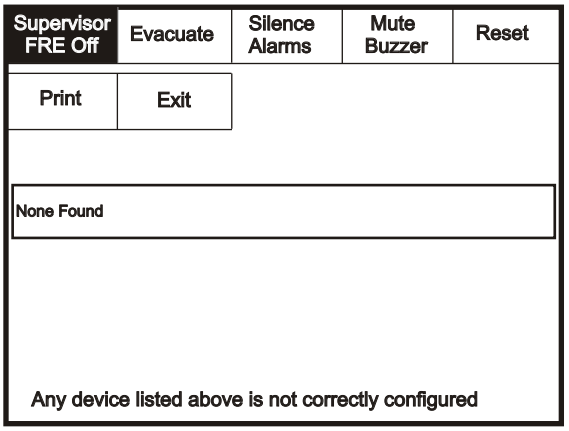
Enter the Supervisor Mode and Select the “Others” Tab. Press Check Auto Config. This feature will scan the loop and pinpoint the exact location of any break in the loop wiring and will also identify any changes in the loop configuration (e.g. New devices added or changed device types).





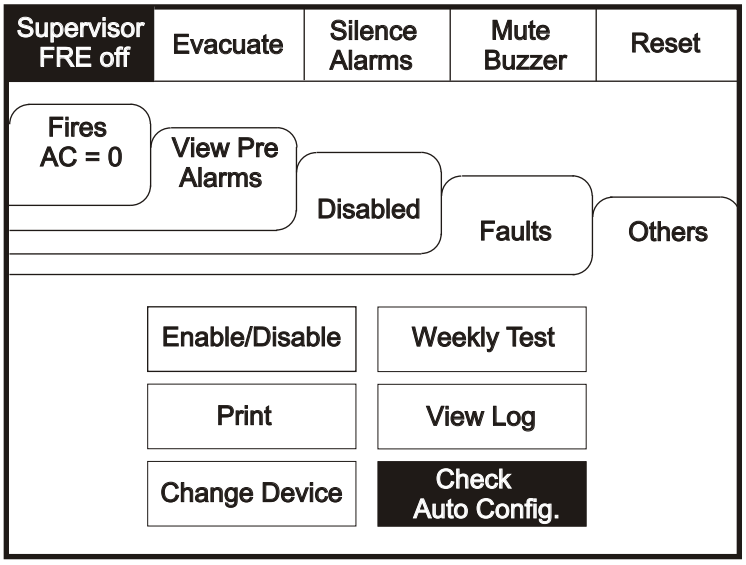


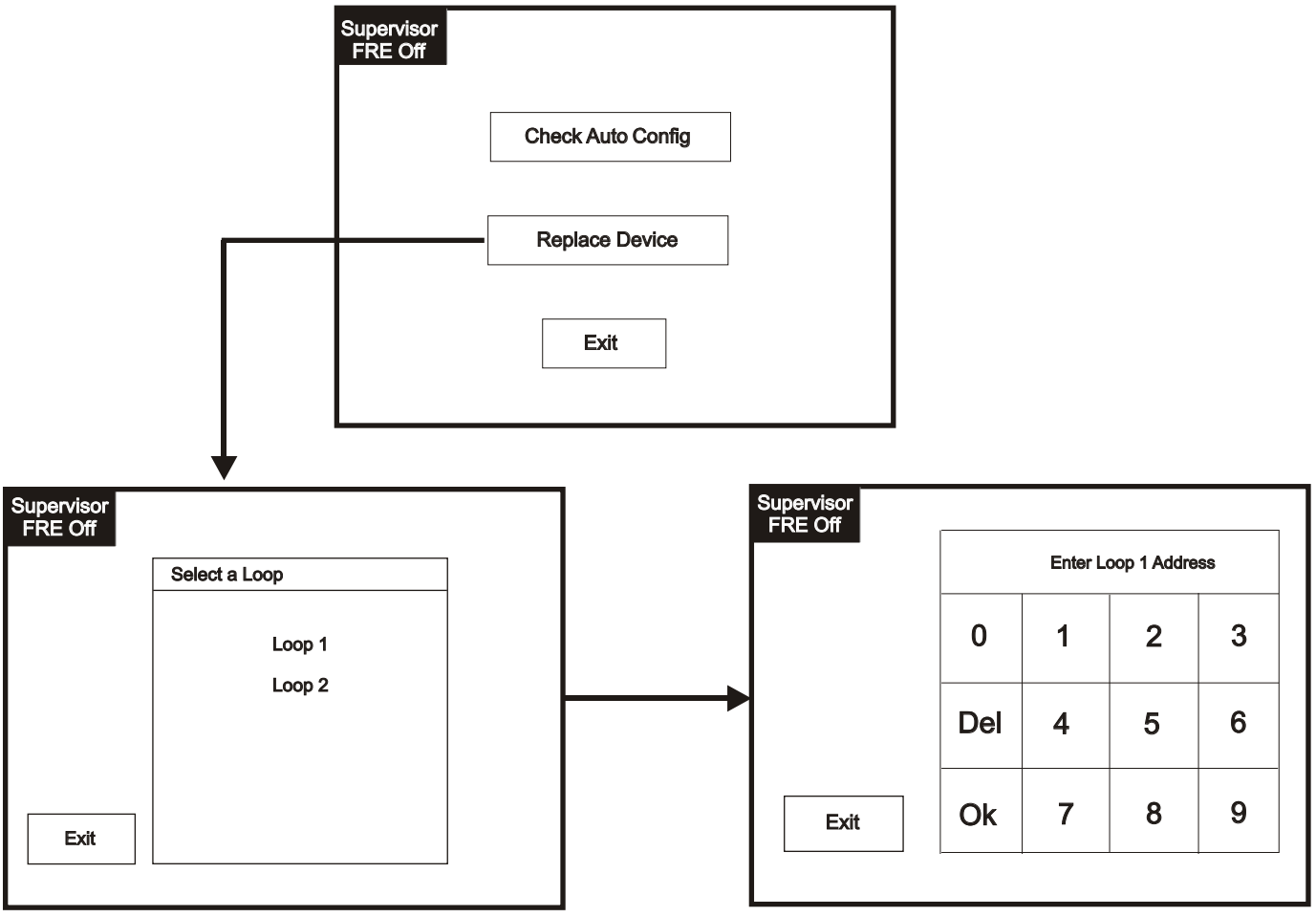
Press the Supervisor Mode button at the top left of the screen.



Replace Device

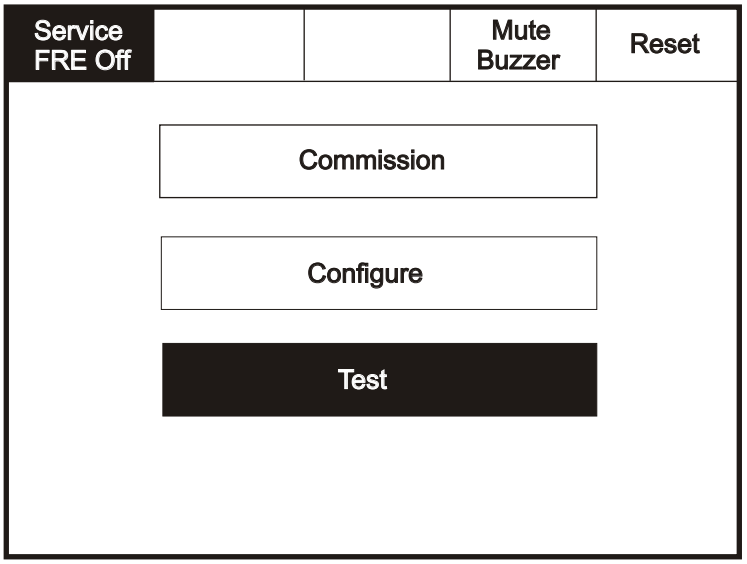
Replace device enables an existing device to be replaced with a new device without losing the existing text and sounder programming.
Replace a single device then use use the replace device menu to allocate an existing address to the new device



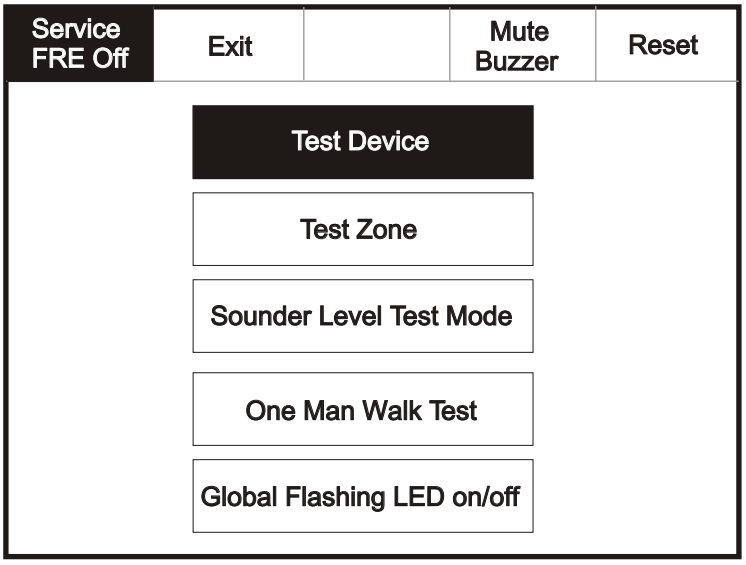


Test Device (Access Level 3)

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.

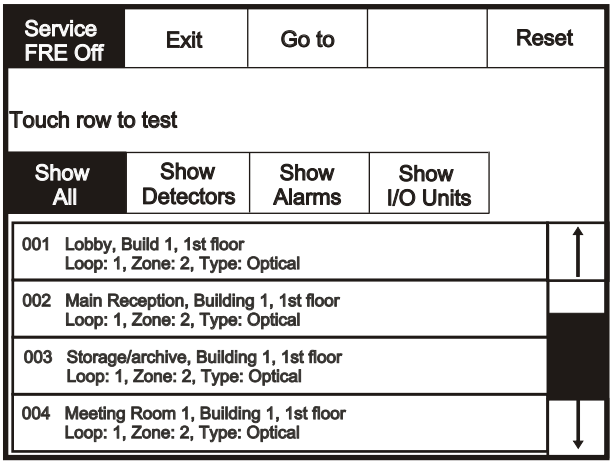


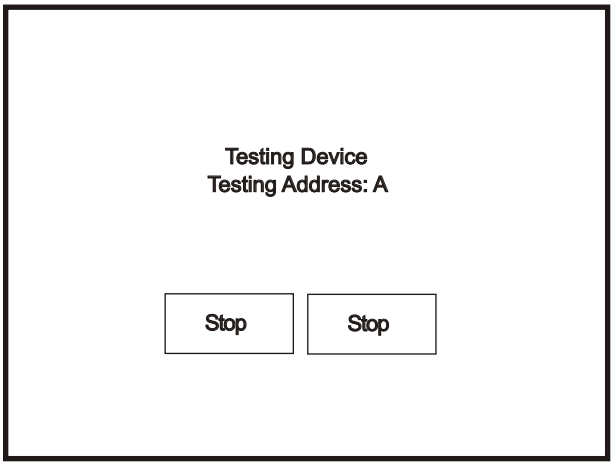
Enter the Service mode. Select "Test".



Select the "Test Device" button.

Touch row to select device to test.

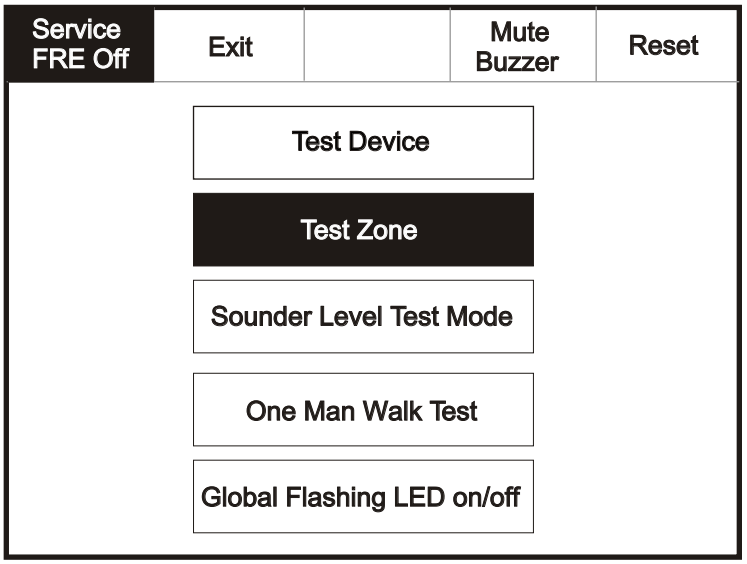


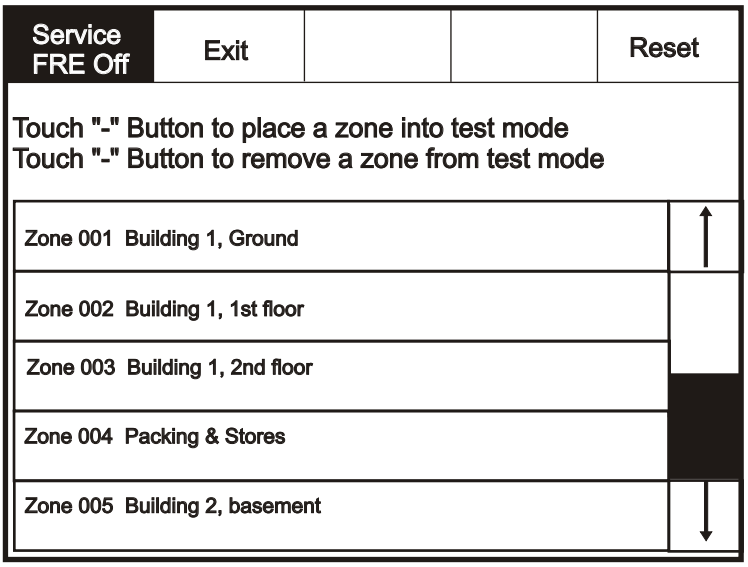


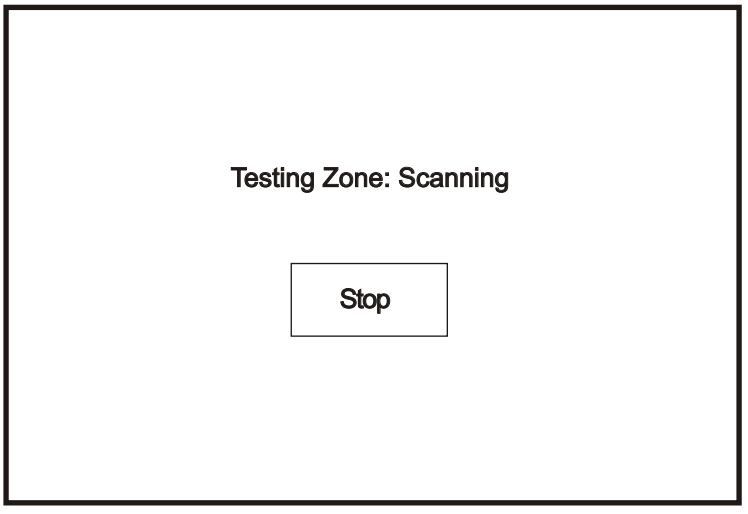
Test Zone

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”

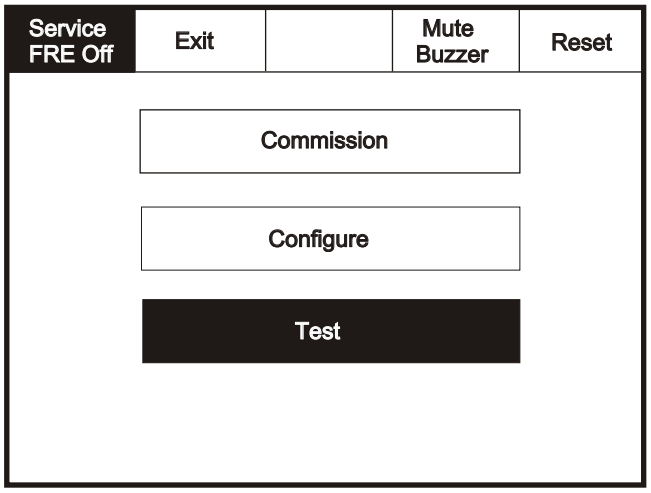


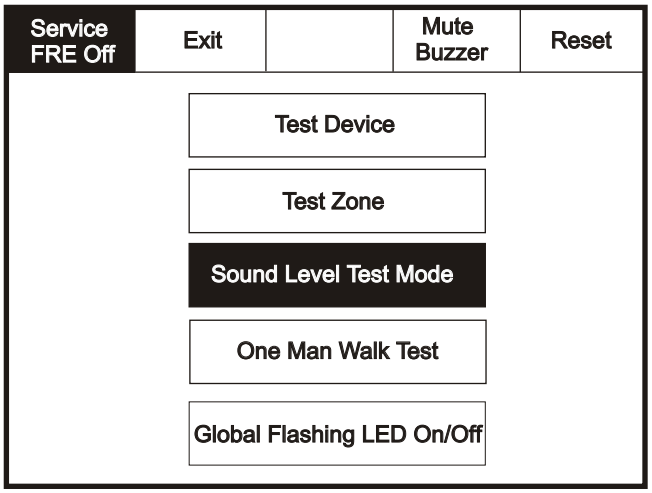


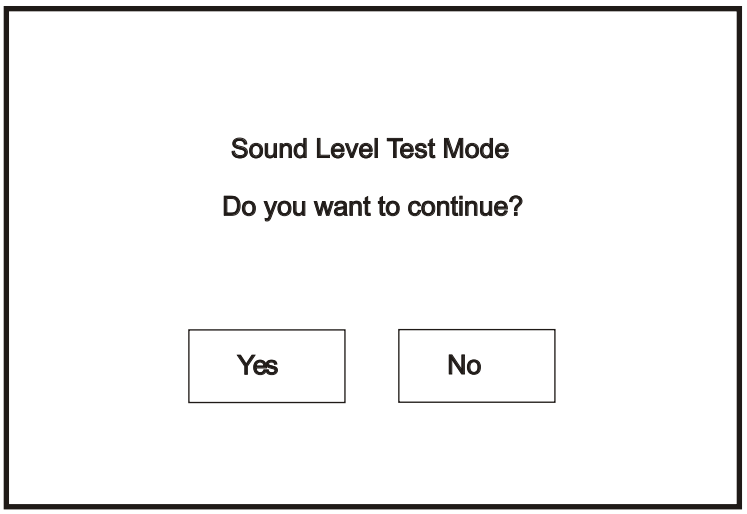


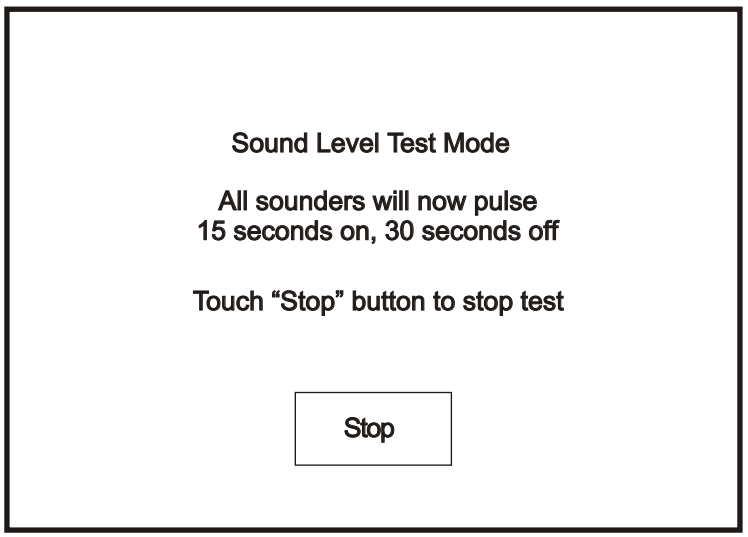
Sounder Level Test Mode

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





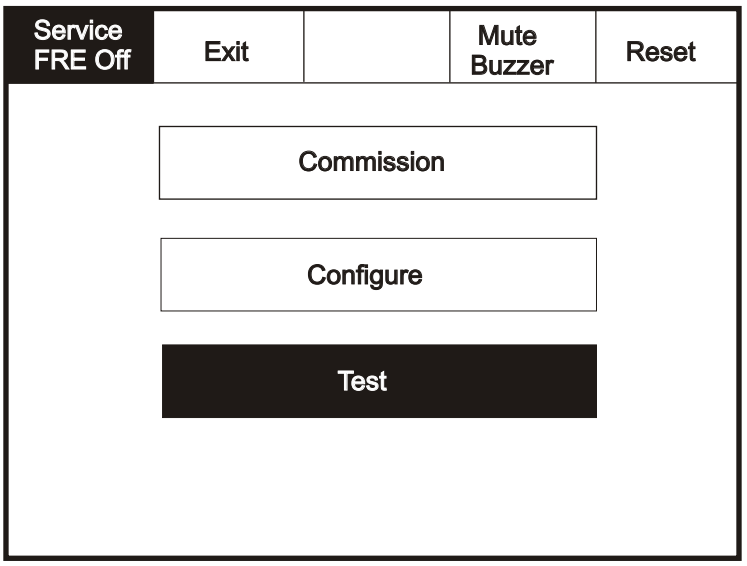




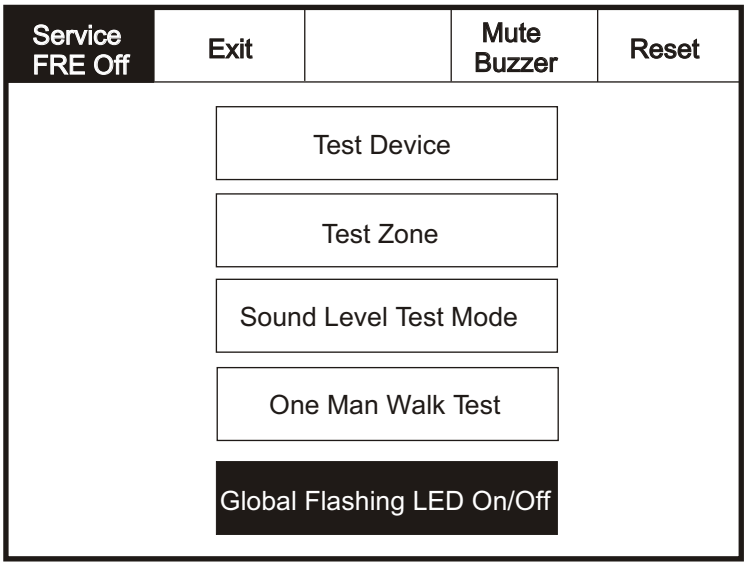
Global Flashing LED On/Off

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.

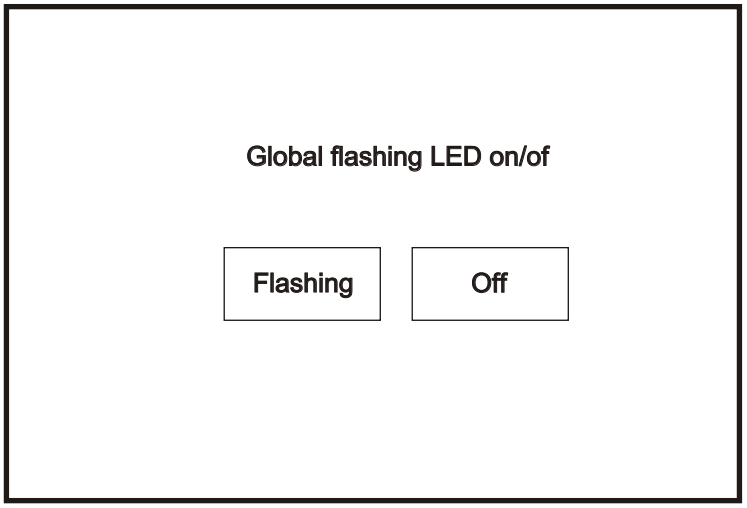
Enter the Service Mode and Select Test.



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



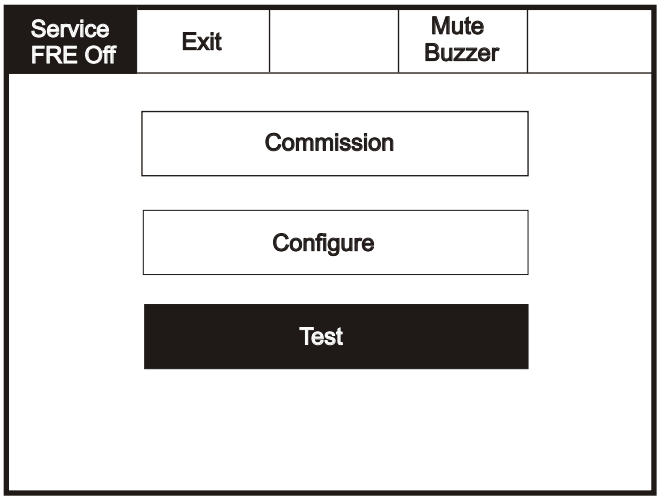
Select "Global Flashing LED On/Off" from the Test Menu Screen.

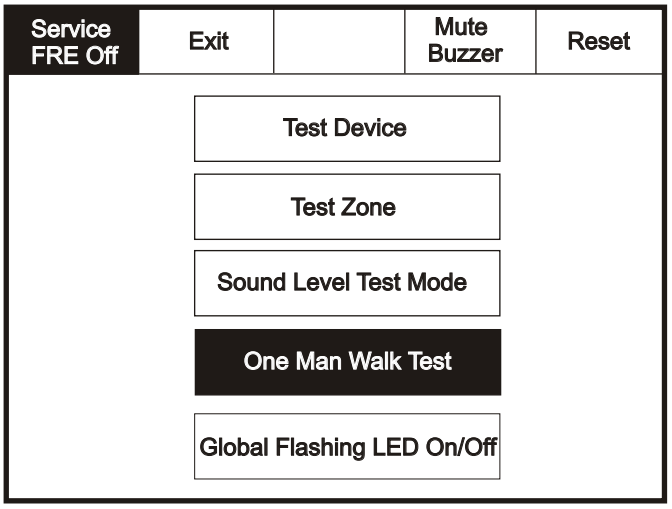


One Man Walk Test

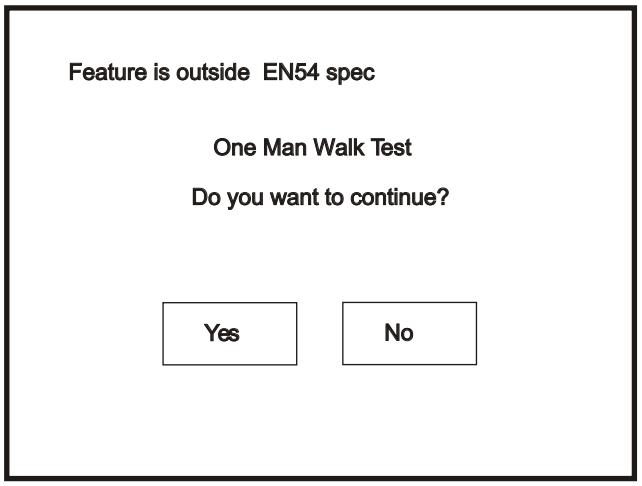
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Test.





Select “One Man Walk Test” from the Test Menu Screen.

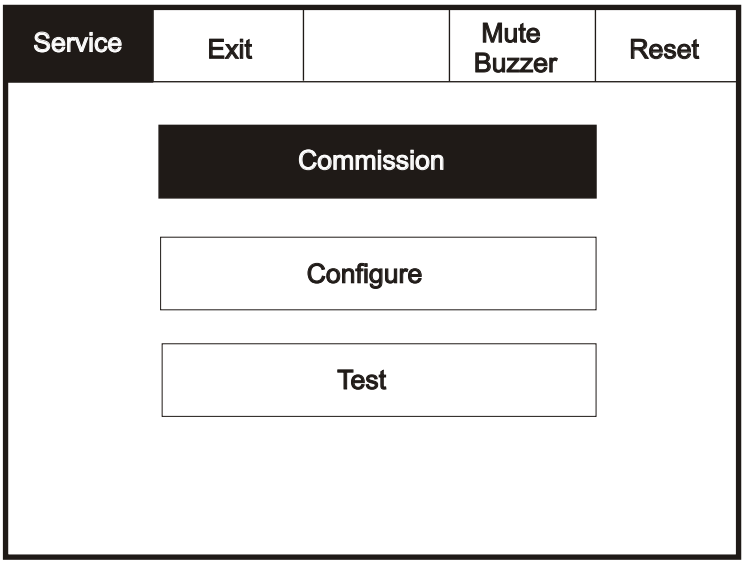


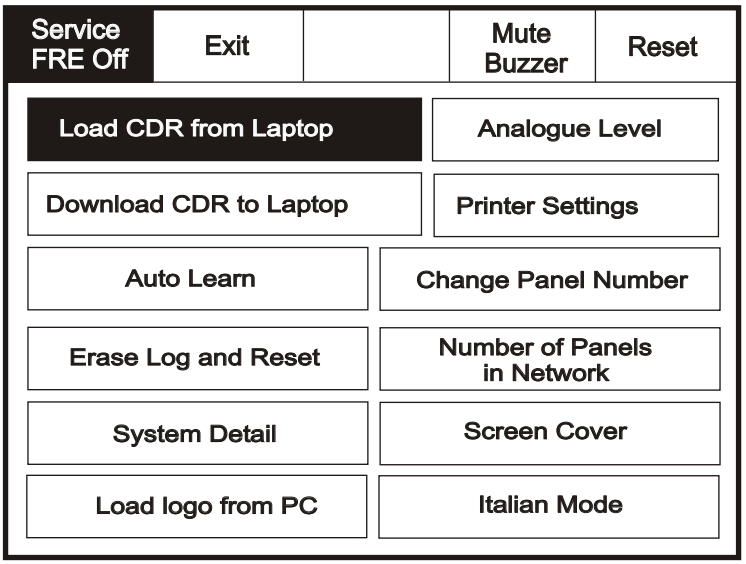


Commission: Load CDR from Laptop

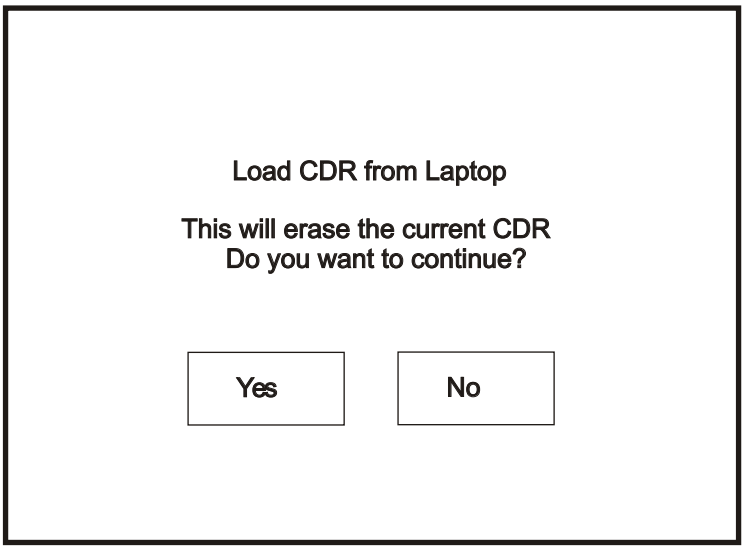
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission..





Select “Load CDR from Laptop” from the Commission Menu”



After pressing “Yes” click commission on the PC download software.

