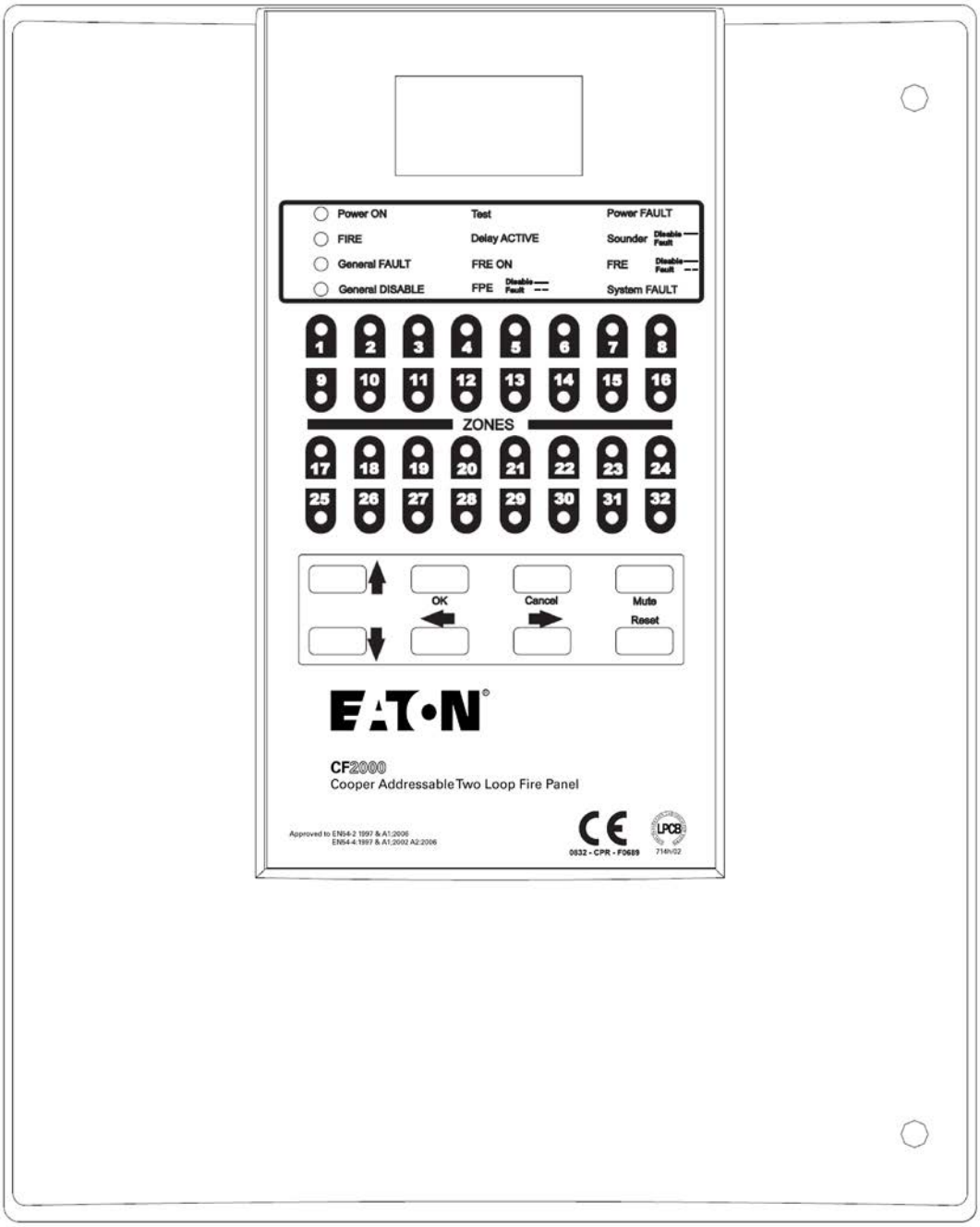
Technical Data **PR202-50-502-22**

Effective June 2017
Supersedes April 2016

CF2000 System Installation Manual



Powering Business Worldwide

Contents

Introduction to the Manual

This manual provides information on the installation, operation and maintenance of the Cooper Fire Systems CF2000 System.

Notice

The operating system of the CF2000 may be revised as a result of enhancements to the system software or hardware. An updated issue of this manual is available on request. The current issue of the manual can also be downloaded from the Eaton website.

⚠ WARNING

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

System Installation and Design

Introduction

CF2000 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. It is available as a two loop panel.

A comprehensive range of ancillary devices is available to operate with the CF2000 panel, including Optical, photo-thermal and heat sensors, callpoints and a comprehensive range of interfaces.

Each of the CF2000 system components has been specifically designed to operate as part of a CF2000 system, this provides an assurance that the panel, the sensor, the interfaces and the ancillaries are all fully compatible with each other and that the full range of system functionality is supported by each device.

Each loop of a CF2000 panel can accommodate up to 200 (99 Belgium) addresses.

Project Planning

The following is a typical program and timetable for a CF2000 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. CF2000 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 sensors, call points, alarm sounders and interface units can 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 for an Eaton Fire Systems Service Engineer to attend site to implement/oversee the final commissioning procedures (see Commissioning section), in conjunction with the installer.

System Design Guidelines

Guidelines

Systems should conform to the relevant local standards and codes of practice. For the UK this is BS5839 part 1. CF2000 meets all the relevant requirements of BS5839 part 1: 2002.

Installation planning is simplified by the fact that every addressable CF2000 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 CF2000).

Loop lengths

The maximum permitted loop length is 2 km measured from the near to the far terminals on the CF2000 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 (99 Belgium). This includes detectors, call points and all other addressable items and call points. When designing systems its recommended that allowances are made for future expansion, Short circuit isolators are incorporated into every CF2000 loop device, including Smoke detectors, heat detectors, sounders, callpoints and interfaces. Therefore, no further fault protection is required. In the event of a single fault, none of the devices connected to the loop will fail to operate as the fault will be isolated by the two adjacent devices.

Spur connected devices downstream of a cable fault will cease to function.

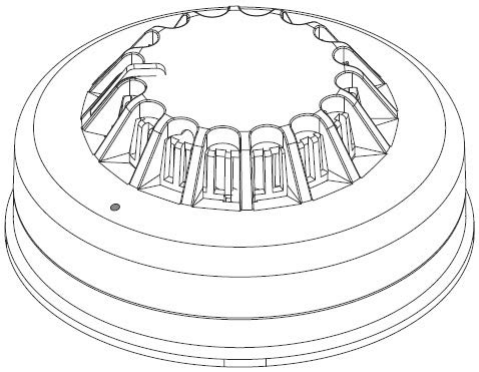
Compatible Equipment

Order code	Reference	Description	Dimensions (mm)
CF2000GCPD	CF2000GCPD	2 Loop CF2000 Panel	400H x 320W x 170D
CF3000PRG	CF3000PRG	Loop Passive repeater for CF2000	270H x 332W x 92D
400002FIRE-0002X	CAP320	Addressable Optical Sensor (CAP320)	101 Dia x 33D
400003FIRE-0003X	CAH330	Addressable Heat Sensor (CAH330)	101 Dia x 33D
400004FIRE-0004X	CAPT340	Addressable Photo Thermal Sensor (CAPT340)	101 Dia x 33D
MAB50R-EM	MAB50R	Addressable Beam Detector (50m)	210H x 130W x 120D
MAB100R-EM	MAB100R	Addressable Beam Detector (100m)	210H x 130W x 120D
CAB300	CAB300	Addressable Sensor Base	104 Dia x 22D
666027FULL-0065X	CAS380	Addressable Sounder Base	120 Dia x 40D
666098FULL-0153	CAS380AU	Addressable Australian Sounder Base	120 Dia x 40D
CASBB384	CASBB384	Addressable Sounder Beacon Base	115 Dia x 44D
CASBB384-B	CASBB384-B	Addressable Bell Tone Sounder Beacon Base	115 Dia x 44D
CASBB394	CASBB394	Addressable VAD Sounder Beacon Base	115 Dia x 44D
600107FUL-0012	CIR301	Conventional Remote Indicator (Connects to Detector)	87H x 87W x 30D
CIR301WP	CIR301WP	Conventional Weatherproof Remote Indicator (Connects to Detector)	87H x 87W x 30D
MRIAD	MRIAD	Addressable Remote Indicator	87H x 87W x 49D
4950010MEN-0432X	CBG370S	Addressable Callpoint	87H x 87W x 57D
4950012FUL-0431X	CBG370WP	Addressable Weatherproof Callpoint	87H x 87W x 59D
654014FULL-0067X	CAS381	Addressable Wall Sounder	105H x 105W x 95D
654013FULL-0066X	CAS381WP	Addressable Weatherproof Wall Sounder	108H x 109W x 103D
654041FULL-0230	CAS381AU	Addressable Australian Wall Sounder	105H x 105W x 95D
666101FULL-0156	CAS381AU-WP	Addressable Australian Weatherproof Wall Sounder	108H x 109W x 103D
666028FULL-0066	CAB382	Addressable Beacon	95 Dia x 53D
666043FULL-0077X	CASB383	Addressable Wall Sounder Beacon	105H x 105W x 95D
666044FULL-0078X	CASB383-WP	Addressable Weatherproof Wall Sounder Beacon	108H x 108W x 103D
666130FULL-0199X	CASB393	Addressable Wall VAD Sounder Beacon	105H x 105W x 95D
666131FULL-0200X	CASB393WP	Addressable Weatherproof Wall VAD Sounder Beacon	108H x 108W x 103D
CSC354CPR	CSC354CPR	Addressable 4-Way Sounder Controller	300H x 300W x 74D
CZMU352	CZMU352	Addressable Zone Monitor Unit	88H x 147W x 57D
CZMU352-IS	CZMU352-IS	Addressable Zone Monitor Unit (Intrinsically Safe)	88H x 147W x 57D
MSU840	MSU840	Addressable Shop Unit Monitor	88H x 147W x 57D
CSI350	CSI350	Addressable Spur Isolator	88H x 147W x 57D
CMIO353	CMIO353	Addressable Mains Relay	130H x 180W x 60D
CIO351	CIO351	Addressable 3 Channel I/O Unit (Reset on Reset)	130H x 180W x 60D
400012FIRE-0026X	MCOM-S	Addressable Micro Output Unit (recognised as sounder)	65H x 35W x 18.5D
400010FIRE-0024X	MCOM	Addressable Micro Output Module (MCOM)	65H x 35W x 18.5D
400008FIRE-0022X	MCIM	Addressable Micro Input Module (MCIM)	65H x 35W x 18.5D
MIU872	MIU872	Addressable Micro Zone Monitor Unit	65H x 35W x 18.5D
ZPCB2252-MML	ZPCB2252-MML	Addressable Master LED MIMIC	190H x 350W x 75D
ZPCB2252-MSL	ZPCB2252-MSL	Addressable Slave LED MIMIC	190H x 350W x 75D

Compatible Equipment

The range of compatible detectors for the CF2000 system consists of the following:

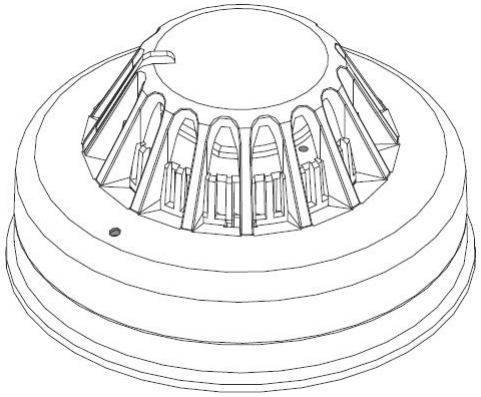
Model	CAP320	CAH330	CAPT340
Operating voltage	18 to 30V dc		
Standby current (max)	220µA		
Alarm current (max)	5mA		
Ambient Temperature (max)	60°C	A1R 50°C	50°C
		BS 65°C	
		CS 80°C	
Ambient Temperature (min)	-20°C		
Alarm temperature (static)	N/A	A1R 60°C	60°C
		BS 77°C	
		CS 90°C	
Heat sensor class as defined by EN54-5:2000	N/A	A1R, BS, CS control panel selectable	A2S
Relative humidity (no n co nd)	0 to 95%		
Height (w/o base)	34mm	43mm	
Height (with base)	47mm	56mm	
Diameter	100mm		
Weight (w/o base)	86g	78g	76g
Material	PC/ABS		
Colour	White		



CAP320 Analogue Photoelectric Sensor

This is the most commonly used detector and is most suitable for detecting slow burning fires.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the CF2000 control panel.



CAPT340 Analogue Photo/thermal Sensor

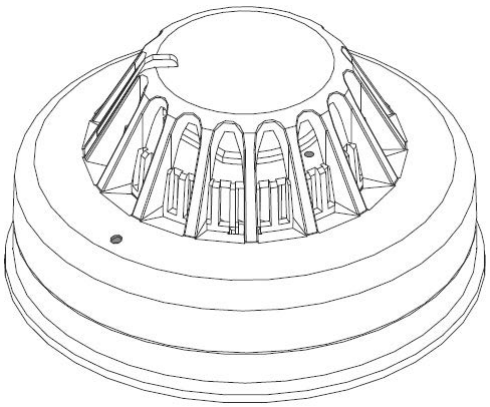
This is a new addition to the Cooper Fire Systems range of sensors. It is the ideal sensor for a multi-use environment as it has an excellent response to smouldering and fast burning fires. Photo/thermal sensors can be programmed for thermal only operation at certain times of day.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the CF2000 control panel.

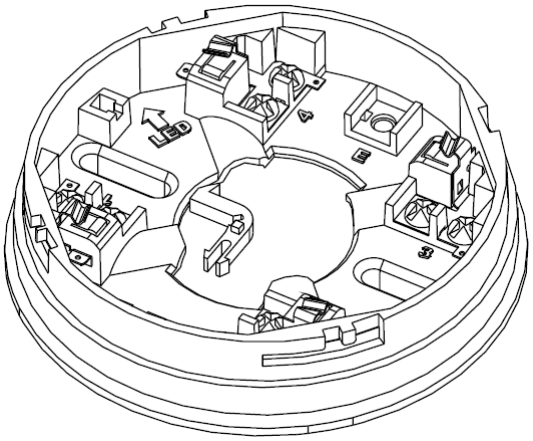
CAH330 Analogue Heat Sensor, Heat

Heat sensors are suitable for dusty environments or environments where smoke is likely to be present under normal operating conditions. The CAH330 can be programmed to operate in A1R,BS or CS mode of operation depending on the required application and sensitivity requirements.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the CF2000 control panel.



CAB300 Analogue Sensor Base



Short Circuit Isolators

Each of the sensors in his range contain an integral short circuit isolator, which operates between the -VE COM IN terminal and the -VE COM OUT terminal. The isolator operates in conjunction with the CF2000 Control Panel when a low parallel resistance fault of typically 200Ω is presented between the+VE and -VE of the loop wiring.

Short Circuit Isolation Data (Integral with each sensor)

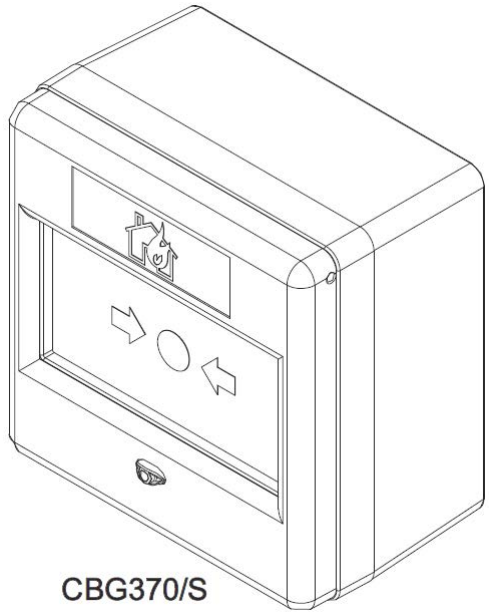
Total Loop Resistance for correct operation of short circuit isolator	50Ω (max)
Continuous Current allowable through isolator	700mA (max)
Isolator Resistance in closed state	0.13Ω (max)
Leakage Current into direct short circuit with isolator open	13mA (max)
Parallel Fault Resistance to be seen at the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

Compatible Callpoints

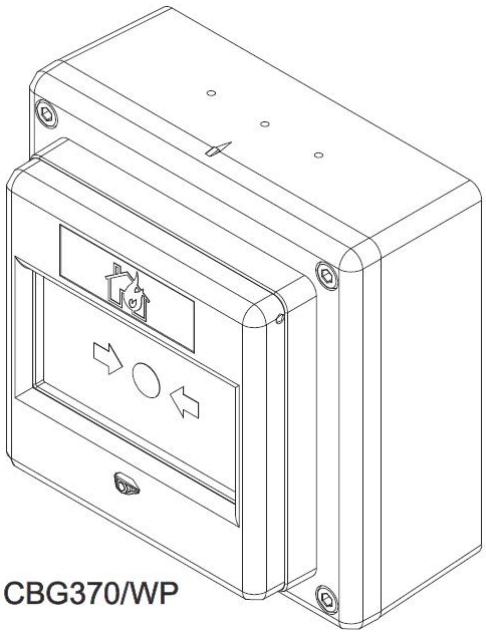
The range of purpose designed callpoints for the CF2000 consists of a surface callpoint, a flush callpoint and a surface weatherproof callpoint.

A range of accessories is available including a hinged protective cover, resettable element kit and a flush bezel.

The status LED can be programmed to either be permanently off under normal conditions or to pulse in order to confirm that it is in communication with the CF2000 control panel.



CBG370/S



CBG370/WP

Compatible Sounders and Beacons

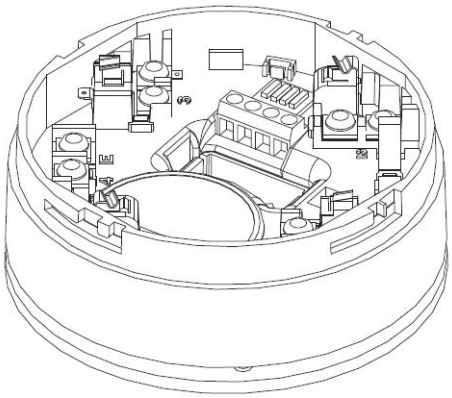
A wide range of loop powered sounders and beacons are available to operate with the CF2000 consisting of a combined sounder base with a maximum output of 95 dB(A), a standalone sounder with a maximum output of 100 dB(A) that is available in standard or weatherproof versions and a stand alone loop powered beacon.
For applications where a discreet dedicated sounder is required, a cover plate is available for the white base mounted sounder enabling it to be used as a stand alone wall or ceiling mounted sounder.
All of these devices are fully programmable via the sophisticated CF2000 multi stage cause and effect programming facilities.

All sounders have multiple selectable volume settings, the volume setting is controlled by the CF2000 panel and so can be altered without needing to access the sounder.

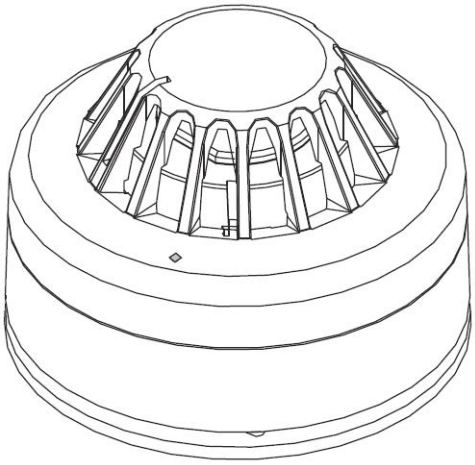
Base Sounder

The CAS380 has been designed specifically to complement the latest generation of Eaton soft addressed detectors.

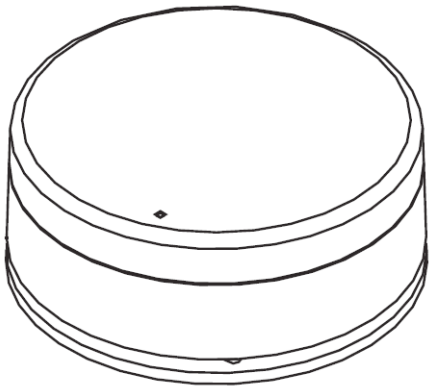
It consists of a first fix bracket, and a main body which clips onto the bracket incorporating the sounder and a detector mounting base in a single composite assembly.



CAS380



CAS380 with sensor fitted



CAS380 with CASC fitted

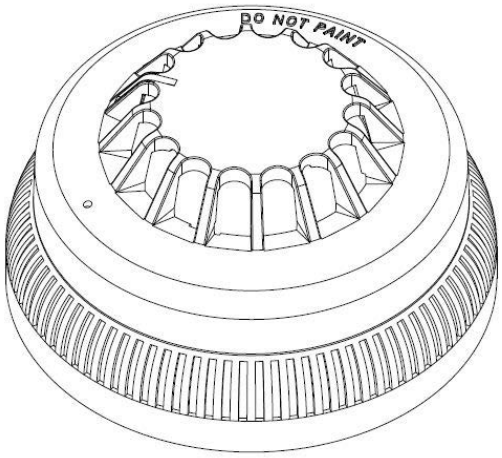
After the body has been clicked into place and connected, a sensor or front cover is then added to complete a very simple quick and neat installation.

The cover enables the CAS380 to be used as a discreet stand alone wall or ceiling mounted device.

The sounder base design incorporates a mechanism that can be activated if required to lock either the sensor or the cover into place to prevent unauthorised removal.

Base Sounder Beacon

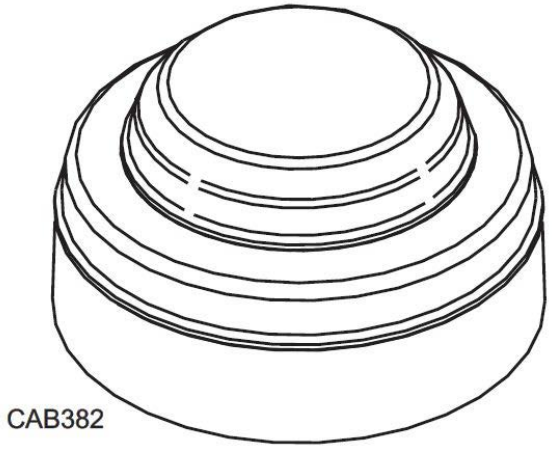
The CASBB384 has been designed with the same fixing as the CAS380 so it can accommodate either a detector or front cover being fitted.



CASBB384

Loop Powered Beacon

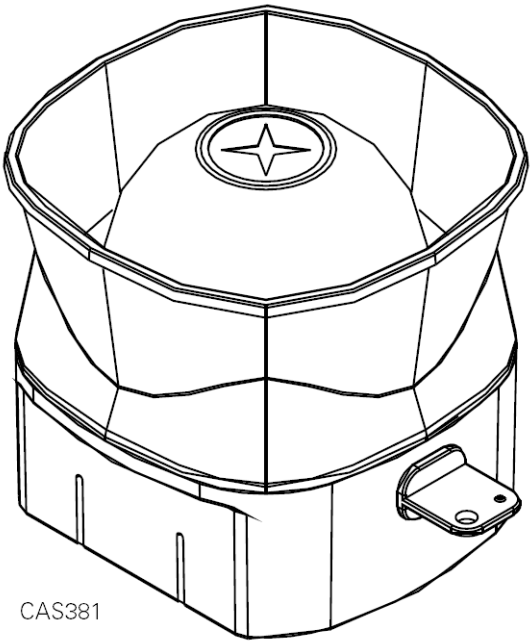
A loop powered flashing beacon is available for applications where visual alarm indication is required such as areas of high ambient noise or buildings which are used by people who are hard of hearing.

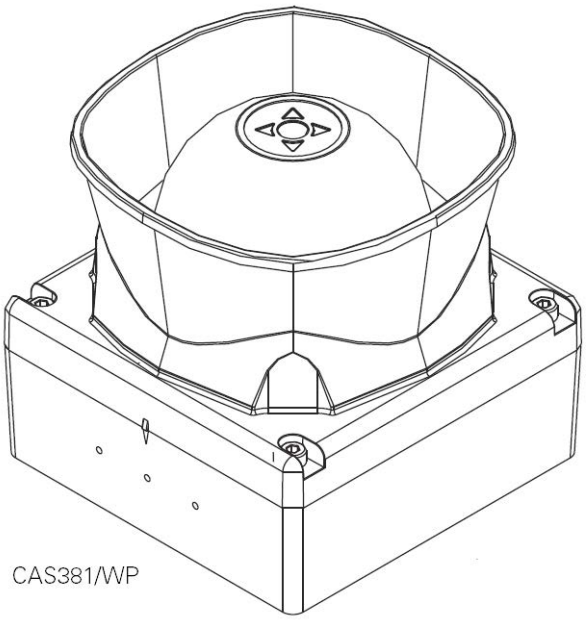


Dedicated Stand Alone Sounders

Stand alone sounders are ideal for applications where greater sound outputs are required than can be achieved with a base sounder or for applications requiring a higher level of resilience or ingress protection.