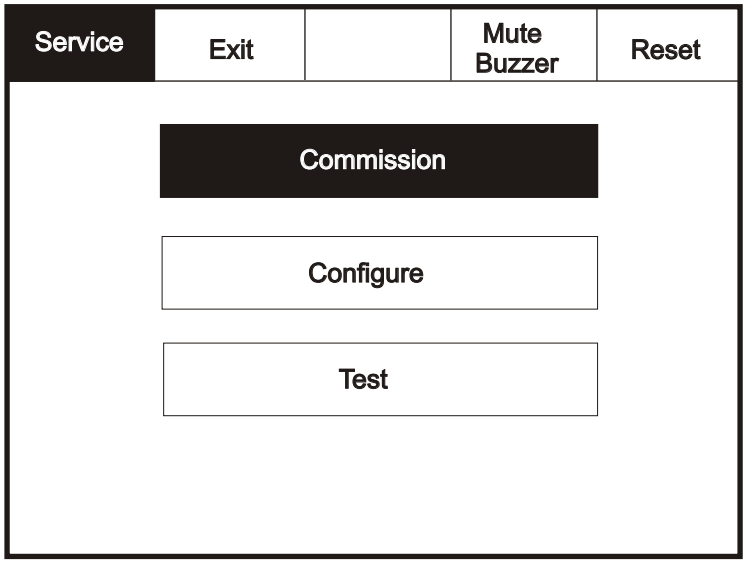
Important:

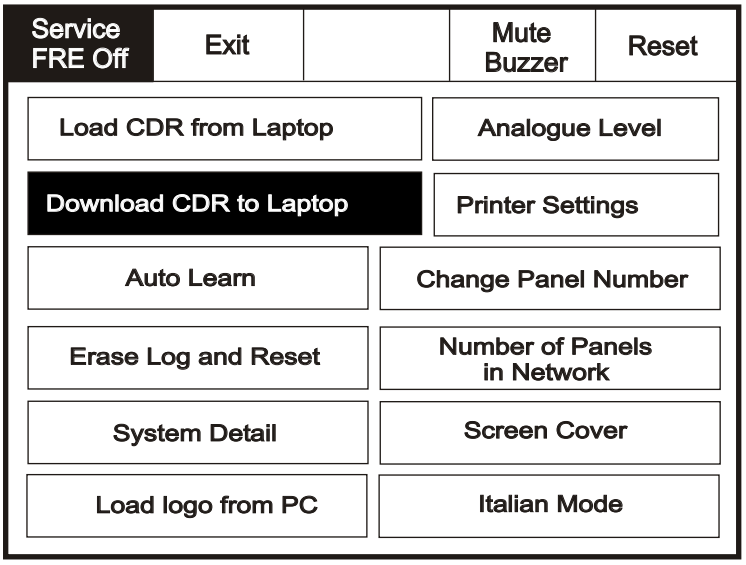
Do not click commission before pressing “Yes” on the “Load CDR” screen.

Commission: Download CDR to Laptop

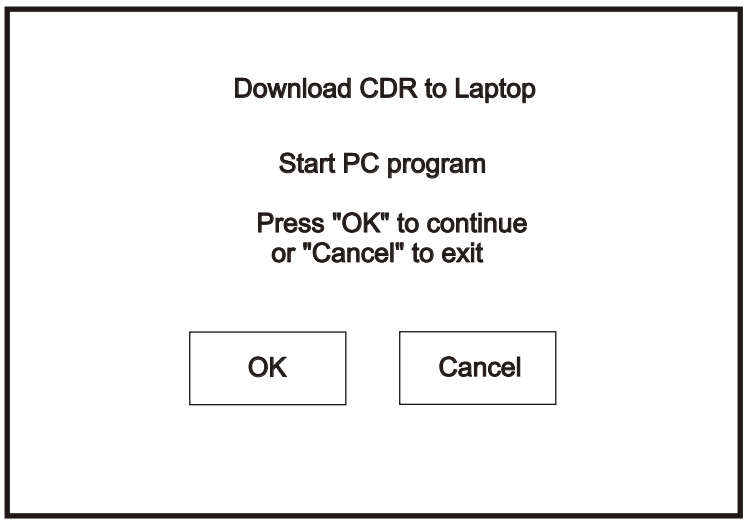
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.





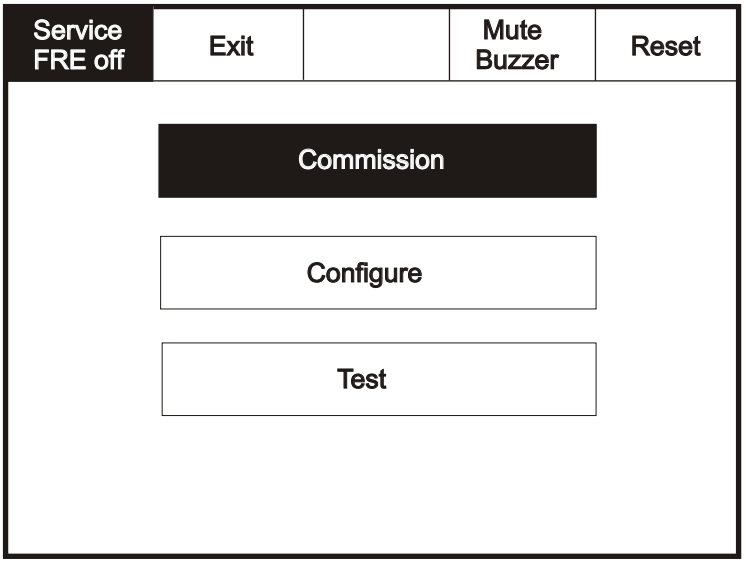
Select “Download CDR from Laptop” from the Commission Menu Screen.

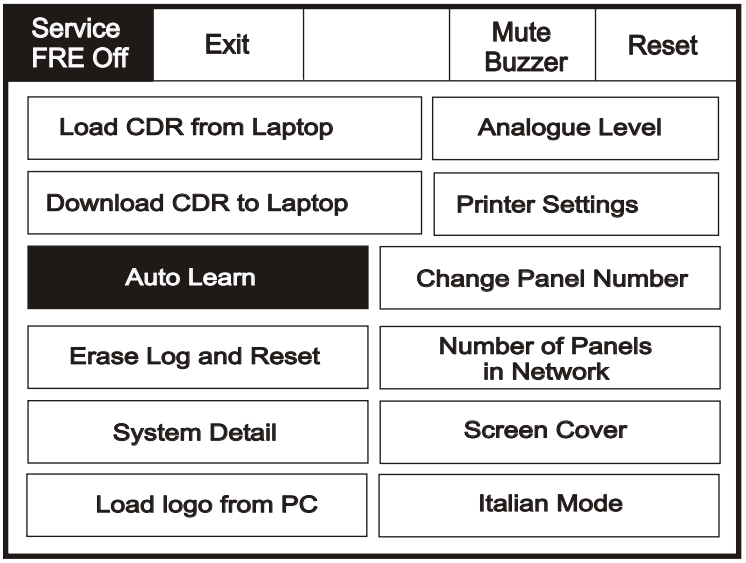


Commission: Auto Learn

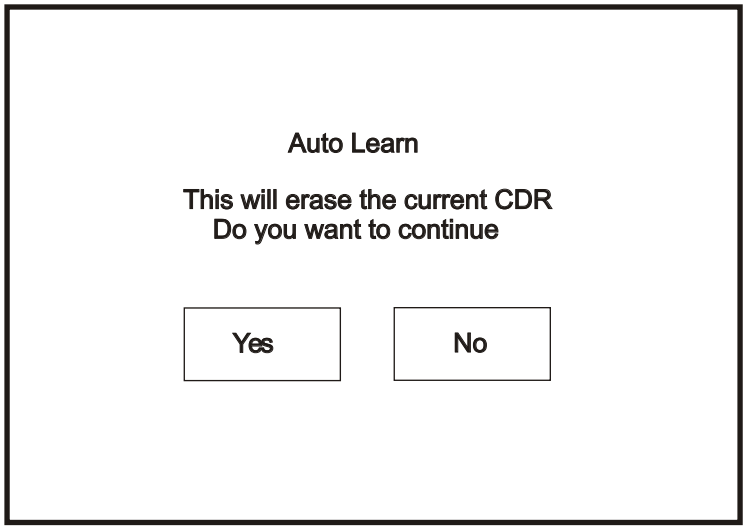
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.





Select “Auto Learn” from the Configure Menu Screen.



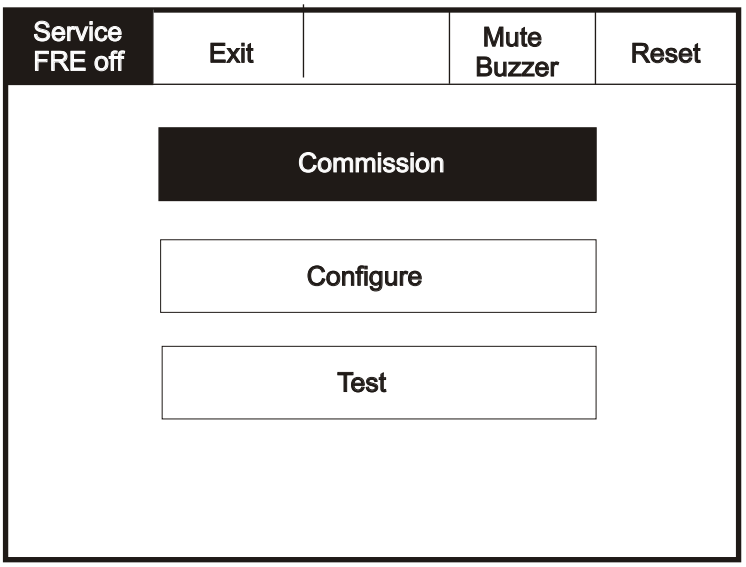
Important:

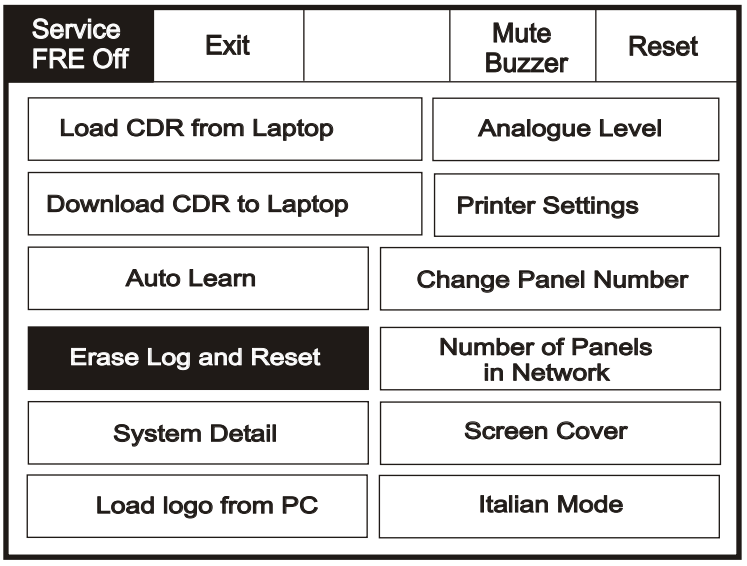
Activating autolearn will erase all existing programming, text and configuration data.

Erase Log

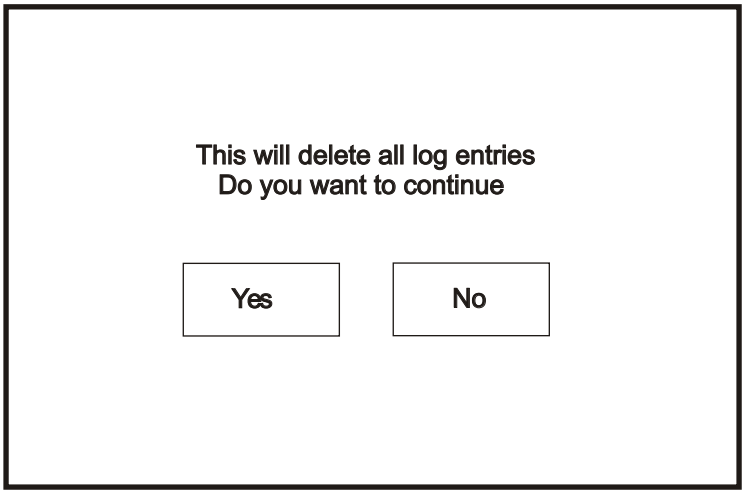
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.





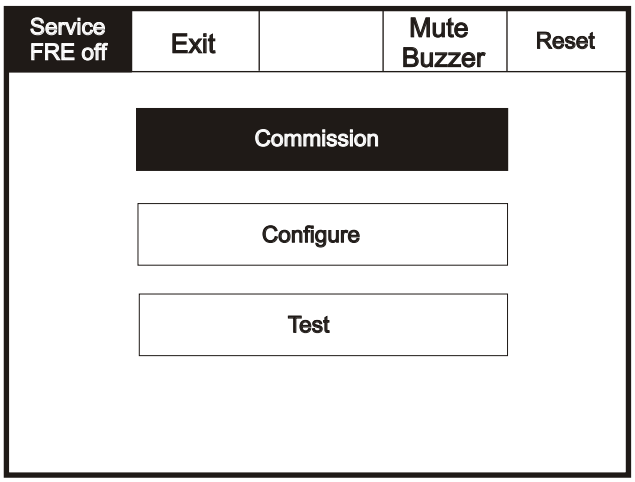
Select “Erase Log and Reset” from the Configure Menu Screen.

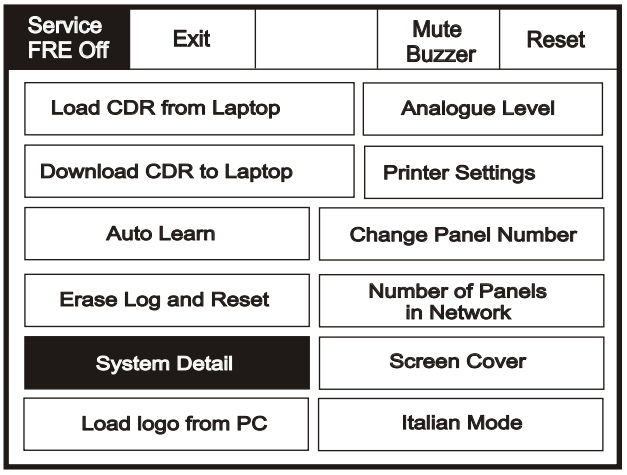


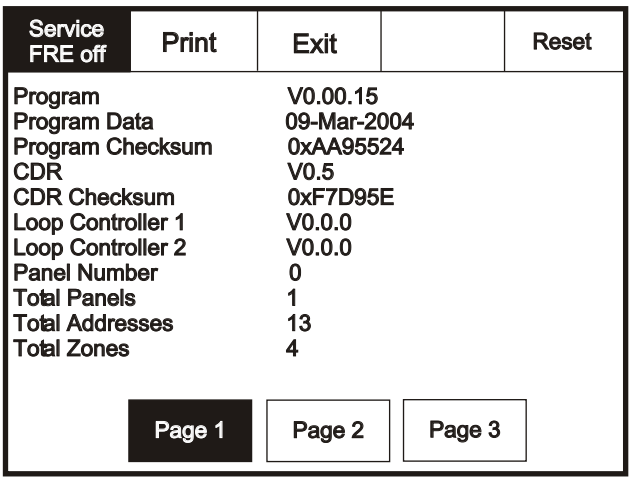
System Details

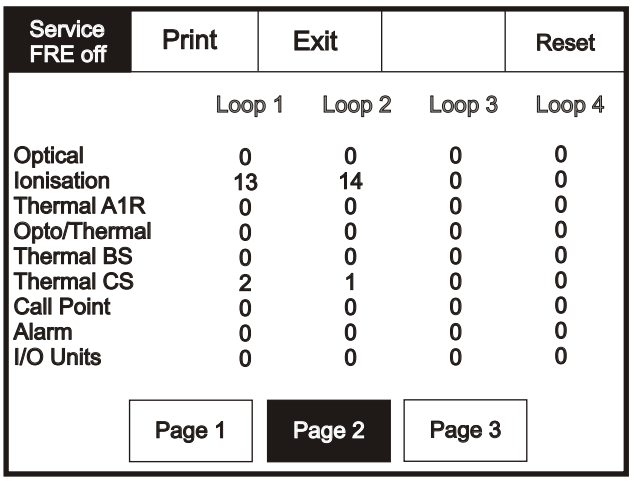
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

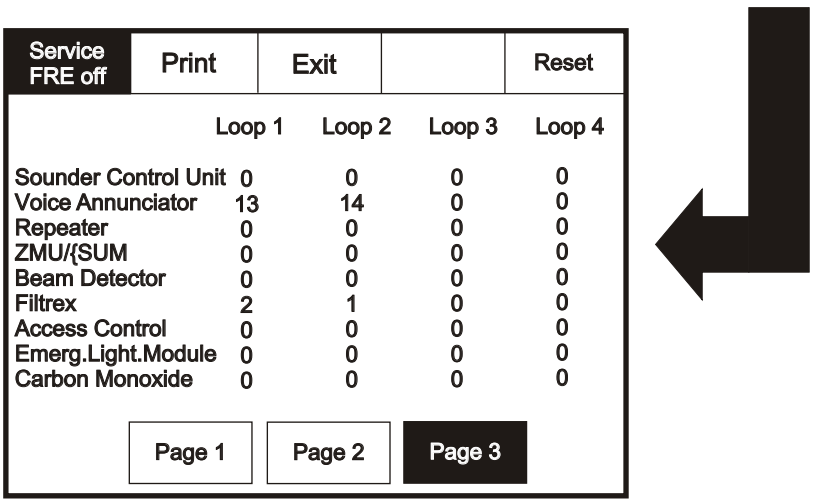
Enter the Service Mode and Select Commission, then Press “System Details”.







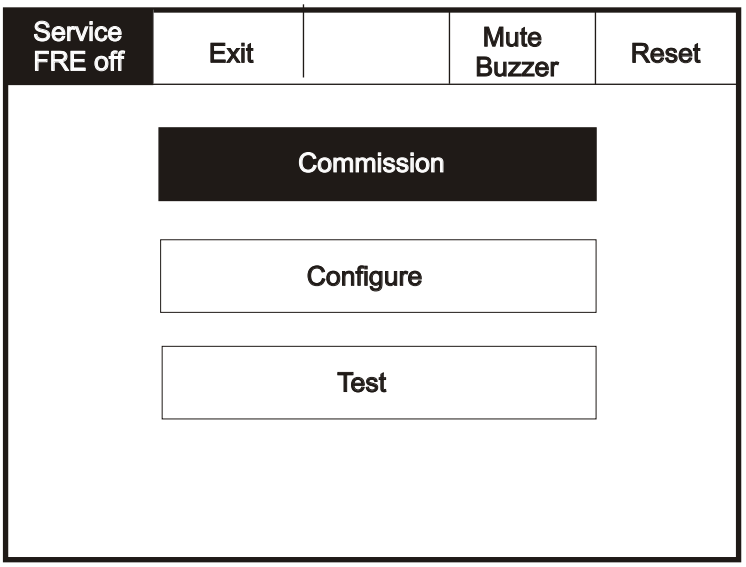


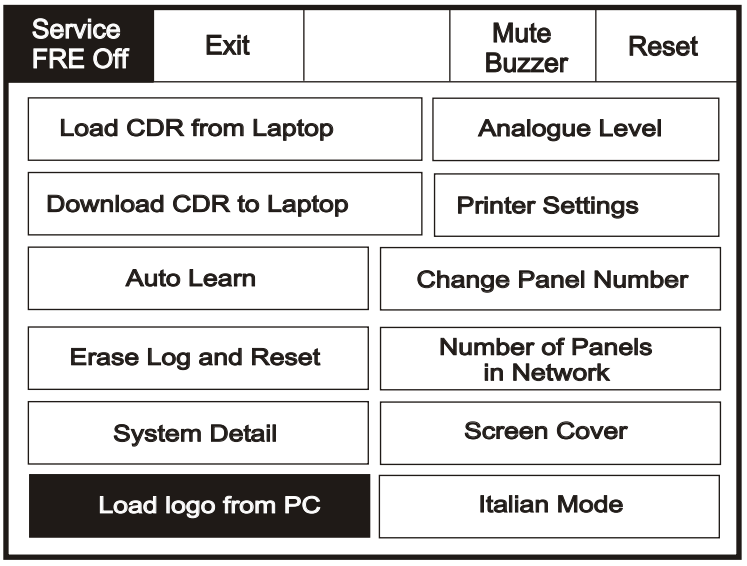


Load Logo from PC

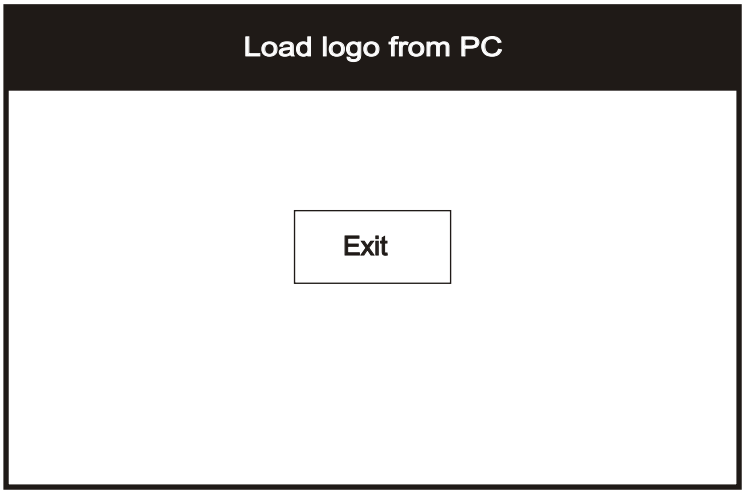
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Commission.





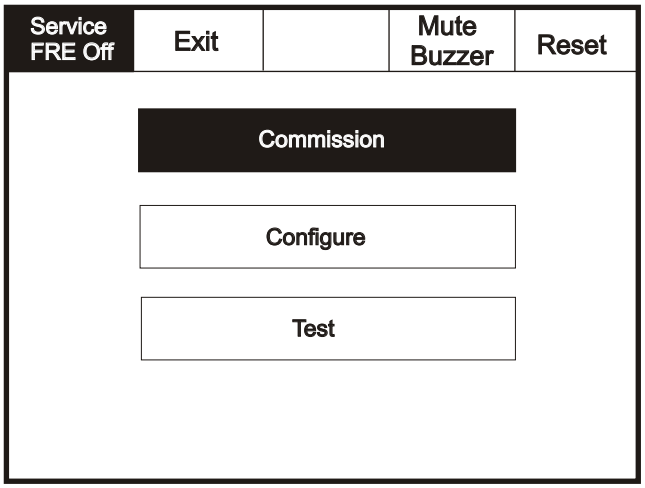
Select “Load logo from PC” from the Configure Menu Screen.

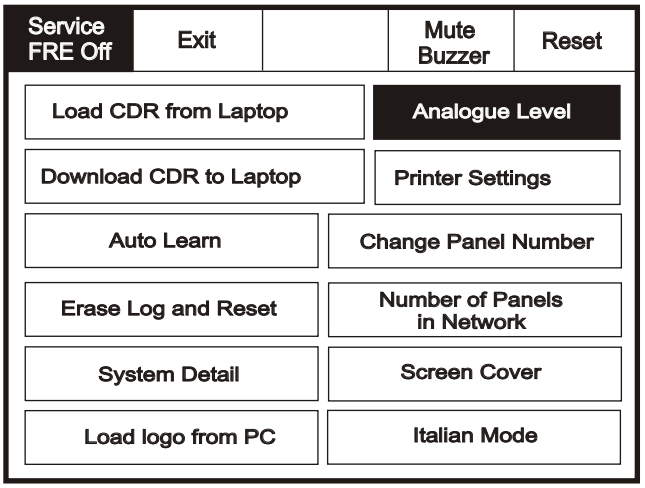


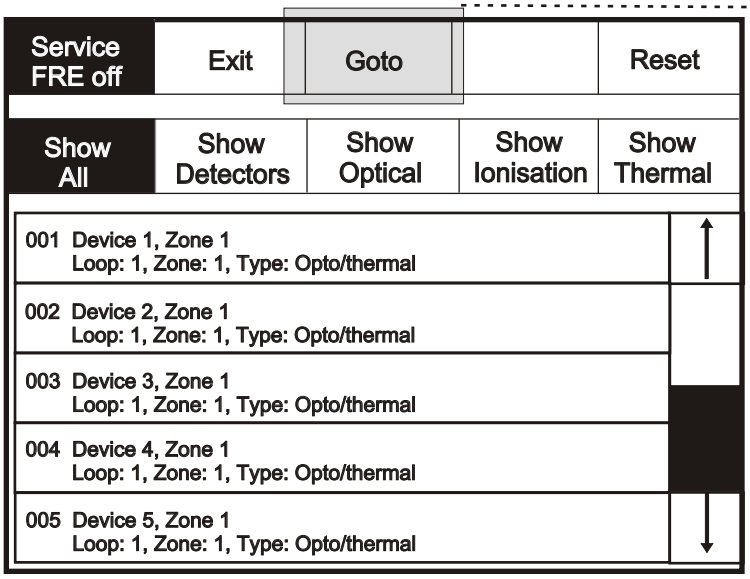
Analogue Level

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.

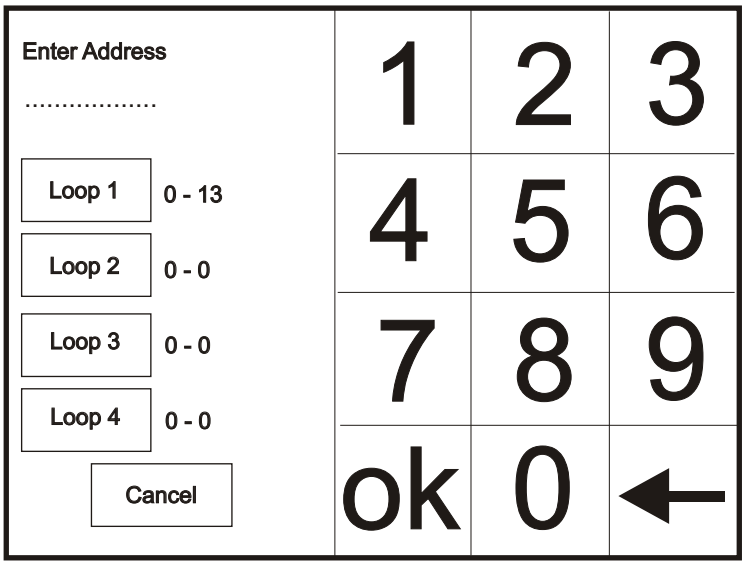
Enter the Service Mode and Select Commission then press “Analogue Levels”.





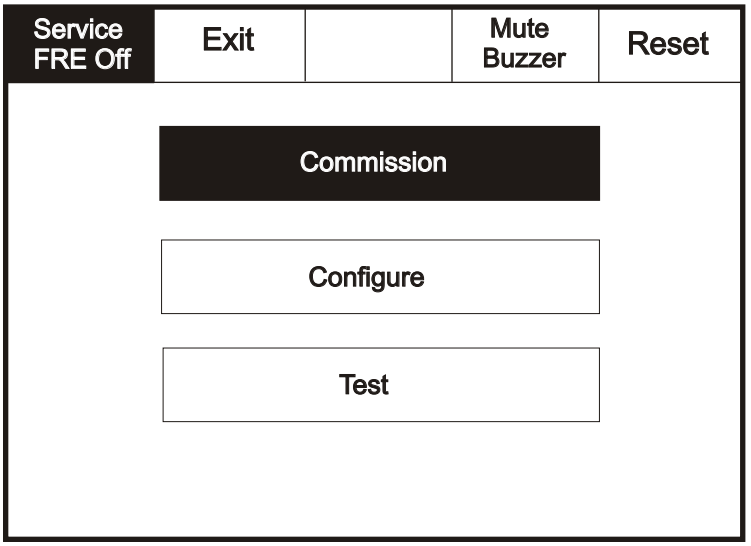


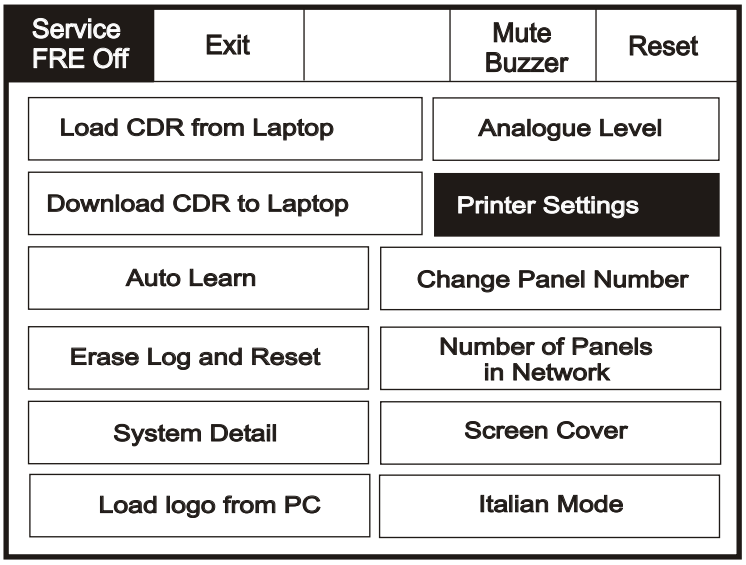
Note
Go to command can be used to jump to a specific address

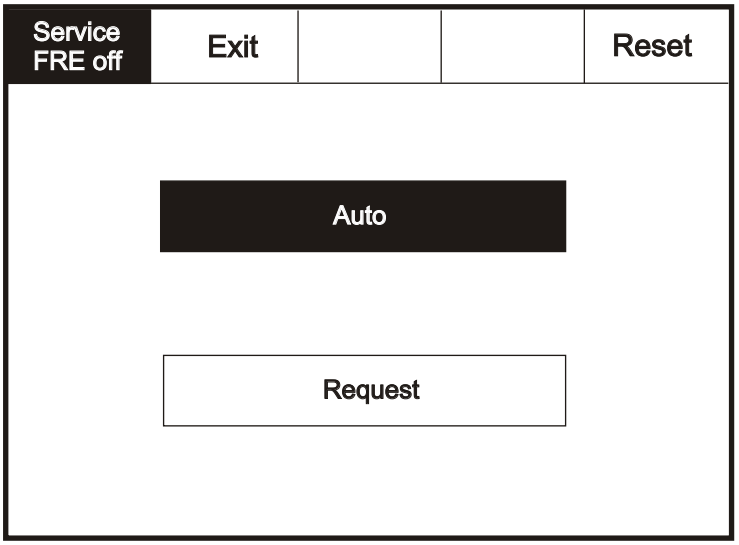


Printer Settings

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 “Printer settings”.