Two different versions are available standard version and an IP66 rated version.

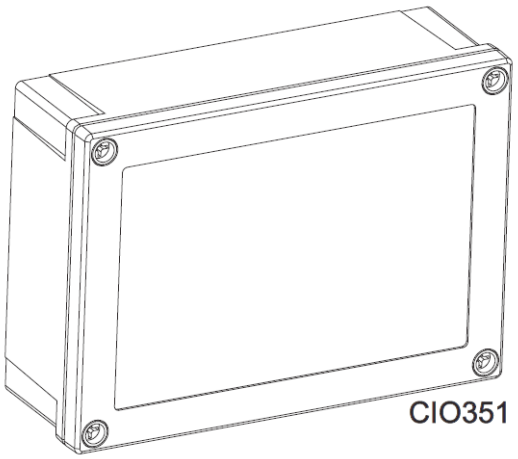




Interfaces

CF2000 has been designed to be suitable for a wide range of applications, various interfaces have been developed to enable the simple integration of other fire systems or building control and safety systems. The following devices are available:

3 Channel I/O device (CIO351)



CIO351 has 3 input channels and 3 output channels. It is used to monitor up to three separate inputs from equipment such as sprinkler flow switches and also to provide 3 separately controlled volt free output contacts which are intended to be used to control external equipment such as air handling plant or access control systems.

All inputs and outputs operate completely independently of each other and can be programmed using the sophisticated cause and effect capabilities of CF2000 to operate either globally or in response to activation of specific devices or specific inputs.

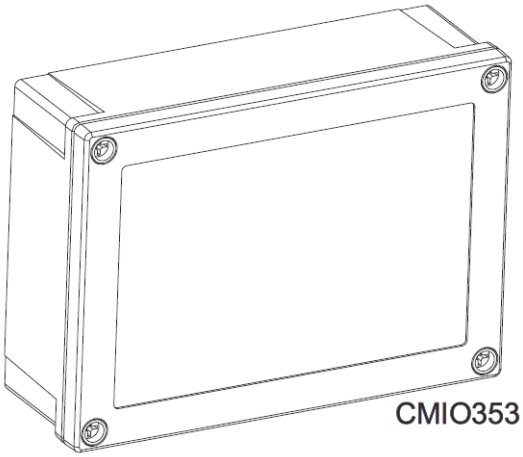
Inputs are monitored for open and short circuits. A specific resistance is required to activate an alarm condition, fully open or short circuit conditions are monitored and generate a system fault signal.

Inputs are suitable for use as fire signal inputs such as from a sprinkler flow switch, however they can also be used to monitor non fire inputs such as external keyswitches.

Outputs are rated to switch a maximum of 1A resistive at 30V DC.

The CIO351 is supplied in a surface mounting IP65 box.

Single Channel I/O device with mains rated switching capability (CMIO353)



CMIO353 is a single channel input / output unit. The output is capable of switching up to 1A at 230V AC. It is commonly used for applications such as door release controls and plant shut down signalling

The input is monitored for open and short circuits. A specific resistance is required to activate an alarm condition, fully open or short circuit conditions are monitored and generate a system fault signal.

The input is suitable for use as a fire signal input such as from a sprinkler flow switch. However it can also be used to monitor non fire inputs such as an external keyswitch.

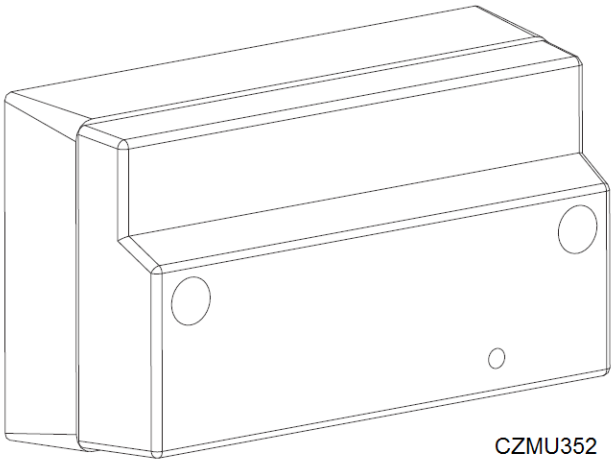
The CIO353 is supplied in a surface mounting IP65 box.

Zone Monitor units

CZMU352
CZMU352 is designed to enable a zone of compatible conventional detectors and callpoints to be connected into the CF2000 loop, it is compatible with up to 20 Menvier conventional detectors connected via CAB300 bases.
Please refer to local standards e.g.BS5839 Pt1:2002 for details of the maximum allowable area to be covered by a single spur / zone. CZMU352 fixes to a standard, deep, double gang back box and can be either surface or semi recess mounted. When semi recessed only the front section protrudes giving a maximum 29mm depth.

CZMU352-IS

Similar to the above but the detection zone has been programmed to accept a Zener barrier and a zone of intrinsically safe detectors. End of line for this zone now becomes 6K8 and the diode in the detector base must be removed.

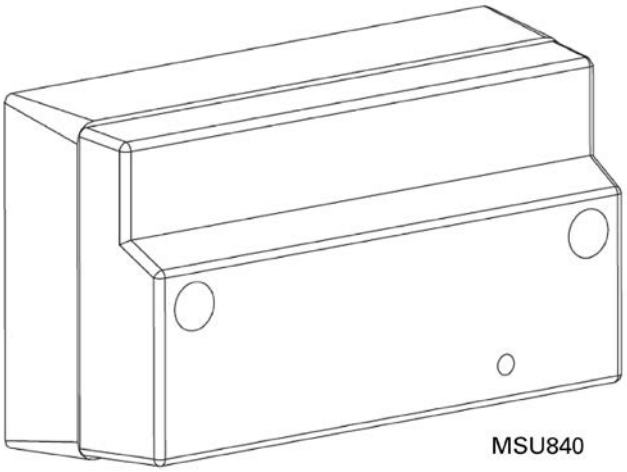

CZMU352

Shop Unit Interface

MSU840 accepts a zone of conventional detectors plus an unlimited number of callpoints which can be connected to the same input as the detectors or a separate callpoint input if required. It also has a 24V 1A rated relay output, and a facility to connect a power supply, which can then be monitored for fault.

In addition it has the facility to connect two circuits of conventional polarised sounders, which are monitored by means of an end of line resistor and powered in alarm conditions from the external power supply.
The sounder circuits can be programmed to operate in pulsed, continuous or time delayed mode.

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

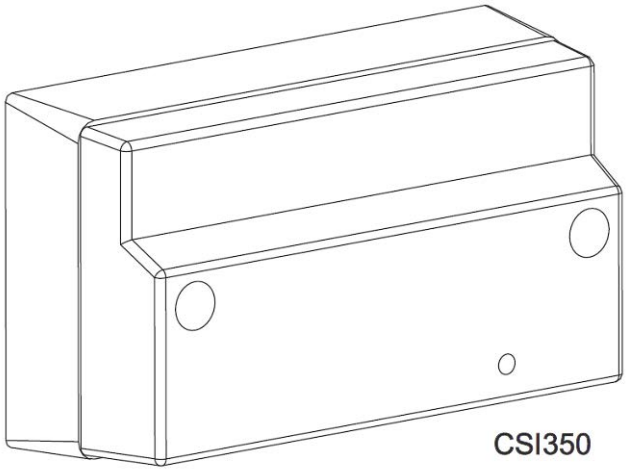

MSU840

Spur Isolator

CSI350 Enables soft addressing to work when the loop contains spurs, it controls the addressing operation so that when the system reaches a spur, all devices on the spur are allocated an address before it continues addressing the loop. CSI350 is mounted on a standard deep double gang back box (supplied).

The device also incorporates a short circuit isolator. Because each device contains a short circuit isolator only 1 is required at the start of each spur.

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

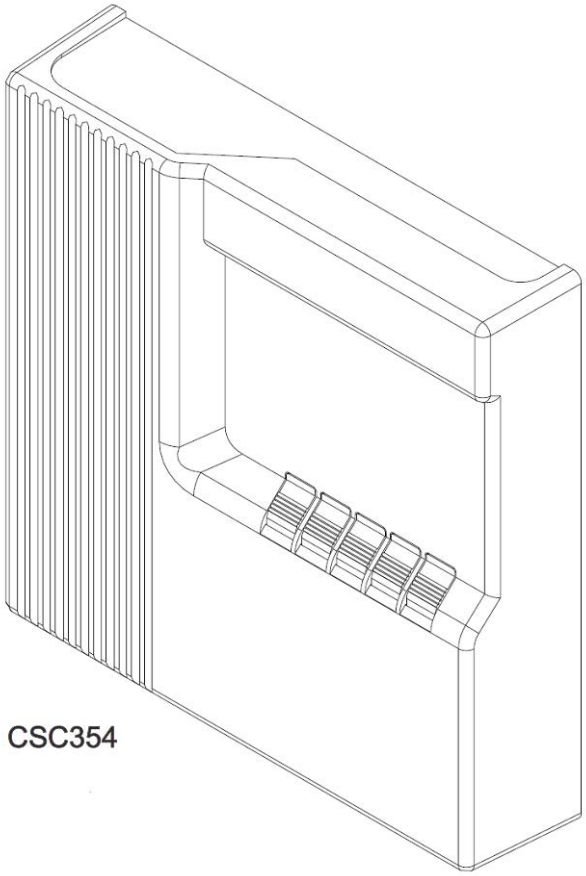

CSI350

4 Way Sounder Circuit Controller

CSC354CPR provides power for 4 separately controllable conventional sounder circuits, each circuit can be separately programmed. It has been designed to greatly simplify installation in applications where specialist sounders or beacons are required since it powers the sounders and allows full control of the sounder operation without having to wire the sounder back to the CF2000 control panel. A 4 way unit takes up a single address but each circuit can be independently controlled.

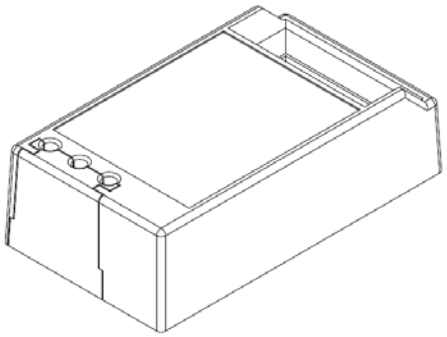
An CSC354CPR unit requires a local un-switched 230V supply and incorporates a back up battery to 24 hours of standby operation followed by a minimum of 30 minutes of full alarm ringing.

A standby of 72 hours can be achieved at the expense of reduced load capability.


CSC354

Micro Interfaces

A range of micro interfaces modules are also available:



MIU872 is a compact single zone input, soft addressed, micro-interface, incorporating integral short circuit isolators. It is fully compatible with the current range of Cooper analogue fire detection panels. It is suitable for interfacing a zone of up to 20 conventional Cooper detectors onto a Cooper analogue fire panel. It will operate with any Cooper conventional detector in configuration with a schottky diode type base.

MCIM is a compact input module used to accept input signals from external equipment such as beam detectors, flow switches, valve monitor switches etc. The CF6000 can be programmed to perform different actions based on the state of the input. The maximum number of input devices per loop is 200.

Equipment Compatibility

Sensors

Loop wired sensors must be of the Cooper Fire Systems 300 series soft addressed analogue type. Cooper Fire Systems 300 series conventional detectors can be connected via an CZMU352 interface. The connection of other detector types via an CZMU352 interface is not recommended,

Call points

Loop wired call points must be the Cooper Fire Systems 300 series soft addressed analogue type, Cooper Fire Systems 300 series conventional callpoints can be connected via an CZMU352 interface. The connection of other callpoint types via an CZMU352 interface is not recommended,

Sounders

Loop powered addressable sounders must be of the Cooper Fire Systems 300 series soft addressed analogue type.

Conventional sounders can also be connected either to the conventional sounder circuits at the panel or to the loop via a CSC354 addressable sounder controller interface providing they meet the following:

1. They are suitable for operation between 18V and 28V.
2. They are polarised and suppressed.
3. The total alarm load is less than the rating of the panel / Alarm Power Interface.

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

Relay circuits

Additional relays can be added to the CF2000 system by using either CMIO353 or CIO351 relay units.

Relays / Auto-dialers and auxiliary equipment

A wide variety of relays and other equipment can be connected to the CF2000 system, but you should note the following constraints:

1. CF2000 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 , 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.

System Overview

Simple user interface

The main element of the user interface with CF2000 is a (60mm x 30mm visible area) display, which provides comprehensive user information.

As well as an LCD display providing full system status information, the panel incorporates 32 traditional zone indication LEDs to provide clear information about the status and spread of a fire even to a user who is completely unfamiliar with the operation of the system.

In addition there are a number of system status LEDs designed to give clear status information to non technical users

User configuration and maintenance facilities

CF2000 has comprehensive facilities for on site system configuration, whereby the user can add or remove simple devices, without the need for a service engineer to visit site.

For initial configuration or major system changes special PC configuration software is available enabling Eaton 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.

During the yearly maintenance, all terminal under main supply shall be verified.

Spur tolerant soft addressing

CF2000 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 CF2000 control panel will automatically scan the detection loops and allocate each device with an address number corresponding with its position on the loop. This avoids the traditional need for manual addressing of the system devices which is time consuming and provides a potential for error.

A major innovation with CF2000 is the ability to incorporate spurs of analogue devices which are fed from the main loop by utilising a spur isolator.

Whenever the panel detects a spur, it breaks from allocating address numbers to the loop wired devices, allocates address numbers to each of the devices on the spur in sequence and then continues to address the devices on the main loop.

Every CF2000 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 CF2000 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 for details of the maximum allowable area to be covered by a single spur.

Integral Power Supply and Battery

The CF2000 panel is designed for ease of installation, the power supply and battery are integral to the main control panel so only a single panel is required.

Technical Specification

Power Supply (Approved EN54 pt 4)

Mains		
Nominal Voltage		230V AC + 10%, -15%
Nominal Current		40mA
Maximum Current		500mA
Input Fuse R1		Anti Surge 1.6A
Output Voltage including tolerances	26V	= 18.5 to 29.5V
	26V RAW	= 18.5 to 29.5V
	5V Output	= 4.6V to 5.5V
Ripple Voltages	26V	= 800mV
	26V RAW	= 800mV
	5V Output	= 430mV
Maximum Loadings	26V O/P	= 0.48A } *I max b
	26V RAW O/P	= 1.2A
	5V	= 0.5A
Standby Current (2 Loops Loaded)	26V	= 140mA } *I max a
	26V RAW	= 50mA
	26V	= 140mA } *I min
	26V RAW	= 50mA
	5V	= 30mA

* I max a, I max b & I min = Current as specified in BS EN54-4 Published 2006 (Amendments 1 & 2)

Batteries	
Number of Batteries	2
Manufacturer	YUASA NP7-12
Capacity	7Ah
Battery Fuse	6.3A Anti-Surge (F4)
Maximum battery current	3.0A
Standby current (mA)	125 (2 loops)
Maximum Charging Current to the Batteries	0.65A
Float Voltage	27.4V
Final Voltage	21.0V
Charging Characteristics	Constant Voltage with 0.65A limit with temperature compensation
Maximum current drawn from the batteries when the mains is not available	3.0A
Deep Discharge Protection	20.6V
Battery Internal Impedance Fault	>0.5Ω

Inputs	
Addressable Loops	
Max Number	2
Max Loop Load per loop	200mA
Max Number of Addressable Devices per loop	200
Class Change	Operated by external volt free contact

⚠ WARNING

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS GIVEN IN APPENDIX 14 BATTERY DISPOSAL INSTRUCTIONS.

Technical Specification (continued)

Outputs

Conventional sounder circuits	
Number of sounder circuits	4
Total Sounder Load	1.0A (FH1204)
Maximum Sounder Circuit Load	800mA
Sounder Circuit Fuses (F1/2/3/4)	1.6A (Quick Blow)
End of line resistor	6k8
Fire Routing Equipment	
Max Load	60mA
Fused (PTC2)	100mA polyswitch
End of Line resistor	6k8
Fire Protecting Equipment	
Max Load	60mA
Fused (PTC4)	100mA polyswitch
End of Line resistor	6k8
Fault Routing equipment	
Max Load	30mA
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	24V 1A
Fuse (PTC5)	1.1A polyswitch
Auxiliary 24V Supply	
Nominal Voltage	24V ±10%
Fuse (PTC3)	300 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 affect the standby duration	
RS485 Port (Mimic Repeater)	
This is a serial output port for driving CF2000 Repeater panels, mimics etc. This output is short circuit protected	
Max Cable Length	2 Km
Min Recommended cable size	1 mm² (Screened)
Mechanical Specification	
Weight including batteries	10.6 Kg
Weight excluding batteries	5.3 Kg
Dimensions (Standard batteries)	400 mm (L) x 320 mm (H) x 170 mm (D)
Type of Material (backbox)	Mild Steel (Powder Coated)
Type of Material (facia)	PC/ABS
Flammability Rating	UL 94 V0
Total Number of knockouts	24
Diameter of knockout	20 mm

⚠ CAUTION

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

Optional Functions as per EN54 Parts 2 & 4

CF2000 is approved to EN54 Parts 2 & 4 including all the options in this section which can be selected as required. Figure 3 on page 23 is a typical system wiring diagram, which shows the recommended connections for the equipment described in this section.

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.

⚠ CAUTION

EQUIPMENT DAMAGE: NO VOLTAGE SHOULD BE APPLIED TO THIS INPUT

Panel Outputs

Panel Sounders: (Option 7.8 EN54 Part 2)

Two pairs of outputs are provided (see Figure 1). 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 = 1.0A

All outputs are fused with 1.6A Glass fuse. Alarm devices should be spread equally across the four sounder circuits.

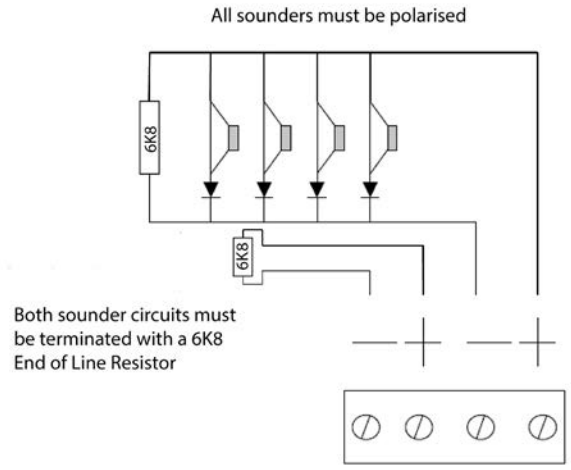


Figure 1. Typical Sounder circuit

⚠ WARNING

DO NOT EXCEED THE RATED OUTPUT CURRENT

Output to Fire Alarm Routing Equipment

(Option 7.9 EN54 Part 2)

This output, which is fused, and monitored using a 6K8 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 a 24V DC output to an auxiliary device (e.g. relay).

It is current limited to 30mA using a resettable polyswitch. Class change and test conditions do not operate this output. If operated under a fire alarm condition, the FRE LED will illuminate and will remain illuminated 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 to ensure correct operation.

Output to Fire Alarm Protecting Equipment

(Option 7.10 EN54 Part 2 Option A)

This output, which is fused, and monitored using a 6K8 end of line resistor, is 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 a 24V DC output to an auxiliary device (e.g. relay).

It is current limited to 30mA 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 to ensure correct operation.

Output to Fault Warning Routing Equipment

(Option 8.9 EN54 Part 2)

This output, which is fused and monitored using a 6K8 end of line resistor, is used for the transmission of fault signals to fault warning routing equipment. This output is monitored using a 6K8 end of line resistor and is current limited to 30mA. Under normal condition it operates by providing 12V DC which can be connected directly to a 12V auxiliary device (it is current limited to 30mA).

Under fault conditions or even if the CF2000 is powered down, this output will be switched to 0V.

Ensure the polarity of the connections is observed at all times and end of line resistors (6K8 5%) are fitted to ensure correct operation.

Delays to outputs (Option 7.11 EN54 Part 2)

The CF2000 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 CF2000 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 CF2000 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 the CF2000 Site Installer software.

Dependencies on more than one alarm signal - Type C

(Option 7.12.3 of EN54 Part 2)

The CF2000 has the facility to inhibit the operation of the output sounders, output to fire alarm routing equipment and the output of the fire alarm protecting equipment until one more confirmatory signals are received from different zones. This feature is programmable using the CF2000 Site Installer software.

Optional Functions as per EN54 Parts 2&4

1. **Auxiliary Relay** (Option not required by EN54)
This output is a volt free contact, which is protected by a polyswitch. It is rated at 24V DC 1A. If operated under a fire alarm condition, this output will remain energised until the fire panel is reset.

DO NOT USE TO SWITCH MAINS VOLTAGE

2. **Auxiliary DC Output** (Option not defined by EN54)
A 24V DC 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 equipment connected to this output will only draw current when a fire condition exists.

⚠ WARNING

DO NOT EXCEED THE RATED OUTPUT CURRENT

3. **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 2 km.

Installation

Mains Supply

The mains supply must be installed in accordance with the current edition of the IEE wiring regulations, and must be fully compliant with local regulations.

Connection to the mains supply must be via an isolating device (e.g. a double pole isolating fuse rated at 2A) 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 LIVE 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

Cable Segregation

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

Panel Installation

The panel should be installed in a clean, dry, reasonably well ventilated place, and not in direct sunlight. Temperatures in excess of 40°C and below 5°C may cause problems, if in doubt consult Cooper Fire Systems. 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 CF2000 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.
- CF2000 utilises intelligent soft addressing technology to greatly simplify the installation and commissioning processes. Once the system has been installed and the loops wired to the panel with all devices fitted, the CF2000 control panel will automatically scan the detection loops on power up 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. If no devices can be found the panel will keep rebooting and performing an auto-learn until a device is found on a loop.
- 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.

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 CF2000 can be flush mount or surface mounted.

1. For Surface Mount; drill four holes and fix the backbox to the wall.
2. For Flush Mount the backbox requires a hole 310mm x 355mm with a depth of 117mm.

Figure 2 shows the back box dimensions.

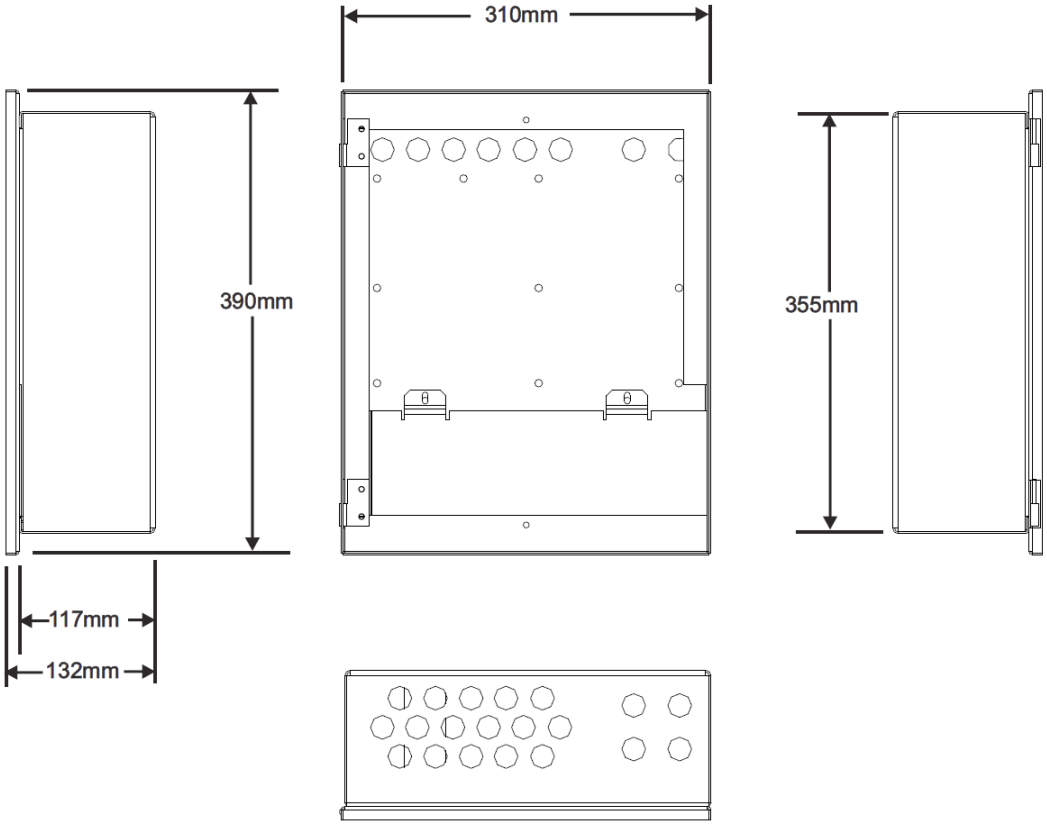


Figure 2. Back Box dimensions

Installing Cabling

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

System Wiring

Figure 3 shows a typical system wiring arrangement.