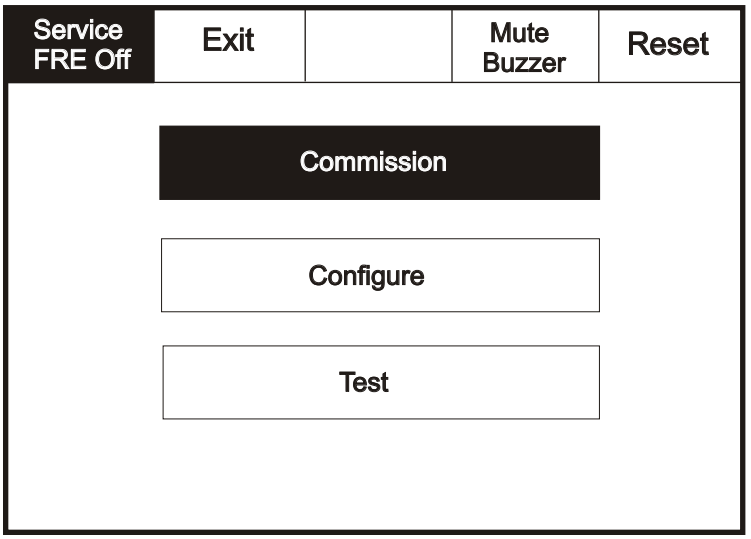


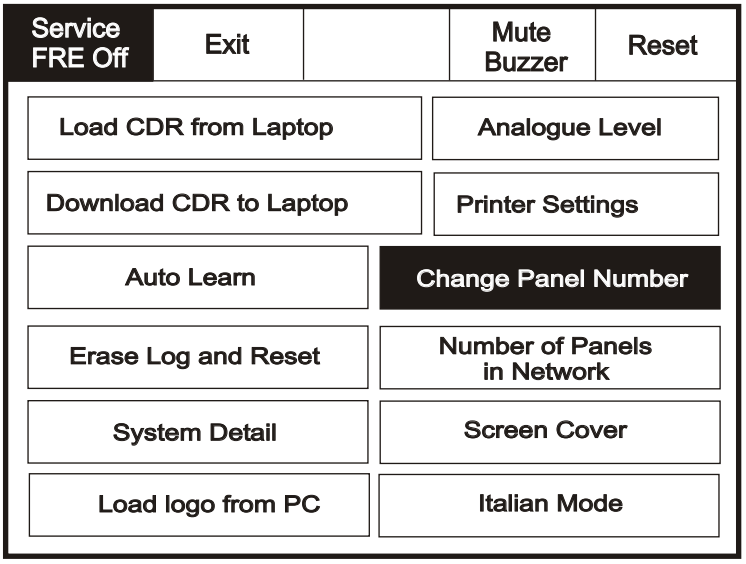


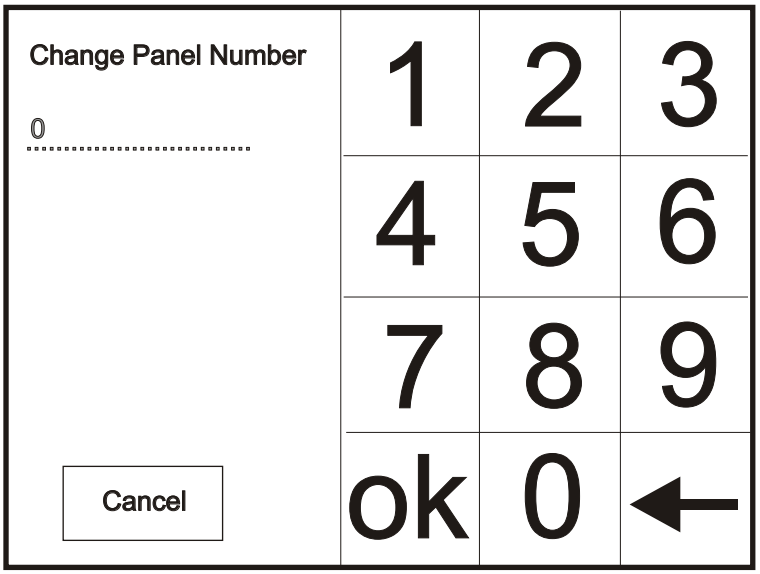


Change Panel Number

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”

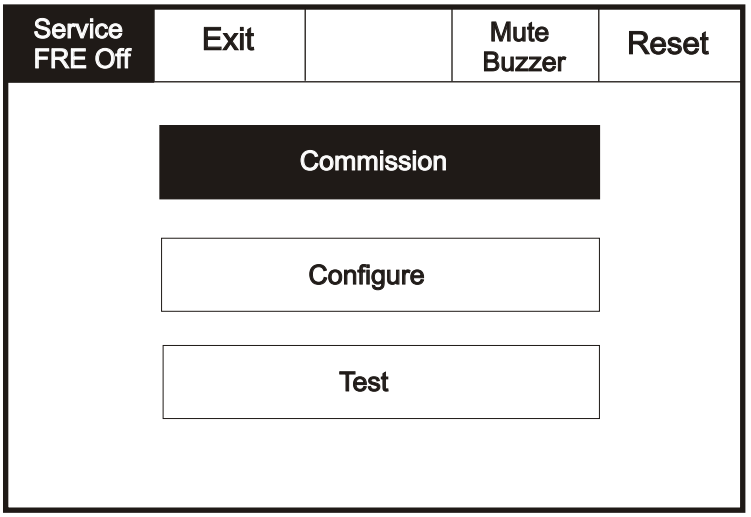


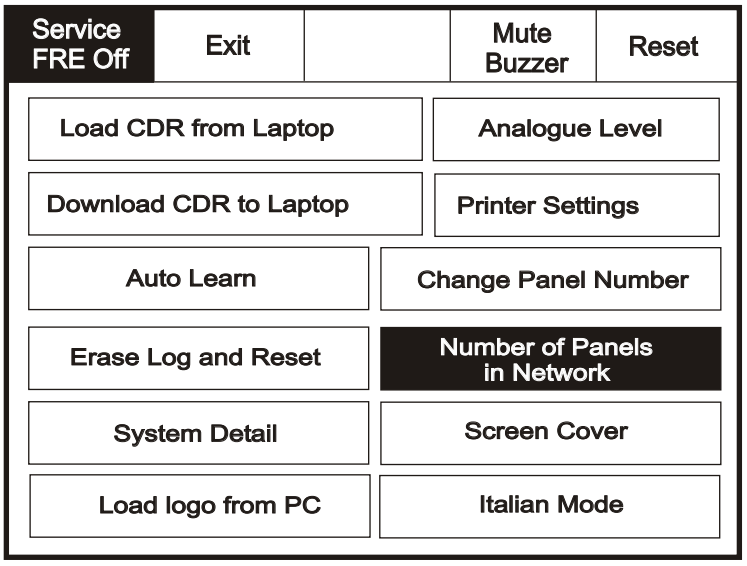


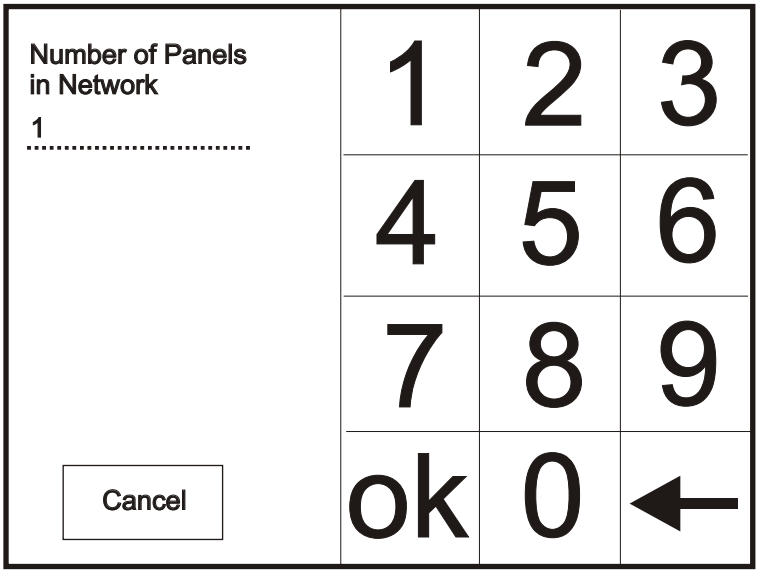


Number of Panels in Network

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

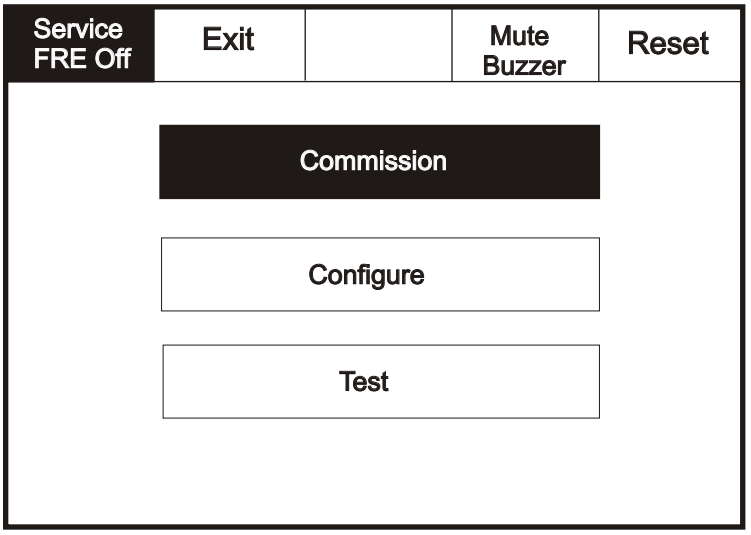


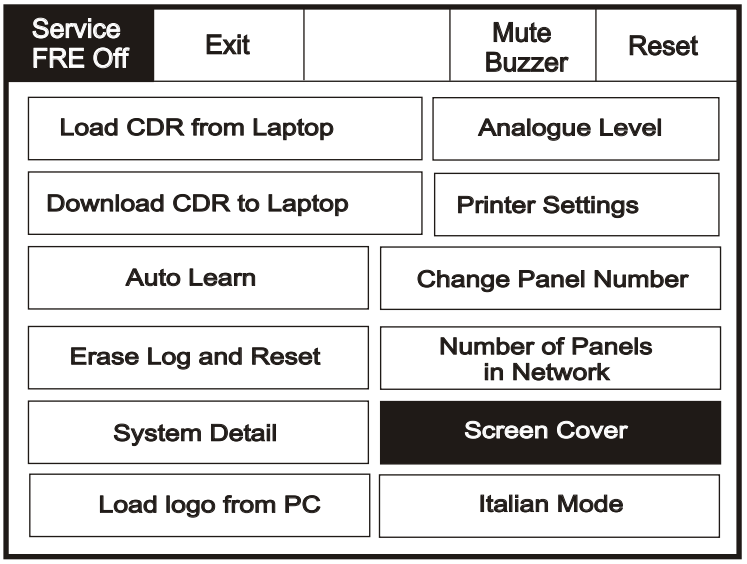


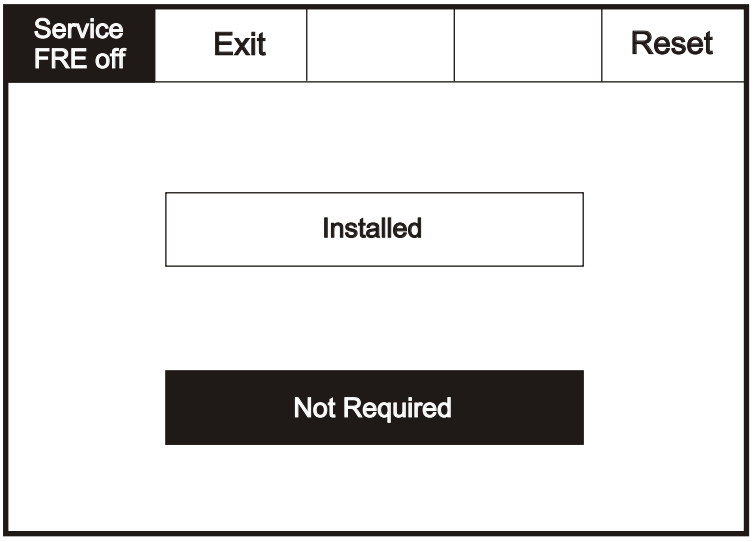


Screen Cover

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”

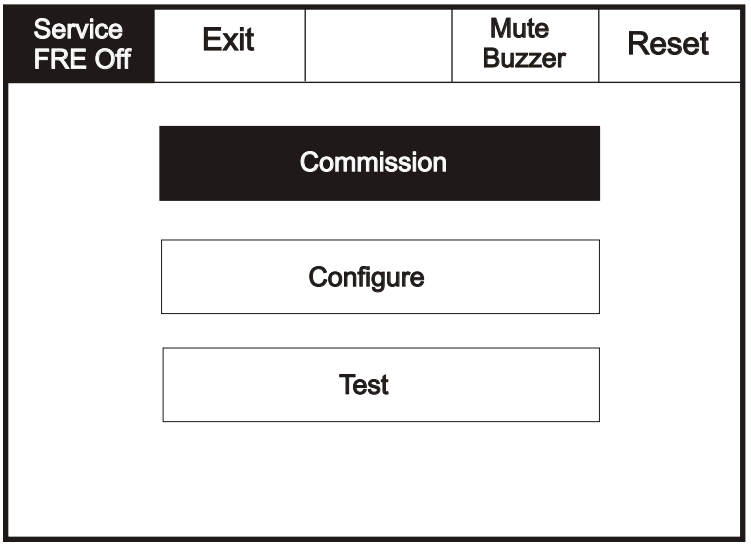


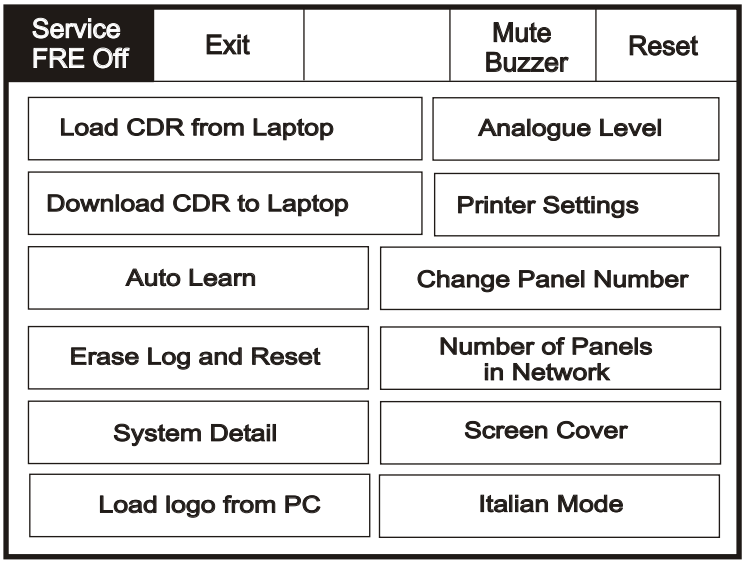


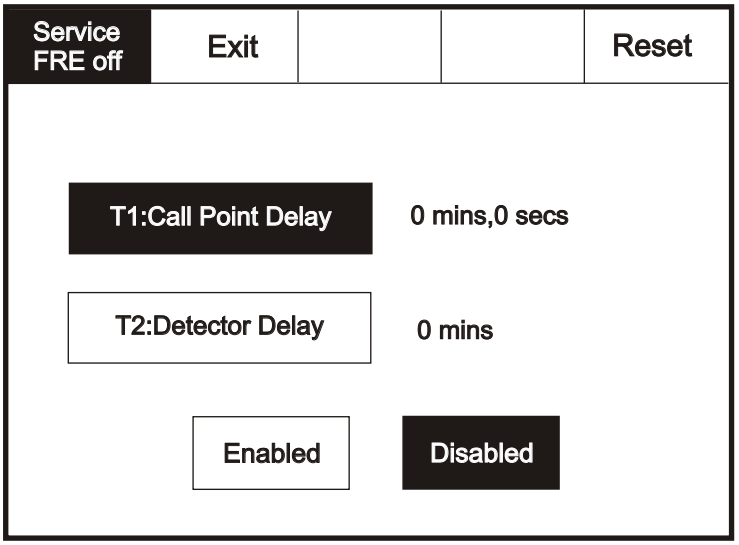


Italian Mode

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 “Italian Mode”.



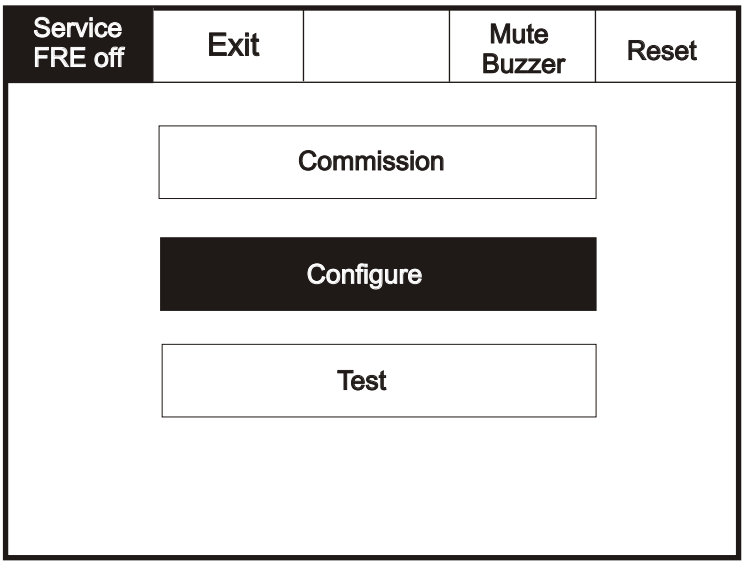




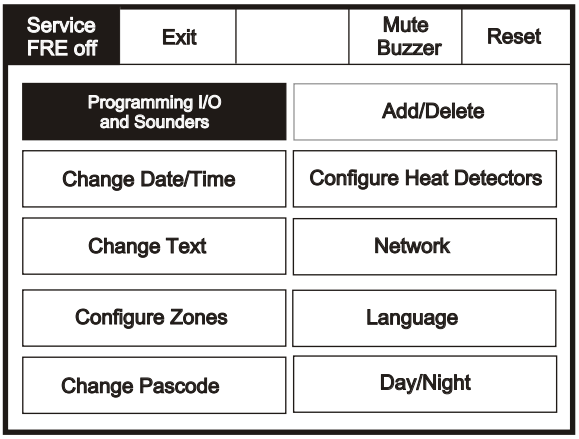
Programming I/O and Sounders T1

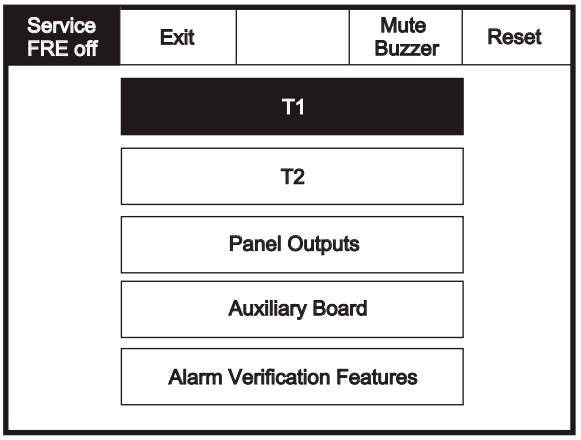
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

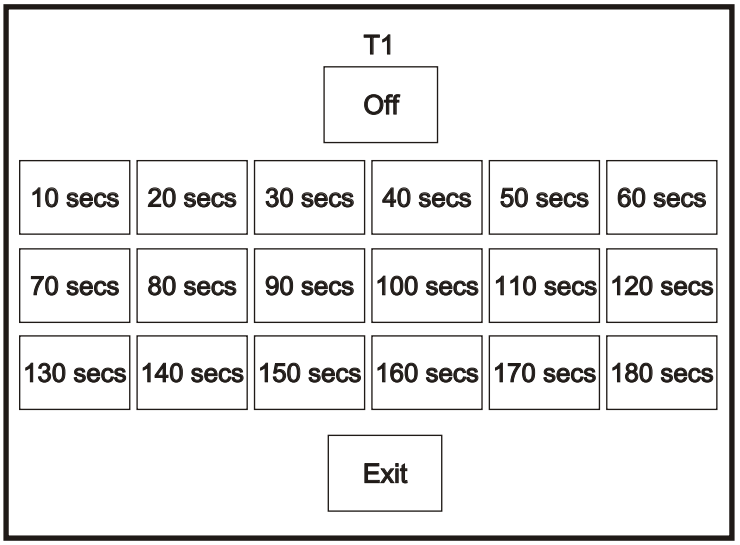
Enter the Service Mode and Select Configure.



Select “Programming I/O and Sounders” from the Configure Menu Screen.Then press T1



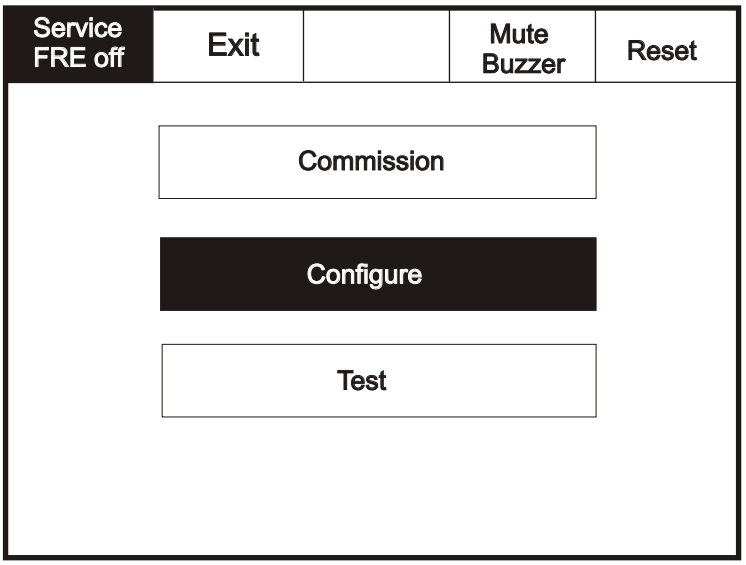




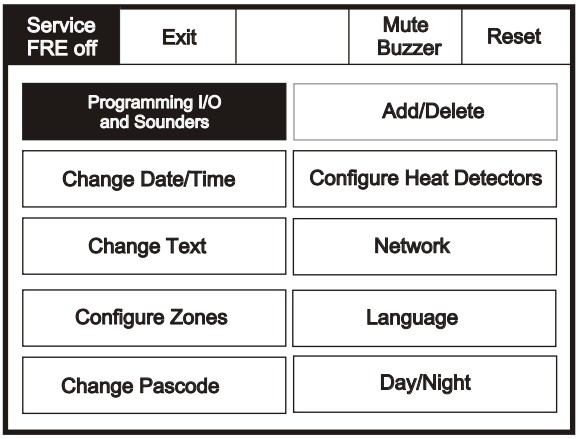
Programming I/O and Sounders T2

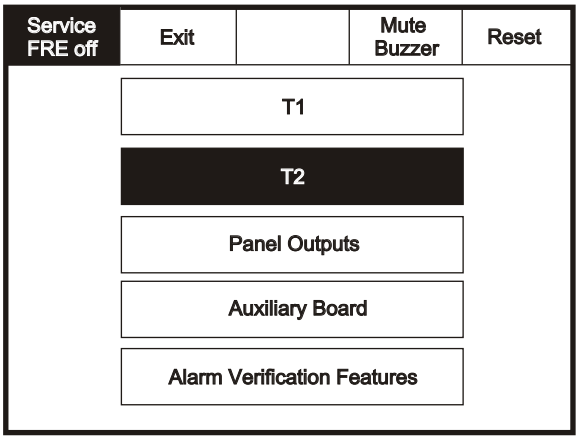
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

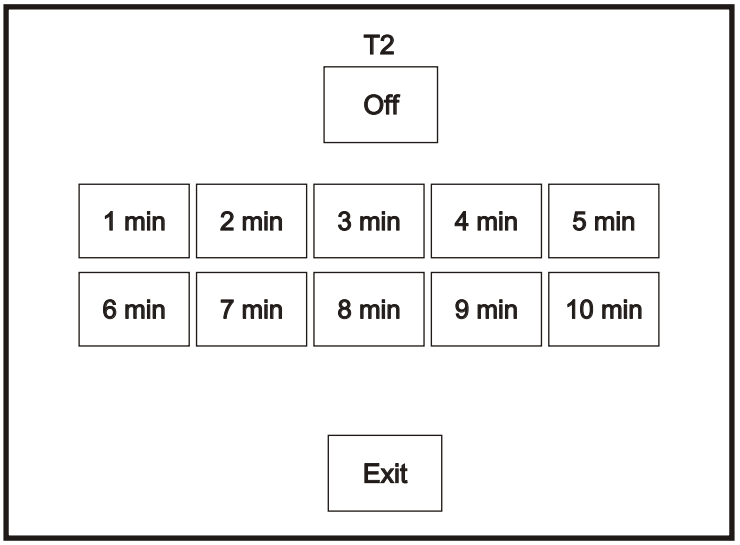
Enter the Service Mode and Select Configure.



Select “Programming I/O and Sounders” from the Configure Menu Screen.Then press T2



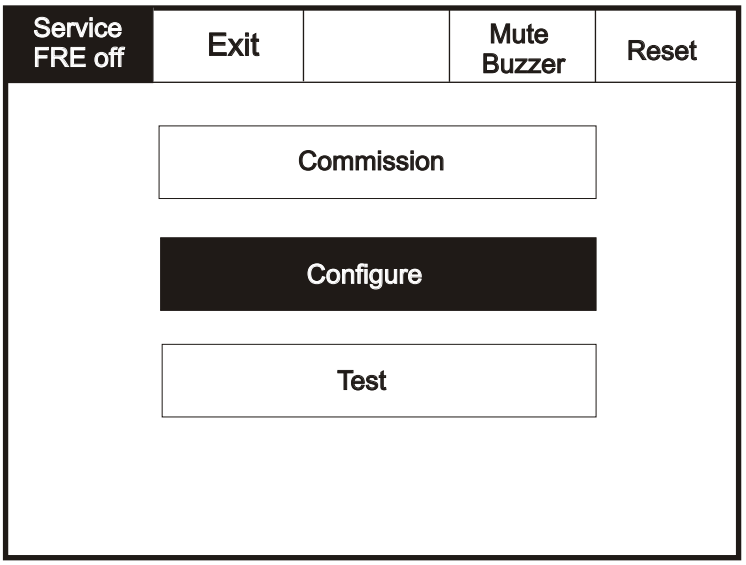


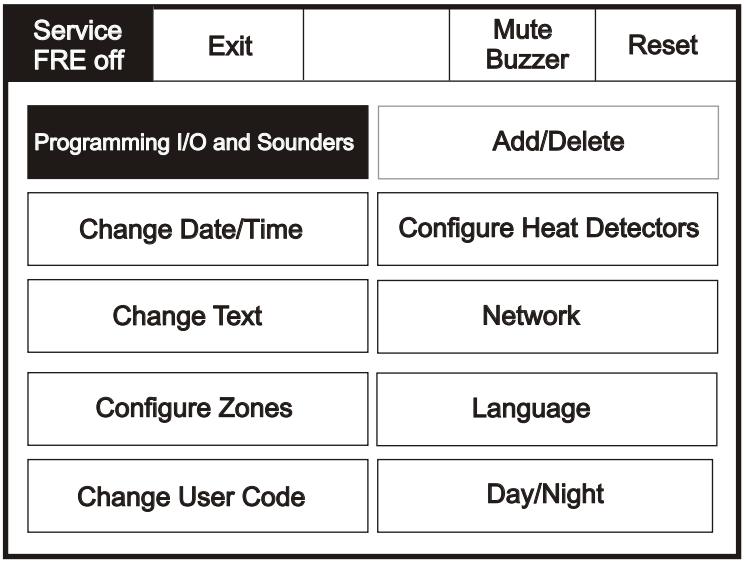


Programming I/O and Sounders . Panel Outputs

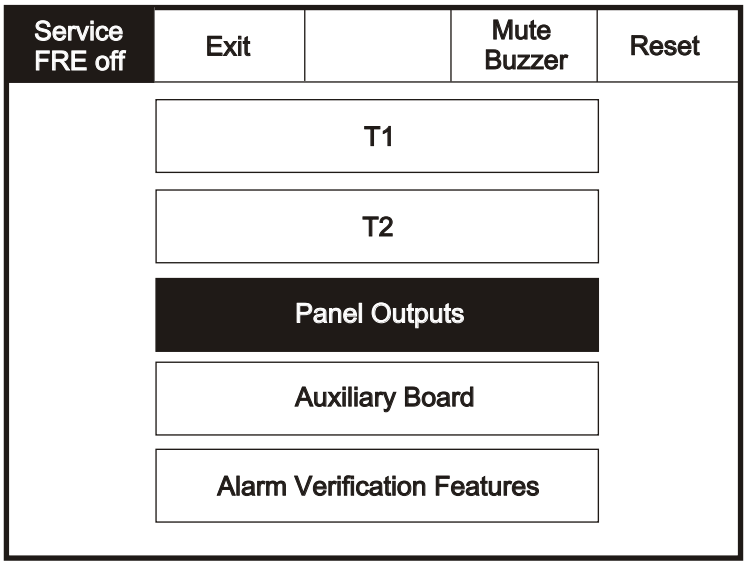
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Configure.





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

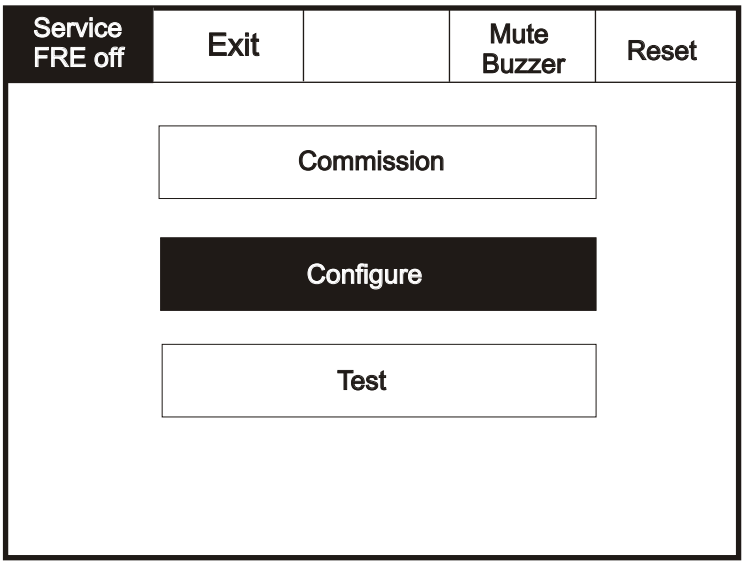


Press panel outputs - NOTE Interface Inputs/Interface Outputs are only used in certain export markets

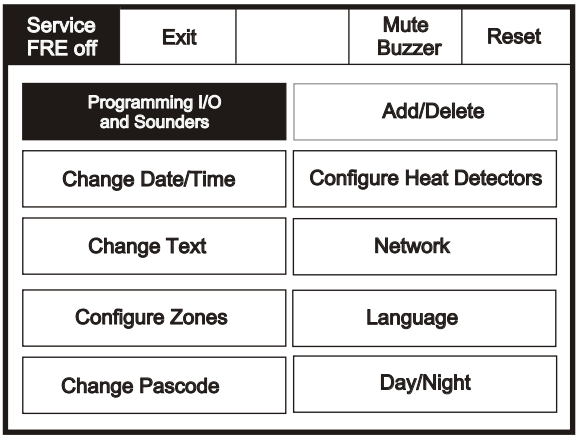
Programming I/O and Sounders . Auxiliary Board

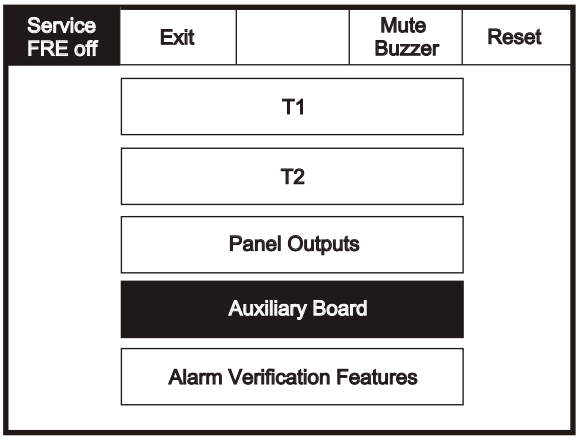
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

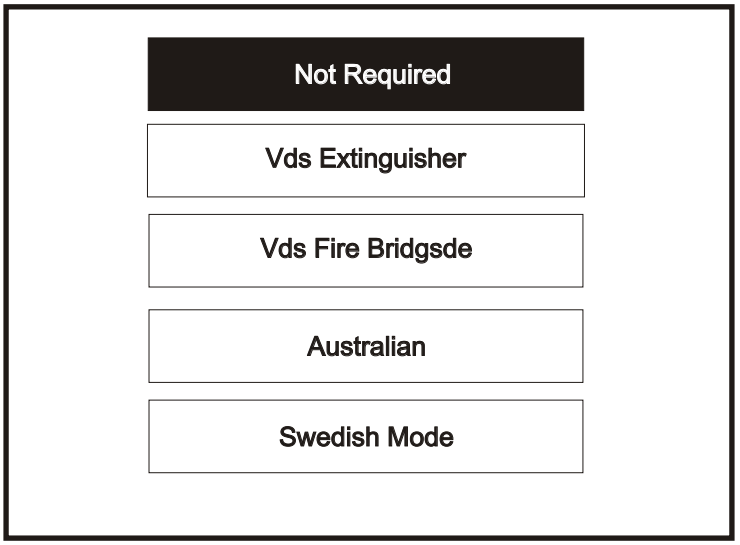
Enter the Service Mode and Select Configure.



Select “Programming I/O and Sounders” from the Configure Menu Screen.Then press Auxiliary Board



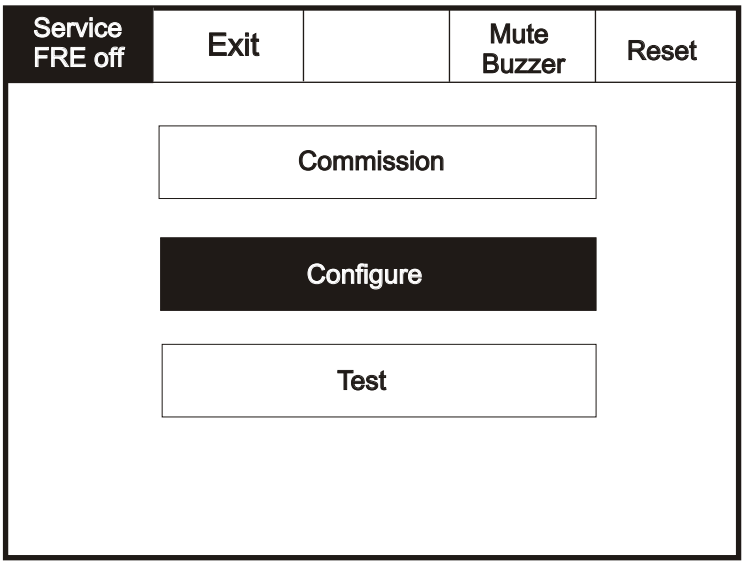




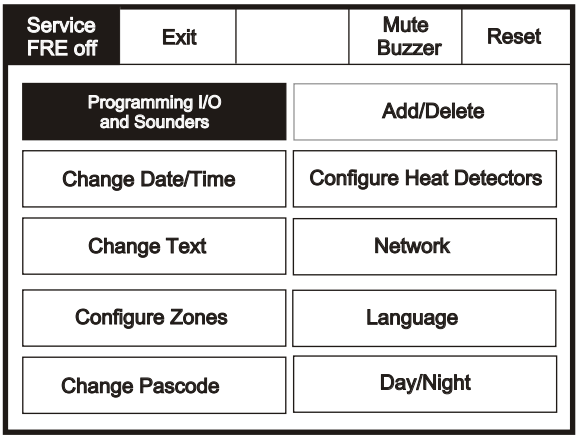
Programming I/O and Sounders Alarm Verification

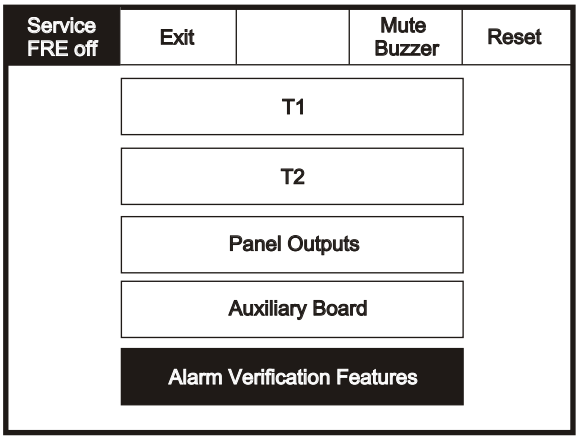
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

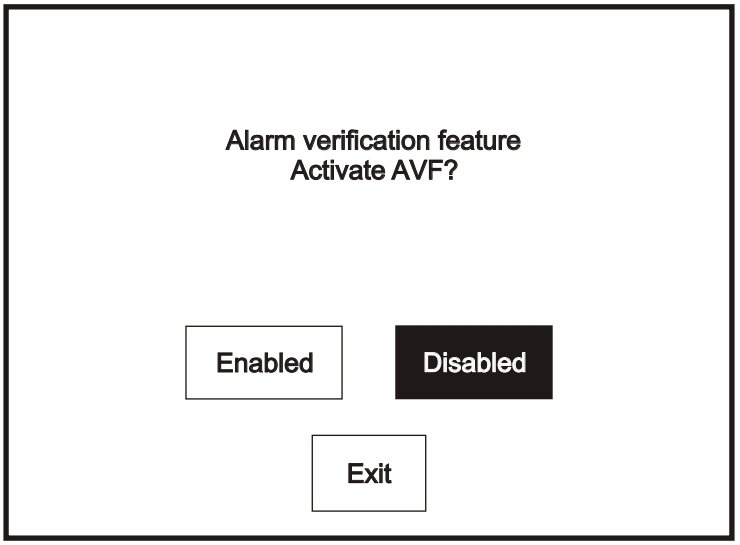
Enter the Service Mode and Select Configure.



Select “Programming I/O and Sounders” from the Configure Menu Screen.Then press Alarm Verification

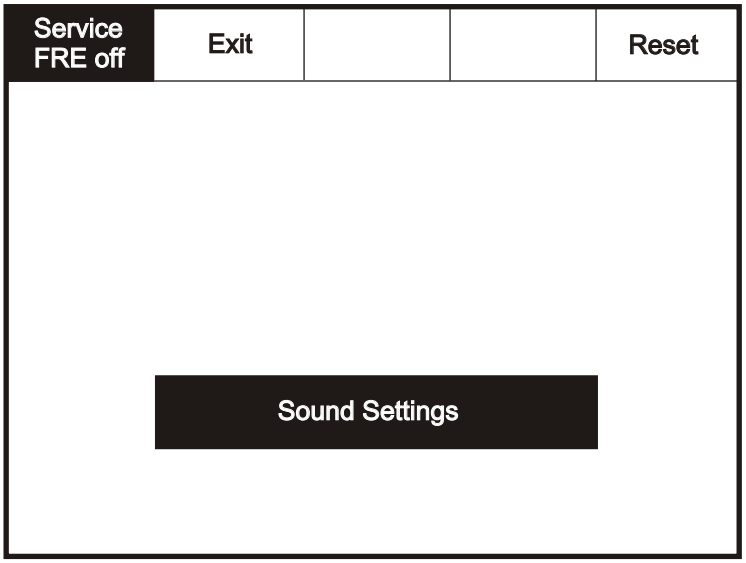




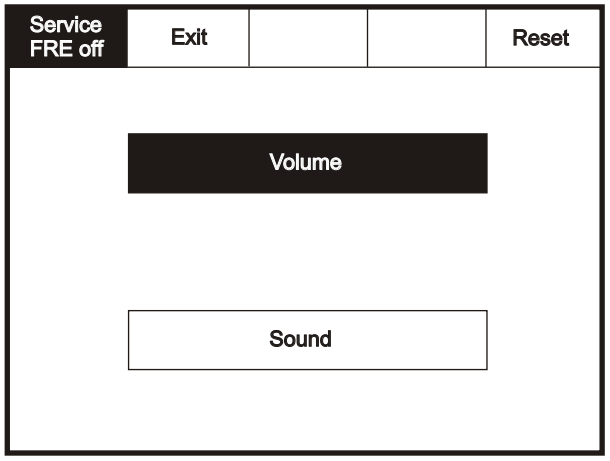


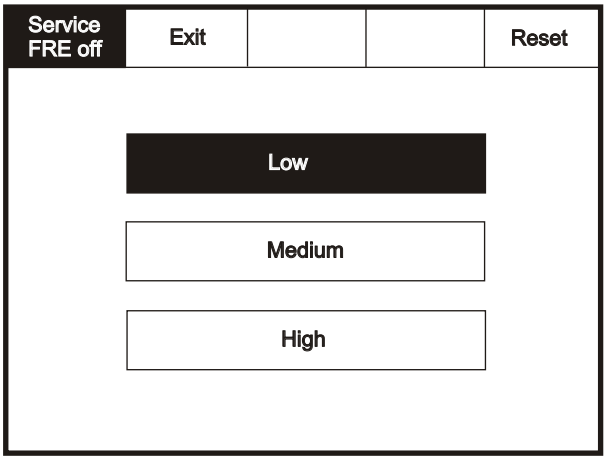
Sound Settings

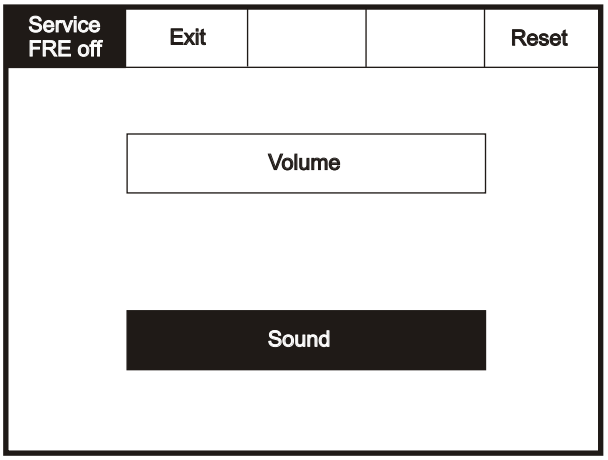
Touch sound settings .

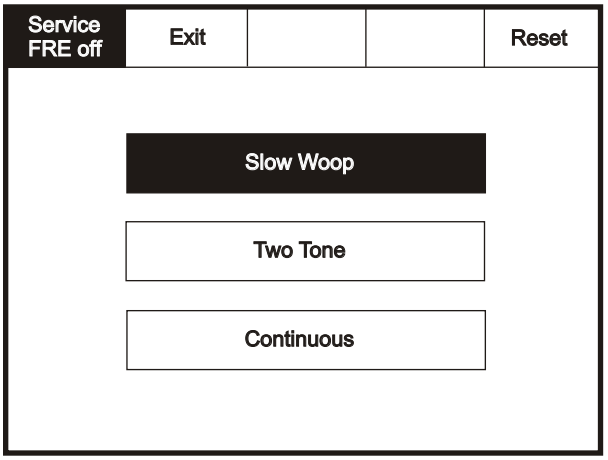


Selections from the screens below will become the global settings for all loop sounders.



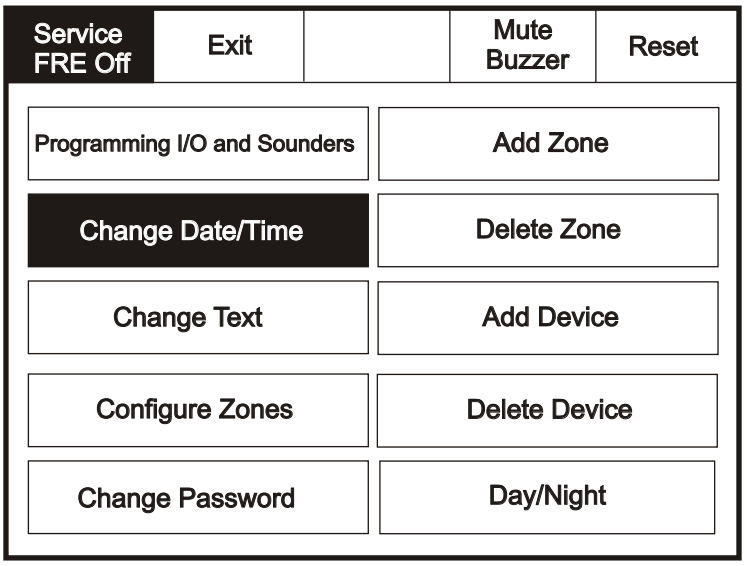




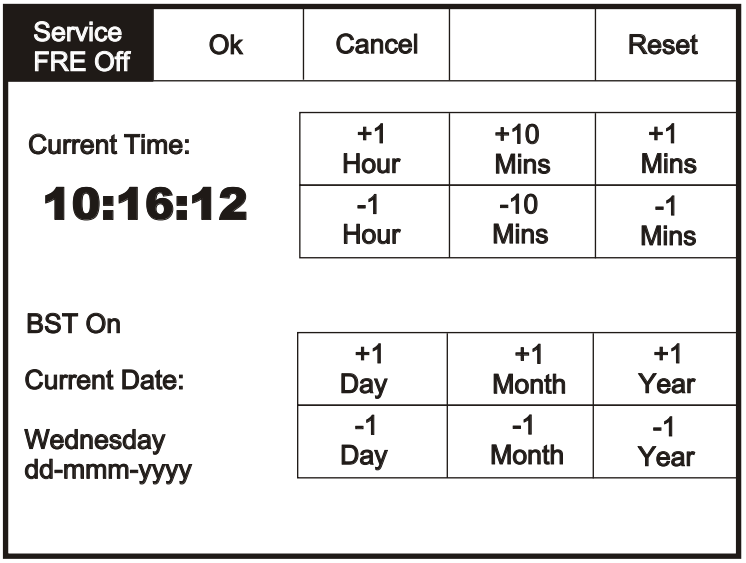


Change Date/Time

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

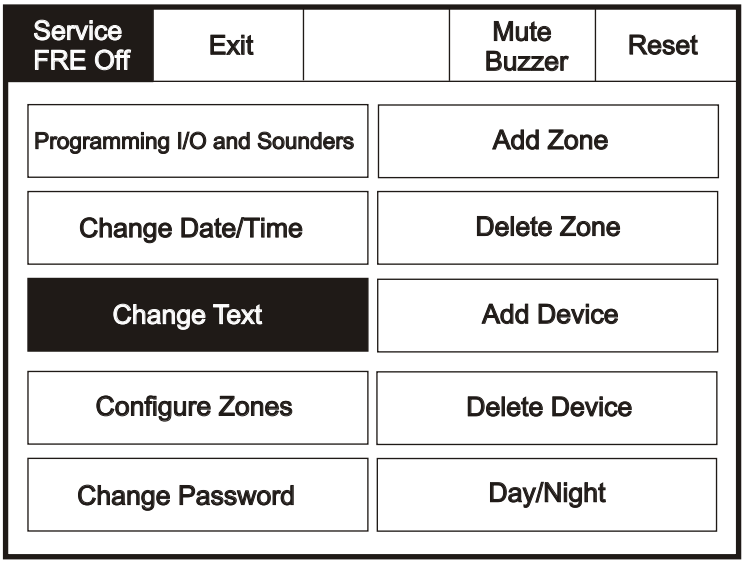


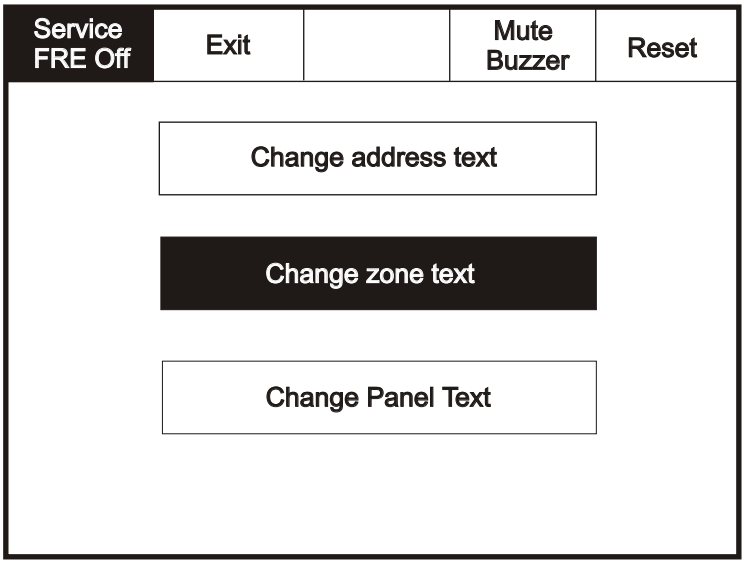
Set the Time Using the Buttons Shown Below.



Change Zone Text

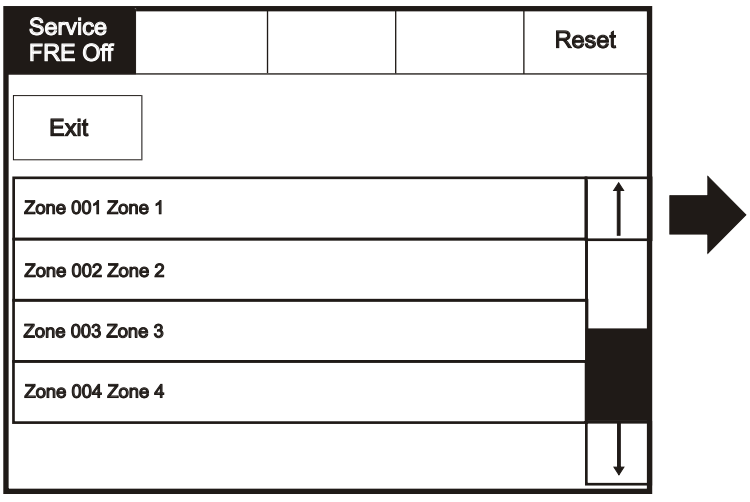
Enter the Service Mode and Select Configure. Select “Change Text”

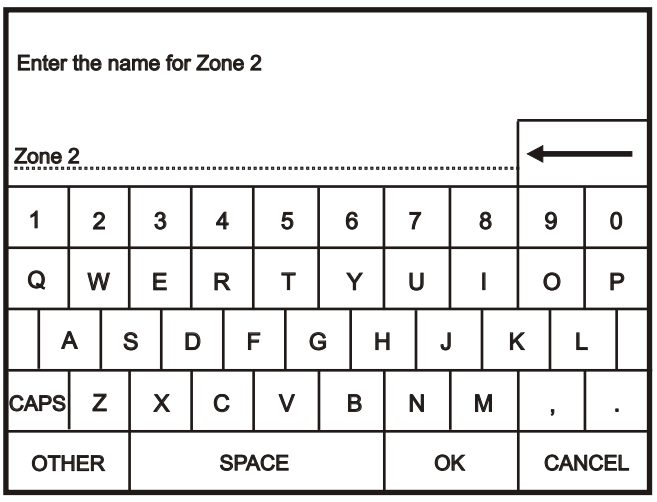




Press “Change Zone Text”

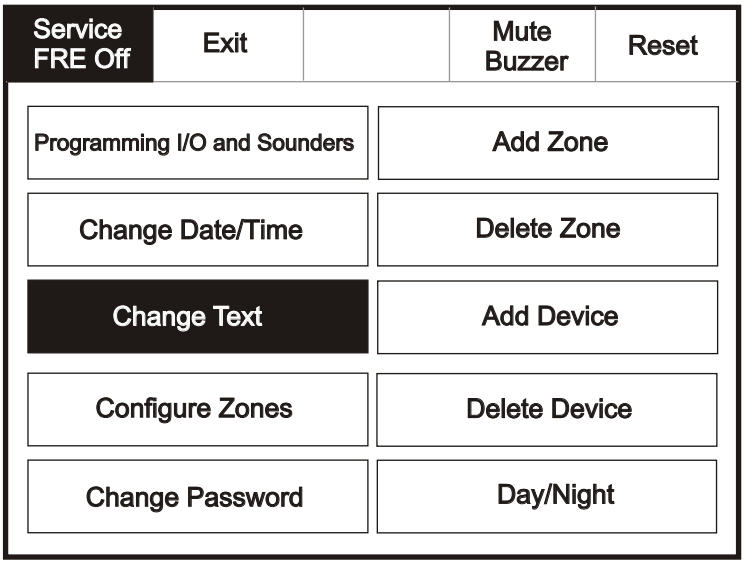
Select the zone you wish to Change and Edit Using the Keyboard



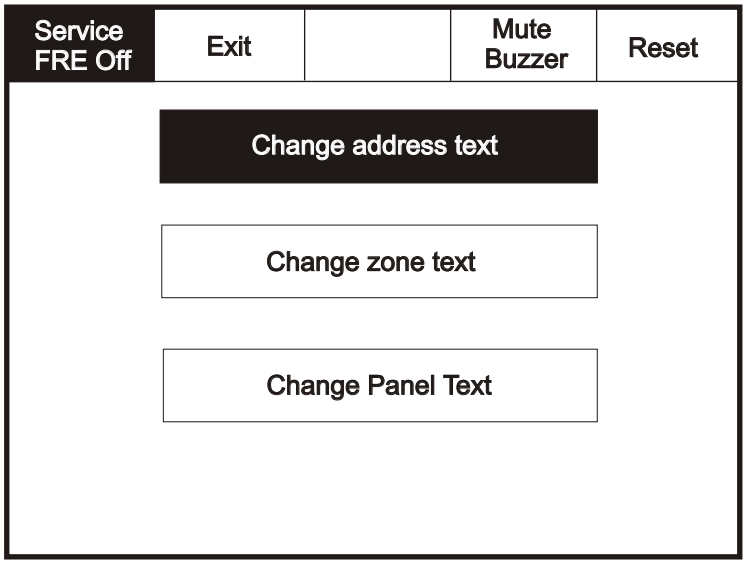


Change Text

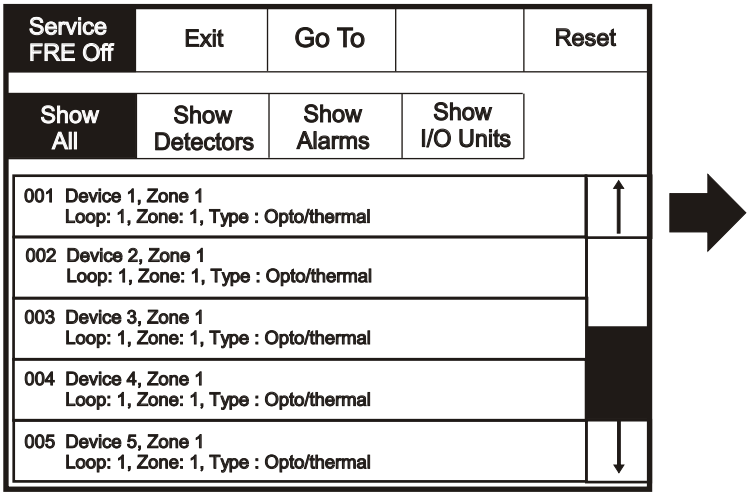
Enter the Service Mode and Select Configure. Select “Change Text”

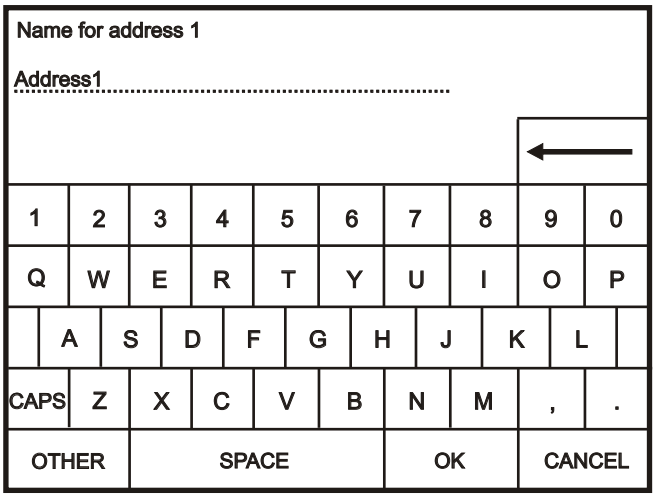


Press “Change Address Text”



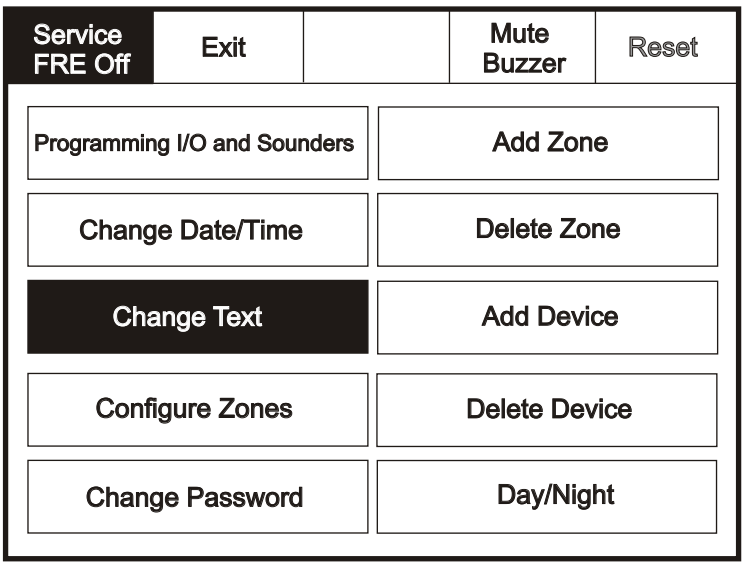
Select the Address you wish to change and edit using the keyboard

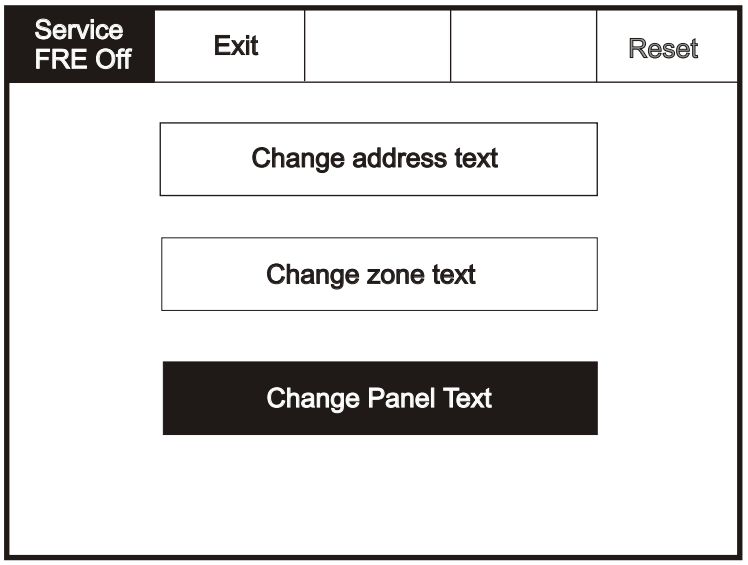




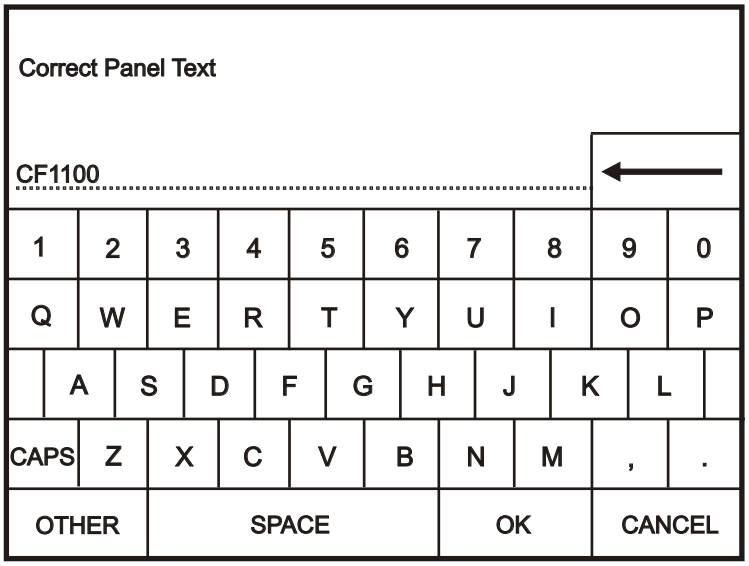
Change Panel Text

Enter the Service Mode and Select Configure. Select “Change Text”



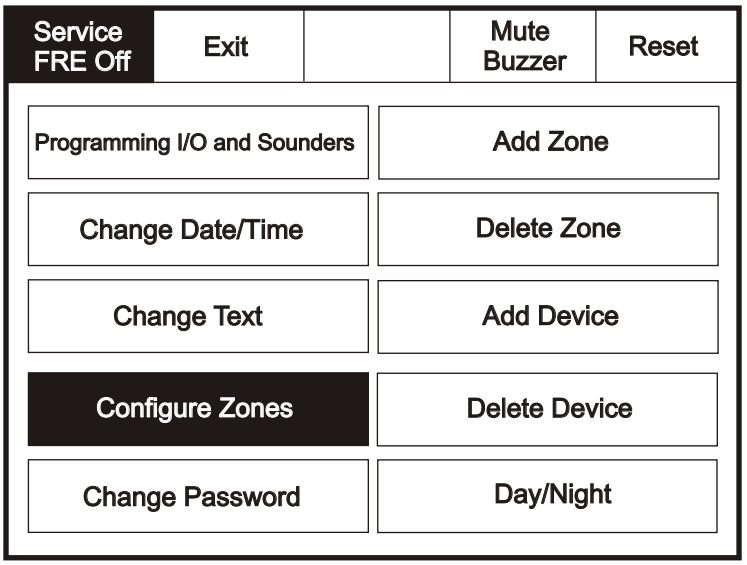


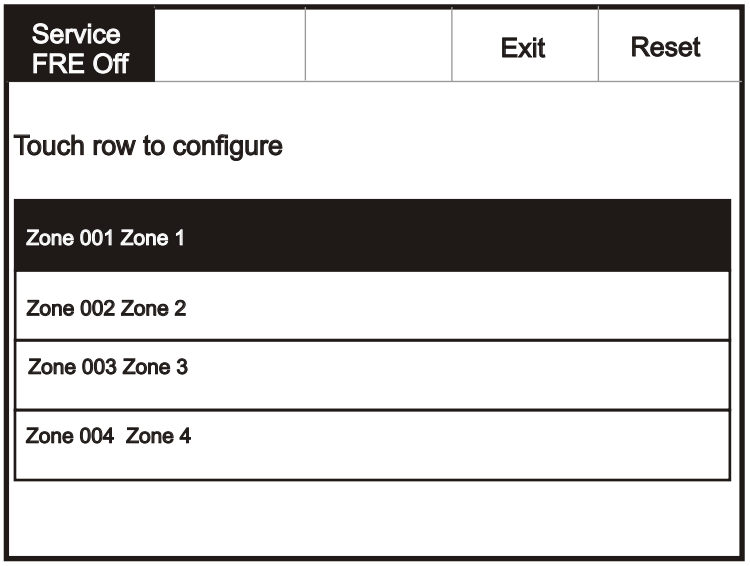
Press “Change Panel Text”



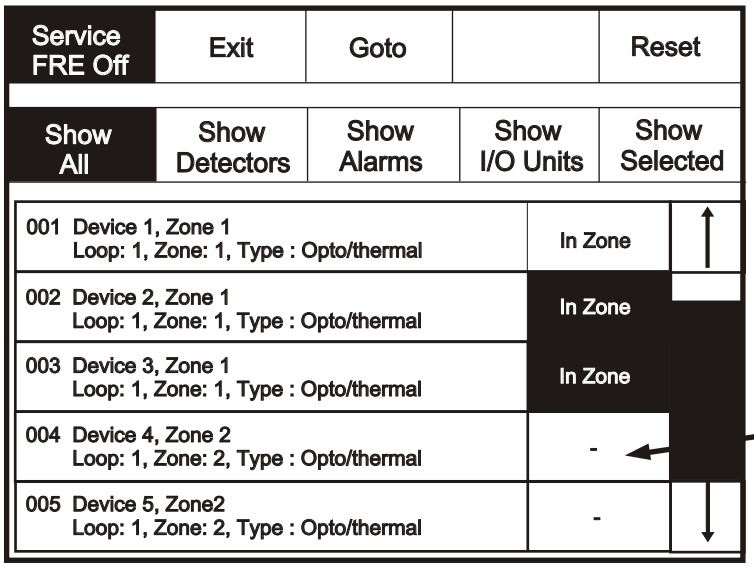
Configure Zones

Enter the Service Mode and Select Configure. Select “Configure Zones”





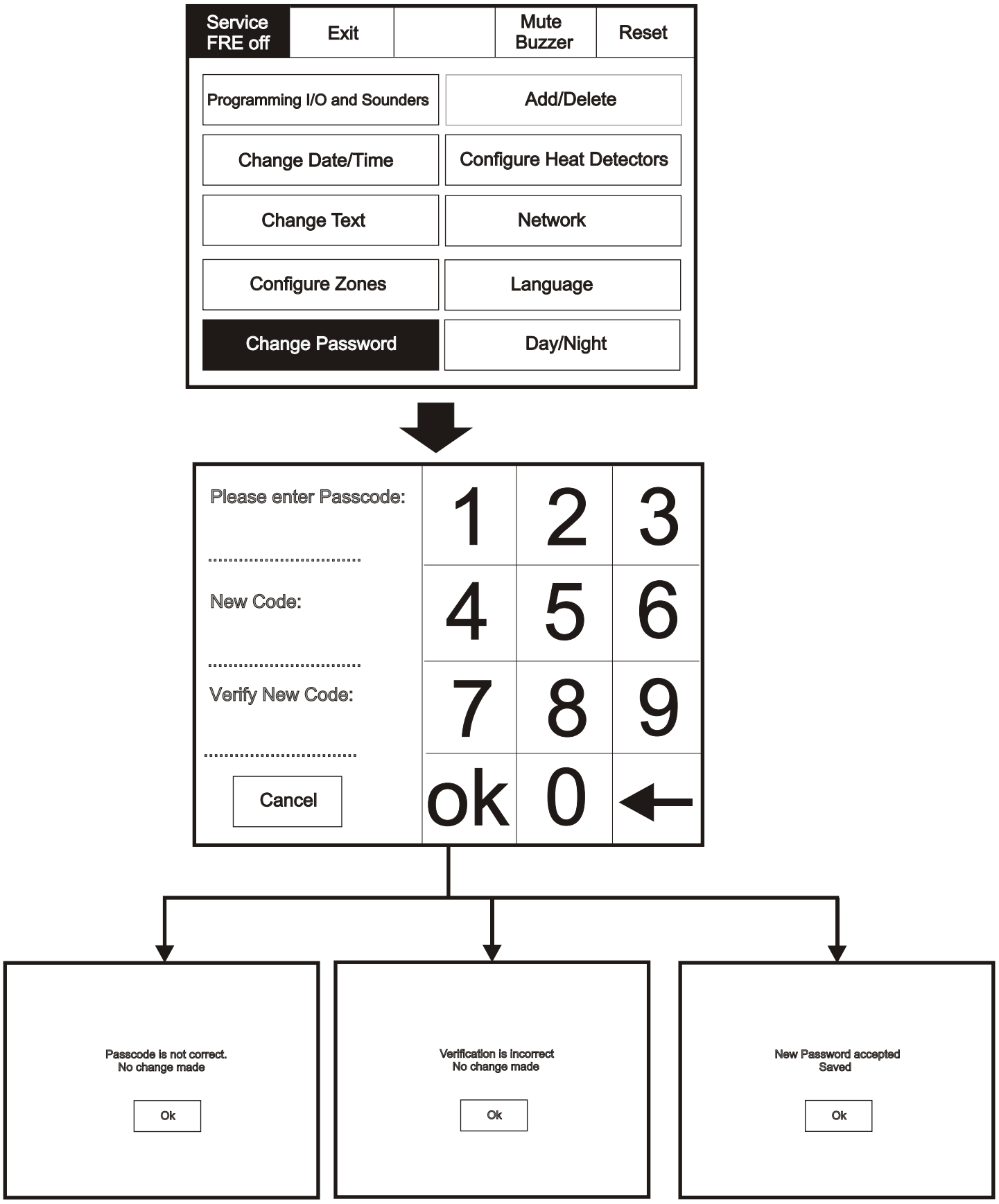
Select Zone into which device will be added