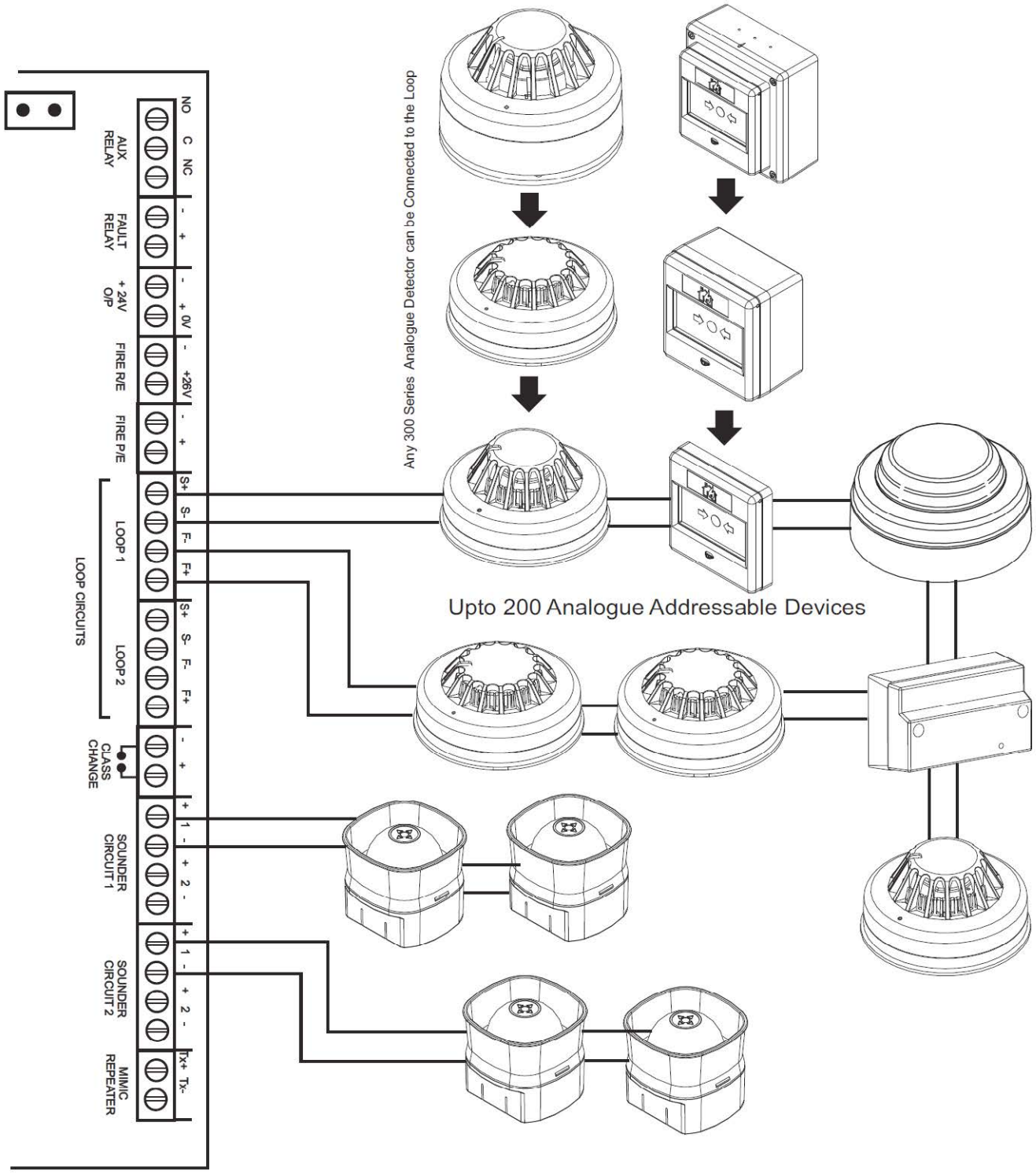


Figure 3. Typical System Wiring diagram

Commissioning CF2000

Up/downloading using PC software

The PC Software enables the address, location text, device type and any comments to be downloaded to the CF2000 panels (Figure 5).

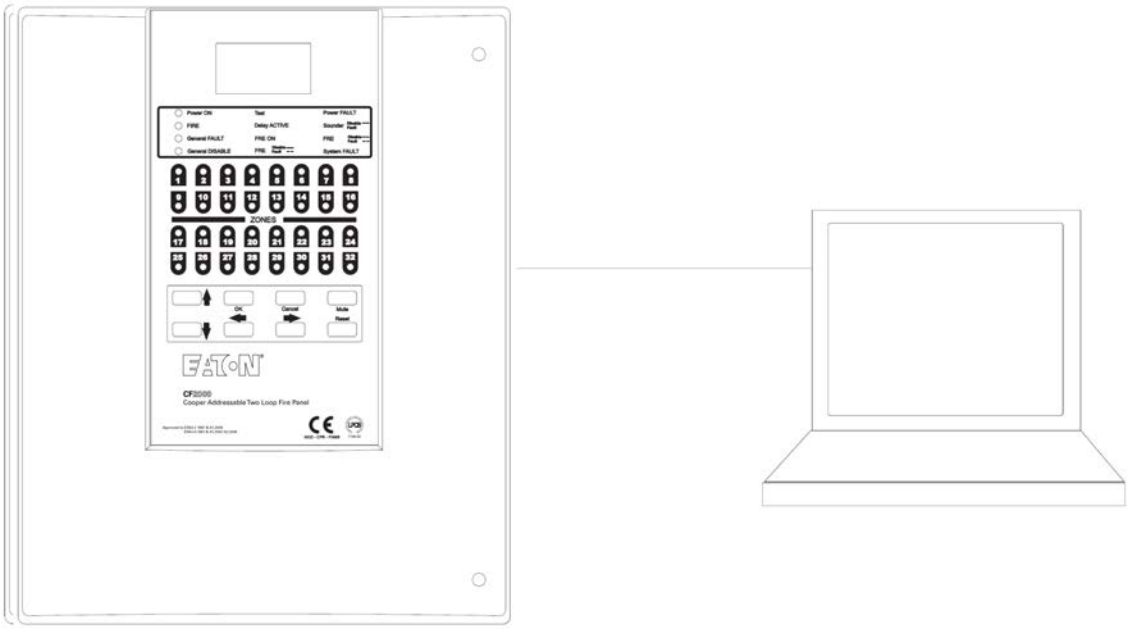


Figure 4. CF2000 front panel

Device input programming

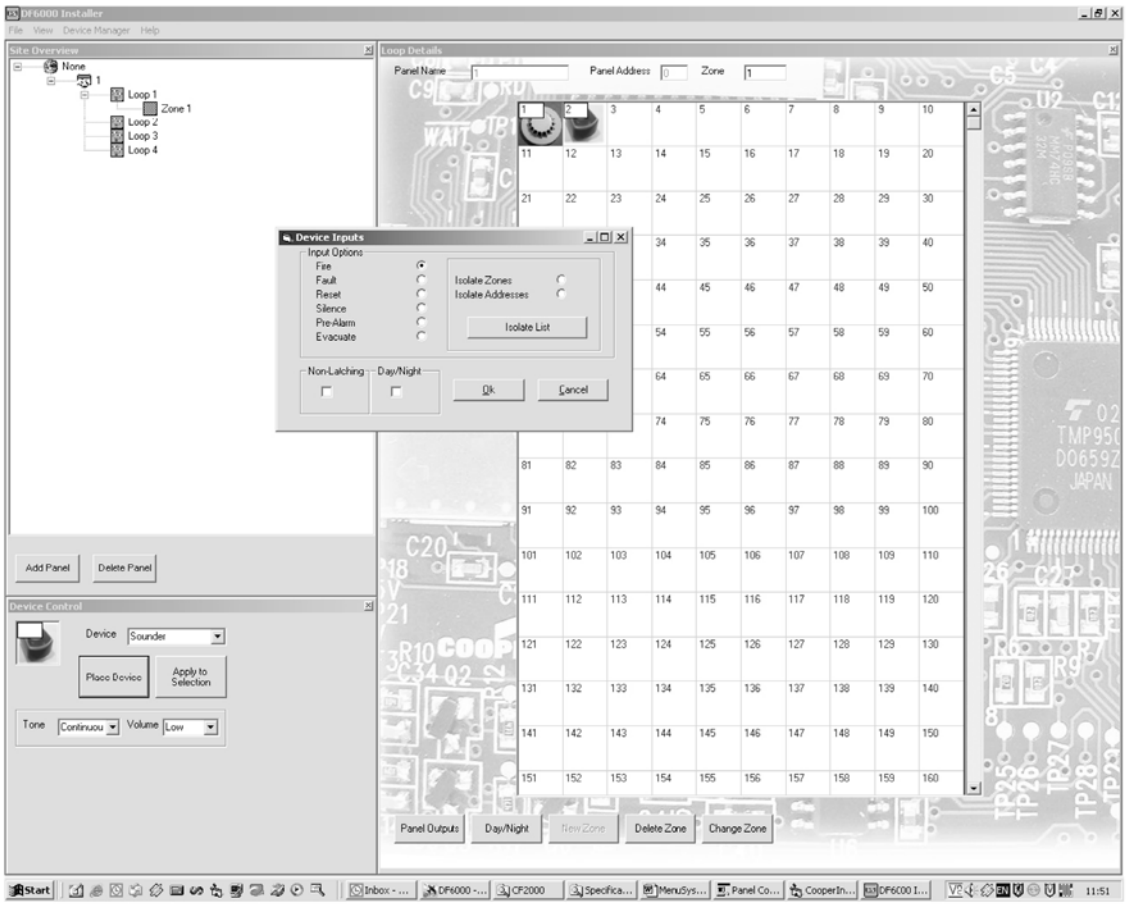


Figure 5. Device Inputs dialog

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 does not latch in alarm condition. Used in conjunction with isolates.	
Day/Night	Option enables day/night mode on compatible heat and opto-heat detectors.	
	Optical-Heat	Mode switches between heat or optoheat mode.
	Heat	Mode switches 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 up to 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.

Device Outputs

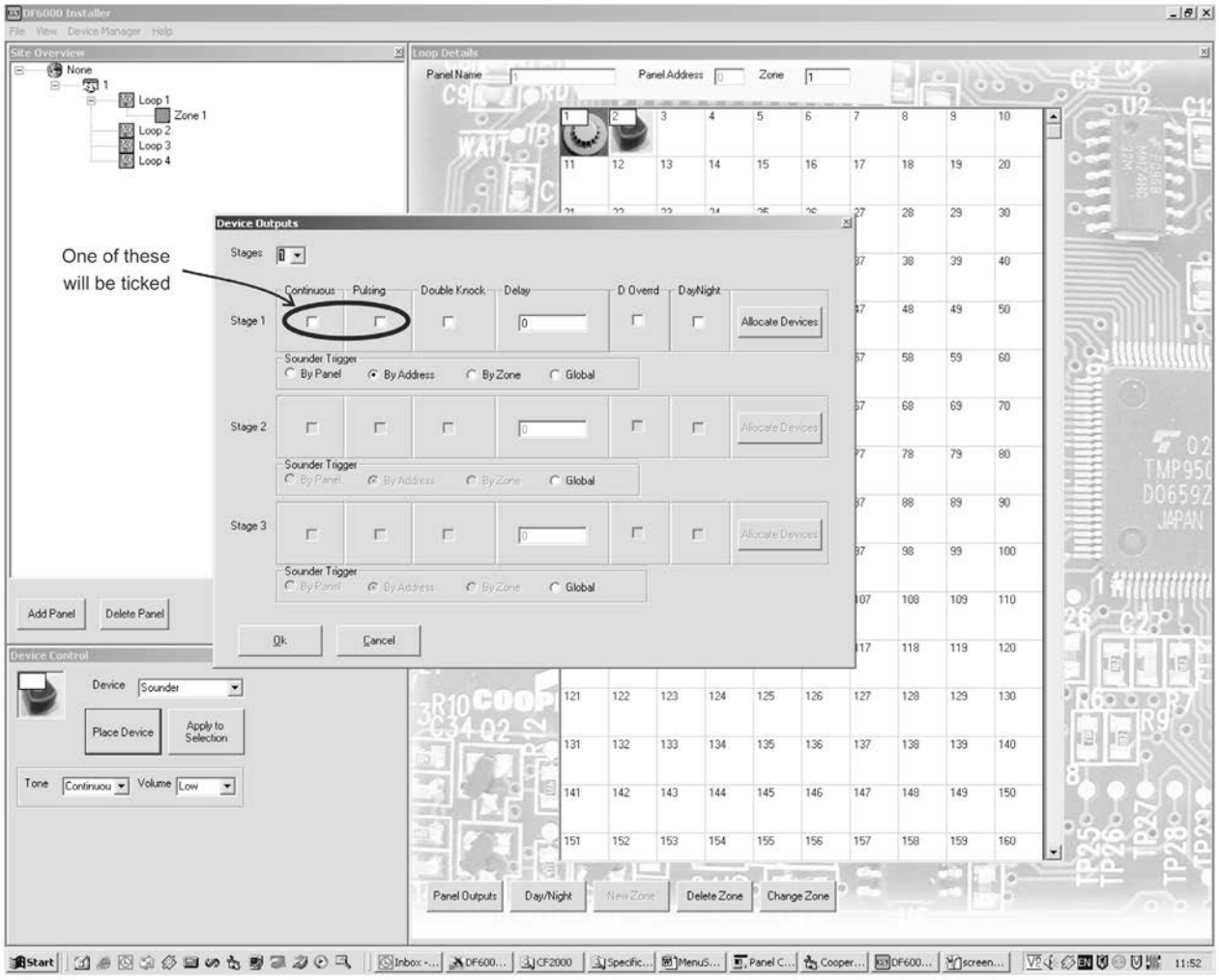


Figure 6. Device Outputs dialog

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.

Delay 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.

Panel Outputs

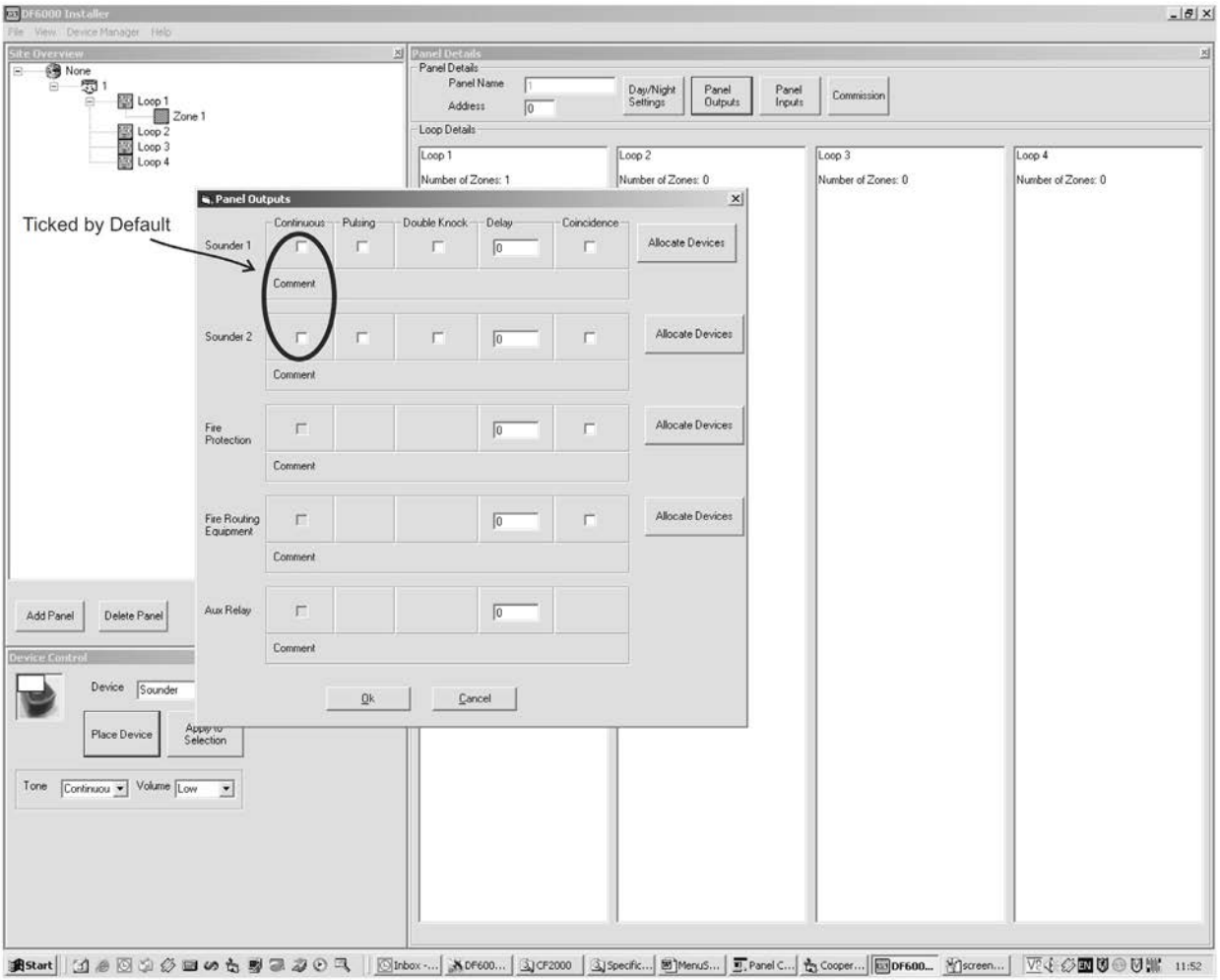
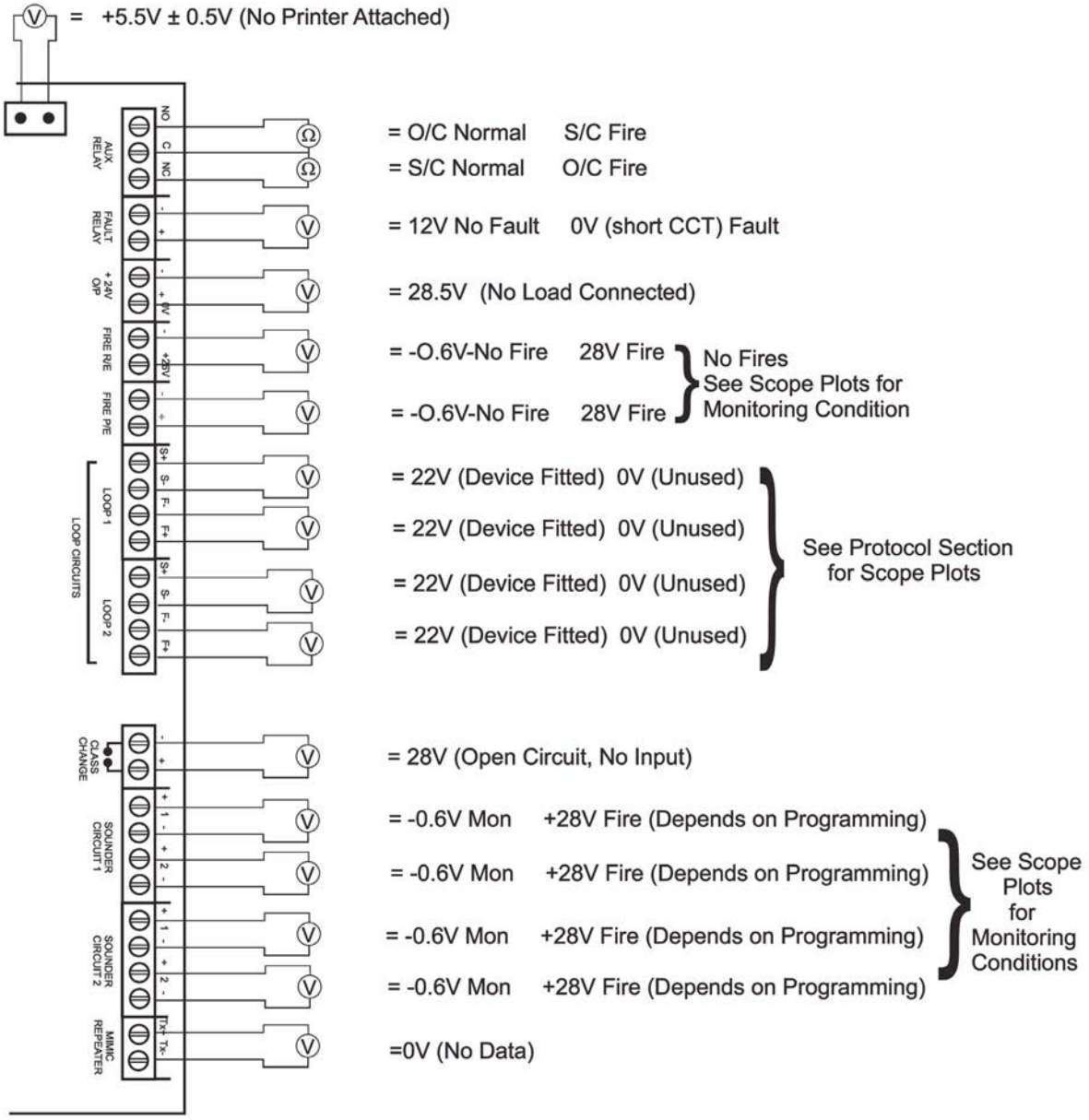


Figure 7. Panel Outputs dialog

Dependence 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 in fire. Alternatively any zone outside this list will trigger the output also when the **Dependence** box is checked. The **Allocate devices** button allows the user to populate this list.

Panel Fault Finding



Protocol Format

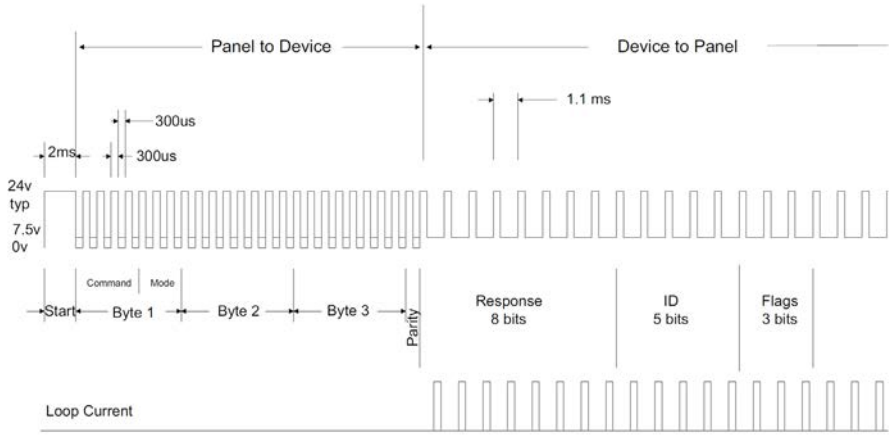


Figure 8. Full Protocol Format (not including repeaters)

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 R84 on the Loop Driver Card; probe 0V clip to the 'Bottom' 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.