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

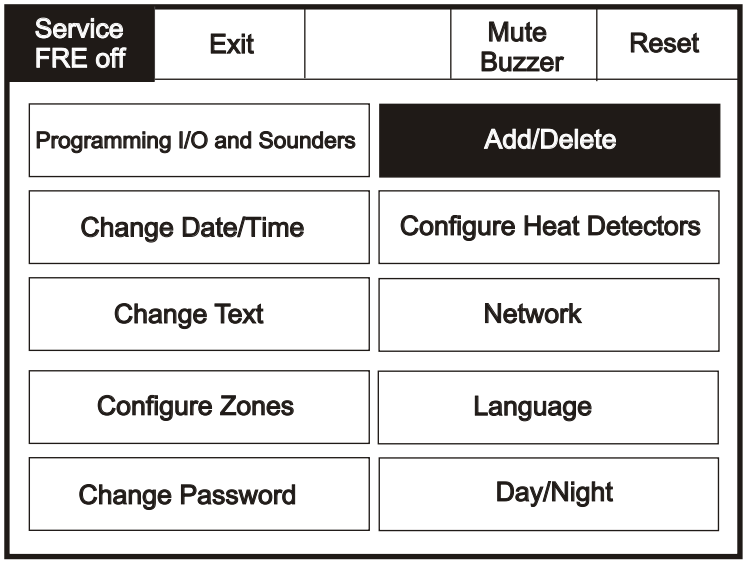
Change Passcode

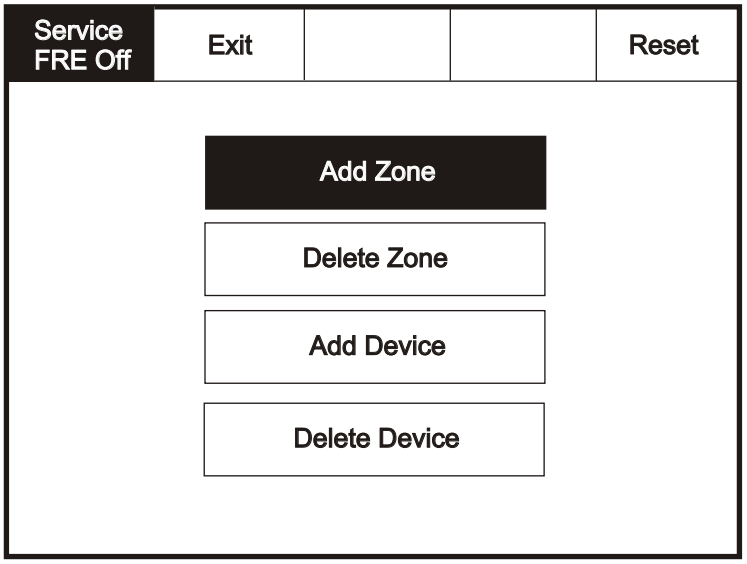
Enter the Service Mode and Select Configure. Select “Change User Code”

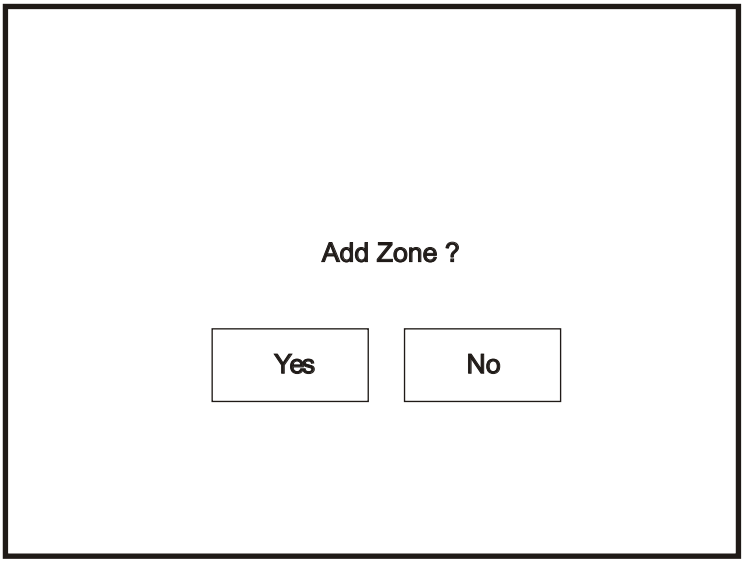


Add Zone

Enter the Service Mode and Select Configure. Select “Add Zone”

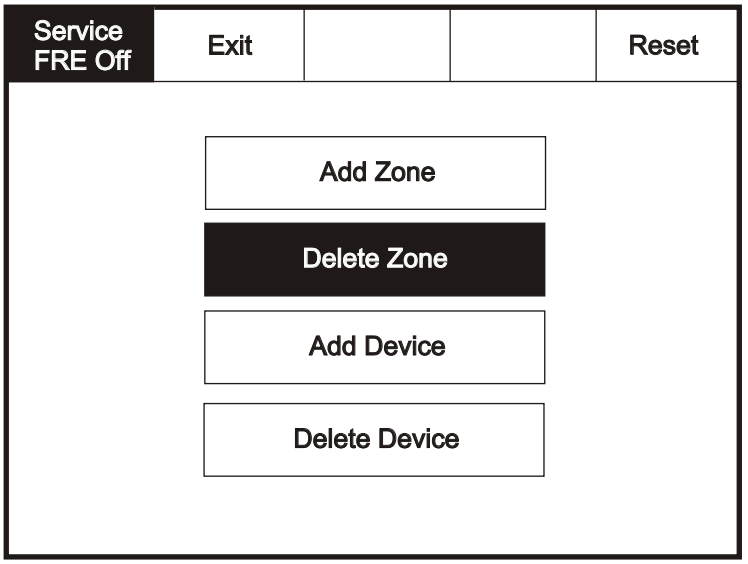


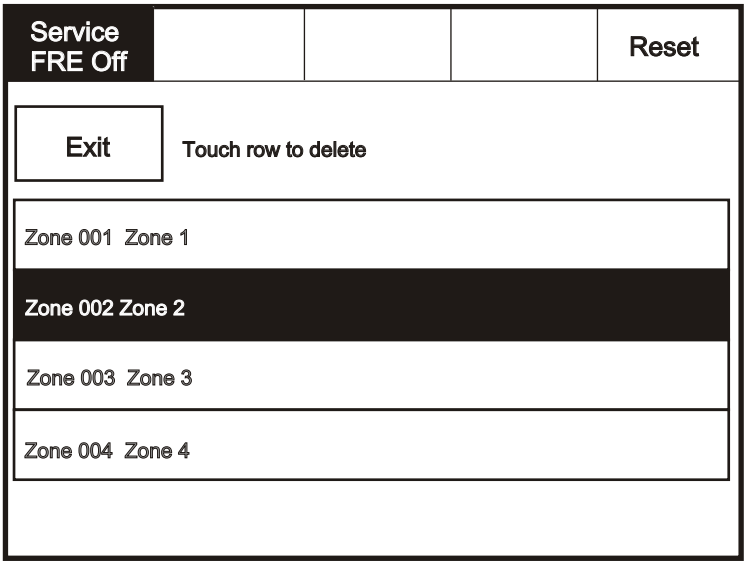




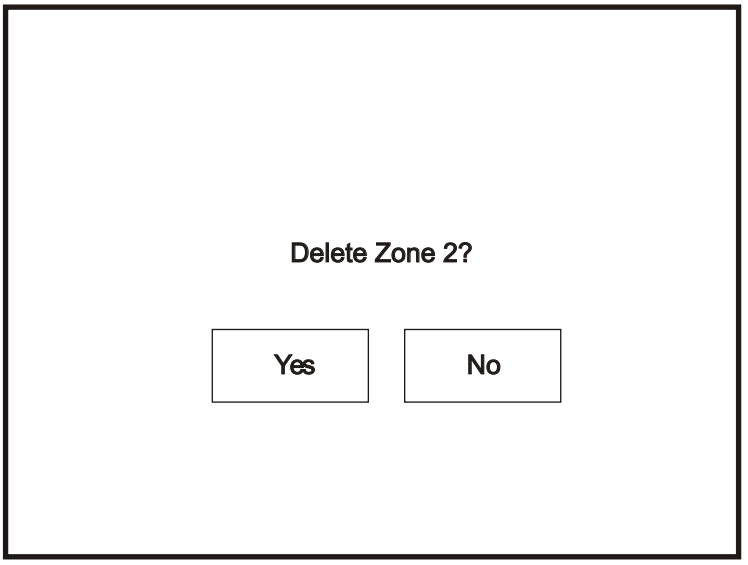
Delete Zone

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





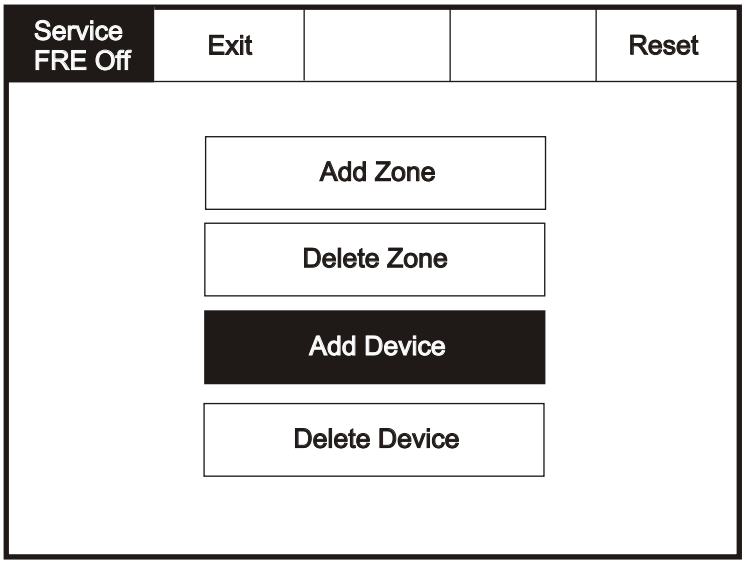
Select Zone to be Deleted

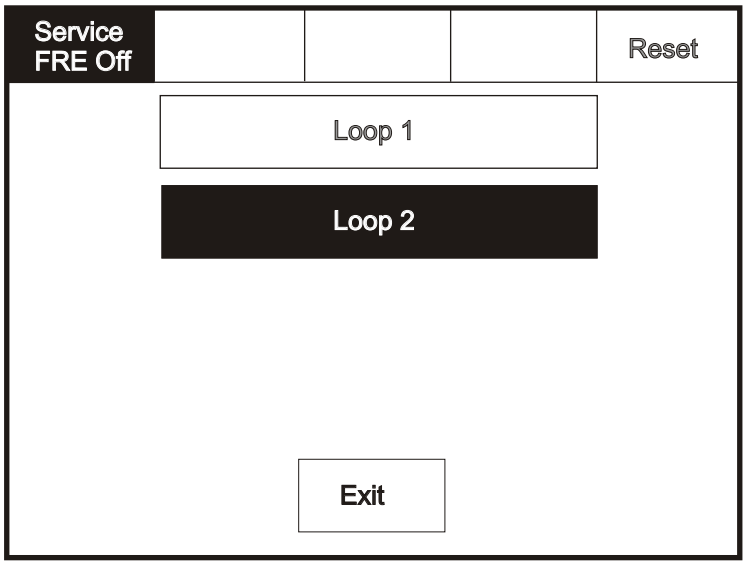


Confirm or Cancel Deletion

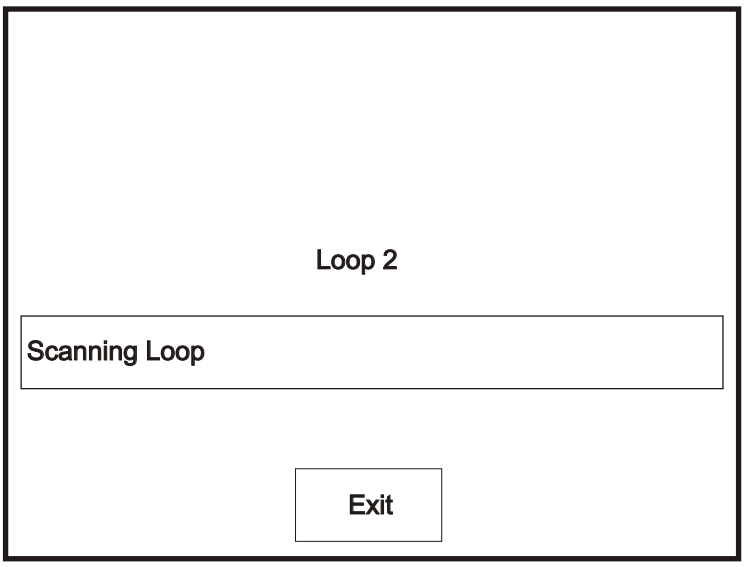
Add Device

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





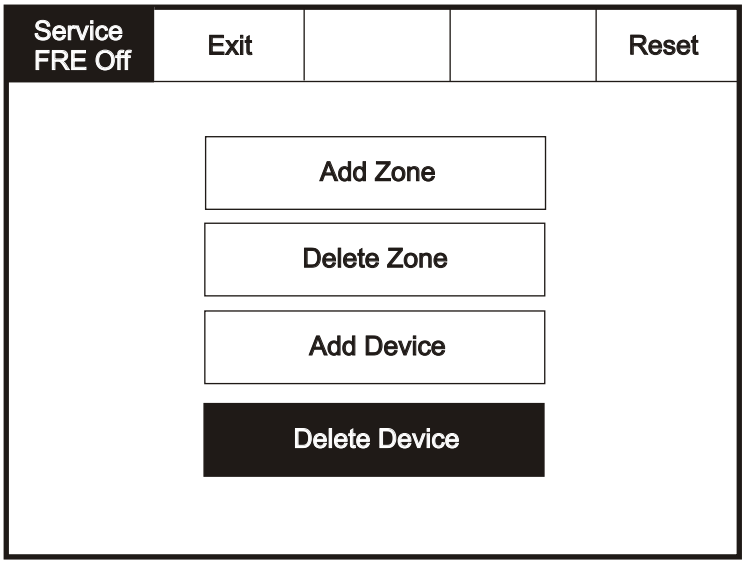
Select a Loop to Add a New Device

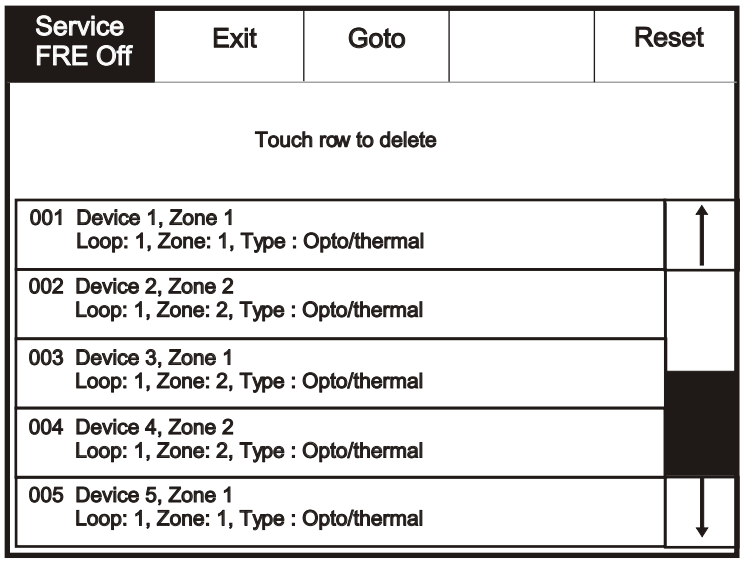


Confirm New Device and Loop

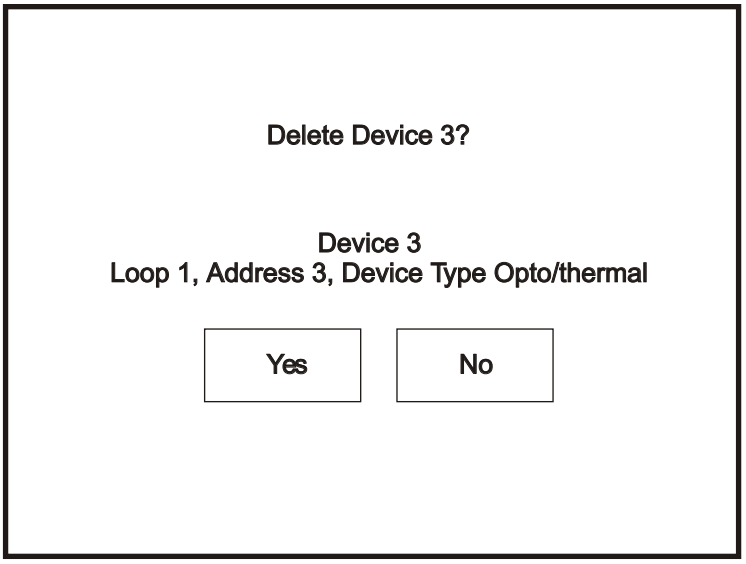
Delete Device

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





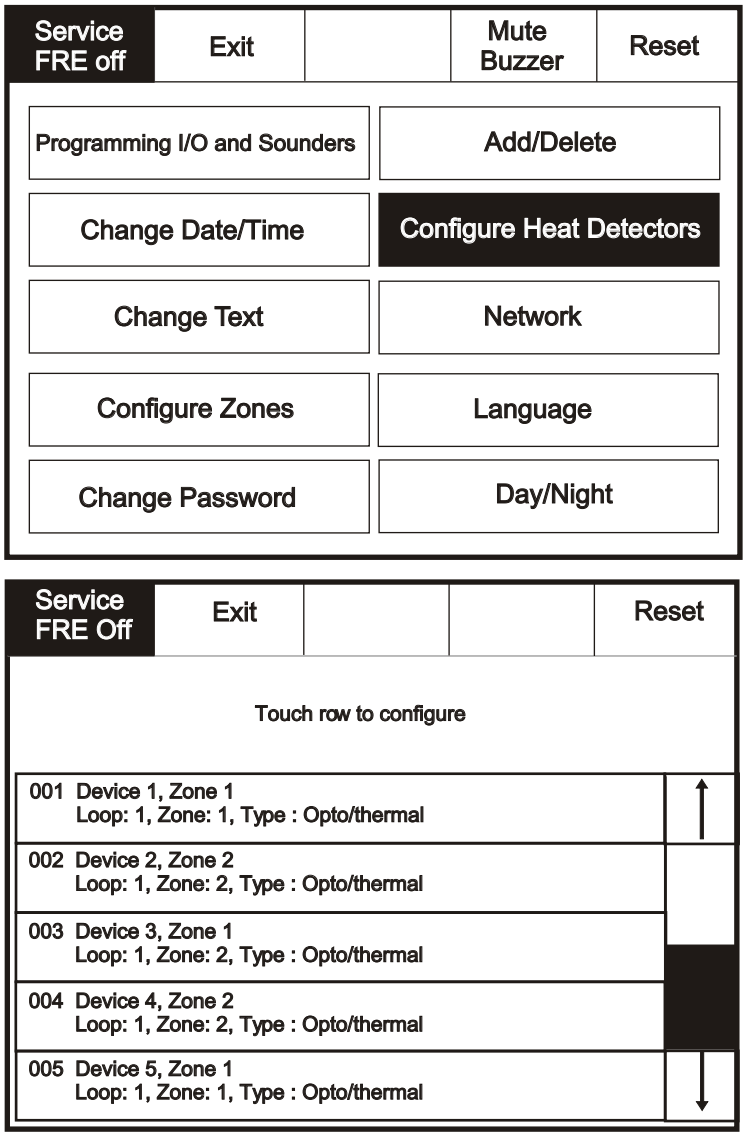
Select a Device to Delete



Confirm or Cancel Deletion

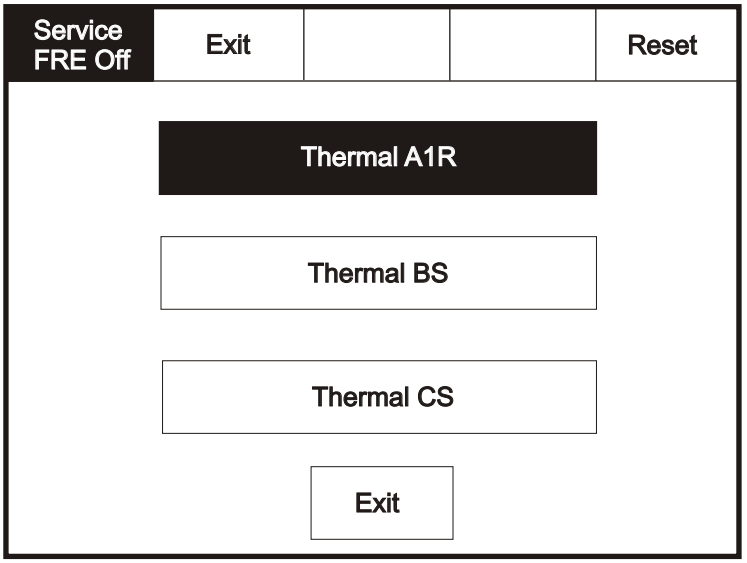
Configure Heat Detectors

Enter the Service Mode and Select Configure. Select “Configure Heat Detectors”



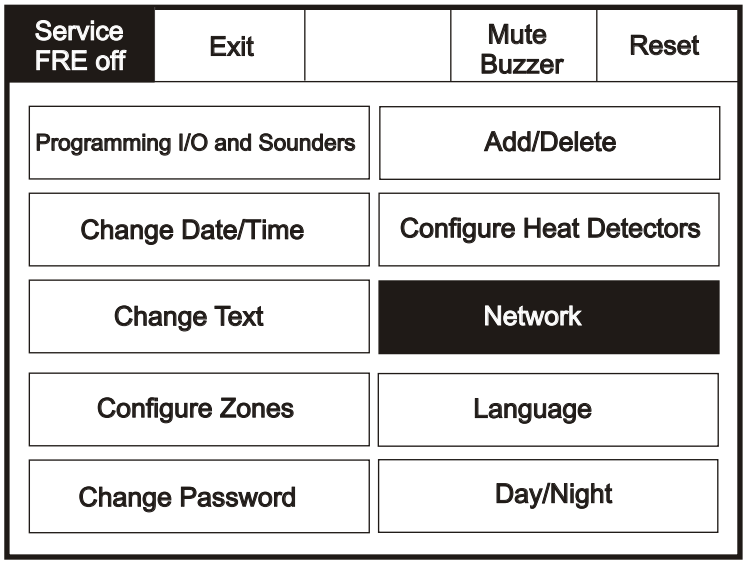
Select a Device to Configure

Select appropriate detector class

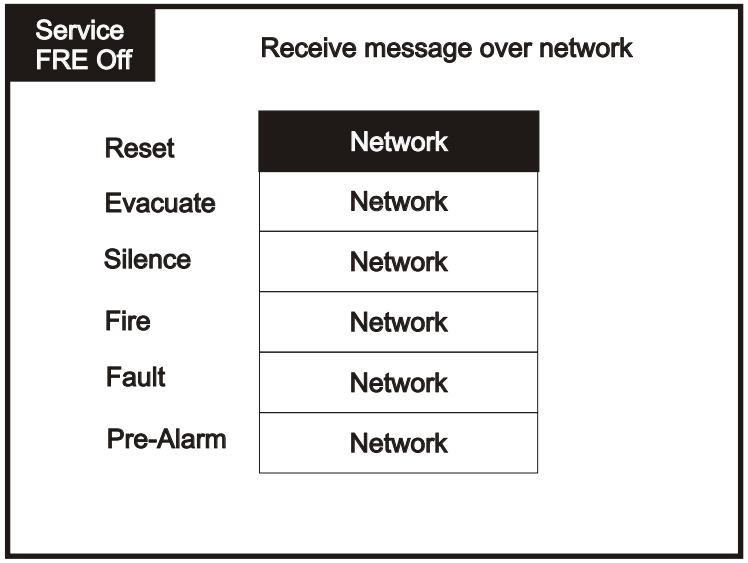


Network

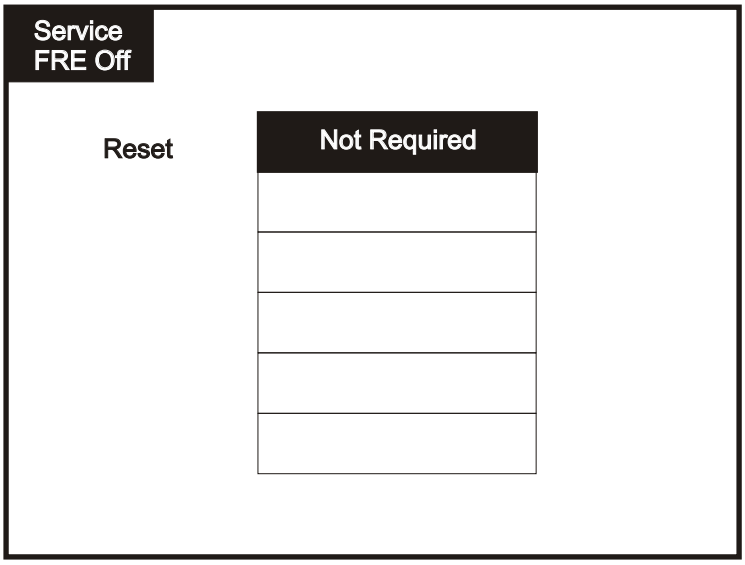
Enter the Service Mode and Select Configure. Select “Network”, This menu defines whether messages are broadcast across the network or remain local.



Select the specific required . E.g “Reset”



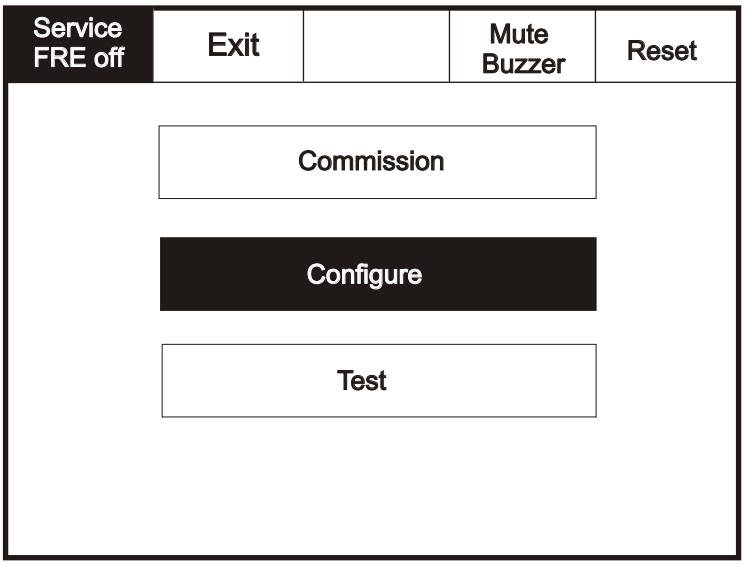
Select if Network is required to be on/off



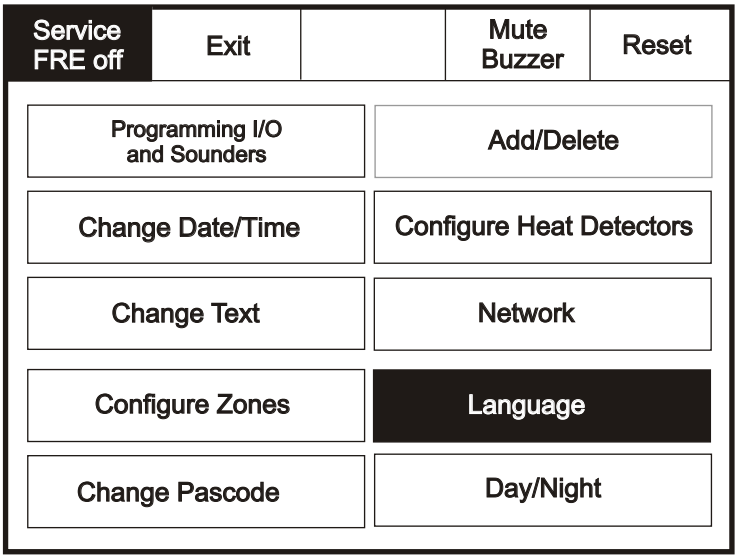
Language

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.

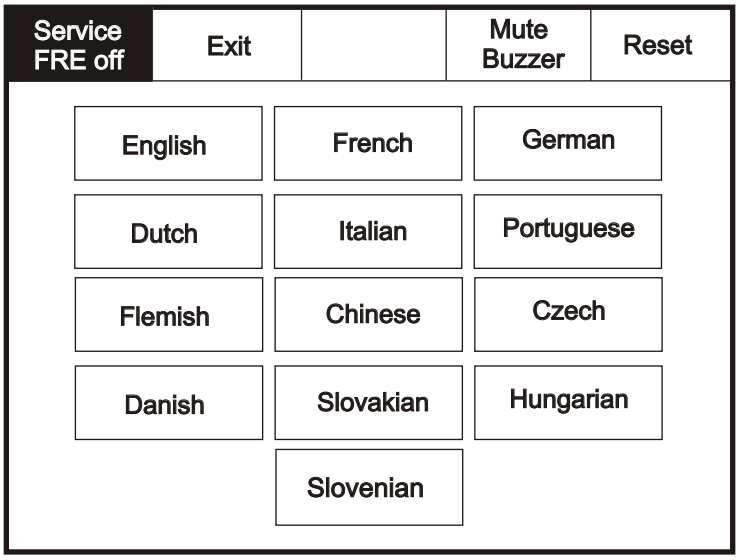
Enter the Service Mode and Select Configure.