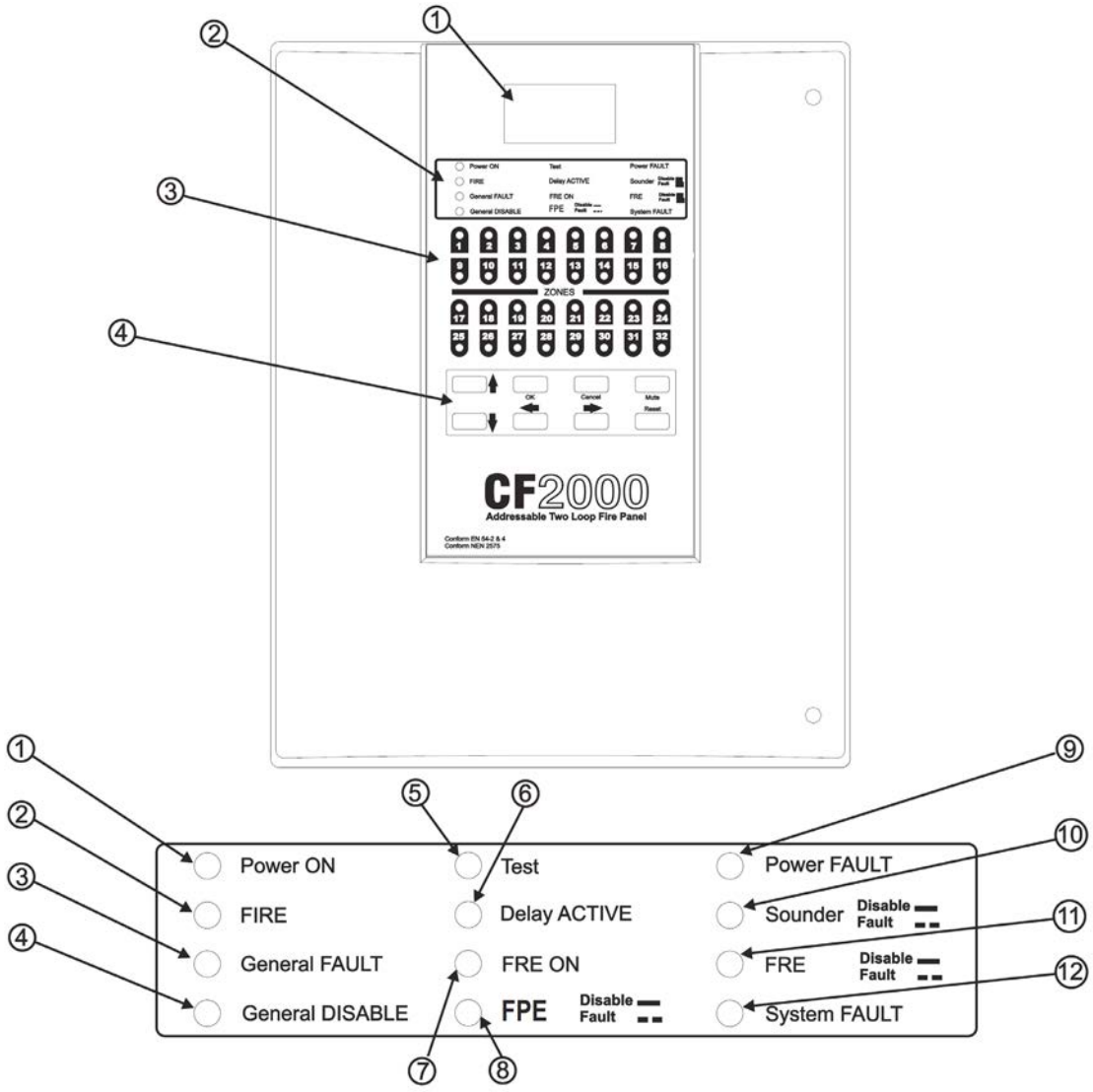
Loop 2: Using a Digital Storage Oscilloscope, connect one channel to R82 on the Loop Driver Card; probe 0V clip to the 'Bottom' side of the resistor. This will display the loop current. Connect the other channel to Loop 2, S+ terminal on the main mother board. DO NOT connect the 0v clip of this probe.

Panel Controls and Indicators

Panel Overview

Panel Display

① LCD Display
② System LEDs
③ Zonal LEDs
④ Buttons



LED Display

LED	Name	Function	Action
①	Power On	Shows Panel is on (Mains Healthy)	Check Indicator is Illuminated
②	Fire	Indicator Panel has Detected a Fire	Implement Fire Action Procedure
③	General Fault	Monitors devices for faults e.g. Smoke detectors/Sounders	Report to System Supervisor
④	General Disable	Monitors panel for disablements	Report Fault to Service Dept
⑤	Test	Supervisor/Engineer is testing the system	Check with System Supervisor
⑥	Delay Active	Part of the system has been disabled	Check with System Supervisor
⑦	FRE On	Fire Routing Equipment relay activated	Report to System Supervisor
⑧	FPE	Indicates Fire Protecting Equipment status	Check with System Supervisor
⑨	Power Fault	Indicates PSU fault	Check with System Supervisor
⑩	Sounder	Indicates the Sounder status	Check with System Supervisor
⑪	FRE	Indicates Fire Routing Equipment status	Check with System Supervisor
⑫	System Fault	Panel has a fault	Report to System Supervisor

Figure 9. Panel Controls and Indicators

System Healthy

CF2000 is operated via an 8 button keypad. The default healthy screen is shown below. From this screen all the panels functions can be operated. Press any key to prompt the passcode screen.

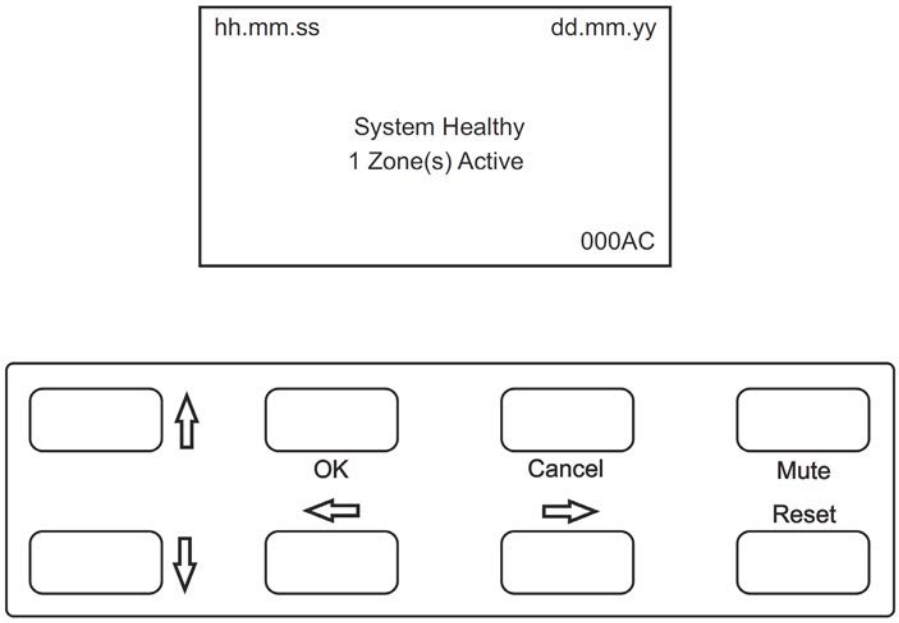


Figure 10. Default System Healthy screen

View Event

The View Events screen is shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

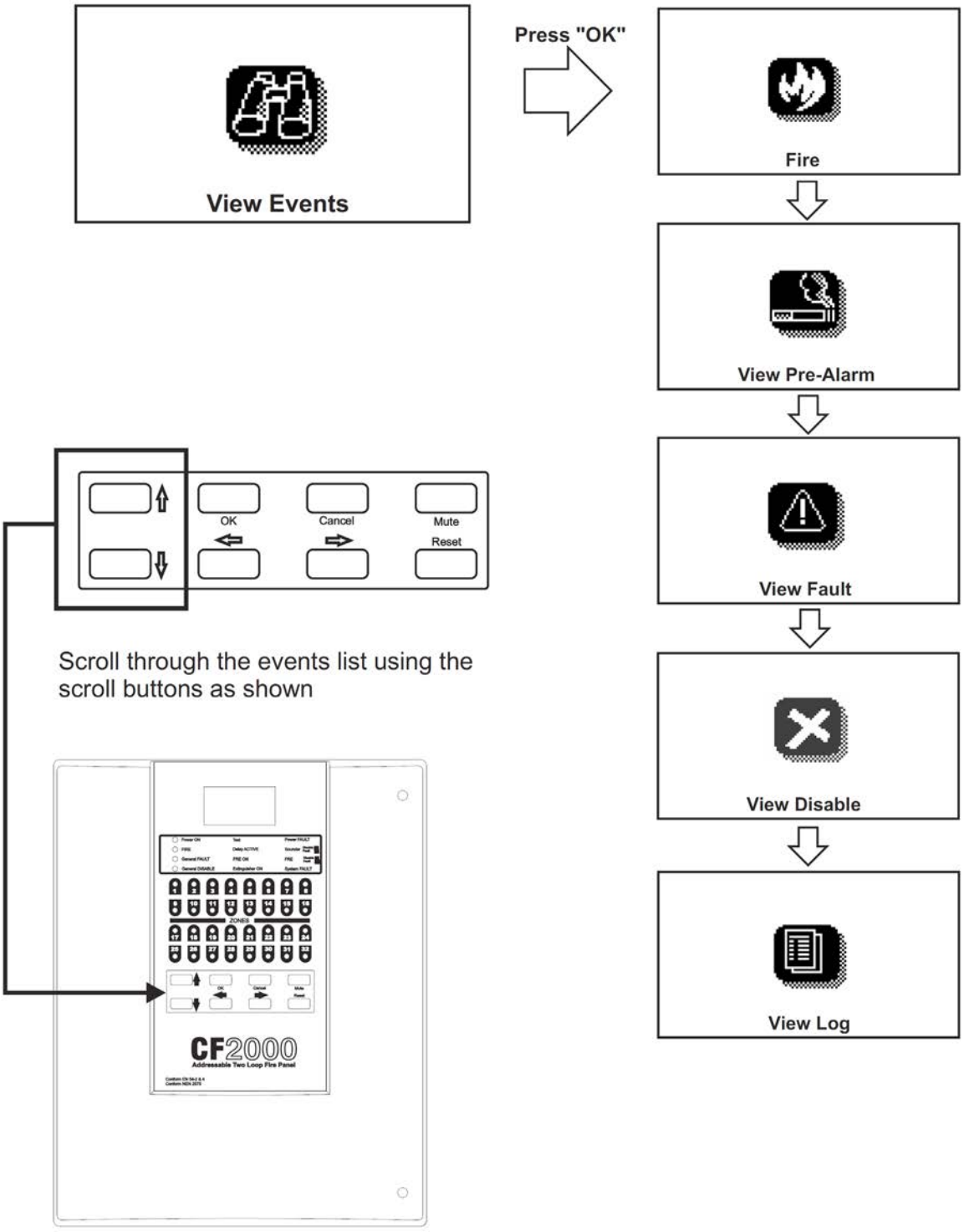
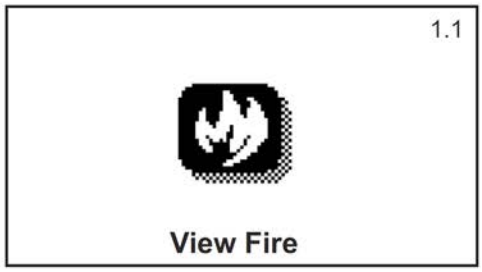
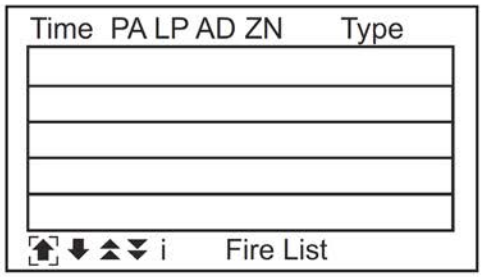


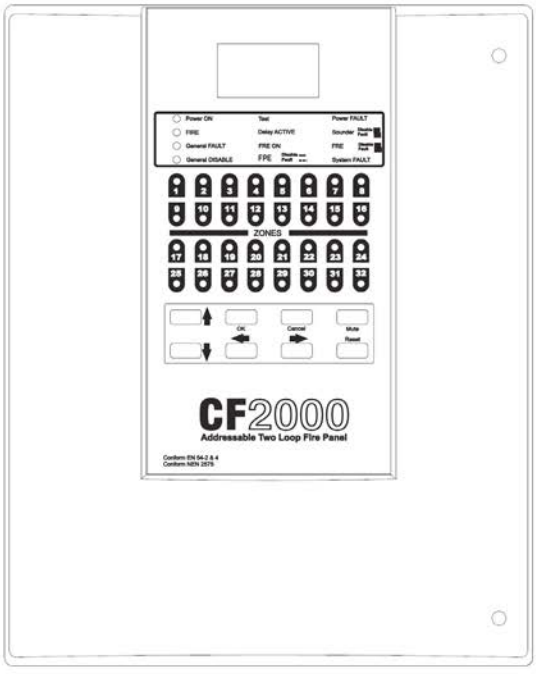
Figure 11. View Events screen

Fire Event

The **Fire** screen is shown below. From this screen all the panels functions can be operated. Press any key to prompt the passcode screen







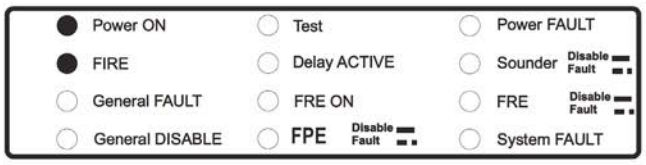


Figure 12. Fire Event screen

View Fires

The View Fires screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

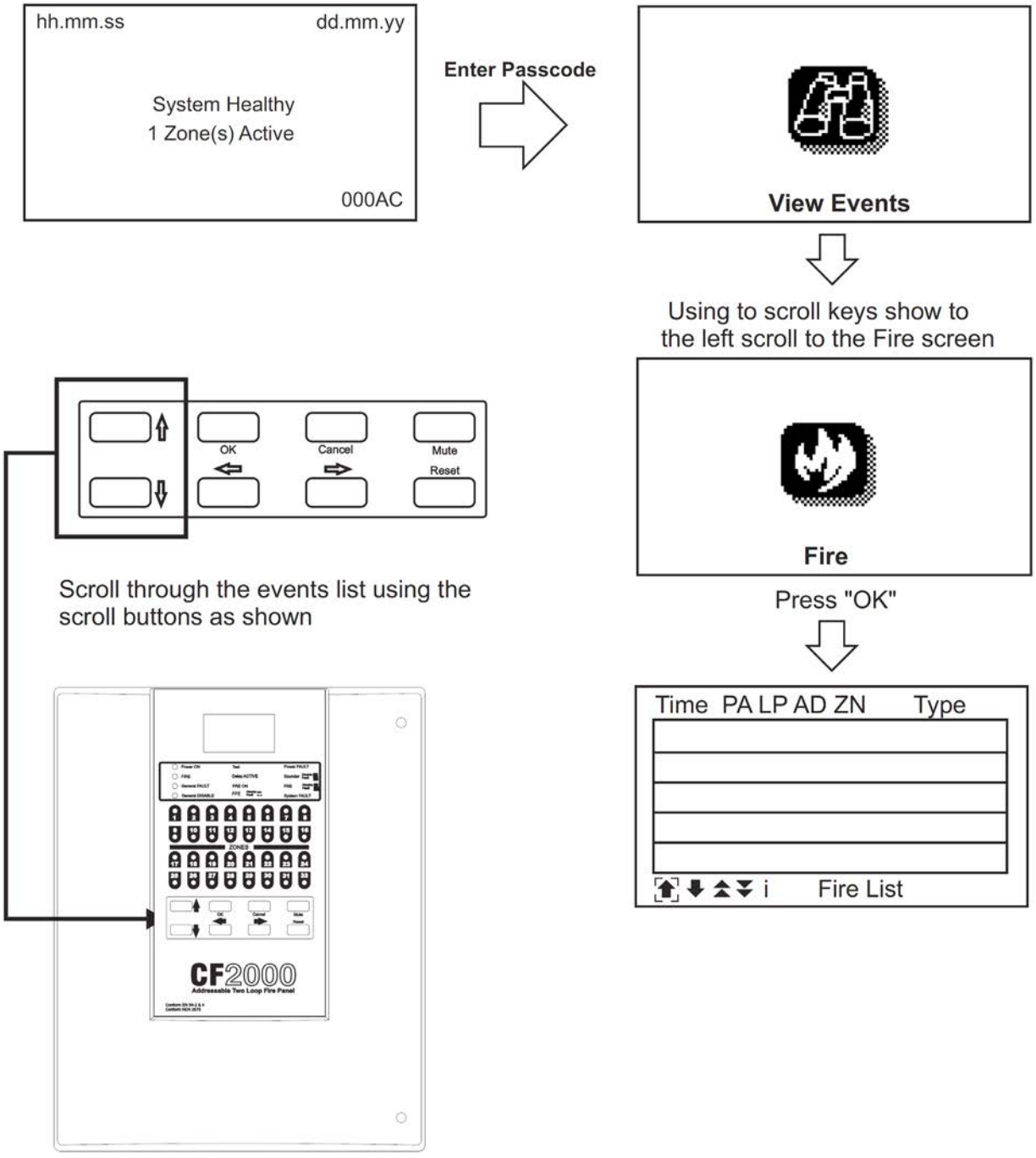


Figure 13. View Fires screen

View Pre-Alarm

The View Pre-Alarm screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

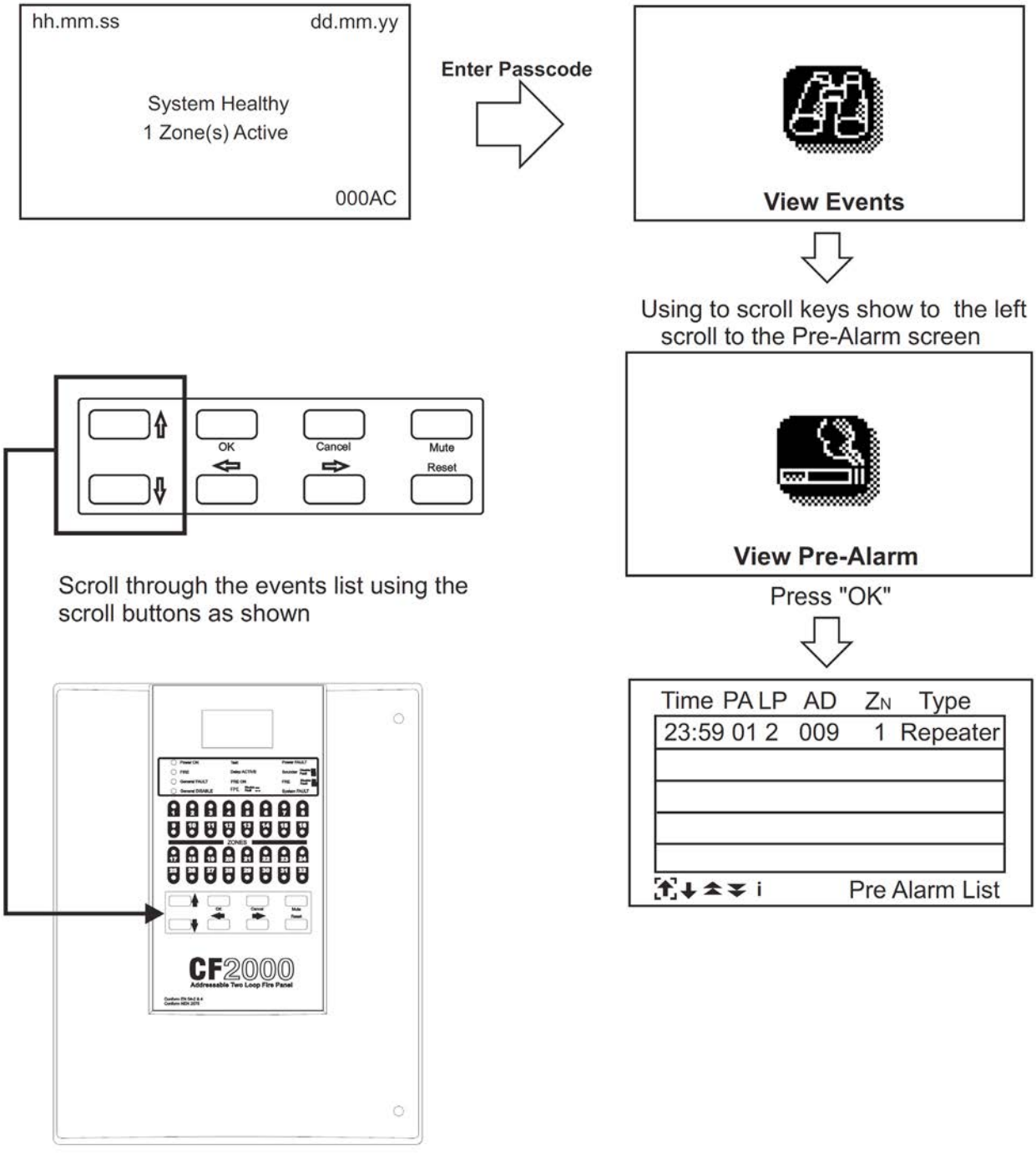


Figure 14. View Pre-Alarm screen

View Fault

The View Fault screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

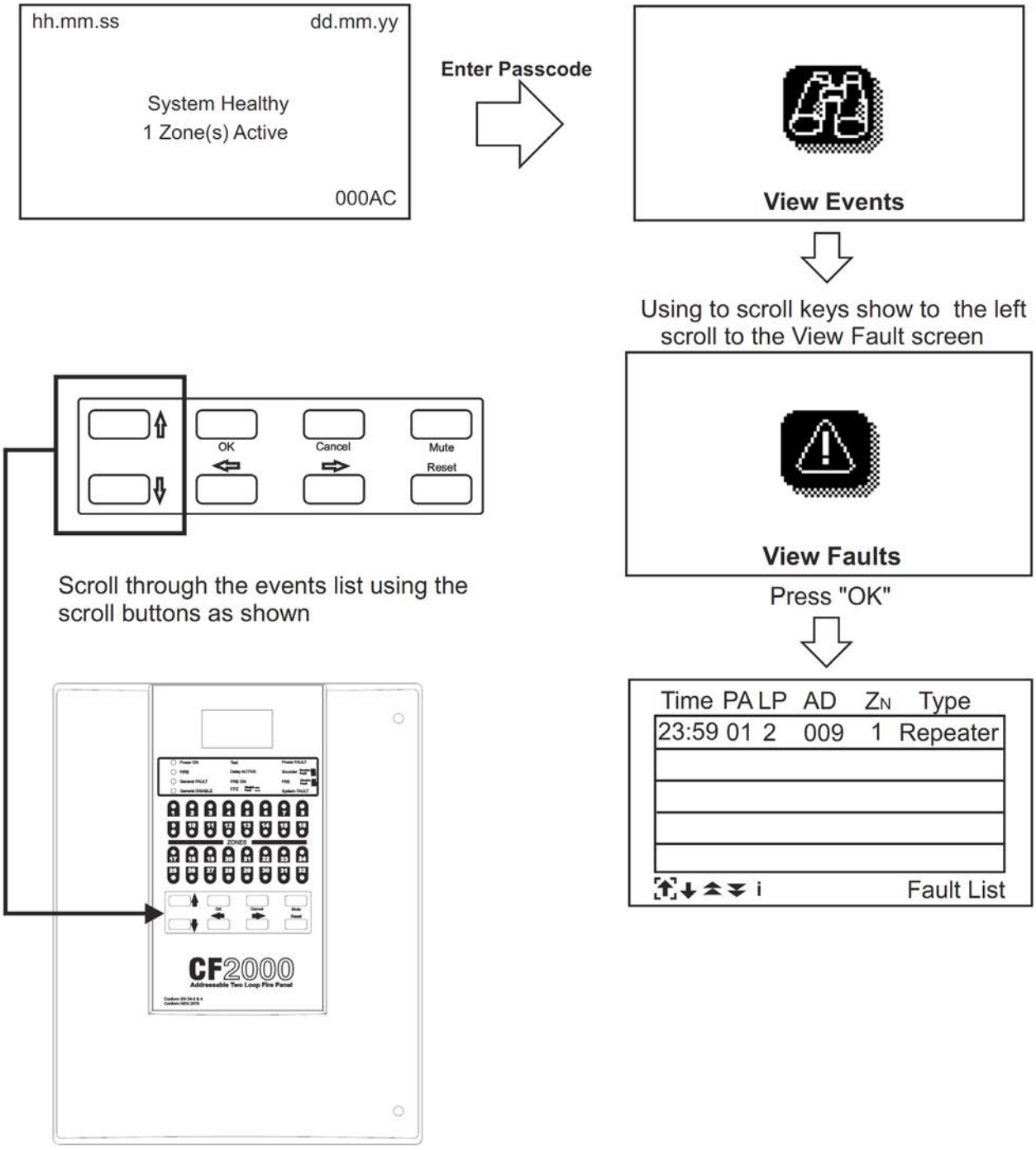


Figure 15. View Fault screen

View Disabled Address

The View Disabled Address screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