Select “Programming I/O and Sounders” from the Configure Menu Screen.Then press Language



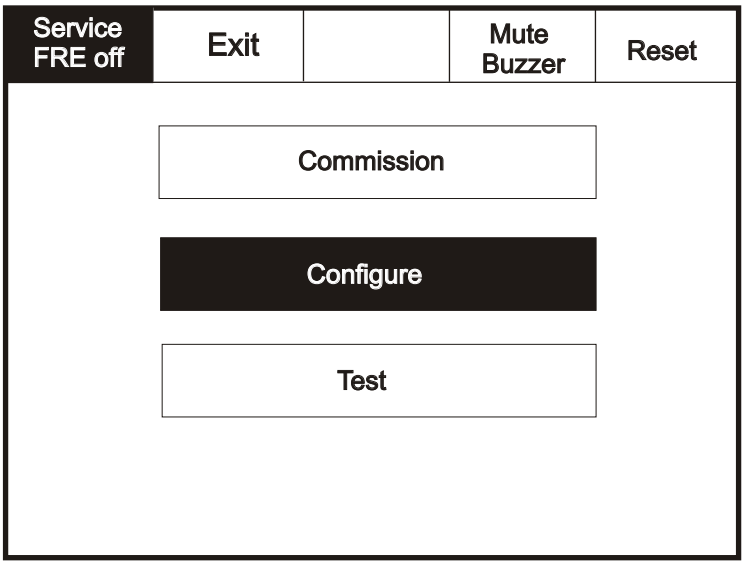
Select required Language



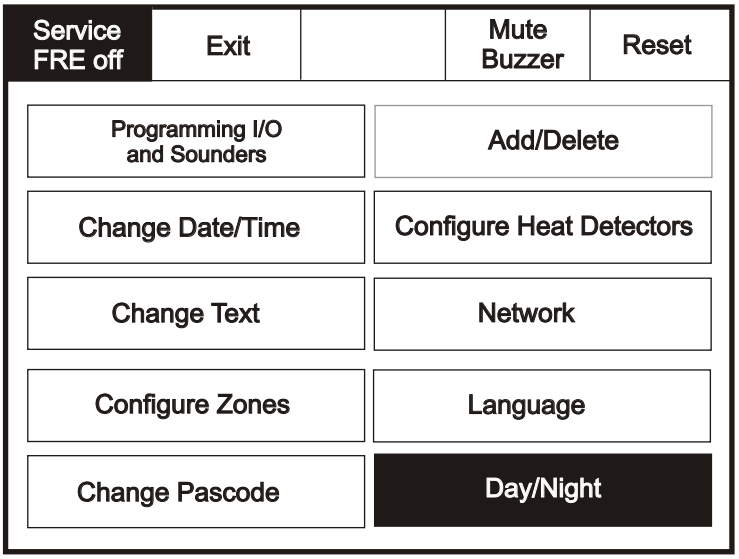
Day / Night

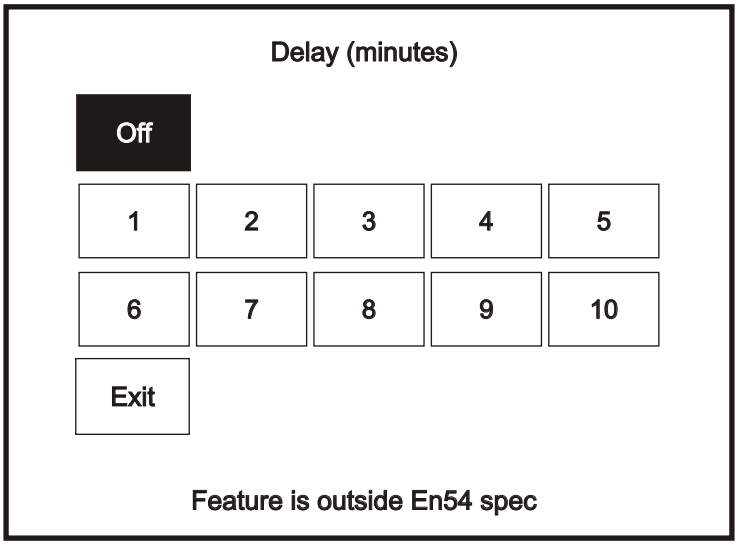
To activate the touch screen, touch the top left corner of the screen until the screen illuminates. To enter the supervisor mode touch the supervisor button and enter the service passcode.

Enter the Service Mode and Select Configure.

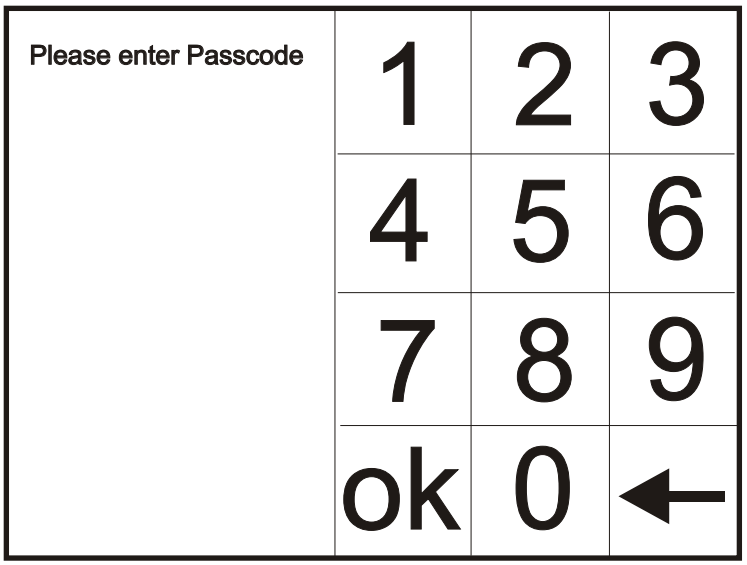


Select “Day/Night” from the Configure Menu Screen.





Password Protection

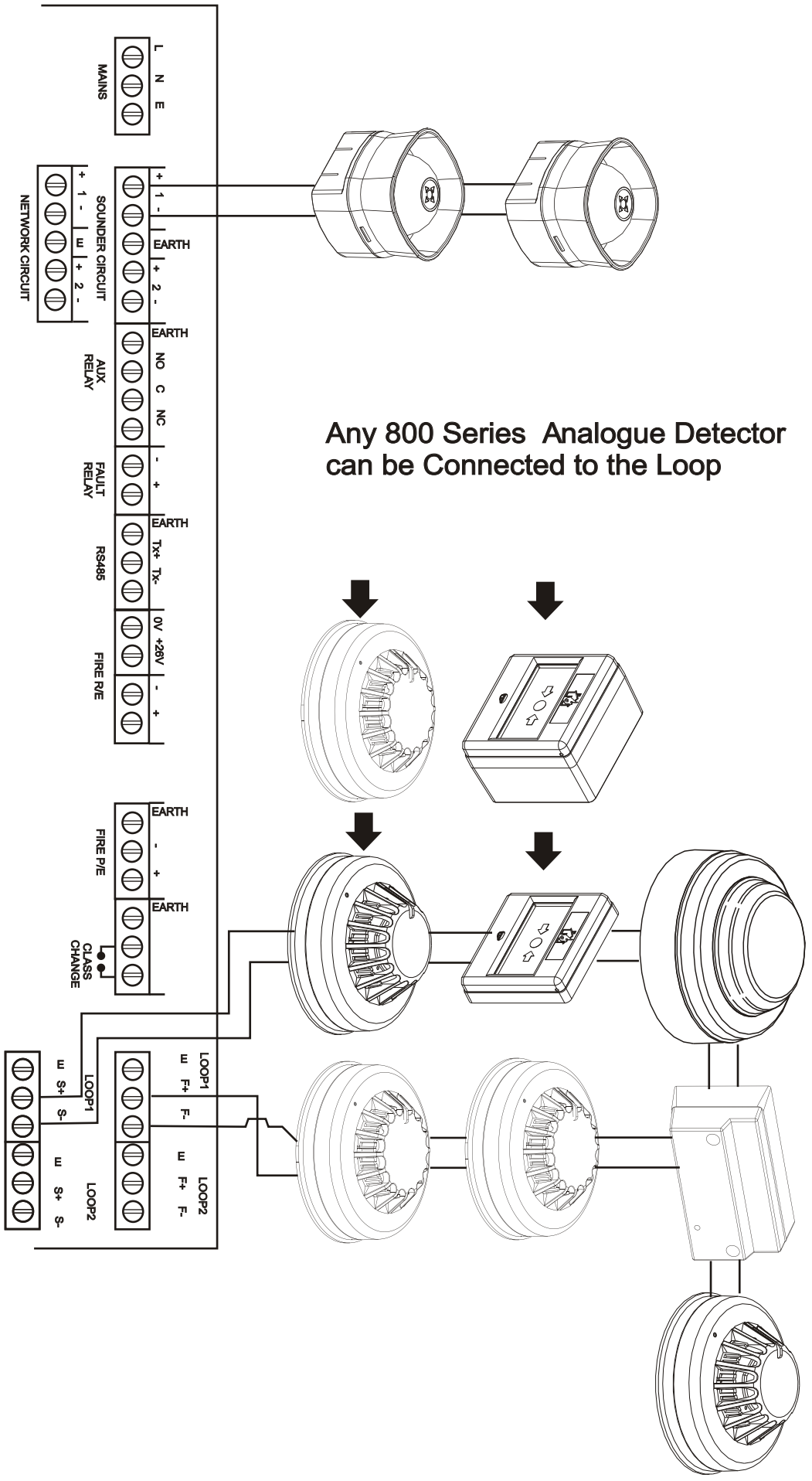


The system has password protection which restricts access to the DISABLE Menu and to TEST/COMMISSIONING MODE. The password is a four digit code and the default number is 2214. The password entry screen is accessed via the supervisor mode button. Press supervisor mode and the password entry screen will 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 4

Appendix

System Wiring



COOPER Fire Systems
Security House,
Vantage Point Business Village,
Mitcheldean,
Glos. GL17 0SZ
Tel: 01594 541900
www.cooperfire.co.uk

Installation Guide for Spur Isolator Unit CSI350

Installation:

Wiring

Each unit terminal connector is suitable for clamping a single cable conductor up to a maximum of 2.5mm².
The CSI350 unit is suitable for mounting on to back boxes with 120mm fixing centres. (surface mounting box supplied)

1. Separate the two halves of the unit
2. Drill out the required holes for cable entries
3. Mount the back box in the required position
4. Install wiring through the pre-drilled holes
5. Connect the unit as per diagram below
6. Fit front cover

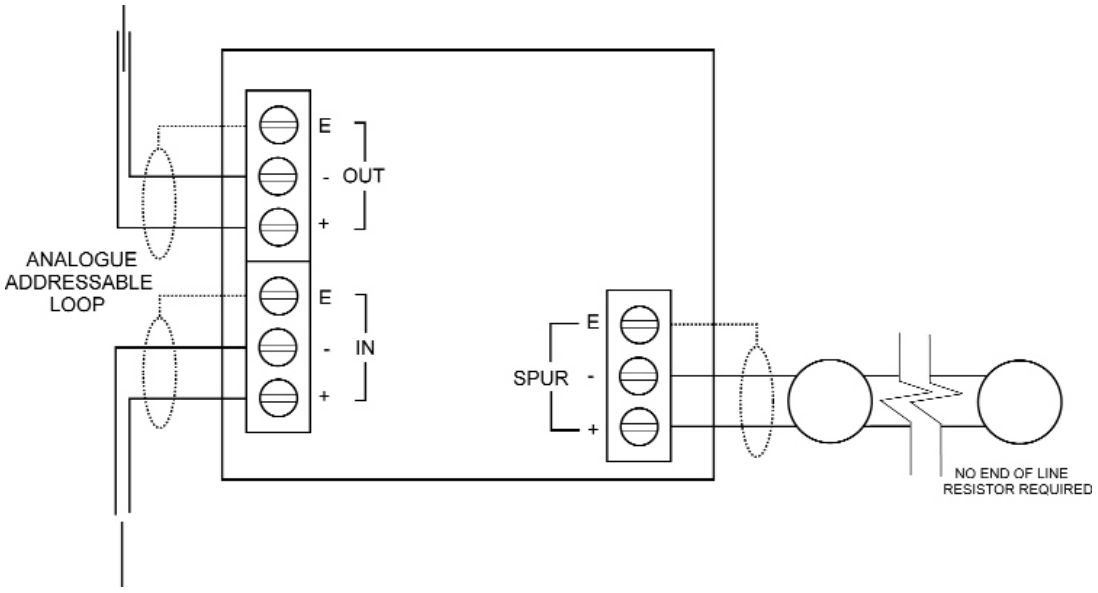
General

Addressing of the unit is not required (see control panel operation for details)

CSI350 - Specification:

Quiescent Current:	170µA
Operating Temperature:	-10 to +60C
Humidity:	0 to 95% non condensing
IP Rating:	IP40
Standards:	EN54:Pt 2 and 4 BS5839:Pt 1 (installation)
EMC:	CE Marked
Materials:	PC\ABS
Dimensions:	147(w)x88(h)x57(d) mm
Cable Size (Min-Max:)	0.5 to 2.5mm²
Recommended Cable Types:	Draka - FIRETUF Pirelli - FP200 MICC

Wiring Schematic:



Notes:

1. Cable earth screen must be connected to its adjacent earth terminal.
2. For maximum spur length/load see BS5839 Pt1:2002
3. This unit can only be used with Cooper Fire Systems CAB300 sensor bases and compatible sensors

COOPER Fire Systems
Security House,
Vantage Point Business Village,
Mitcheldean,
Glos. GL17 0SZ
Tel: 01594 541900
www.cooperfire.co.uk

Installation Guide for 4 Way Sounder Controller Unit CSC354

Installation:

Wiring

Each unit terminal connector is suitable for clamping a single cable conductor up to a maximum of 2.5mm².

1. Remove the front cover of the unit
2. Mount the back box in the required position.
3. Install wiring through the pre-drilled holes ensuring care is taken not to damage the circuit board.
4. Connect the unit as per diagram below.
5. Refit front cover.

General

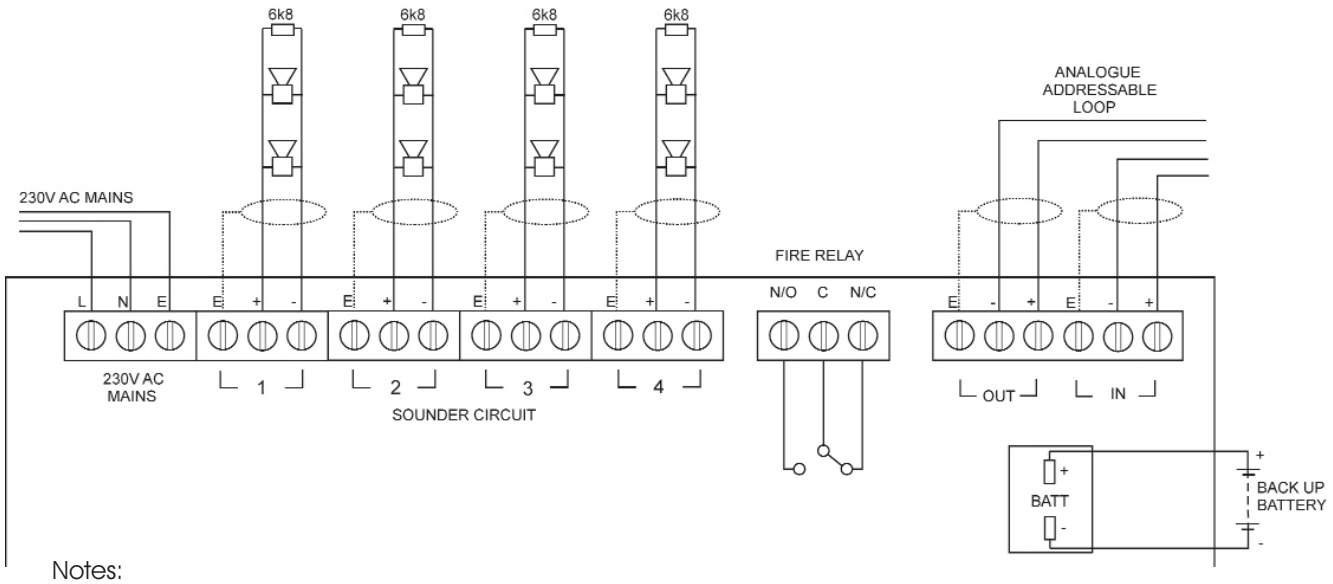
The CSC354 unit requires a permanent 230Vac supply.

Addressing of the unit is not required (see control panel operation for details)

CSC354 - Specification:

Mains supply voltage:	230Vac
Mains current consumption:	0.5A
Operating voltage:	24Vdc
Standy period:	24hrs + 30 minutes ringing
Quiescent Current:	250µA
Addressing mode:	Auto addressed
Sounder circuit output:	0.8Amp (max)
Maximum sounder load:	3.2A (4 channels)
Fire relay switching voltage	30Vdc
Maximum switching current	1A (resistive)
	0.5A (inductive)
Operating Temperature:	-10 to +45C
Humidity:	0 to 95% non condensing
IP Rating:	IP40
Standards:	EN54:Pt 2 and 4
	BS5839:Pt 1 (installation)
EMC:	CE Marked
Battery:	2x12V, 4Ah, SLA
Materials:	PC\ABS\Steel
Dimensions:	300(w)x300(h)x74(d) mm
Cable Size (Min-Max:)	0.5 to 2.5mm²
Recommended Cable Types:	Draka - FIRETUF
	Pirelli - FP200
	MICC

Wiring Schematic:



Notes:

1. Cable earth screen must be connected to its adjacent earth terminal.
2. The end of line resistor must always be fitted, even if sounder circuit is not used.
3. Sounder circuits are monitored for wiring open and short circuit.
4. Output fire relay is a set of changeover volt free-contacts and is not monitored.
5. This unit should only be finally connected to the 230Vac mains supply and battery, during system commissioning

COOPER Fire Systems
Security House,
Vantage Point Business Village,
Mitcheldean,
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www.cooperfire.co.uk

Installation Guide for Zone Monitor Unit CZMU352

Installation:

Wiring

Each unit terminal connector is suitable for clamping a single cable conductor up to a maximum of 2.5mm².
The zone monitor unit is suitable for mounting on to back boxes with 120mm fixing centres. (surface mounting box supplied)

1 Separate the two halves of the unit
2 Drill out the required holes for cable entries
3 Mount the back box in the required position
4 Install wiring through the pre-drilled holes
5 Connect the unit as per diagram below
6 Fit front cover

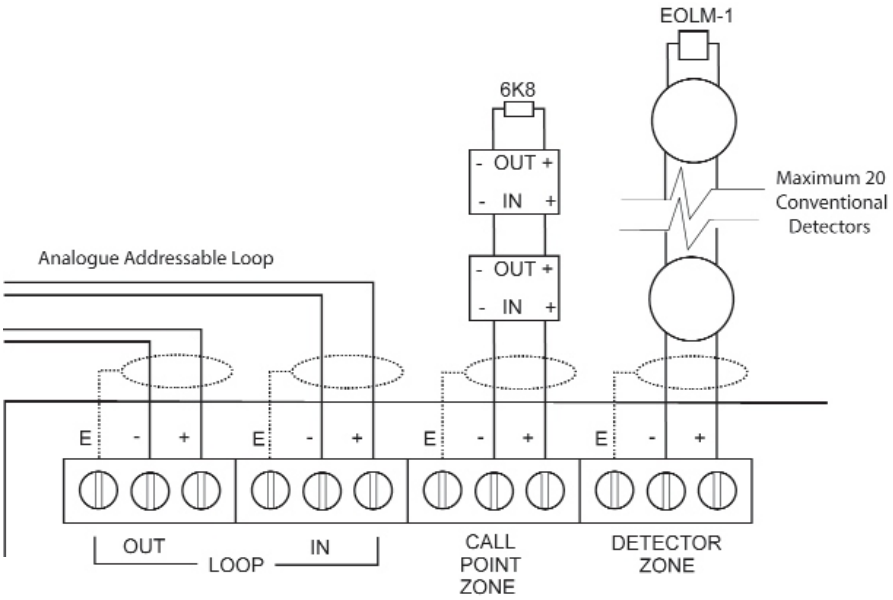
General

Addressing of the unit is not required (see control panel operation for details)

CZMU352 - Specification:

Operating voltage:	18 to 30Vdc
Quiescent Current:	2.8mA
Current with 20 detectors	3.4mA
Total alarm current	8mA
Addressing mode:	Auto addressed
Detector zone loading:	20 detectors (max)
Call point load	Unlimited
Operating Temperature:	-10 to +60C
Humidity:	0 to 95% non condensing
IP Rating:	IP40
Standards:	EN54:Pt 2 and 4 BS5839:Pt 1 (installation)
EMC:	CE Marked
Materials:	PC\ABS
Dimensions:	147(w)x88(h)x57(d) mm
Cable Size (Min-Max:)	0.5 to 2.5mm²
Recommended Cable Types:	Draka - FIRETUF Pirelli - FP200 MICC

Wiring Schematic:



Notes:
1. Cable earth screen must be connected to its adjacent earth terminal.
2. The end of line resistor must always be fitted, even if the spur is not used.
3. Maximum spur length - see BS5839 Pt:1 2002 for zone coverage.
4. There is no maximum number of conventional call points allowed per zone output.
5. This unit can only be used with Cooper Fire Systems CDB300/I detector base and compatible detectors

Installation Instructions for:

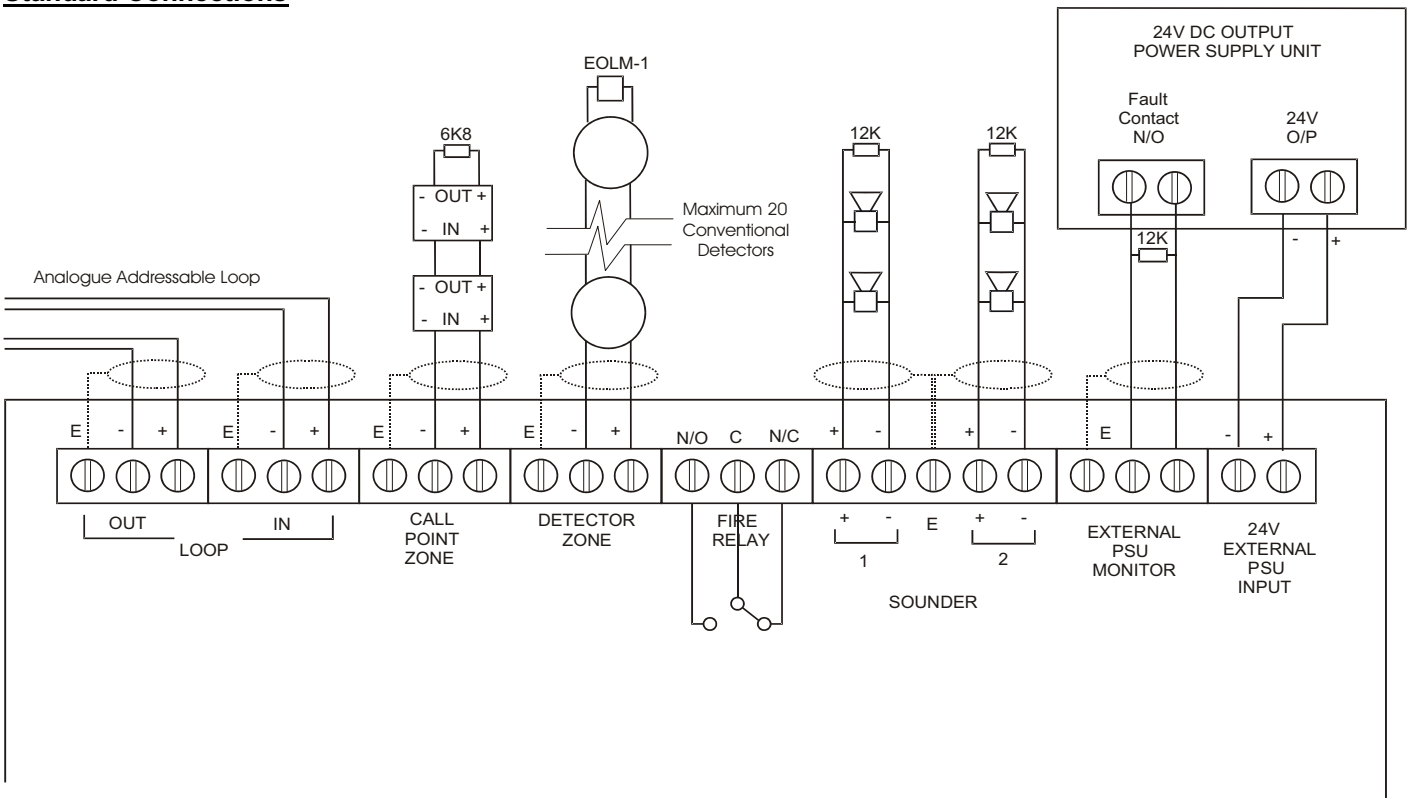
Shop Unit Monitor CSUM355

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. This unit can only be used with Cooper 300 series 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 Pt1:2001 for Zone Coverage.
5. Maximum number of call points allowed is unlimited.
6. Detector zone end of line device is EOLM-1

Cooper Fire Systems
Tel: +44 (0) 1594 541900
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Specifications

Loop Load	Min	Nom	Max	Units
Quiescent Current		2.8		mA
With 20 Cooper Detectors, Unlimited Call Points		3.4		mA
Alarm Condition, with 20 Cooper Detectors, Unlimited Call Points		8.0		mA

Sounder Circuits				
External PSU Input Voltage	20	24	30	V
External PSU Current Rating	1			A
Sounder Load (Each Channel)			300	mA
End Of Line Resistance		12±5%		KΩ

Call Point Zone				
Number of Call Points per Zone	0		Note 1	
End Of Line Resistance		6.8		KΩ
Fire Input Trigger Resistance		680		Ω
Short Circuit Fault Threshold Resistance			100	Ω
Open Circuit Fault Threshold Resistance	39			KΩ

Detector Zone				
Number of Detectors per Zone	0		20	
End Of Line Monitor	ACTIVE END OF LINE DEVICE			
Fire Input Trigger Resistance		680		Ω
Short Circuit Fault Threshold Resistance			100	Ω
Open Circuit Fault Threshold Resistance	39			KΩ

External PSU Monitor Input				
End Of Line Resistance		12±5%		KΩ
Fault Input Trigger Resistance			100	Ω

Fire Relay Contact Ratings				
Switching Voltage			30	V DC
Switching Current (Un-fused)			1	A

Environmental				
Operating Temperature	-10		+60	°C
Humidity (Non Condensing)			95	%rh

Standards
EN54 : Pt2 & 4
BS5839 : Pt1 (Installation)

Compatibility
Suitable for use with Cooper Analogue Addressable Fire Systems

Physical	
Dimensions	147 x 88 x 57 (mm)
Weight	0.25kg
Ingress Protection	IP40

Notes:
1. Maximum number of call points allowed is unlimited.
2. Detector zone end of line device is EOLM-1 (supplied).

Installation Instructions for:

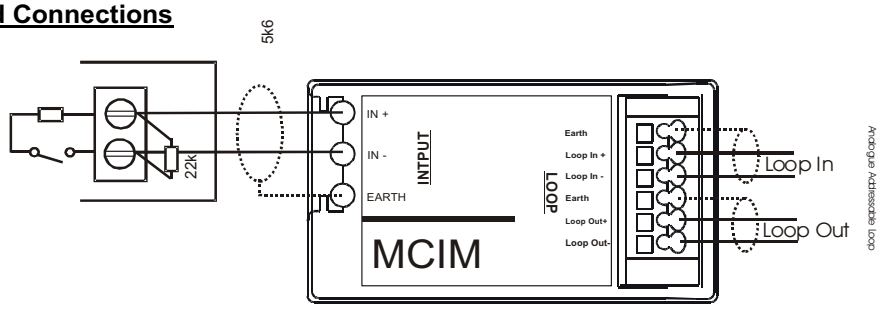
Single Channel Input Unit MCIM

Installation

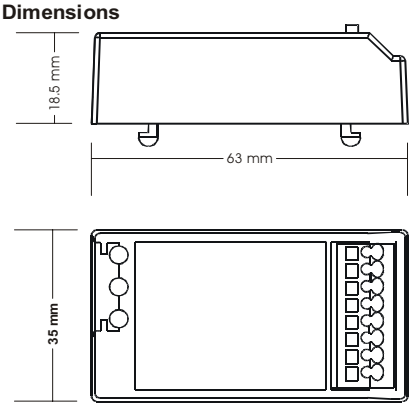
1. Fit the box in position using the mounting details below.
2. Connect the unit according to the diagram below.
3. Recommended Loop Cable Type: FIRETUF, FP200, MICC

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

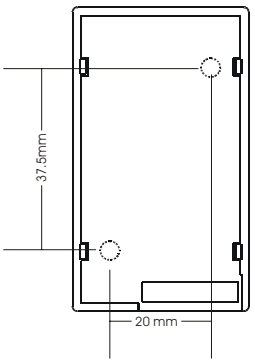
Standard Connections



Dimensions



Mounting Details (Drilling positions, template over leaf)



Notes:
1. Only connect cable screen to its adjacent earth terminal.
2. The end of line resistor provided must always be fitted, even if the input is unused.
3. Monitored inputs can detect open or short circuit faults.

Cooper Lighting and Security Ltd.
Menvier – JSB Division
Wheatley Hall Road, Doncaster, South Yorkshire, DN2 4NB, United Kingdom

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Fax:+44 (0)1302 – 367155	Fax:+44 (0)1302 – 303220	Fax:+44 1302 - 303251
Email: sales@cooper-ls.com	technical@cooper-ls.com	export@cooper-ls.com

Specifications

Loop Load	Min	Nom	Max	Units
Quiescent Current		310		µA

Operating Voltage	18	30		V DC

Inputs				
Trigger Resistance		5.6		KΩ
End Of Line Resistor		22		KΩ
Short Circuit Fault Threshold Resistance			1	KΩ
Open Circuit Fault Threshold Resistance	33			KΩ

Environmental				
Operating Temperature	-10		+60	°C
Humidity (Non Condensing)			95	%RH

Standards
EN54 : Pt2 & 4
BS5839 : Pt1 (Installation)

Compatibility
Suitable for use with Cooper Analogue Addressable Fire Systems

Physical	
Dimensions	63mm x 35mm x 18.5mm
Weight	> 0.1gm
Ingress Protection	IP40

Short Circuit Isolator

This addressable device contains an integral short circuit isolator, which operates between the – IN terminal and the – OUT terminal. The isolator operates in conjunction with Cooper Analogue Addressable Control Panels when a low parallel resistance fault of typically 200? is present between the +VE and –VE of the loop wiring.

Short Circuit Isolation Data (Integral with each device)	
Total Loop Resistance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the Control Panel for isolators to open	200Ω (typ)

Installation Instructions for:

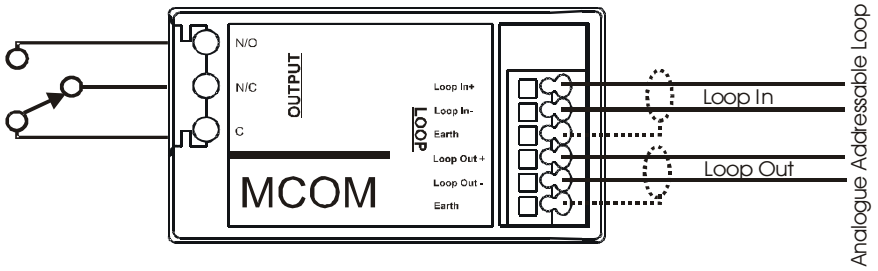
Single Channel Output Unit MCOM

Installation

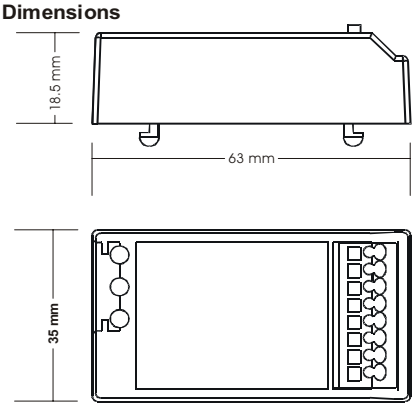
1. Fit the box in position using the mounting details below.
2. Connect the unit according to the diagram below.
3. Recommended Loop Cable Type: FIRETUF, FP200, MICC

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

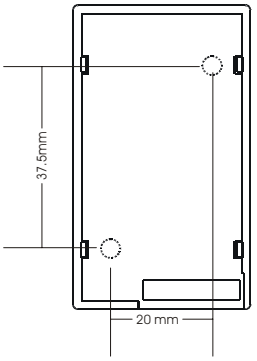
Standard Connections



Dimensions



Mounting Details (Drilling positions, template over leaf)



Notes:
1. Only connect cable screen to its adjacent earth terminal.
2. Output relay are volt-free contacts and are not monitored.

Cooper Lighting and Security Ltd.
Menvier – JSB Division
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Fax:+44 (0)1302 – 367155	Fax:+44 (0)1302 – 303220	Fax:+44 1302 - 303251
Email: sales@cooper-ls.com	technical@cooper-ls.com	export@cooper-ls.com

Specification

Loop Load	Min	Nom	Max	Units
Quiescent Current		310		µA

Operating Voltage	18	30		V DC

Output Relay				
Switching Voltage		24	30	V DC
Contact Rating			1	A
Switching Power			30	W

Environmental				
Operating Temperature	-10		+60	°C
Humidity (Non Condensing)			95	%RH

Standards
EN54 : Pt2 & 4
BS5839 : Pt1 (Installation)

Compatibility
Suitable for use with Cooper Analogue Addressable Fire Systems

Physical	
Dimensions	63mm x 35mm x 18.5mm
Weight	>0.1kg
Ingress Protection	IP40

Short Circuit Isolator

This addressable device contains an integral short circuit isolator, which operates between the – IN terminal and the
- OUT terminal. The isolator operates in conjunction with Cooper Analogue Addressable Control Panels when a low parallel resistance fault of typically 200? is present between the +VE and –VE of the loop wiring.
-

Short Circuit Isolation Data (Integral with each device)	
Total Loop Resistance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the Control Panel for isolators to open	200Ω (typ)

Installation Instructions for:

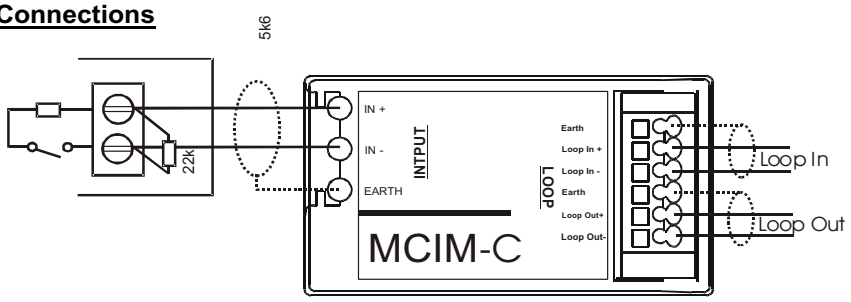
Single Channel Input Unit MCIM-C

Installation

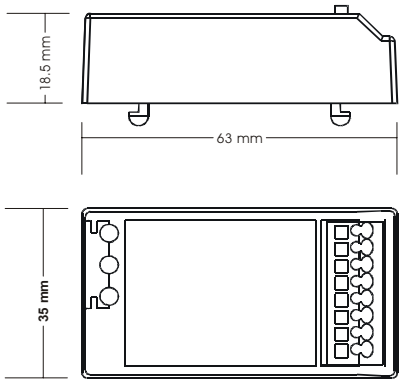
1. Fit the box in position using the mounting details below.
2. Connect the unit according to the diagram below.
3. Recommended Loop Cable Type: FIRETUF, FP200, MICC

Notes:
No addressing of the interface is required. See control panel operation for details.
This needs to be programmed as a call point on site installed PC software.

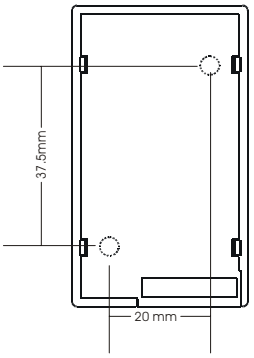
Standard Connections



Dimensions



Mounting Details (Drilling positions, template over leaf)



Notes:
1. Only connect cable screen to its adjacent earth terminal.
2. The end of line resistor provided must always be fitted, even if the input is unused.
3. Monitored inputs can detect open or short circuit faults.

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Email: sales@cooper-ls.com	technical@cooper-ls.com	export@cooper-ls.com

Specifications

Loop Load	Min	Nom	Max	Units
Quiescent Current		310		µA

Operating Voltage	18	30		V DC

Inputs				
Trigger Resistance		5.6		KΩ
End Of Line Resistor		22		KΩ
Short Circuit Fault Threshold Resistance			1	KΩ
Open Circuit Fault Threshold Resistance	33			KΩ

Environmental				
Operating Temperature	-10		+60	°C
Humidity (Non Condensing)			95	%RH

Standards
EN54 : Pt2 & 4
BS5839 : Pt1 (Installation)

Compatibility
Suitable for use with Cooper Analogue Addressable Fire Systems

Physical	
Dimensions	63mm x 35mm x 18.5mm
Weight	> 0.1gm
Ingress Protection	IP40

Short Circuit Isolator

This addressable device contains an integral short circuit isolator, which operates between the – IN terminal and the – OUT terminal. The isolator operates in conjunction with Cooper Analogue Addressable Control Panels when a low parallel resistance fault of typically 200? is present between the +VE and –VE of the loop wiring.

Short Circuit Isolation Data (Integral with each device)	
Total Loop Resistance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the Control Panel for isolators to open	200Ω (typ)

Drg ref PR205-118-510-01

Installation Instructions for:

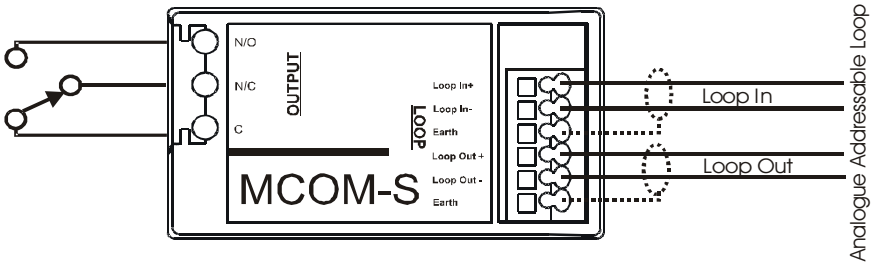
Single Channel Output Unit MCOM-S

Installation

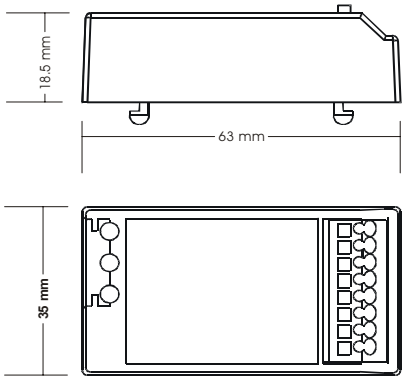
1. Fit the box in position using the mounting details below.
2. Connect the unit according to the diagram below.
3. Recommended Loop Cable Type: FIRETUF, FP200, MICC

Notes:
No addressing of the interface is required. See control panel operation for details.
This needs to be programmed as a sounder device type on site installed PC software .

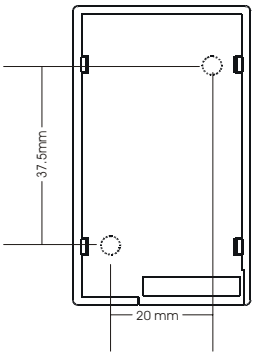
Standard Connections



Dimensions



Mounting Details (Drilling positions, template over leaf)



Notes:
1. Only connect cable screen to its adjacent earth terminal.
2. Output relay are volt-free contacts and are not monitored.

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Email: sales@cooper-ls.com	technical@cooper-ls.com	export@cooper-ls.com

Specification

Loop Load	Min	Nom	Max	Units
Quiescent Current		310		µA

Operating Voltage	18	30		V DC

Output Relay				
Switching Voltage		24	30	V DC
Contact Rating			1	A
Switching Power			30	W

Environmental				
Operating Temperature	-10		+60	°C
Humidity (Non Condensing)			95	%RH

Standards
EN54 : Pt2 & 4
BS5839 : Pt1 (Installation)

Compatibility
Suitable for use with Cooper Analogue Addressable Fire Systems

Physical	
Dimensions	63mm x 35mm x 18.5mm
Weight	>0.1kg
Ingress Protection	IP40

Short Circuit Isolator

This addressable device contains an integral short circuit isolator, which operates between the – IN terminal and the
- OUT terminal. The isolator operates in conjunction with Cooper Analogue Addressable Control Panels when a low parallel resistance fault of typically 200? is present between the +VE and –VE of the loop wiring.

–

Short Circuit Isolation Data (Integral with each device)	
Total Loop Resistance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the Control Panel for isolators to open	200Ω (typ)

Drg ref PR205-118-514-01

COOPER Fire Systems
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www.cooperfire.co.uk

Installation Guide for 3 Channel Input/Output Unit CIO351

Installation:

Wiring

Each unit terminal connector is suitable for clamping a single cable conductor up to a maximum of 2.5mm².

1. Remove the front cover of the unit
2. Remove the internal PCB
3. Drill out the required holes for cable entries
4. Mount the back box in the required position
5. Refit the internal PCB
6. Install wiring through the pre-drilled holes ensuring care is taken not to damage the circuit board
7. Connect the unit as per diagram below
8. Fit front cover

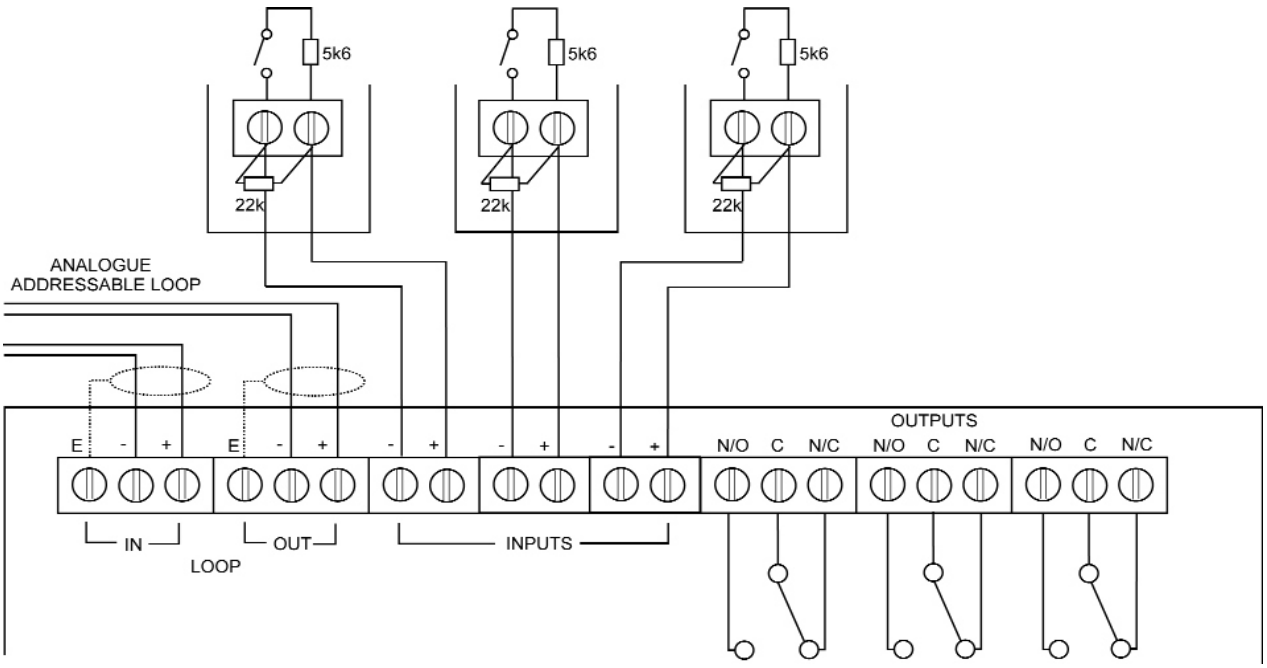
General

Addressing of the unit is not required (see control panel operation for details)

CIO351 - Specification:

Operating voltage:	18 to 30Vdc310
Quiescent Current:	310µA
Addressing mode:	Auto addressed
Output relay contact rating	1A @ 30V resistive 0.5A inductive
Maximum switch voltage	50Vac or 30Vdc
Operating Temperature:	-10 to +60C
Humidity:	0 to 95% non condensing
IP Rating:	IP65
Standards:	BS5839:Pt 1 (installation)
EMC:	CE Marked
Materials:	PC\ABS
Dimensions:	180(w)x129(h)x60(d) mm
Cable Size (Min-Max:)	0.5 to 2.5mm²
Recommended Cable Types:	Draka - FIRETUF Pirelli - FP200 MICC

Wiring Schematic:



Notes:

1. Cable earth screen must be connected to its adjacent earth terminal.
2. The end of line resistor must always be fitted, even if inputs are not used.
3. Input circuits are monitored for wiring open and short circuit.
4. Output relays are volt free-changeover contacts and are not monitored.

Installation Instructions for:

CGi420 4-20mA Interface

The CGI420 is a 4-20mA analogue module to interface with Gas Detectors and is compatible with Cooper addressable control panels. This interface has a unique address on the Cooper addressable loop .It has a built in isolator for short circuit protection.

Each of the DIL switches JP1, JP2 and JP3 (see table 1) can be programmable to set the threshold
Level for Pre-alarm1, Pre-alarm 2 and Alarm respectively.
This can be expressed as a percentage of L.E.L (Lower Explosion Limit) or PPM (Parts per million).

Installation

General Operation

The lower 7 switch positions of each of the 8-way DIL switches (JP1, JP2 and JP3) are used to the activation thresholds in steps of 5% between 4 and 20mA (see table 1).
The 8th Position of each DIL Switch is used to select 'tracking' and will operate as follows:

	Tracking switch set to 'ON'	**Tracking switch set to 'OFF'**
Pre-Alarm 1 threshold exceeded (DIL SWITCH JP1)	• Panel displays pre-alarm 1, • No fire LED	• No Indication on the panel
Pre-Alarm 2 threshold exceeded (DIL SWITCH JP2)	• Panel displays pre-alarm 2, • No fire LED	• No Indication on the panel
Alarm (threshold exceeded (DIL SWITCH JP3)	• Panel displays Alarm Condition • Panel Fire LED ON. • Panel Cause & effect programming active	• No Indication on the panel

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.
5. Recommended Loop Cable Type: FIRETUF, FP200, MICC

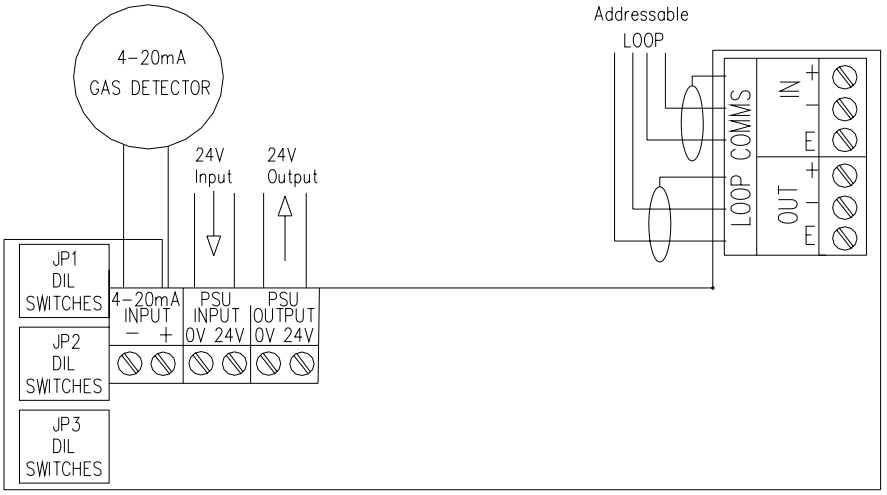
Notes:
No addressing of the interface is required. See control panel operation for details.

Cooper

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Email: sales@cooper-ls.com	technical@cooper-ls.com	export@cooper-ls.com

Standard Connections



Notes:

1. Only connect cable screen to its adjacent earth terminal.
2. Output relays are volt-free contacts and are not monitored.
3. Sensitivity is set by DIL switch's JP1,J P2 &J P3.
4. 24V External power supply is required

Specifications

Loop Load	**Min**	**Nom**	**Max**	**Units**
Quiescent Current		310		**µA**

Operating Loop Voltage	18	30		V DC

Inputs	4	20	mA	
External PSU	15V		30V	V DC

Environmental				
Operating Temperature	-10		+60	°C
Humidity (Non Condensing)			95	%RH

Standards
EN54: Pt2 & 4
BS5839 : Pt1 (Installation)

Compatibility
Suitable for use with Cooper Analogue Addressable Fire Systems

Physical	
Dimensions	147 x 88 x 57 (mm)
Weight	0.25kg
Ingress Protection	IP40

PR205-117-507-02
PINSTCGI420

		DIL switches to set, ON = 1						
Percentages	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
0%	Tracking Bit - ON activates relays and passes fire and pre-alarms to the panel, OFF activates the relays only	0	0	1	0	0	0	0
5%		0	0	1	0	0	1	1
10%		0	0	1	0	1	1	0
15%		0	0	1	1	0	0	1
20%		0	0	1	1	1	0	1
25%		0	1	0	0	0	0	0
30%		0	1	0	0	0	1	1
35%		0	1	0	0	1	1	0
40%		0	1	0	1	0	1	0
45%		0	1	0	1	1	0	1
50%		0	1	1	0	0	0	0
55%		0	1	1	0	0	1	1
60%		0	1	1	0	1	1	1
65%		0	1	1	1	0	1	0
70%		0	1	1	1	1	0	1
75%		1	0	0	0	0	0	0
80%		1	0	0	0	1	0	0
85%		1	0	0	0	1	1	1
90%		1	0	0	1	0	1	0
95%		1	0	0	1	1	0	1
100%		1	0	1	0	0	0	1

Table 1: Setting of Dil Switches JP1,JP2 and JP3

Short Circuit Isolator

This addressable device contains an integral short circuit isolator, which operates between the – IN terminal and the
– OUT terminal. The isolator operates in conjunction with the Cooper Addressable Control Panel when a low parallel resistance fault of typically 200? is present between the +VE and –VE of the loop wiring.

Short Circuit Isolation Data (Integral with each device)	
Total Loop Resistance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the Control Panel for isolators to open	200Ω (typ)

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Installation Guide for CAB300 Analogue Sensor Base and Series 300 Analogue Sensors

Order Codes:

CAI310 -	**Analogue Ionisation Sensor**
CAP320 -	**Analogue Photoelectric Sensor**
CAPT340 -	**Analogue Photo/Heat Sensor**
CAH330 -	**Analogue Heat Sensor**
CAB300 -	**Analogue Detector Base**

CAB300 - Specification:

Supply Voltage	18-30V dc
Cable Size (Min-Max)	0.5 to 2.5mm²
Recommended Cable Types	Draka - FIRETUF Pirelli - FP200 MICC
Mounting Hole Centres	50 - 80mm

Installation:

Wiring

Each base terminal is suitable for clamping up to 2 cable conductors (maximum size 2.5mm²
Suitable for mounting on to back boxes with 50 to 80mm fixing centres

General

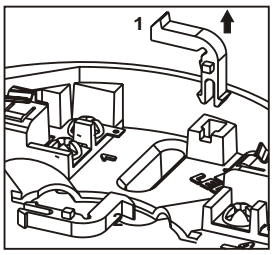
If difficulty is experienced when mounting the sensor, this may be due to the following:
Wiring causing and obstruction- Move or shorten wires

Uneven mounting surface - uneven surfaces may cause the base to deform when the mounting screws are tightened, it is recommended that the screws are loosened or the base be re-sited.

WARNING:

Locking Tabs:

The mounting base includes an optionfeature to prevent the removal of the sensor without the use of a tool.

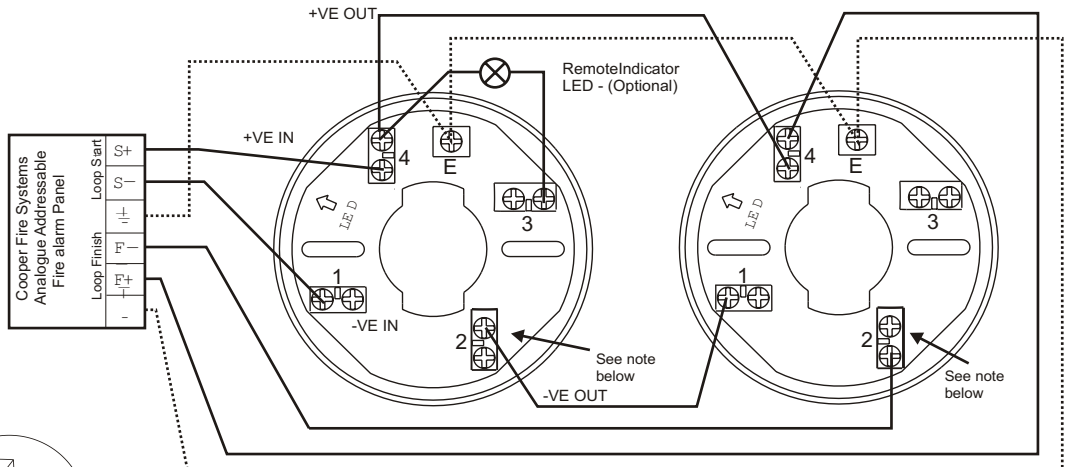


1. Remove the standard fit retaining clip.
2. Insert the locking clip which is located at the centre of the base as shown.

Insert the sensor onto the base and rotate fully clockwise until it locates, continue to rotate until the sensor 'clicks' into position.

The sensor is now locked into position and can only be removed by inserting a suitable tool (thin bladed screwdriver) into the hole located in the sensor cover whilst rotating the sensor anti-clockwise.

Wiring Schematic:





Attention: If using the outer connection on terminal 2, ensure the operation of the switch is not inpeded and that there is no short circuit between terminal 2 and the switch contact.

Ensure that the cable does not short onto the contact

Series 300 Analogue Addressable Sensors - Technical Data Sheet:

Model	CAI310	CAP320	CAH330	CAPT340
Operating voltage	18 TO 30V dc			
Standby current (max)	220µA			
Alarm current (max)	5mA			
Ambient Temperature (max)	60ºC		A1R 50ºC BS 65ºC CS 80ºC	50ºC
Ambient Temperature (min)	-20ºC			
Alarm temperature (static)	N/A		A1R 60ºC BS 77ºC CS 90ºC	60ºC
Heat sensor class as defined by EN54-5:2000	N/A		A1R, BS, CS control panel selectable	A2S
Radioactive material/strength	Am 18.5KBq	N/A		
Relative humidity (non cond)	0 to 95%			
Height (w/o base)	34mm		43mm	
Height (with base)	47mm		56mm	
Diameter	100mm			
Weight (w/o base)	86g	78g	76g	78g
Material	PC/ABS			
Colour	White			

Integral short circuit isolator data	
Total loop resistance for correct operation of short circuit isolator	50 ohms (max)
Continuous current allowable through isolator	700mA (max)
Isolator resistance in closed state	0.13 ohms (max)
Leakage current into a direct short circuit with isolator open	13mA (max)
Parallel fault resistance to be seen at the control panel for isolators to open	200 ohms (typ)

Integral short circuit isolators:

Each of the senors in this range contain an integral short circuit isolator, which operates between the -ve in and -ve out terminal (terminals 1 & 2 as per base wiring diagram overleaf). The isolator operates in conjunction with the CF3000 control panel when a low parallel resistance fault of typically 200 ohms is present between the +ve and -ve of the loop wiring.
The isolator will isolate a short circuit on either side of the sensor without loss of sensor functionality.

Sensor installation:

A Fit sensor to mounting base and rotate clockwise until the sensor drops into place.
B Continue to rotate clockwise until the sensor 'clicks' into position and no further rotation is posible.
C If the sensor is required to be locked into position, refer to base installation instructions (see overleaf).
D Smoke sensors are supplied fitted with dust covers for general protection against airbourne contaminates. These must be removed from all sensors prior to system commisioning.
NB. These dust covers to not provide adequate protection against quantities of dust generated by building work, sanding etc. Therefore sensors should not be installed until this type of work has been completed.

Testing: General

All sensors must be tested following installation or routine servicing and maintenance. It is recommended that these tests are carried out by a competent person. Authorised personnel must be informed that the fire system will temporarily be 'out of service' before commencing testing. To prevent unwanted alarms, ensure that the control panel is in 'One Man Walk Test' mode. When all tests are complete, re-enable any previously disabled zones, exit the 'One Man Walk Test' mode and inform the authorised personnel that the system is operational.

Testing: Smoke sensors

A Subject the sensor to be tested to a controlled amount of an approved synthetic smoke aerosol via a smoke sensor test pole. Suitable products are available from No Climb Products Ltd.
B Check that the red LED on the sensor lights within 30 seconds and the appropriate alarm address indication is displayed on the control panel. If an optional remote LED is fitted , check that this also lights.
C The control panel will automatically reset after a few seconds.
*The above procedure will test the smoke sensing circuitry of the photo/thermal sensor (CAPT340)

Testing: Heat sensors

A. Using a suitable heat gun capable of generating a temperature of up to 95°C, direct the heat source towards the heat sensing element, visible through the side of the outer cover, from a distance of between 15 to 30cm. Care should be taken not to allow the plastic surface temperature to exceed 110°C otherwise damage may occur.
B. When the temperature reaches the 'alarm temperature' (see specification table above), check that the red LED on the sensor lights, the appropriate alarm address indication is displayed on the control panel and the appropriate alarm activation is give n. If an optional remote LED is fitted, check that this also lights.
C. The control panel will automatically reset after a few seconds.
*The above procedure will test the heat sensing circuitry of the photo/thermal sensor (CAPT340).

Maintenance:

Only minimal maintenance can be performed on this range of sensors, as they do not contain any site serviceable parts. The frequency of maintenance will depend on the installed environment but should be at least annually. Damp or dusty environments will demand more frequent maintenance.
A. Remove the sensor from its base
B. Use a vacuum cleaner to remove dust build up from around the smoke entry apertures or the heat sensing-element.
C. On smoke sensors visually inspect the insect mesh for blockages. If unable to clear with a vacuum cleaner the sensor must be replaced.
D. Refit sensor and test as described above. Any sensor that fails the test procedure must be replaced.

CAS381 Wall Sounder Specification

Supply Voltage	: 20 ~ 28 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)
Material	: ABS/FR Plastic (Wall Sounder)
	: ABS/PC FR (Wall Sounder IP66)
Sound output @ +/-3dB	: Low volume : 87dB @ <2mA
(set by panel)	: Medium volume : 93dB @ <3mA
	: High volume : 100dB @ <6mA
Tones	: Continuous 984Hz
(set by panel)	: Pulsed 984 / 0Hz pulse 1Hz
	: Two Tone 644 / 984Hz @ 1Hz cycle
	: Slow whoop 500-1200Hz in 3.5 seconds / 0.5secs gap

Note: Polar dispersion information available in the Technical manual.
(Ref:)

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COOPER Fire Systems

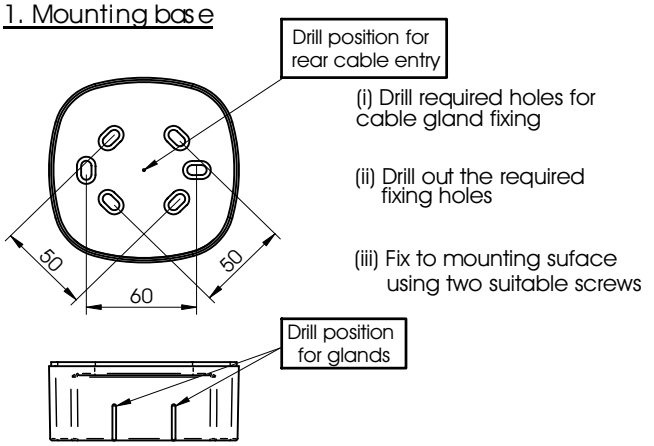
Order Codes

CAS381	Addressable Wall Sounder
CAS381/WP	Addressable Wall Sounder IP66

Installation Details

Wall Sounder IP22C

1. Mounting base

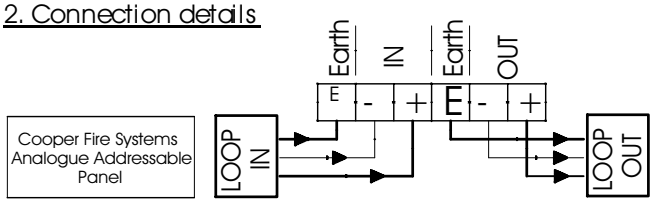


(i) Drill required holes for cable gland fixing

(ii) Drill out the required fixing holes

(iii) Fix to mounting suface using two suitable screws

2. Connection details

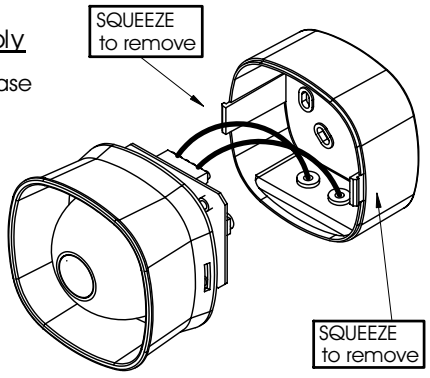


WARNING: Do NOT use high voltage testers if ANY equipment is connected to the system.
Earth screen must be continuous along entire length of loop.

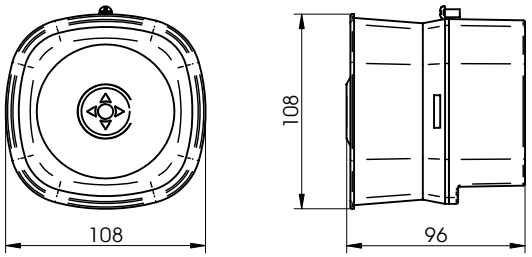
3. Sounder assembly

(i) Clip sounder onto base

(ii) Ensure cables do not put stress on the PCB

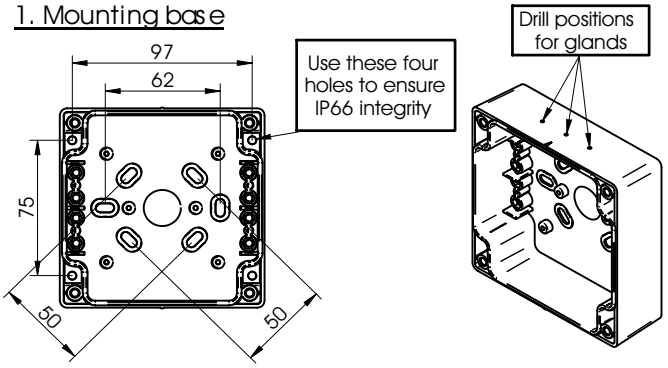


Dimensions



Wall Sounder IP66

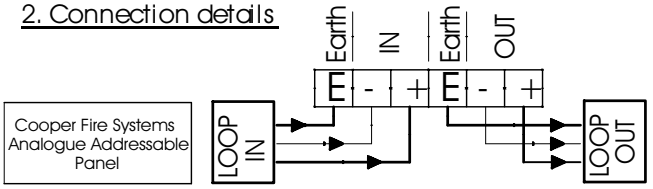
1. Mounting base



(i) Drill required holes for cable gland fixing (top or bottom) and ensure cables are correctly sealed for IP66 integrity.

(ii) Fix to mounting surface using four suitable screws

2. Connection details



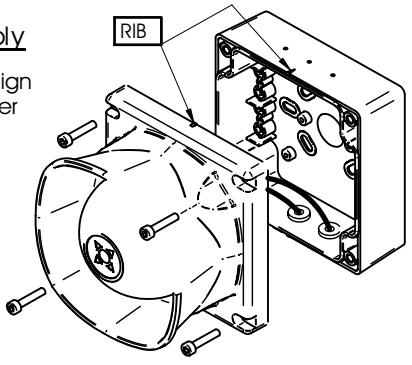
WARNING: Do NOT use high voltage testers when beacons or control panel are connected to the system.
Earth screen of cable to be continuous between sounders.

3. Sounder assembly

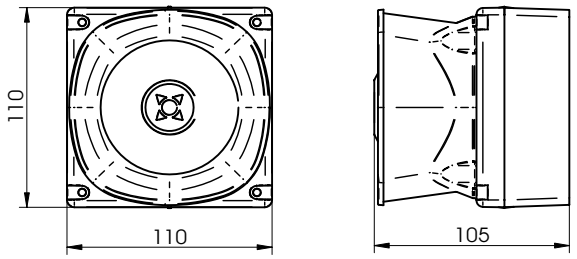
(i) Location ribs must align on base and sounder

(ii) Ensure cables do not put stress on the PCB

(iii) Bolt sounder onto base



Dimensions



CASB383 Wall Sounder Beacon Specification

Supply Voltage	: 17 ~ 32 Vdc
Cable Size / type	: 0.5 ~ 2.5mm/ FIRETUF, FP200 or MICC
Standby current	: < 450 uA
Operating temperature	: -10 to +55 degrees C (95%RH)
Sound output @ +/-3dB	: Low volume : 92dB @ <6.5mA
(set by panel)	: Medium volume : 97dB @ <7.5mA
	: High volume : 100dB @ <8.5mA
Environment Category	: Type A/B
Compliance	: EN54-3 Fire Alarm Device - Sounder
Tones	: Continuous 984Hz
(set by panel)	: Pulsed 984 / 0Hz pulse 1Hz
	: Two Tone 644 / 984Hz @ 1Hz cycle
	: Slow whoop 500-1200Hz in 3.5 seconds / 0.5secs gap
Beacon	: 1Hz Flash

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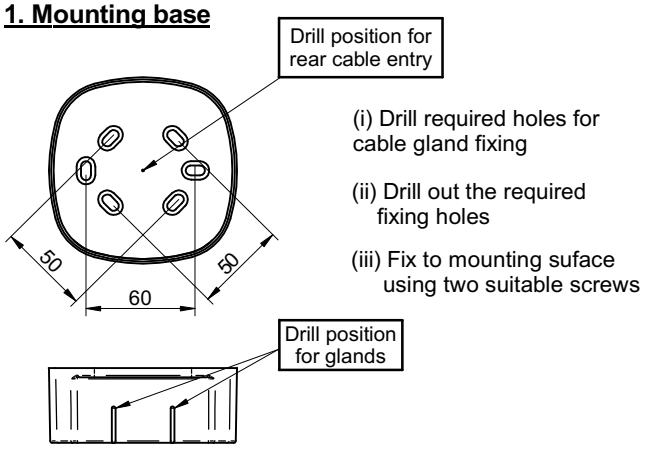
Order Codes

CASB383	Addressable Wall Sounder/Beacon
CASB383/WP	Addressable Wall Sounder/Beacon IP66

Installation Details

Wall Sounder/Beacon (Type A / IP21C)

1. Mounting base

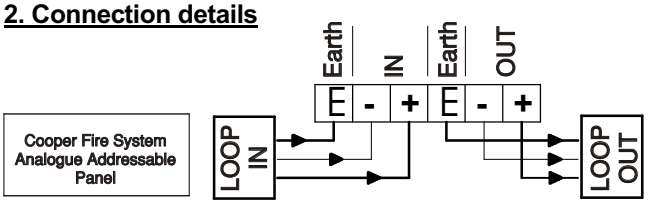


(i) Drill required holes for cable gland fixing

(ii) Drill out the required fixing holes

(iii) Fix to mounting suface using two suitable screws

2. Connection details

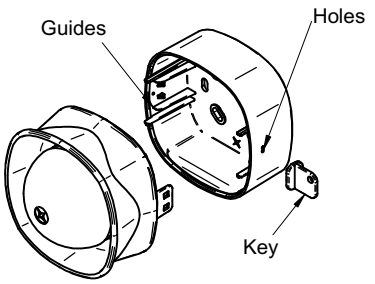


WARNING: Do NOT use high voltage testers if ANY equipment is connected to the system.
Earth screen must be continuous along entire length of loop.