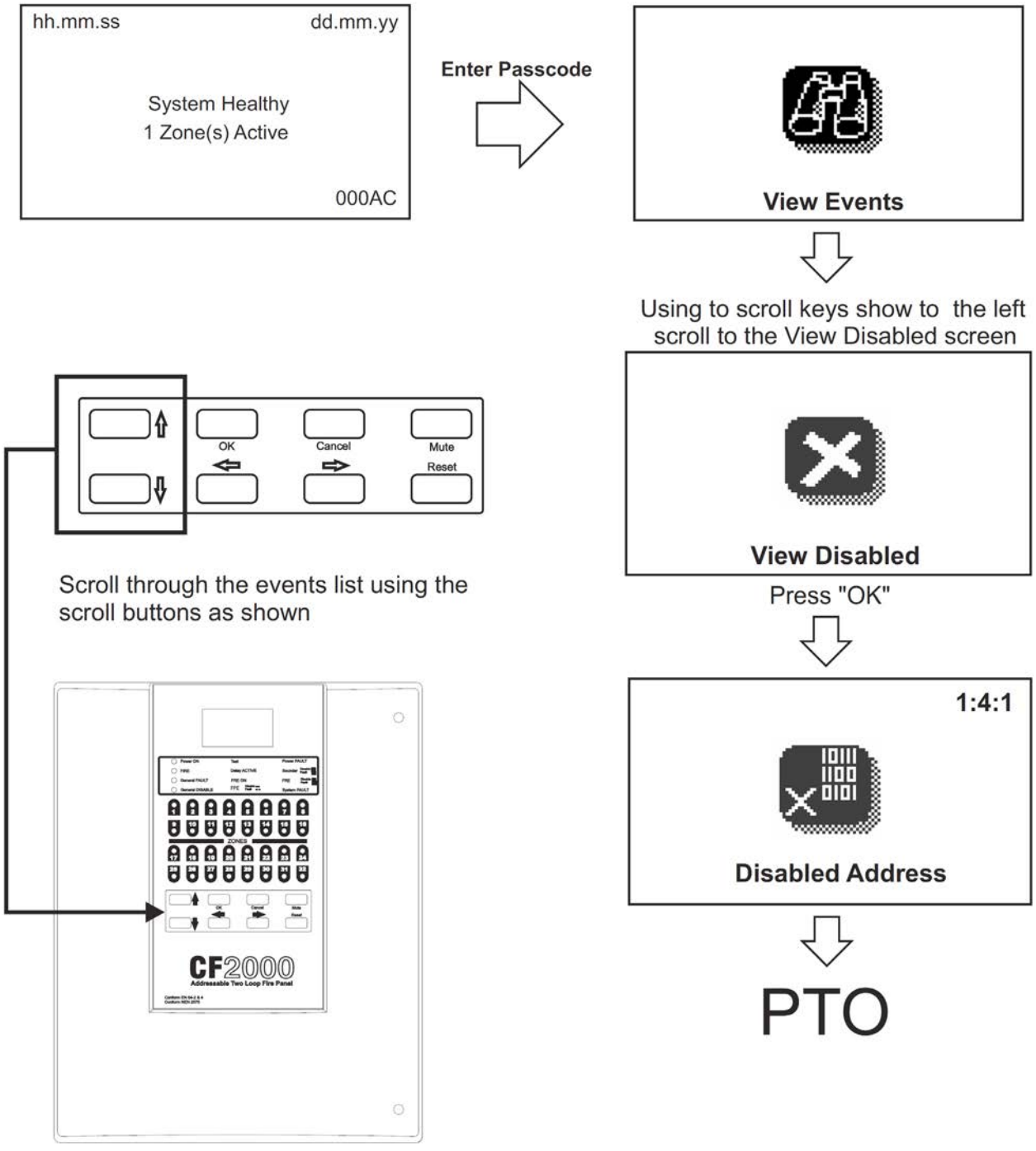
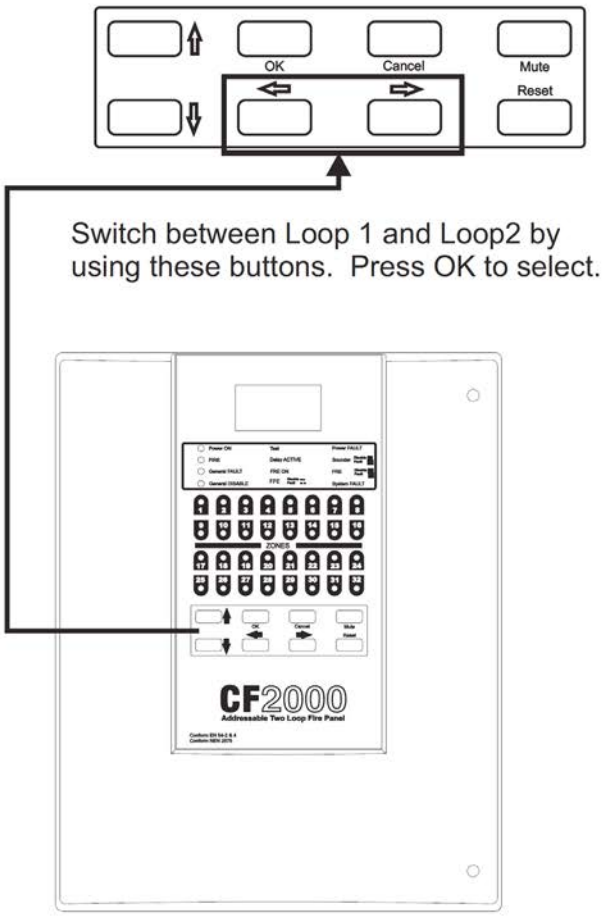


Figure 16. View Disabled Address screen

View Disabled Address (continued)



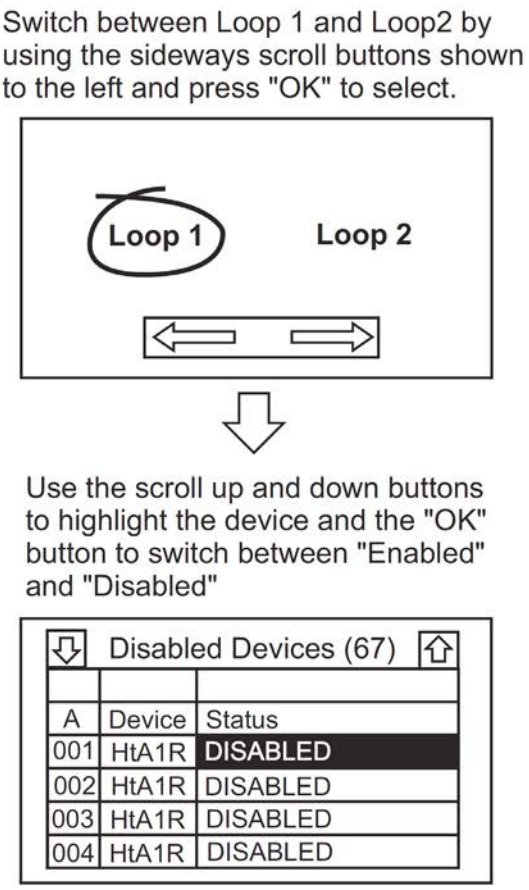


Figure 17. View Disabled Address (continued)

View Disabled Zone

The View Disabled Zone screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

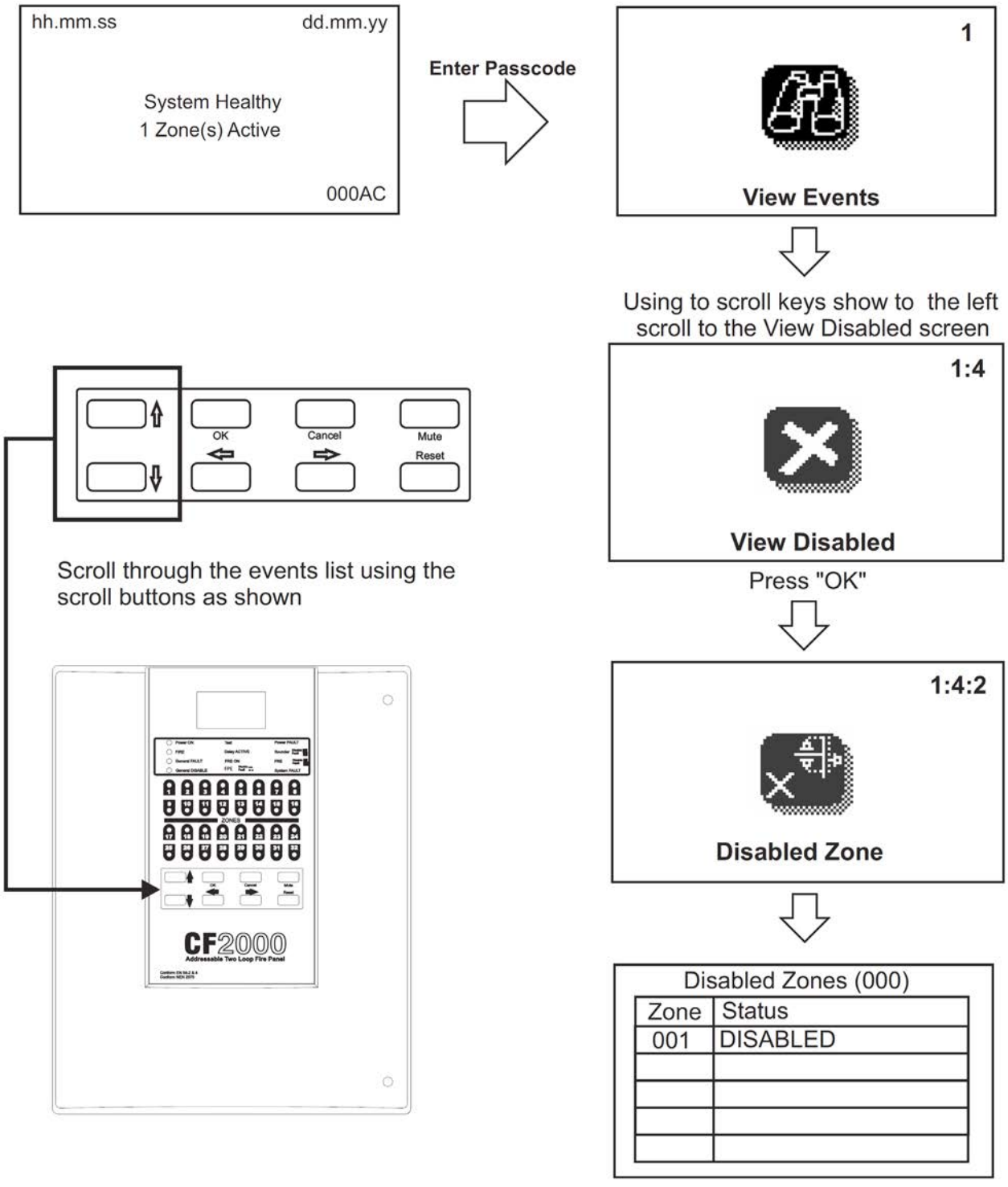


Figure 18. View Disabled Zone screen

View Disabled I/O

The View Disabled I/O screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

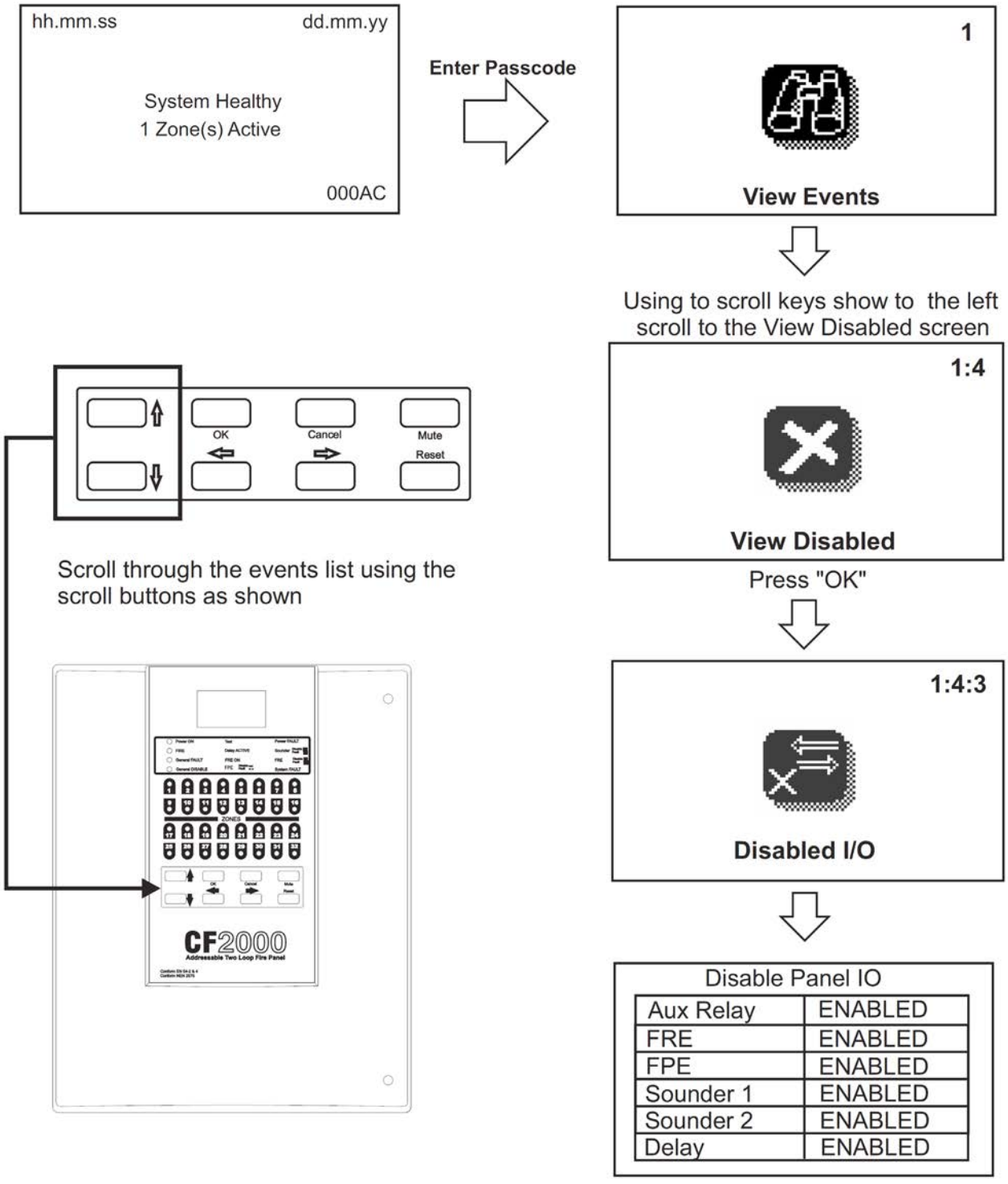


Figure 19. View Disabled I/O screen

View Log

The View Log screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

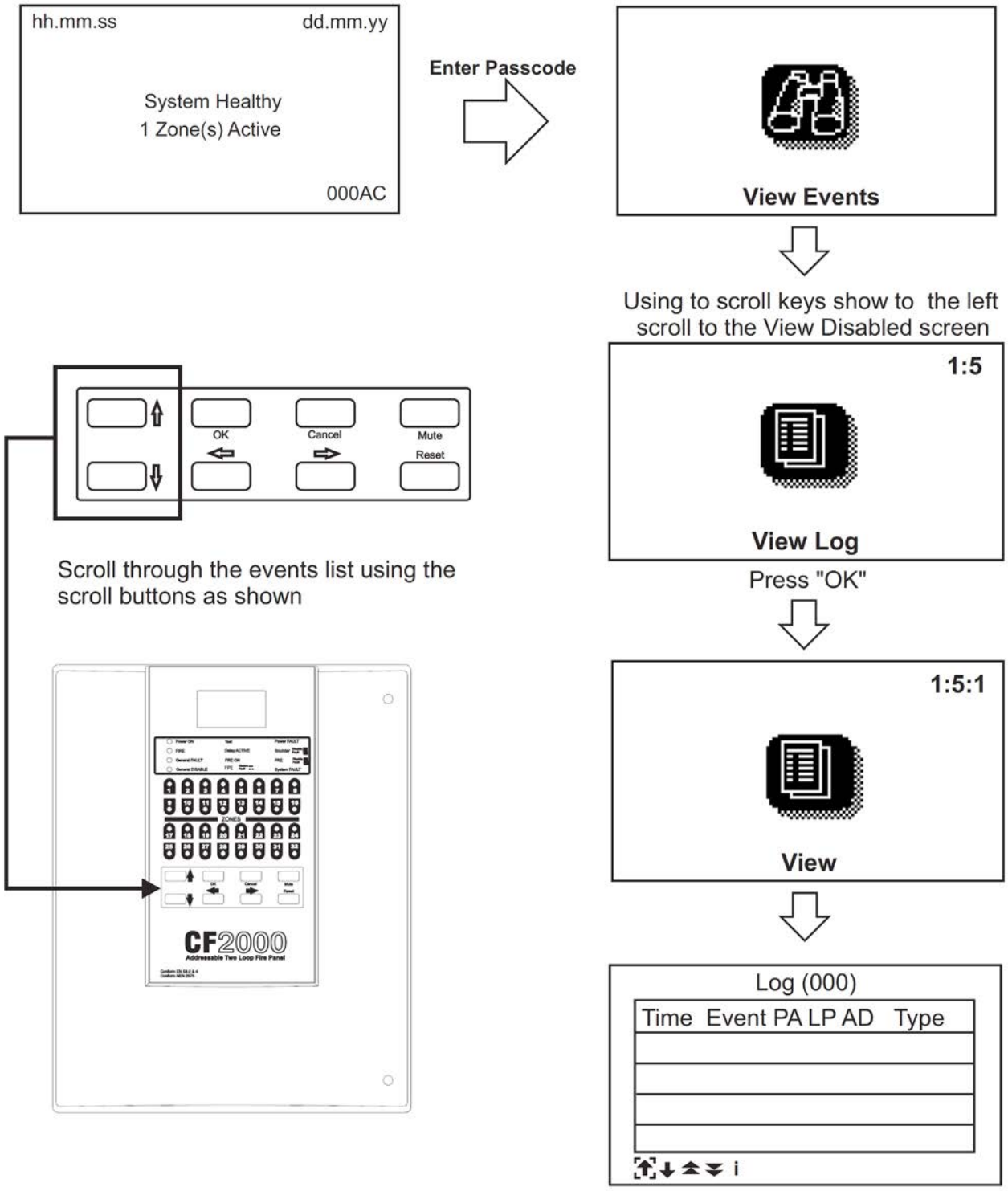


Figure 20. View Log screen

Operations (Soft Reset)

The Soft Reset screen is accessed as shown below. The Operations screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the events screen by default. Press the Scroll Down button until the Soft Reset screen is shown as illustrated below. Press OK and scroll through the list of options using the Up and Down arrow buttons and pressing OK to select.

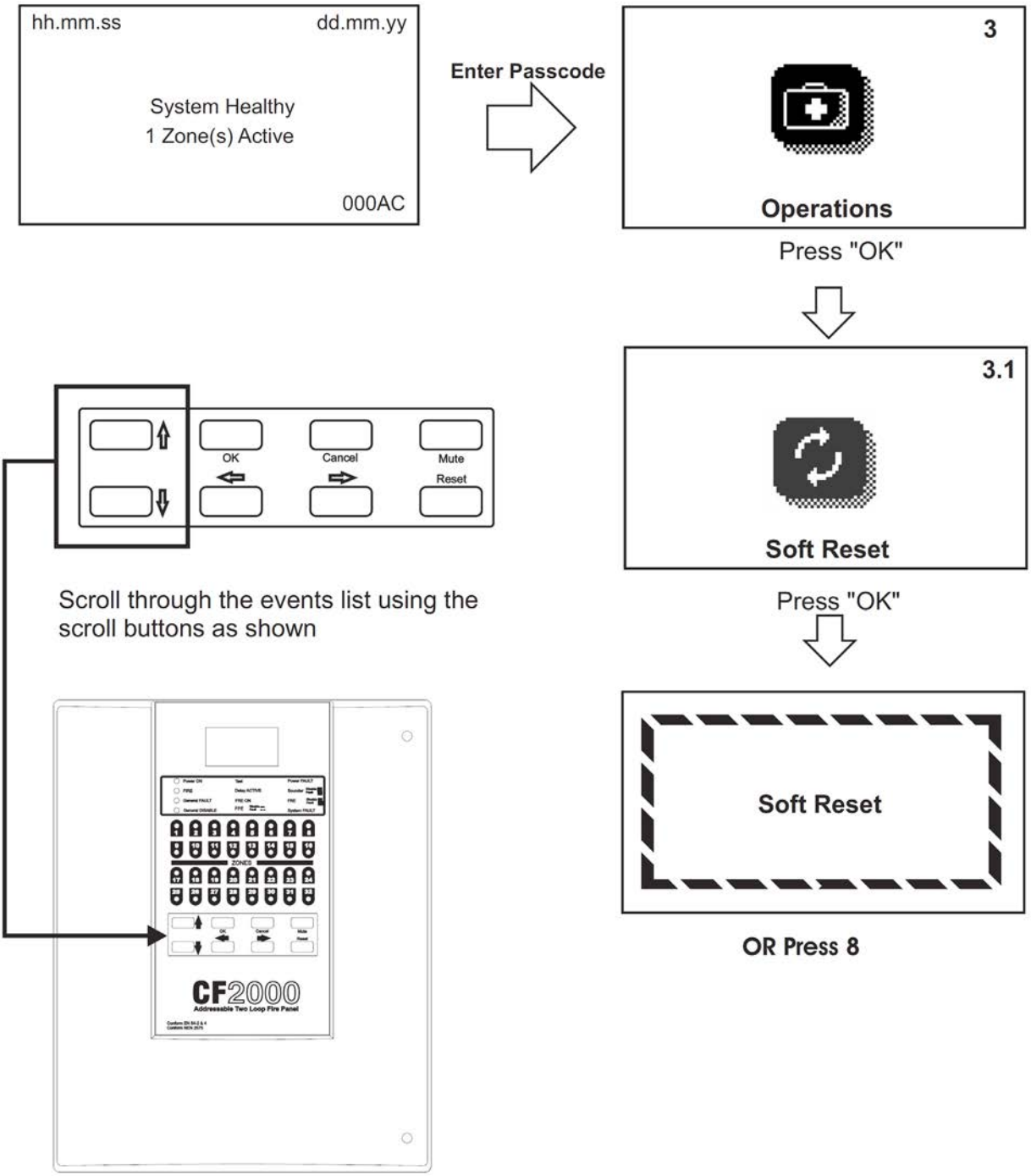


Figure 21. Operations (Soft Reset) screen

Operations (Evacuate)

The Evacuate screen is accessed as shown below. The Operations screen is accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the events screen by default. Press the Scroll Down button until the Evacuate screen is shown as illustrated below. Press OK and scroll through the list of options using the Up and Down arrow buttons and pressing OK to select.