3. Sounder assembly

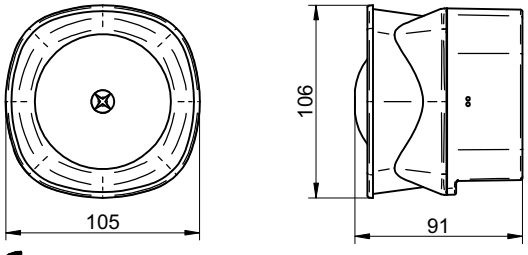
(i) Clip sounder onto base

(ii) Ensure cables do not put stress on the PCB



To Un-Lock use key provided

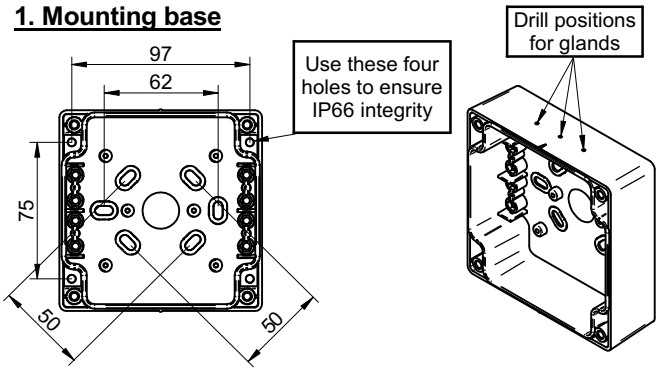
Dimensions



25-5799 Iss A

Wall Sounder/Beacon IP66 (Type B / IP33C)

1. Mounting base

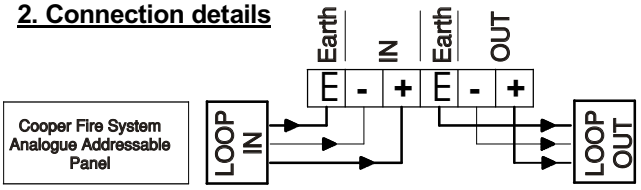


(i) Drill required holes for cable gland fixing (top or bottom) and ensure cables are correctly sealed for IP66 integrity.

(ii) Fix to mounting surface using four suitable screws

All products meet minimum requirements of IP33C in accordance with EN54-3

2. Connection details



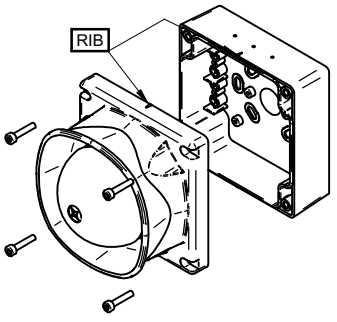
WARNING: Do NOT use high voltage testers when beacons or control panel are connected to the system.
Earth screen of cable to be continuous between sounders.

3. Sounder assembly

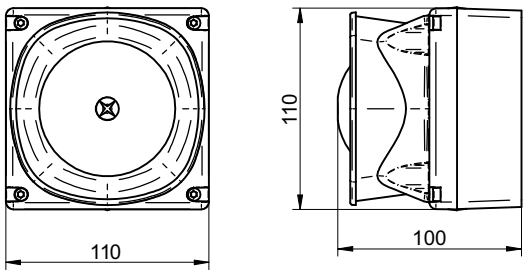
(i) Location ribs must align on base and sounder

(ii) Ensure cables do not put stress on the PCB

(iii) Bolt sounder onto base



Dimensions



Note: Polar dispersion information available in the Technical manual.(Ref:M05-021)

CAS380 Sounder Base Specification

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)
Material	: ABS/PC FR Plastic
Environment Category	: Type A / IP21C
Sound output @ +/- 3dB	: Low volume : 84dB @ <4mA
(Set by panel)	: Medium volume : 92dB @ <8mA
	: High volume : 95dB @ <12mA
Compliance	: EN54-3 Fire Alarm Device - Sounder

Tones (set by panel)
: Continuous 910Hz
: Pulsed 910Hz / 0Hz pulse 1Hz
: Two tone 610 / 910Hz @ 1Hz cycle
: Slow whoop 500-1200Hz in 3.5 seconds / 0.5secs gap

Note: Polar dispersion information available in the Technical manual. (Ref:M05-010)

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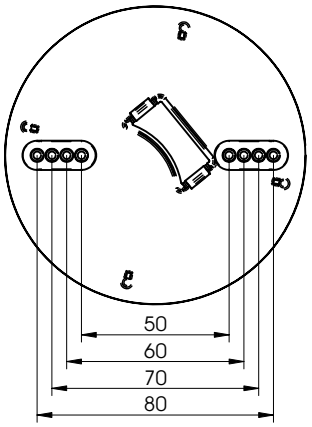
COOPER Fire Systems

Order Codes

CAS380	Addressable sounder base
CAS380/COV	Cover for sounder base (5 pack)

Installation Details

1. Mounting base



(i) Knock-out the required fixing holes

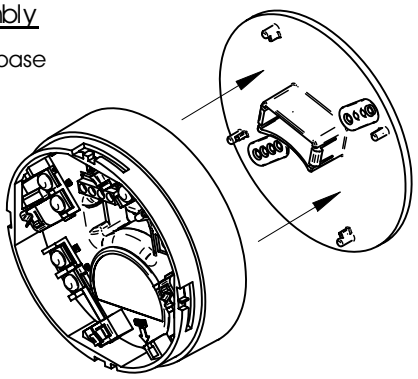
(ii) Fix to mounting surface using two suitable screws

If the base deforms on an uneven surface, loosen the screws or move to a more flat position.

2. Sounder assembly

(i) Clip sounder onto base

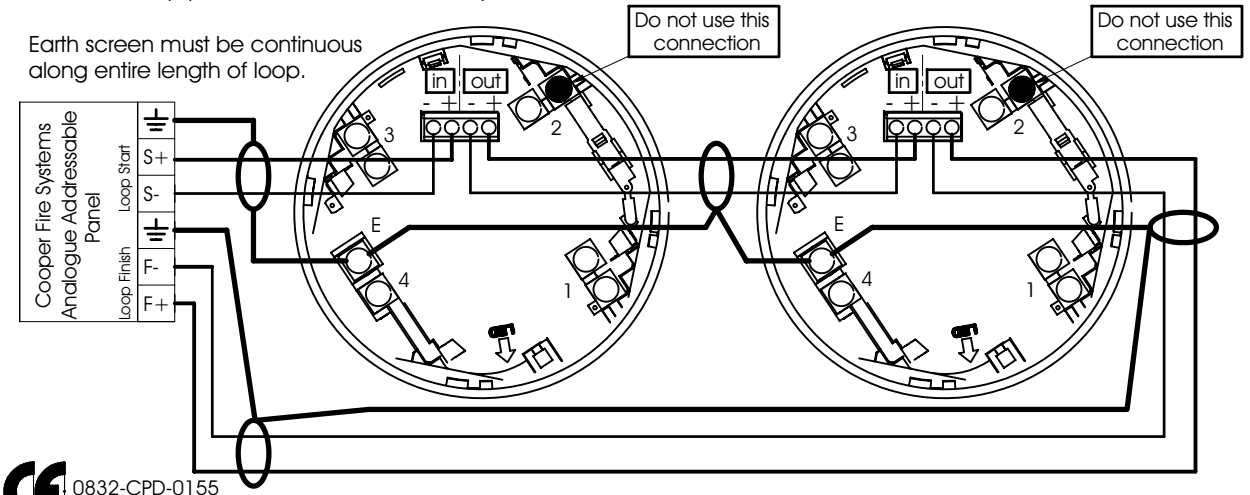
If sounder needs to be removed, use a small screwdriver to unclip.



3. Connection details

WARNING: Do NOT use high voltage testers if ANY equipment is connected to the system.

Earth screen must be continuous along entire length of loop.

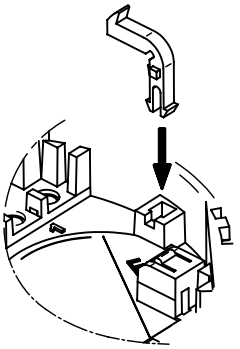


4. Locking tab (optional)

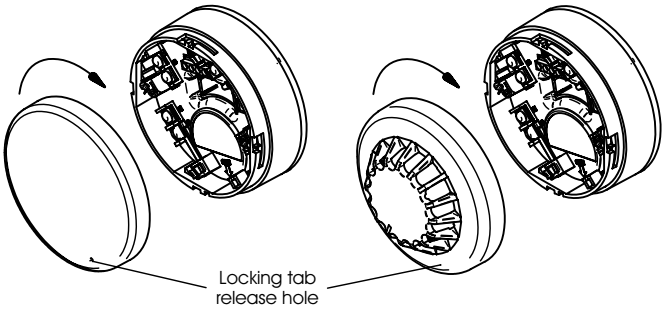
Fit the locking tab into the square hole on the sounder.

Finish assembly as stage 5.

Remove by inserting a suitable tool (eg thin screwdriver) into the hole in the detector or cover, then rotate detector or cover anti-clockwise.



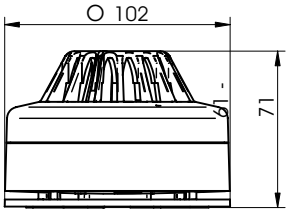
5. Fitting detector or cover



Dimensions



Sounder and Cover



Sounder and Detector

0832-CPD-0155
CE marking under the CPD was affixe d on : (See batch code on product)

25-5654 C

CASBB384 Sounder/Beacon Base Specification

Supply Voltage	: 18 ~ 32 Vdc
Cable Size / type	: 0.5 ~ 2.5mm/ FIRETUF, FP200 or MICC
Standby current	: < 450 uA
Operating temperature	: -10 to +55 degrees C (95%RH)
Material	: ABS/PC FR Plastic
Environment Category	: Type A / IP21C
Sound output @ +/- 3dB	: Low volume : 77dB @ <6.4mA
(Set by panel)	: Medium volume : 89dB @ <8.0mA
	: High volume : 90dB @ <8.5mA
Compliance	: EN54-3 Fire Alarm Device - Sounder
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
Flash	:1 Hz

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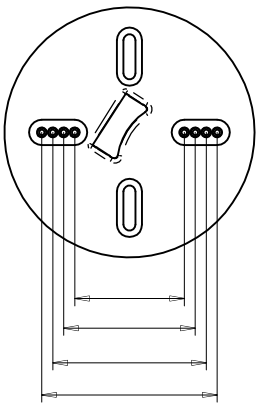
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Order Codes

CASBB384	Loop Mounted Sounder/Beacon Base

Installation Details

1. Mounting base



(i) Knock-out the required fixing holes

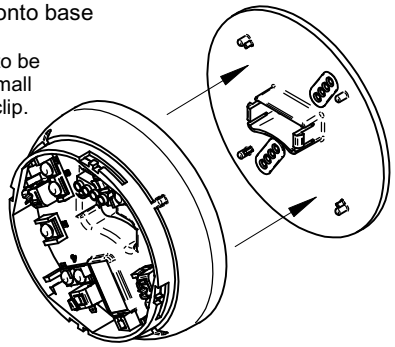
(ii) Fix to mounting surface using two suitable screws

If the base deforms on an uneven surface, loosen the screws or move to a more flat position.

2. Sounder assembly

(i) Clip sounder onto base

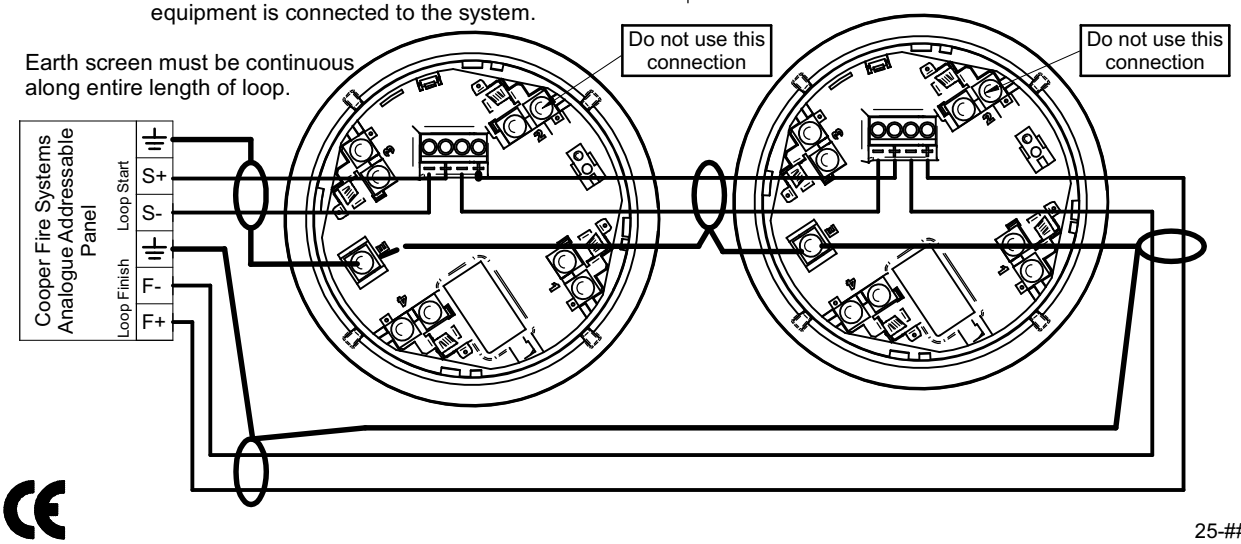
If sounder needs to be removed, use a small screwdriver to unclip.



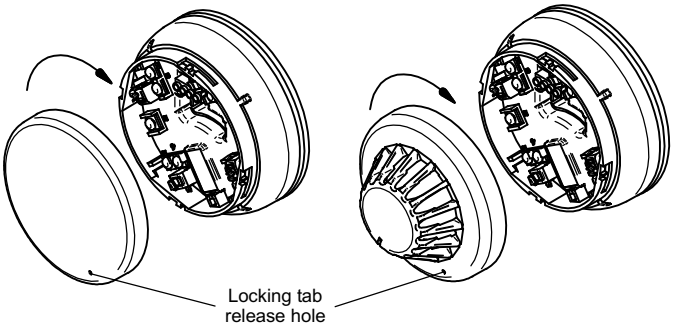
3. Connection details

WARNING: Do NOT use high voltage testers if ANY equipment is connected to the system.

Earth screen must be continuous along entire length of loop.

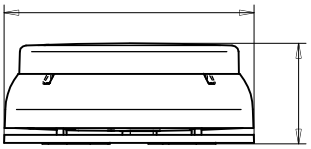


5. Fitting detector or cover

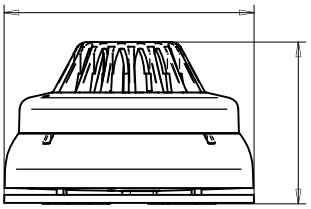


Remove by inserting a suitable tool (eg thin screwdriver) into the hole in the detector or cover, then rotate detector or cover anti-clockwise.

Dimensions



Sounder and Cover



Sounder and Detector

CE

CAB382 Beacon Specification

Supply Voltage	: 17 ~ 32 Vdc
Cable Size	: 0.5 ~ 2.5mm
Recommended cable	: FIRETUF, FP200 or MICC
Material	: Polycarbonate/ABS FR
Standby current	: < 250 uA
Alarm current	: < 4.1 mA
Flash frequency	: 1/2 Hz
Operating temperature	: -10 to +55 degrees C (95%RH)
IP Rating	: IP54

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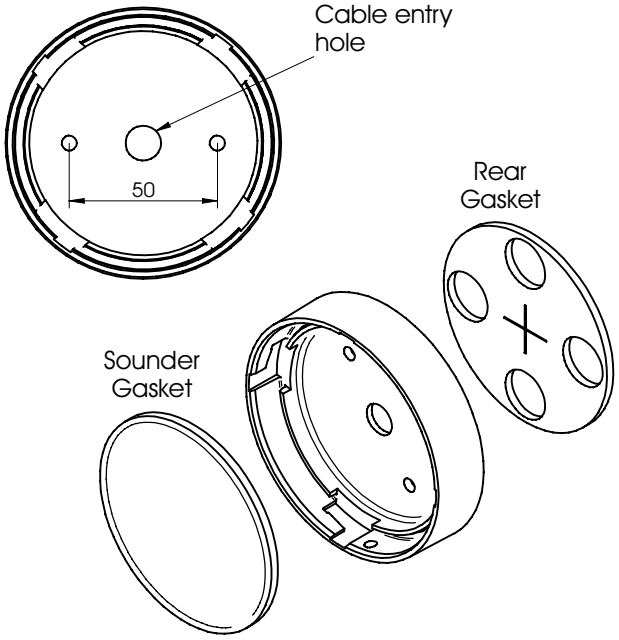
Order Codes

CAB382	Addressable Beacon

Installation Details

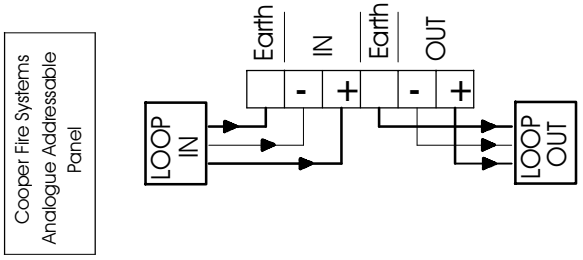
1. Mounting base

(i) Fix to mounting surface using two suitable screws - the rear gasket fits underneath the base, and the sounder gasket fits inside the base.



2. Connection details

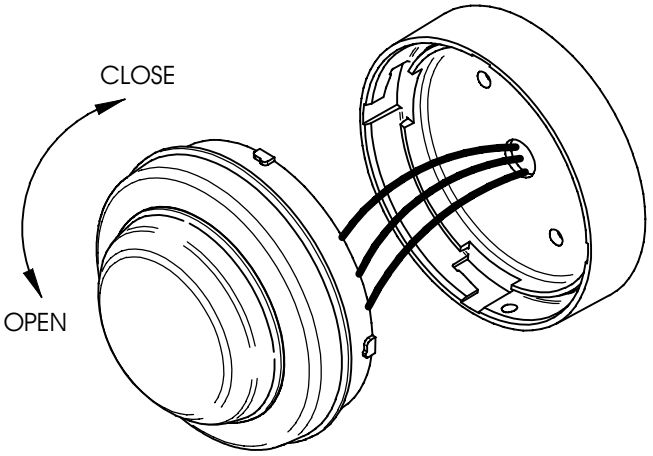
(i) Earth screen must be continuous along entire length of loop.



WARNING:

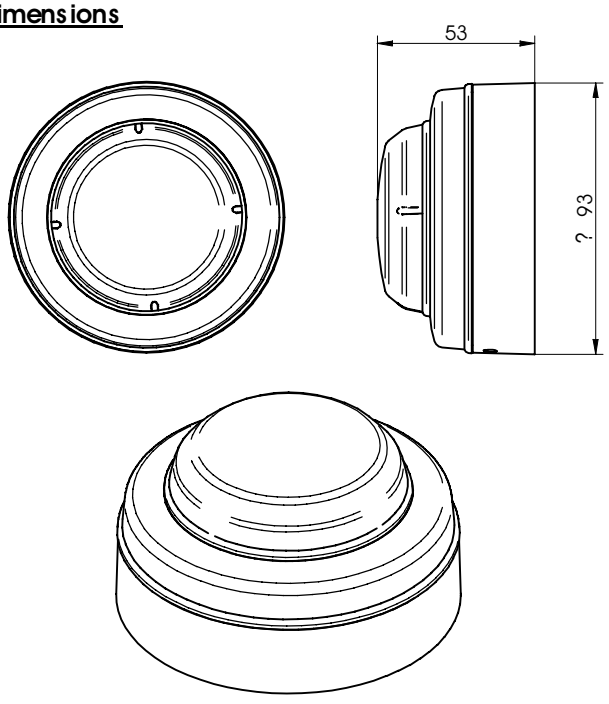
Do NOT use high voltage testers if ANY equipment is connected to the system.

3. Fitting b eacon to base



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

Dimensions



25-5657 A

ADDRESSABLE CALL POINT INSTALLATION DETAILS

FLUSH CALL POINT (order code CBG370)

The flush call point will mount onto any standard U.K. single gang back box with a depth of 25mm or greater. Consideration should be given to the amount of cabling space at the rear of the call point, i.e. a deeper box or spacer eases installation.

SURFACE CALL POINT

To make a surface mount Call Point a seperate Back Box (order code CXBB/R - pack of 10) is required. There is provision for rear cable entry, and by using the template below (fig.1), cable holes can be drilled into the top or bottom of the back box to accept one (A) or two (B) cable glands - Max. dia.20mm (see fig.2).

COMPATIBILITY

Suitable for use with Cooper Fire Systems analogue addressable panels with soft addressing protocol.

SPECIFICATION

Supply Voltage	: 18 ~ 30 Vdc
Cable Size	: 0.5 ~ 2.5mm
Recommended cable	: FIRETUF, FP200 or MICC
Standby current	: < 170 uA
Alarm current	: < 6 mA
Operating temperature	: -25 to +55 degrees C
Material	:ABS Plastic
IP Rating	: IP42 (IP67 Weatherproof version available)

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FIG.1



Fig.2 INSTALLATION

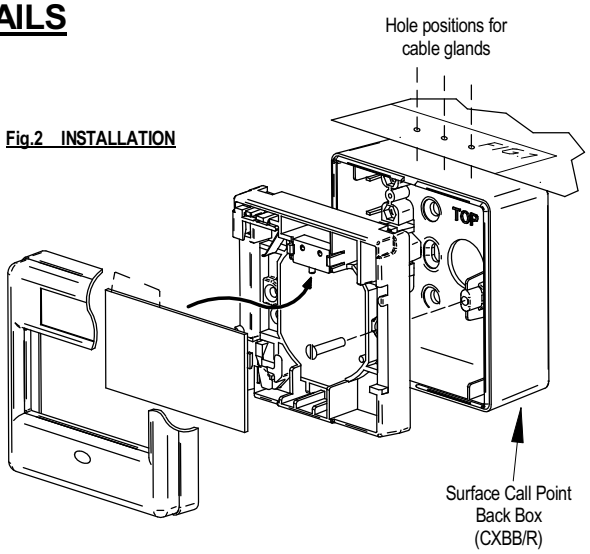
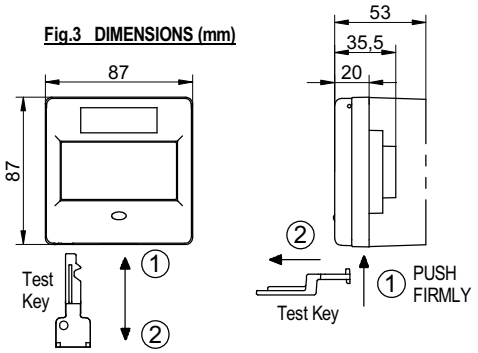


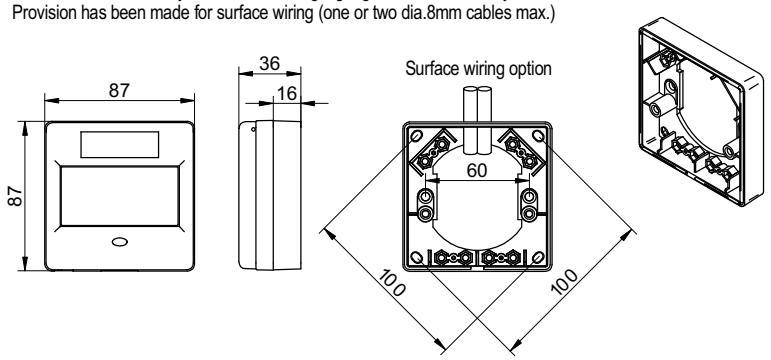
Fig.3 DIMENSIONS (mm)



CALL POINT ACCESSORIES

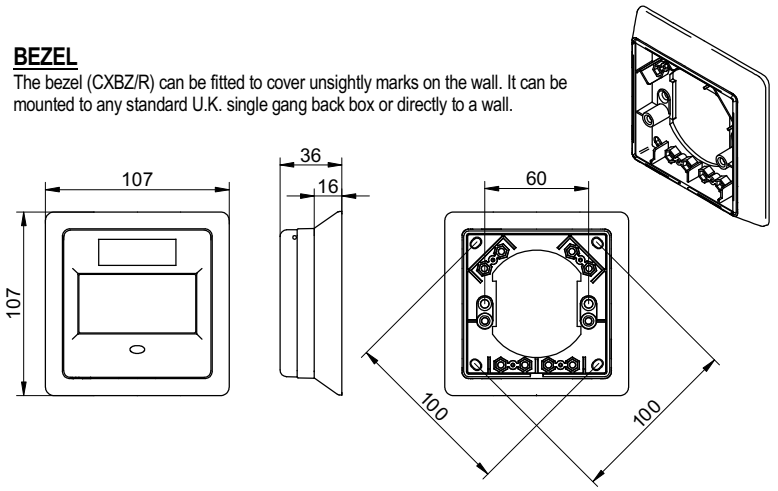
ACER

The spacer (CXS/R) can be fitted instead of the back box to reduce the depth of the Call Point. It can be mounted to any standard U.K. single gang back box or directly to a wall. Provision has been made for surface wiring (one or two dia.8mm cables max.)



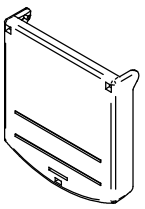
BEZEL

The bezel (CXBZ/R) can be fitted to cover unsightly marks on the wall. It can be mounted to any standard U.K. single gang back box or directly to a wall.



CLEAR HINGED FLAP

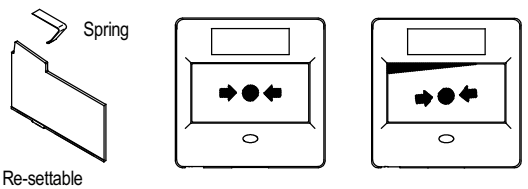
The Clear Hinged Flap gives extra protection from accidental operation. (Order code CXPC)



Clear Hinged Flap

RE-SETTABLE PLASTIC ELEMENT

The re-settable plastic element and spring replaces the glass element. When the re-settable element is pushed, a visible flag will appear indicating the call point has been activated.
Re-settable elements are available in packs of 10. (order code CX/P/KIT)



25-5652-B CE

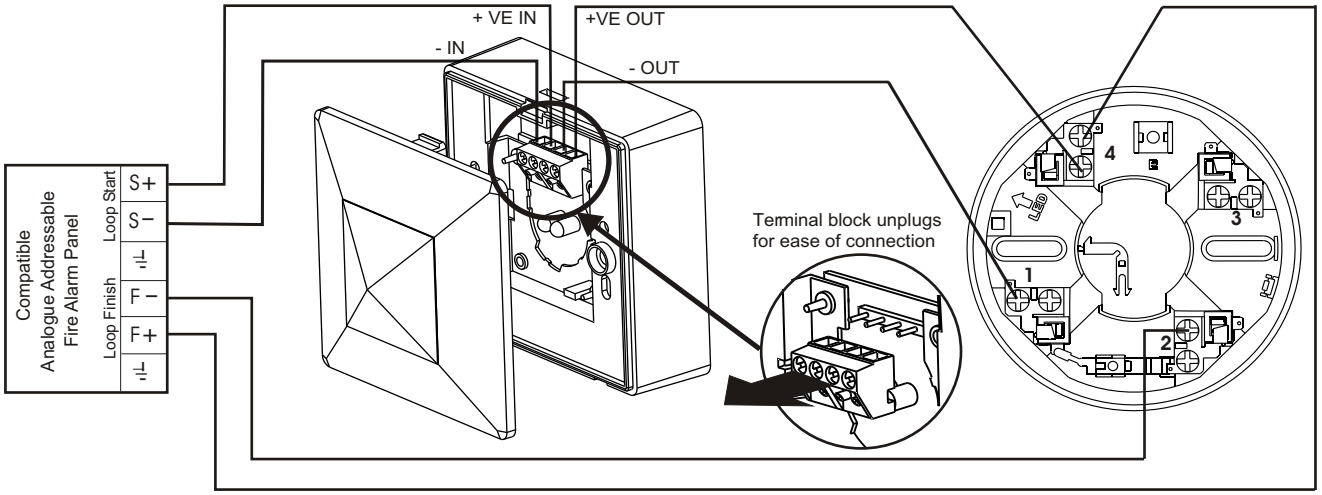
MRIAD Addressable Remote Indicator

Quiescent Current	220uA
Alarm Current	6mA
Cable Size	0.5 - 2.5mm²
Recommended cable types	FIRETUF,FP200 or MICC
Mounting Hole Centres	60.3mm

Cooper Lighting and Security
Wheatley Hall Road,
Doncaster,
South Yorkshire,
DN2 4NB
Tel: 01302 321 541
www.cooper-ls.com

MENVIER

WIRING DETAILS



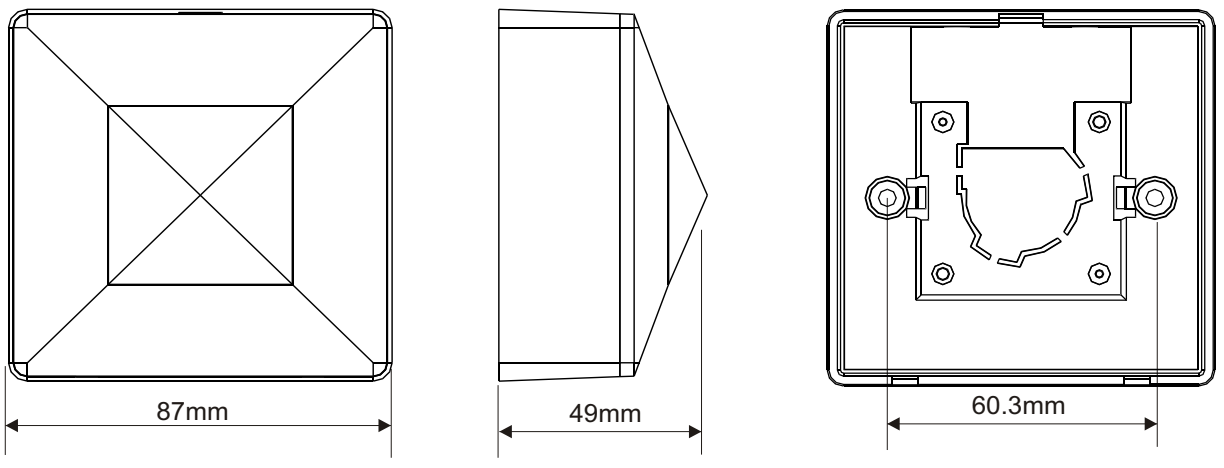
Earth screen of cable to be continuous between all addressable devices

SHORT CIRCUIT ISOLATORS

The addressable remote indicator contains an integral short circuit isolator, which operates between the COM IN terminal and the COM OUT terminal. The isolator operates in conjuction with the DF6000 Control Panel when a low parallel resistance fault of typically 200W is presented between the +VE and -VE of the loop wiring.

Short Circuit Isolation Data (Integral with each detector)	
Total Loop Resis tance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the Control Panel for isolators to open	200Ω (typ)

DIMENSIONS



PR204-97-508-01