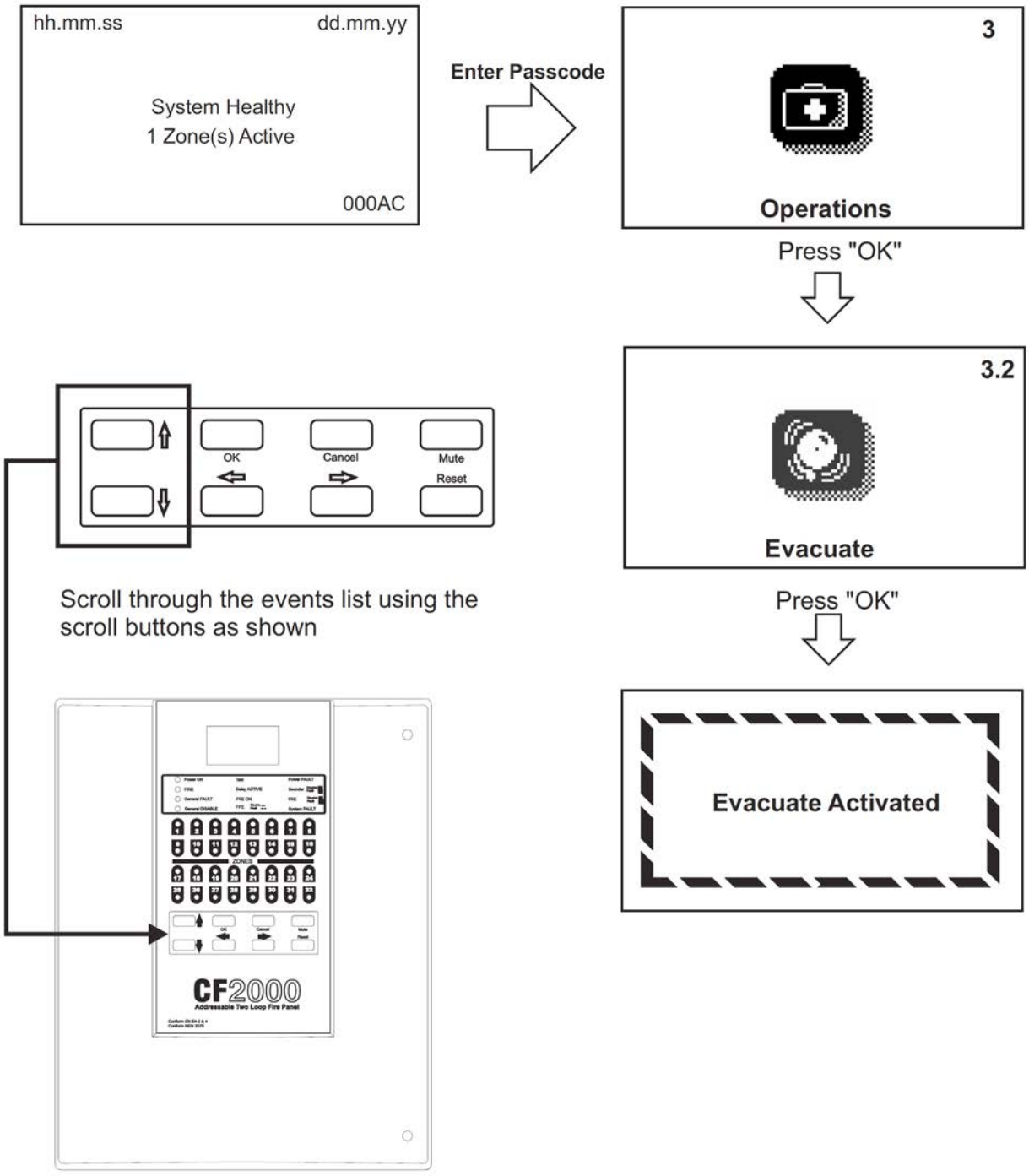


Figure 22. Operations (Evacuate) screen

Operations (Silence Alarms)

The Silence Alarms screen is accessed as shown below. The Operations screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the events screen by default. Press the Scroll Down button until the Silence Alarms screen is shown as illustrated below.

Press OK and scroll through the list of options using the Up and Down arrow buttons. Press OK to select.

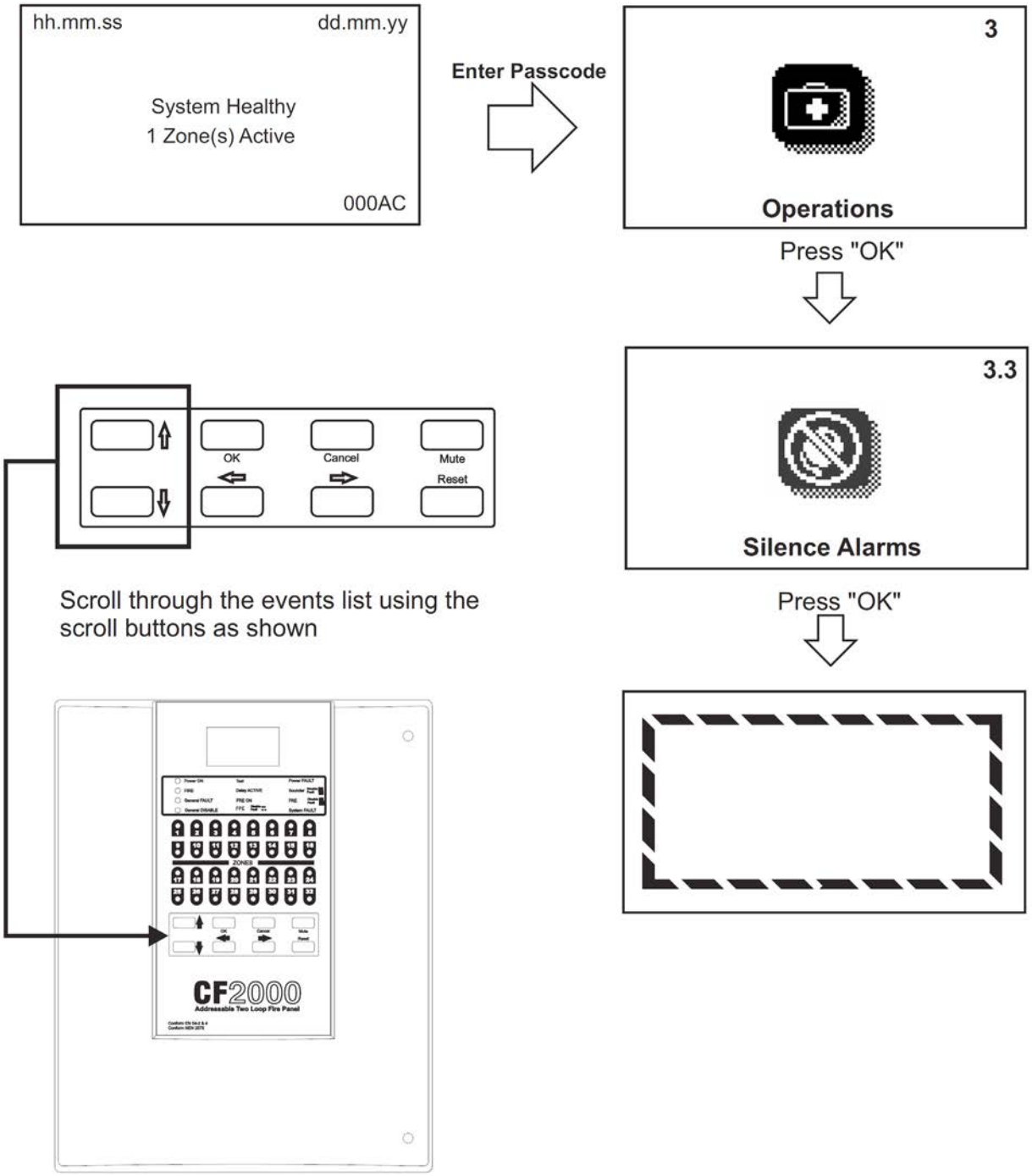


Figure 23. Operations (Silence Alarms) screen

Operations (Lamp Test)

The **Lamp Test** screen is accessed as shown below. The **Operations** screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the events screen by default, press the **Scroll Down** button until the **Lamp Test** screen is shown as illustrated below.

Press **OK** and scroll through the list of options using the **Up** and **Down** arrow buttons and pressing **OK** to select.

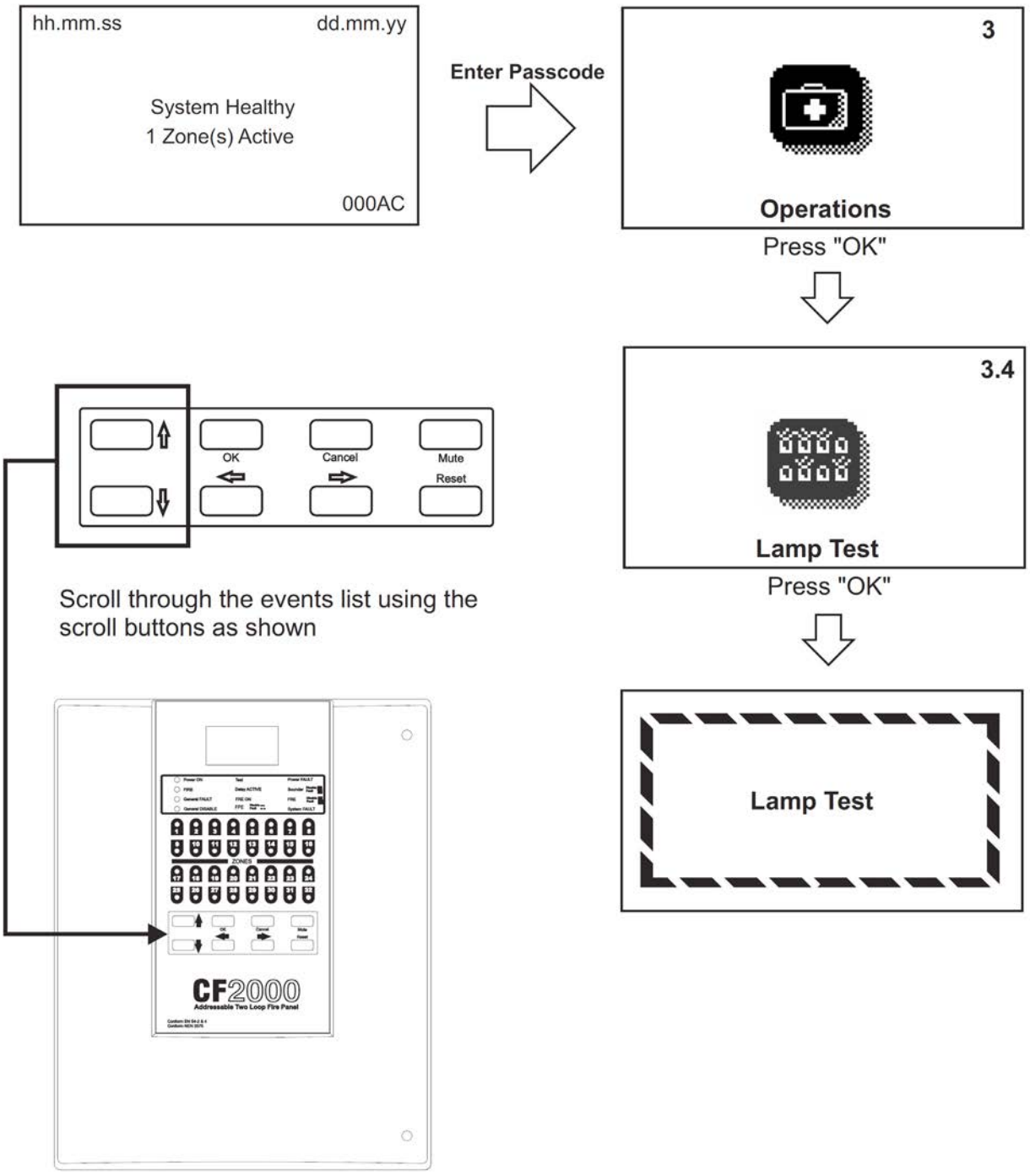


Figure 24. Operations (Lamp Test) screen

Operations (Weekly Test)

The Weekly Test screen is accessed as shown below. The Operations screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the events screen by default. Press the Scroll Down button until the Weekly Test screen is shown as illustrated below.

Press OK and scroll through the list of options using the Up and Down arrow buttons and pressing OK to select.

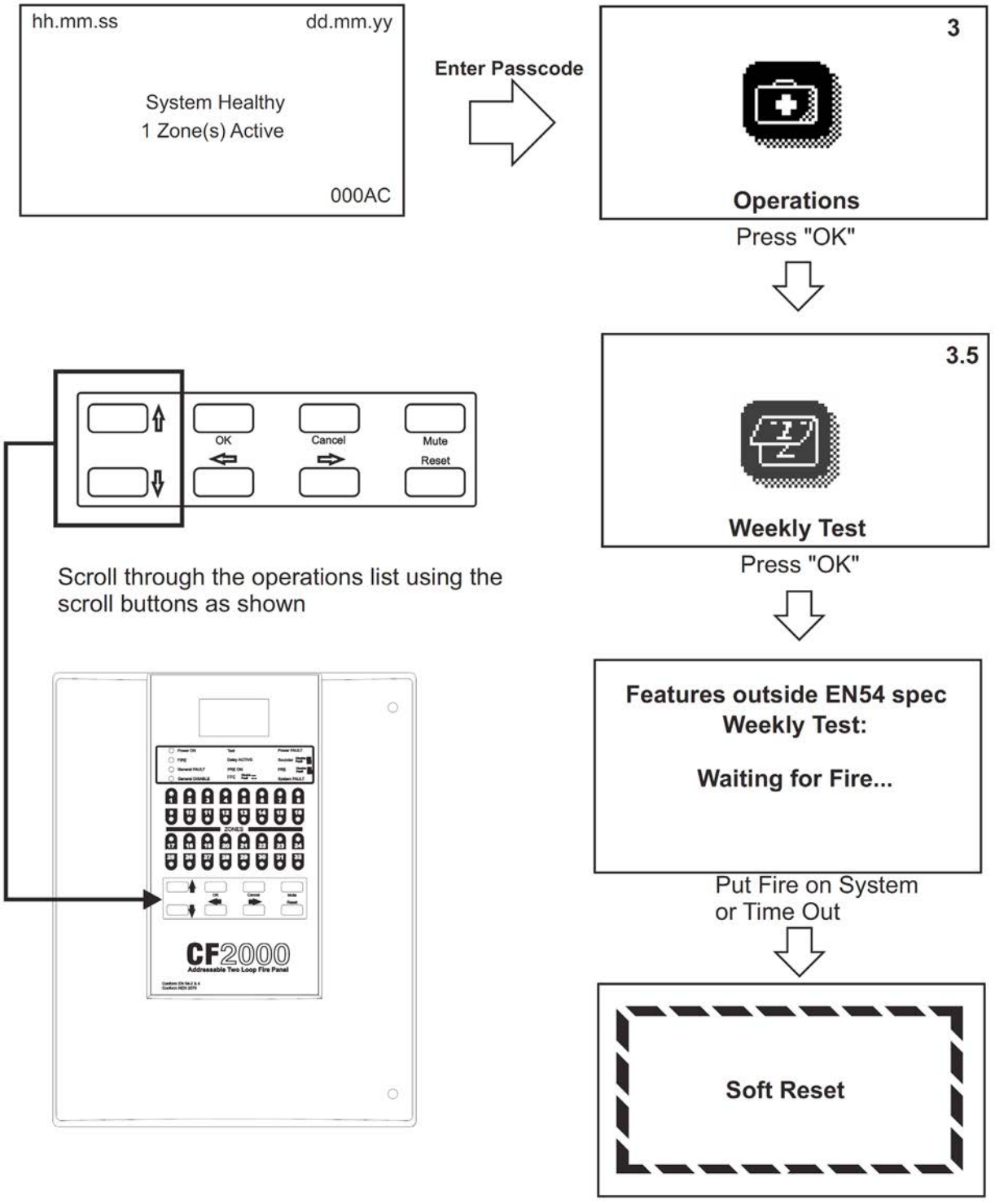


Figure 25. Operations (Weekly Test) screen

Access Level 2

Commissioning

The **Commissioning** screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press **OK** and scroll through the list of events using the **Up** and **Down** arrow buttons.

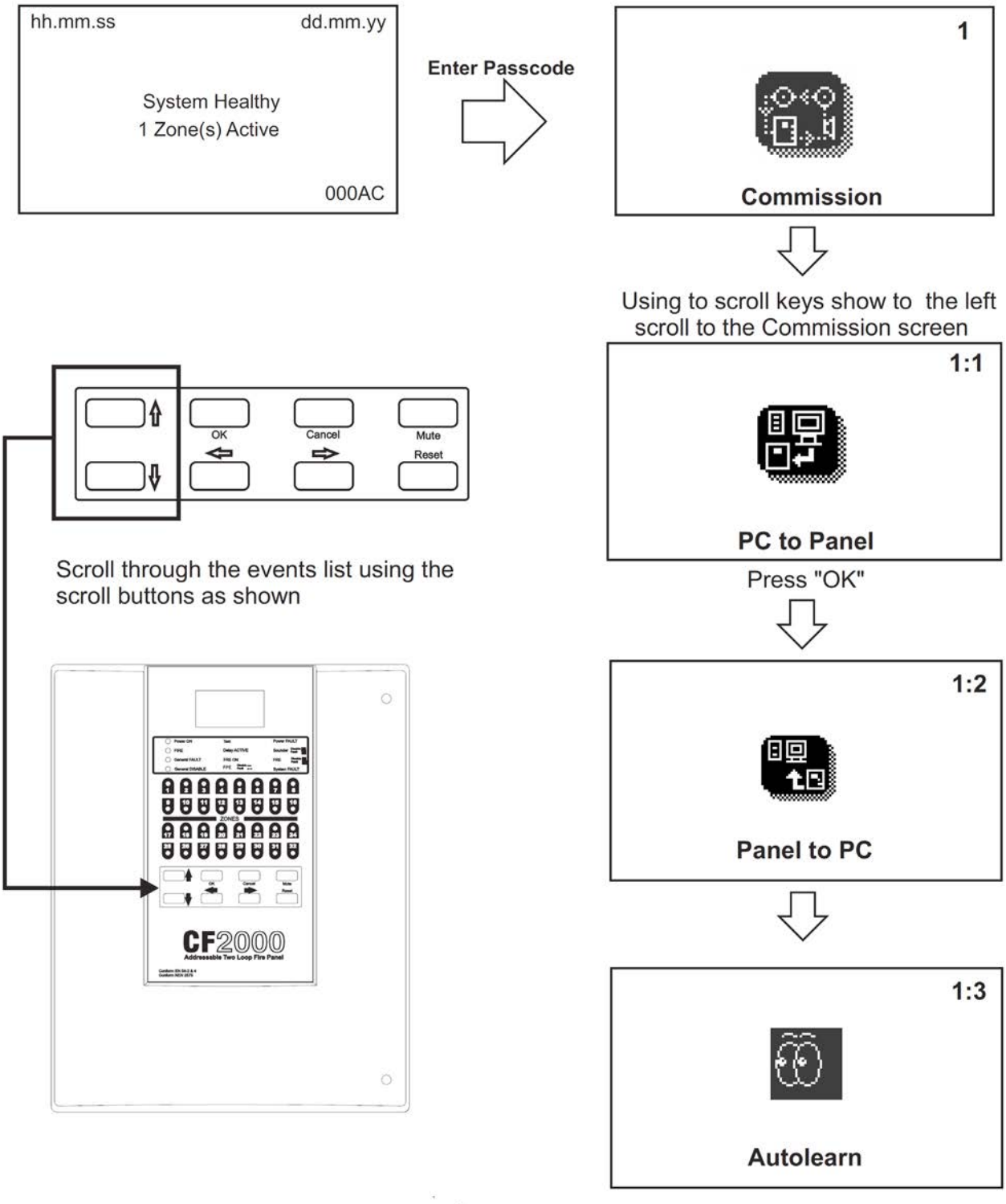


Figure 26. Commissioning screen

Panel Settings (Erase Log)

The Erase Log screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

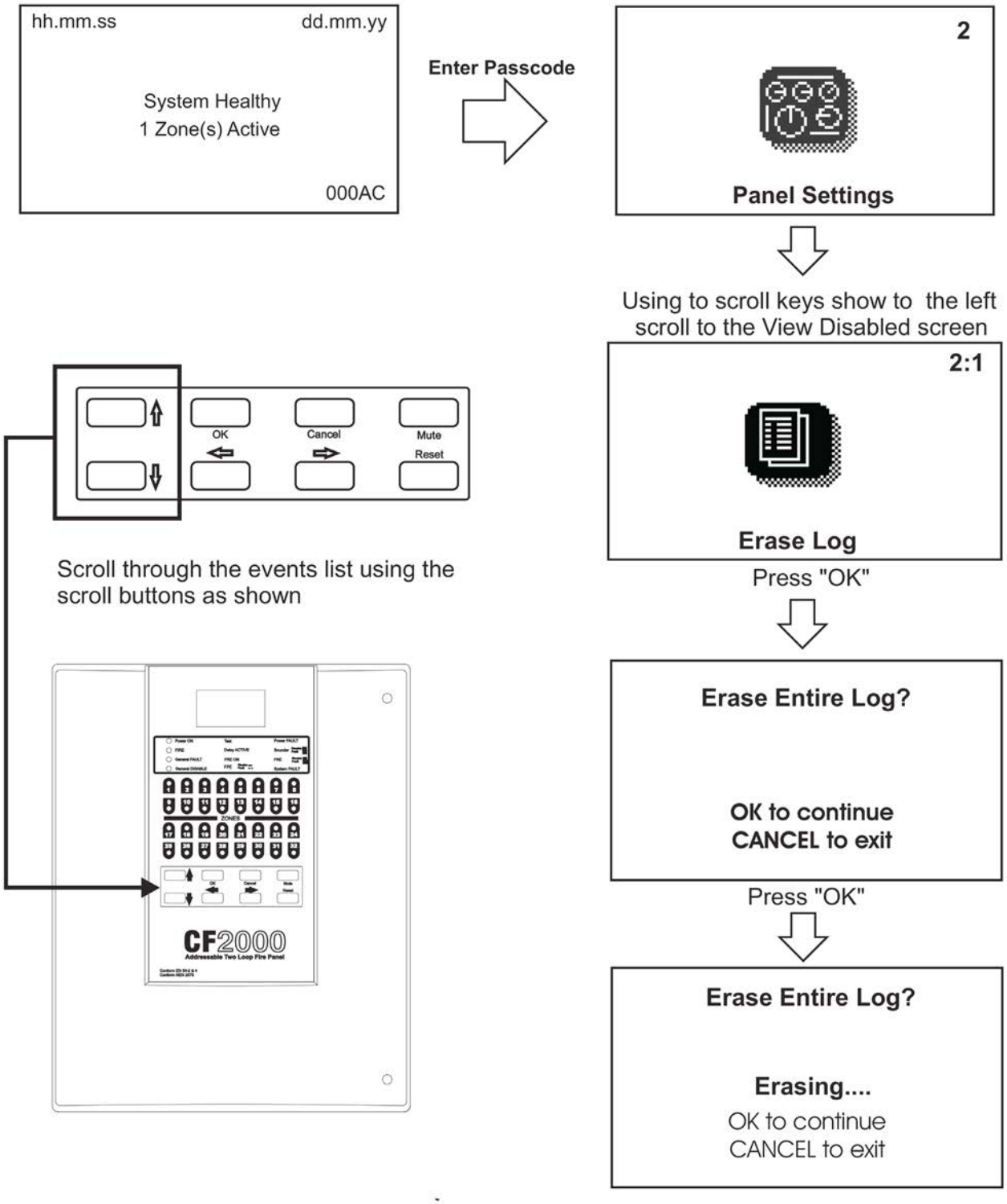


Figure 27. Panel Settings (Erase Log) screen

Panel Settings (Change Password)

The Change Password screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

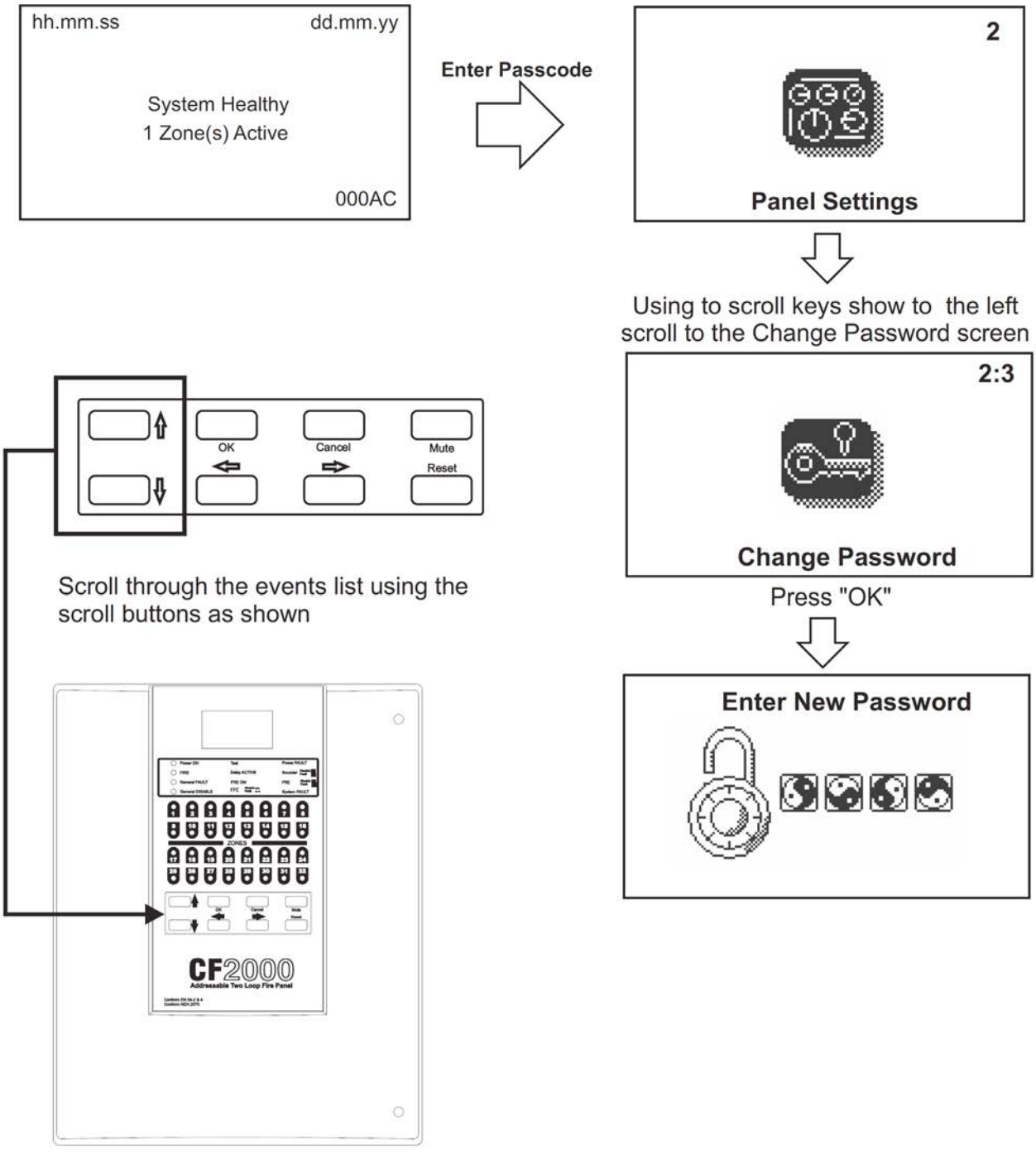


Figure 28. Panel Settings (Change Password) screen

Panel Settings (Change Language)

The Change Language screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

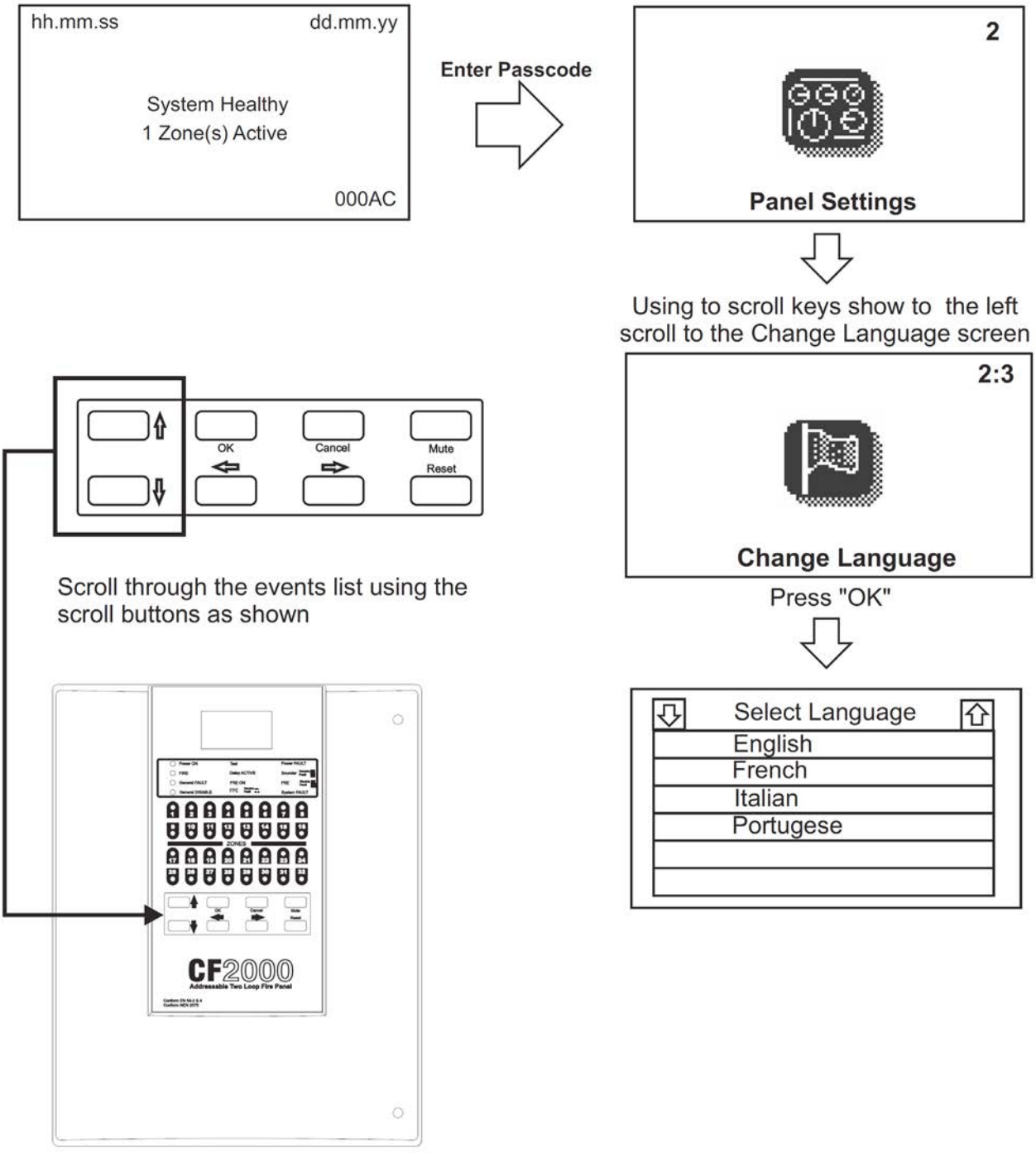


Figure 29. Panel Settings (Change Language) screen

Panel Settings (Date/Time)

The Date/Time screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

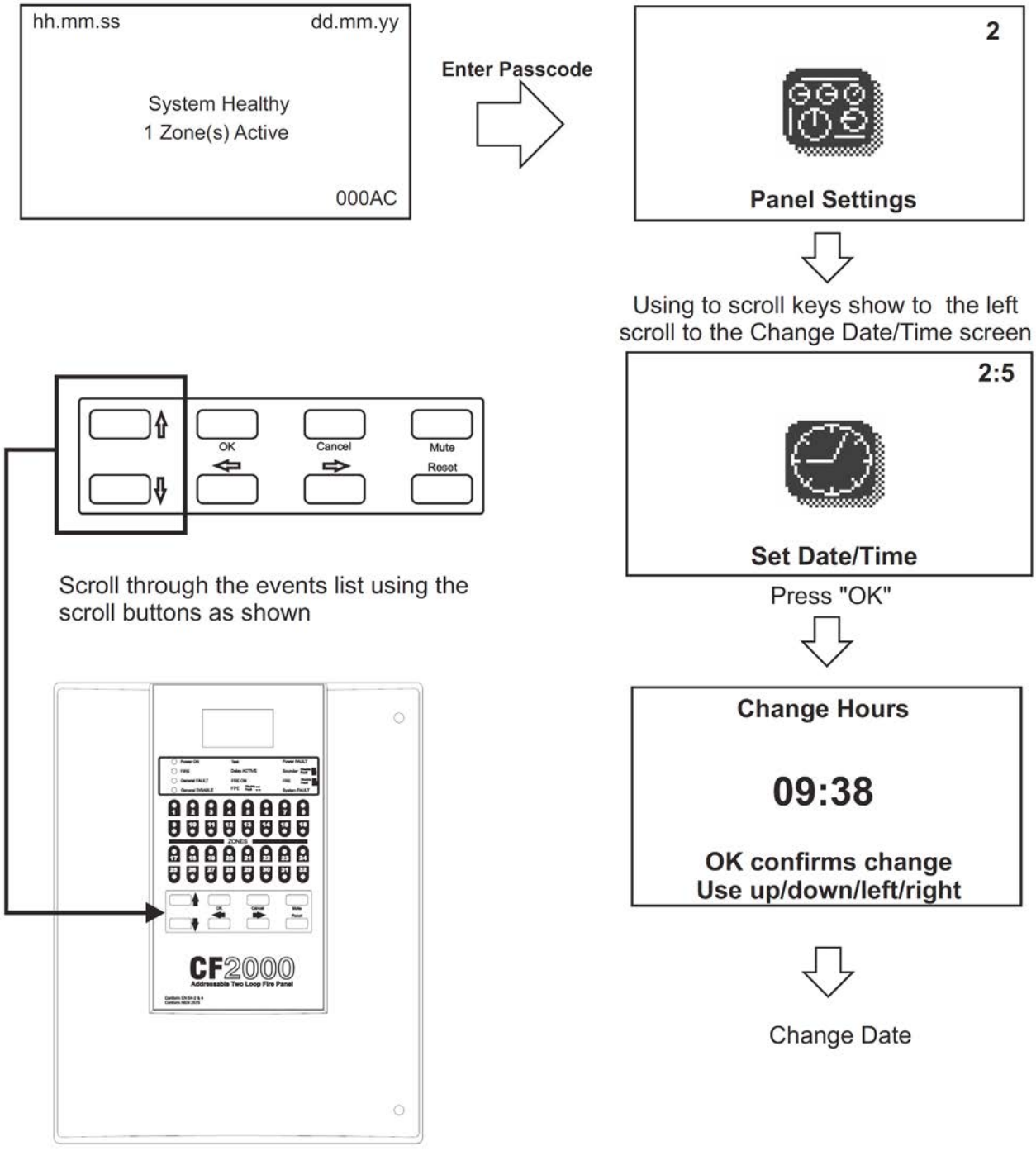


Figure 30. Panel Settings (Date/Time) screen

Panel Settings (System Details)

The System Details screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

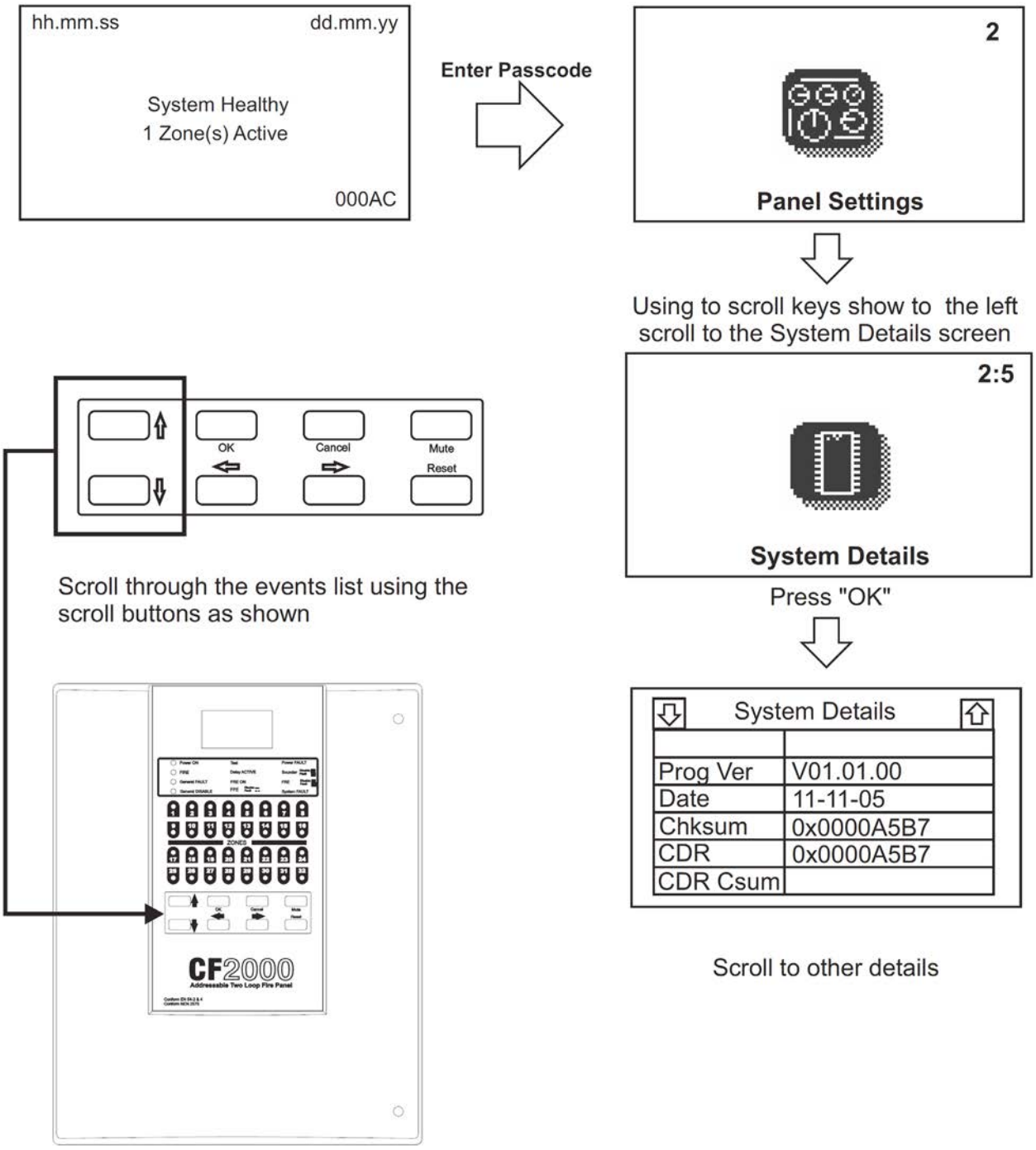


Figure 31. Panel Settings (System Details) screen

Testing (Test Device)

The Test Device screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

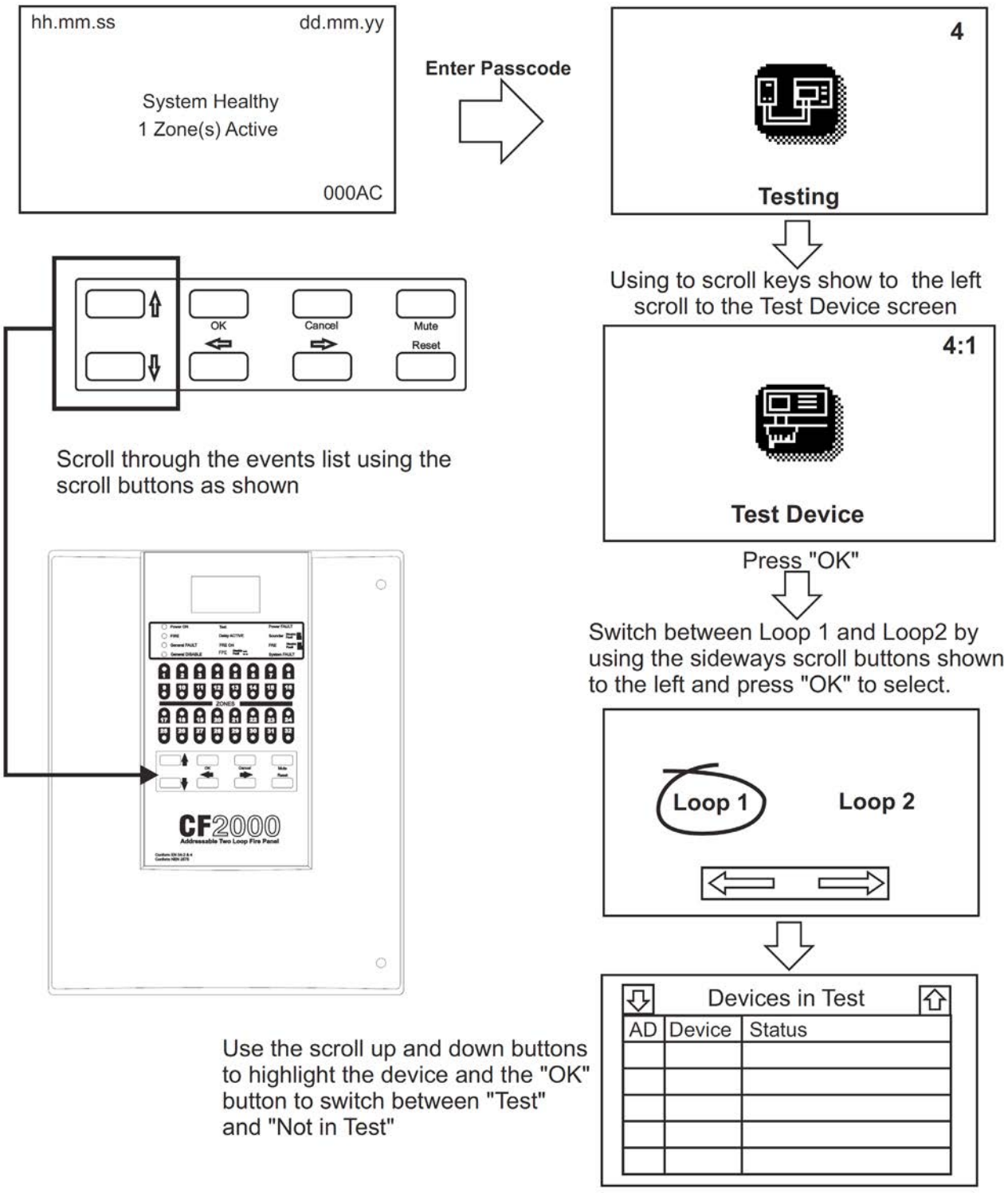


Figure 32. Testing (Test Device) screen

Testing (Test Zone)

The Test Device screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

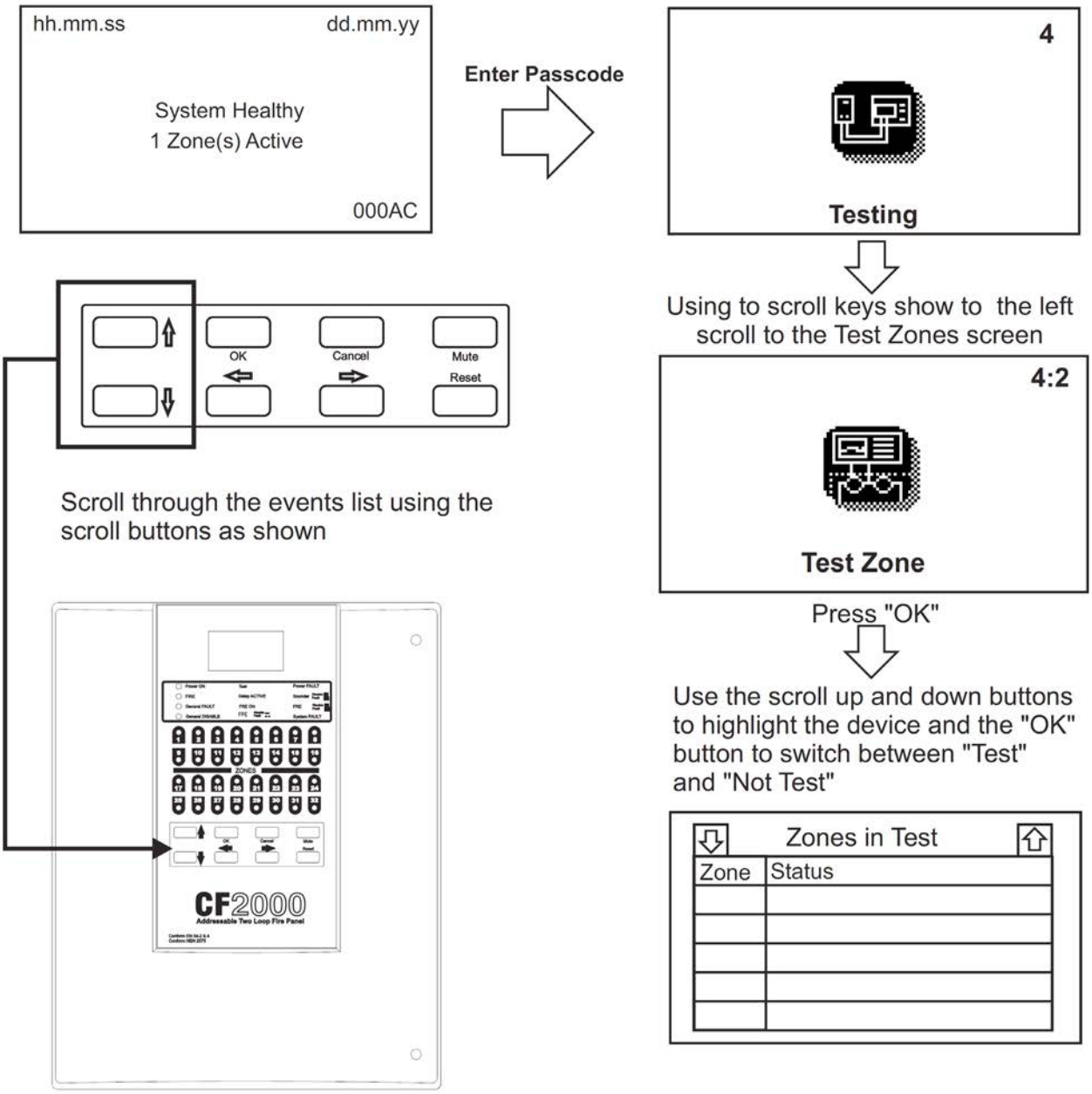


Figure 33. Testing (Test Zone) screen

Testing (Test Sound Levels)

The Test Sound Levels screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

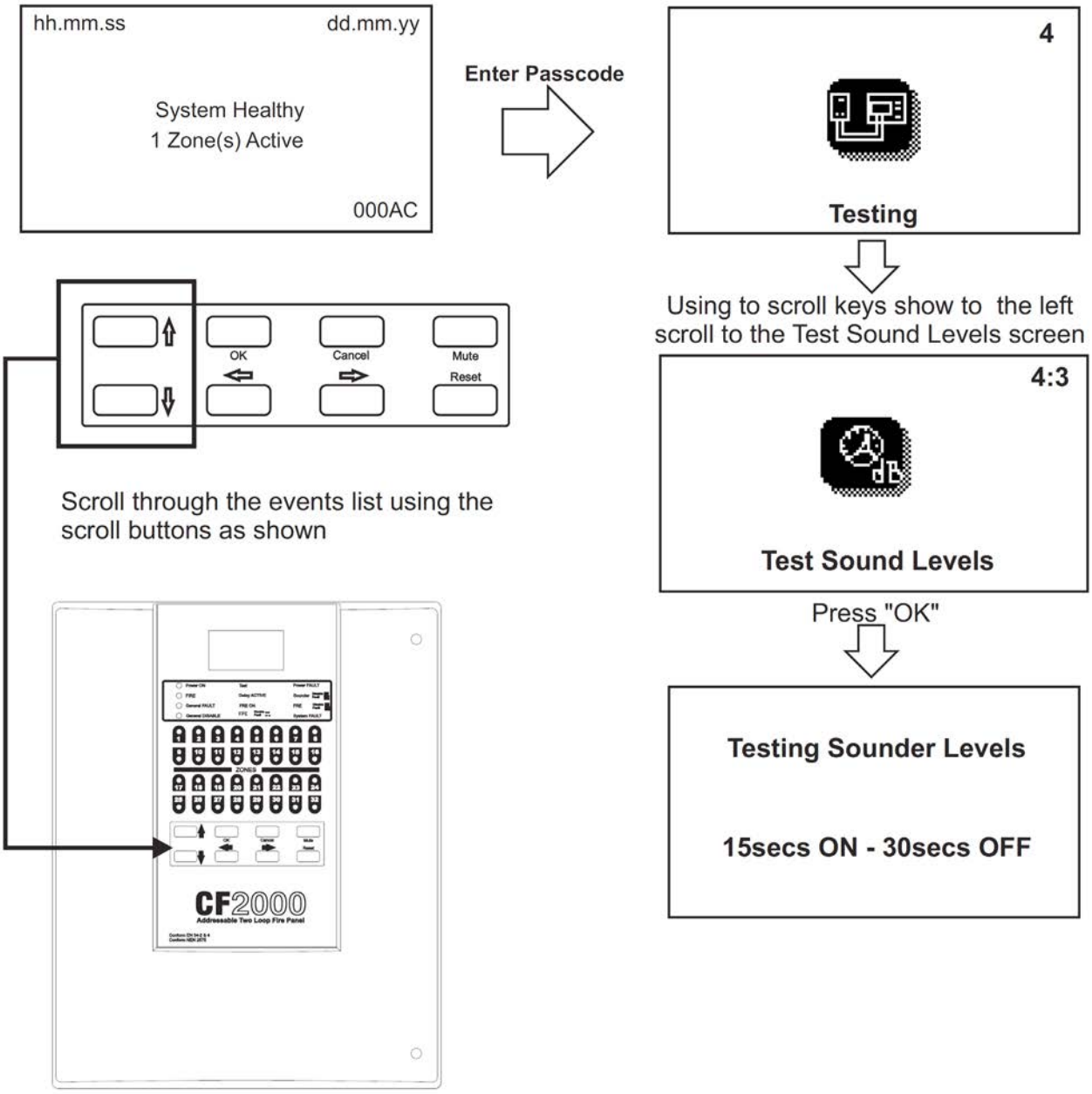


Figure 34. Testing (Test Sound Levels) screen

Testing (One Man Walk Test)

The One Man Walk Test screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

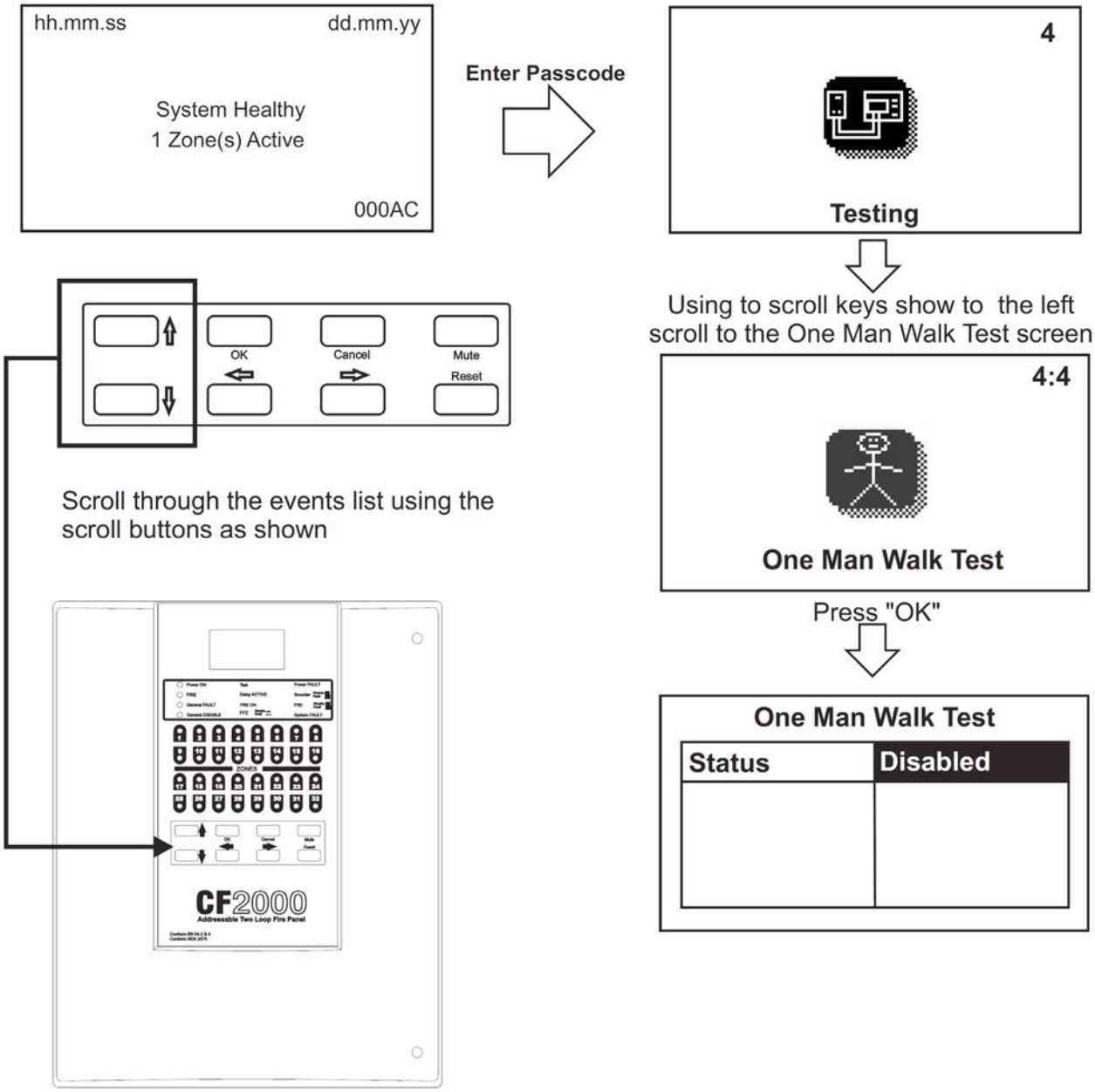


Figure 35. Testing (One Man Walk Test) screen

Testing (Global Flashing LED) screen

The Global Flashing LED screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

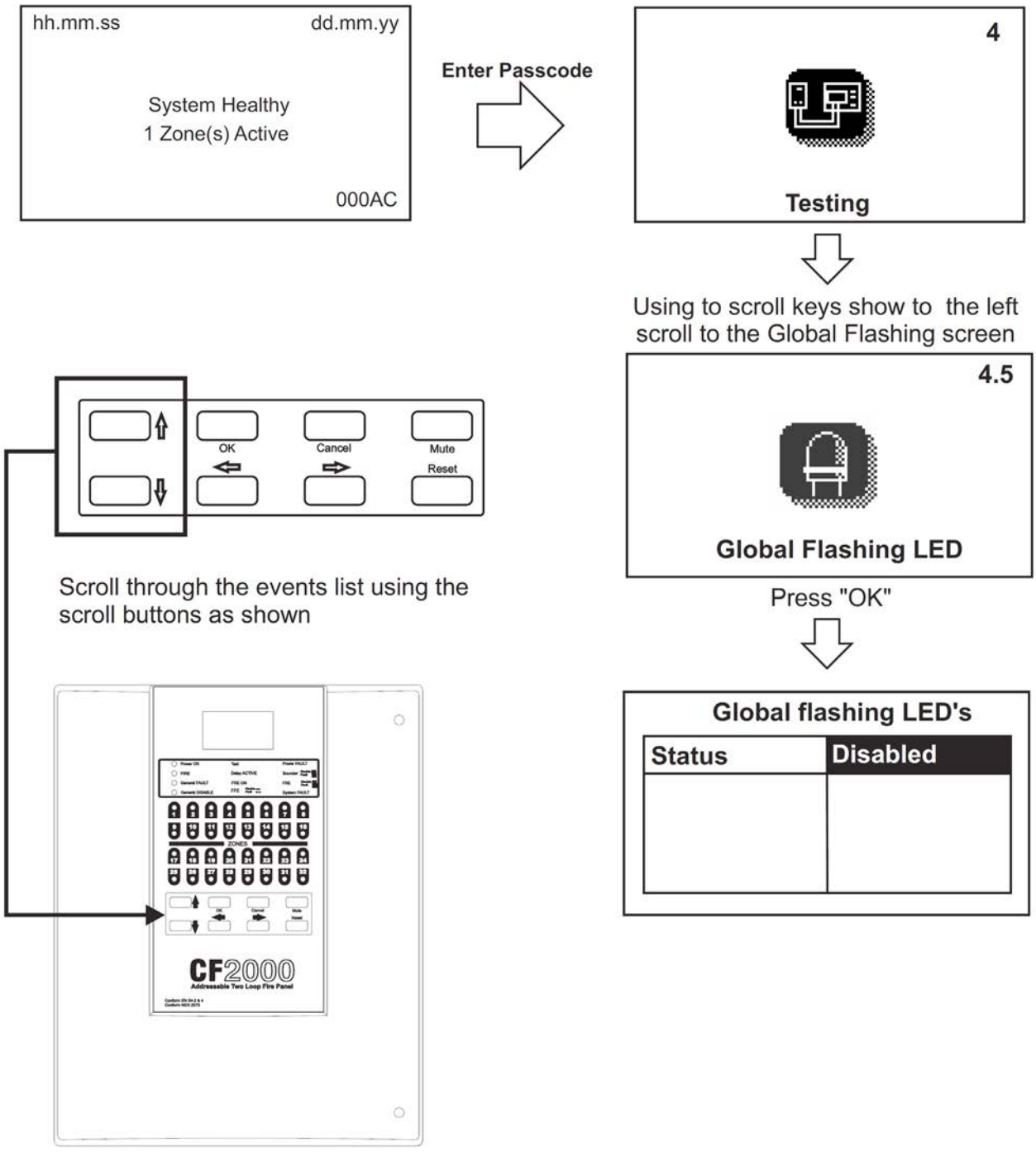


Figure 36. Testing (Global Flashing LED) screen

Testing (Analogue Levels)

The Analogue Levels screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

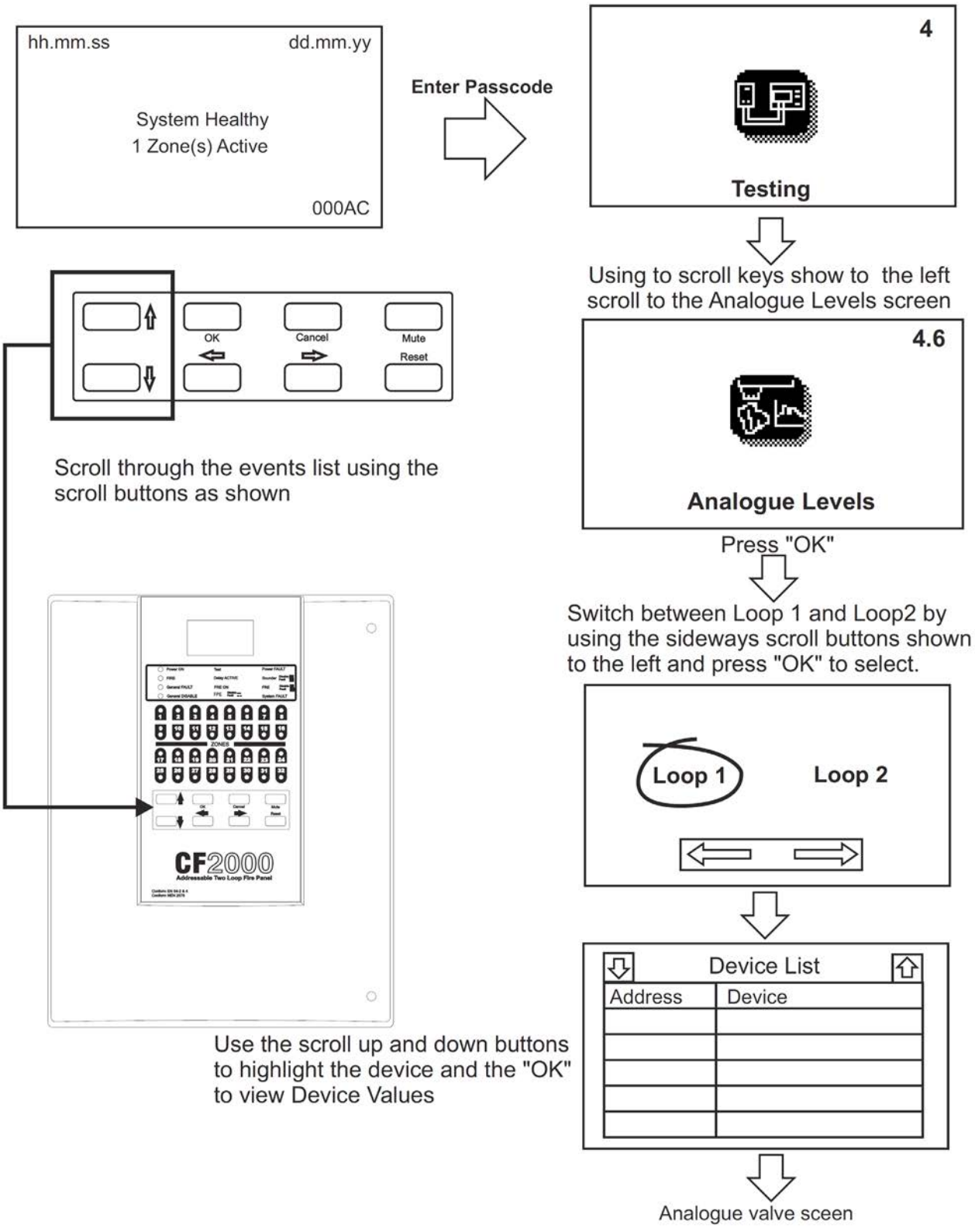


Figure 37. Testing (Analogue Levels)

Device Config (Add Device)

The Add Device screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

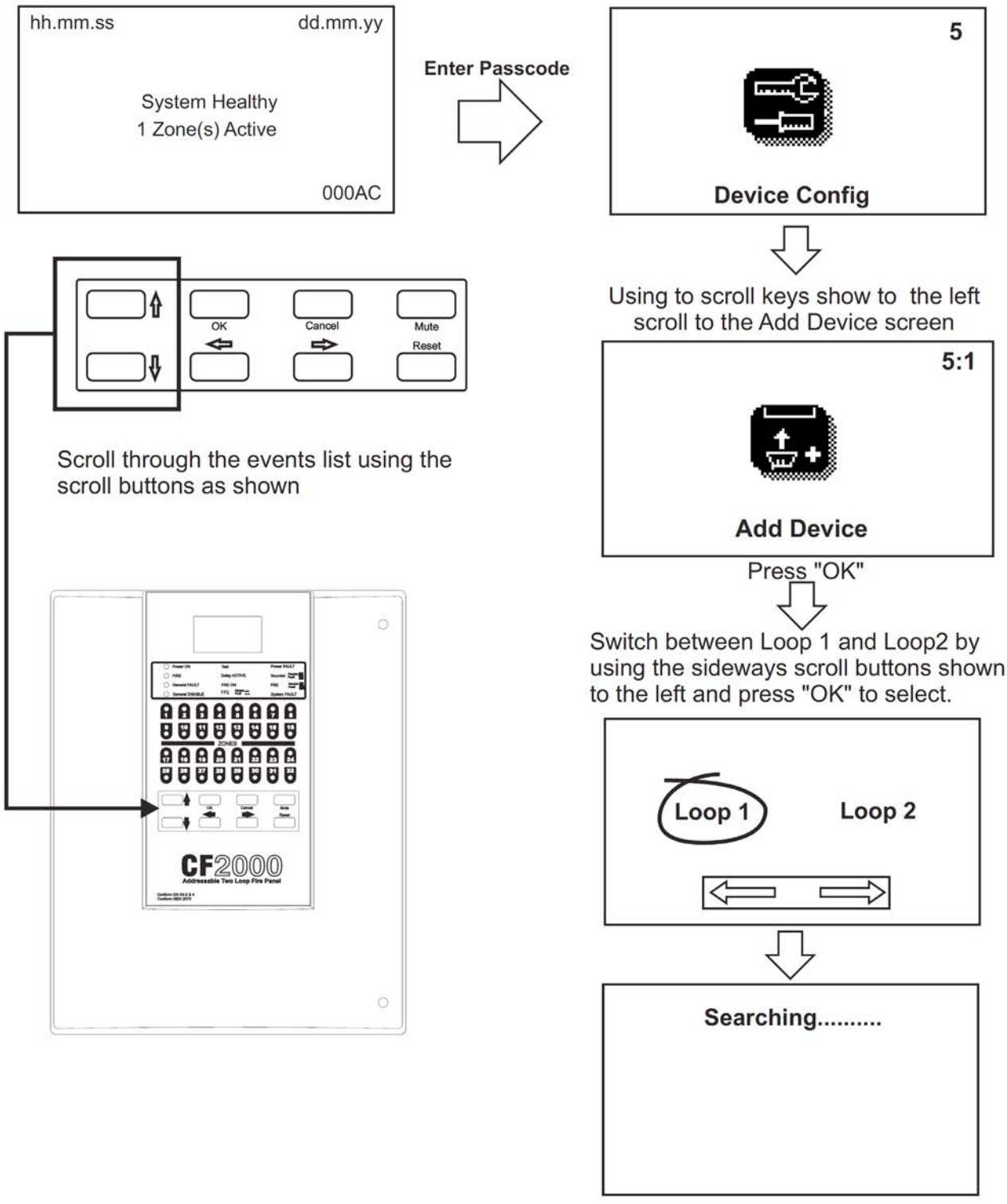


Figure 38. Device Config (Add Device) screen

Device Config (Delete Device)

The Delete Device screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the pass-code which will show the screen below by default.

Press OK and scroll through the list of events using the Up and Down arrow buttons.

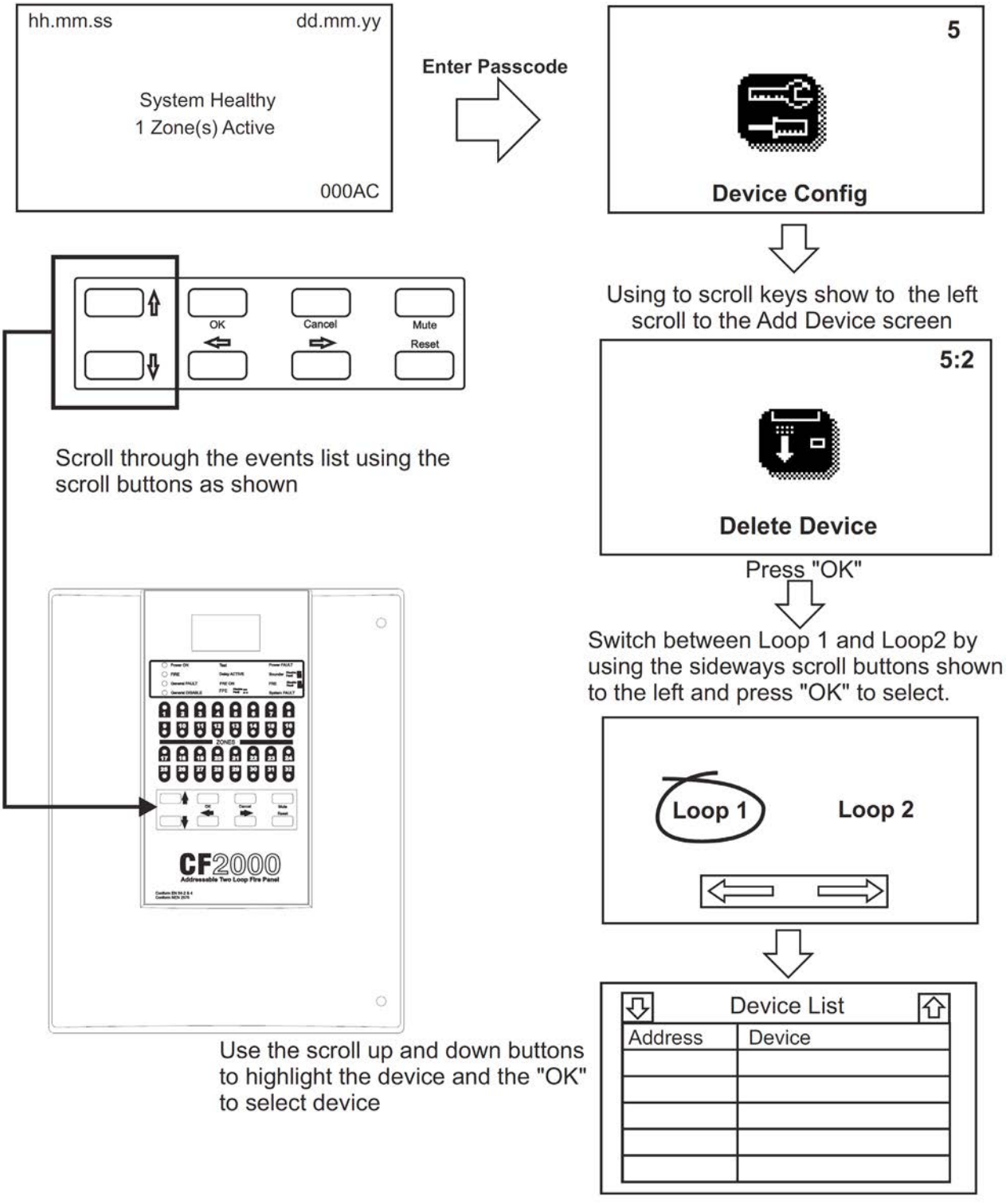


Figure 39. Device Config (Delete Device) screen

Device Config (Configure Zones)

The Configure Zones screen is accessed as shown below. The events screens are accessed from the healthy screen by first pressing any button. You will then be prompted to enter the passcode which will show the screen below by default. Press OK and scroll through the list of events using the Up and Down arrow buttons.

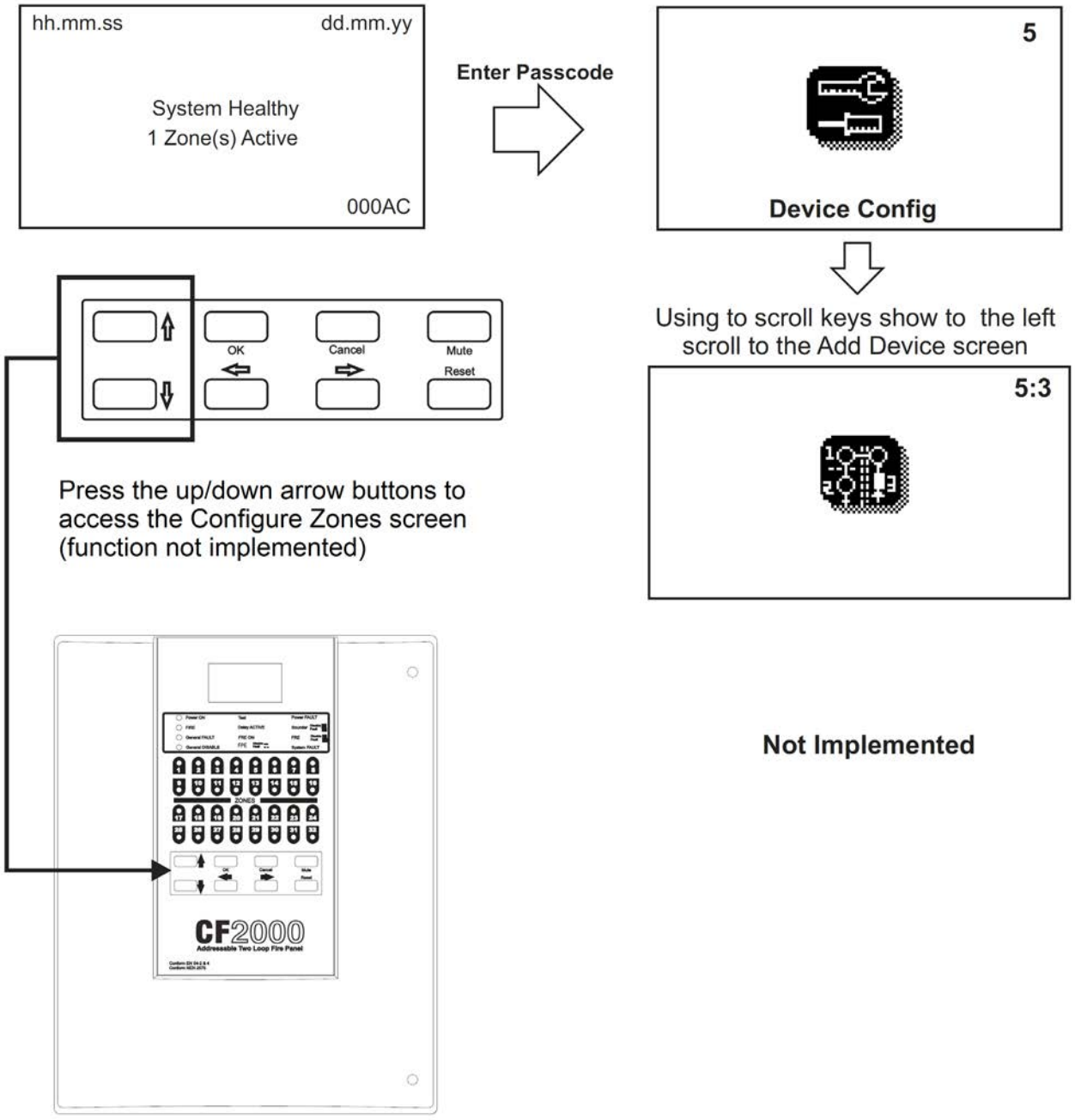


Figure 40. Device Config (Configure Zones) screen

Appendix

System Wiring

A typical wiring arrangement is shown in Figure 41

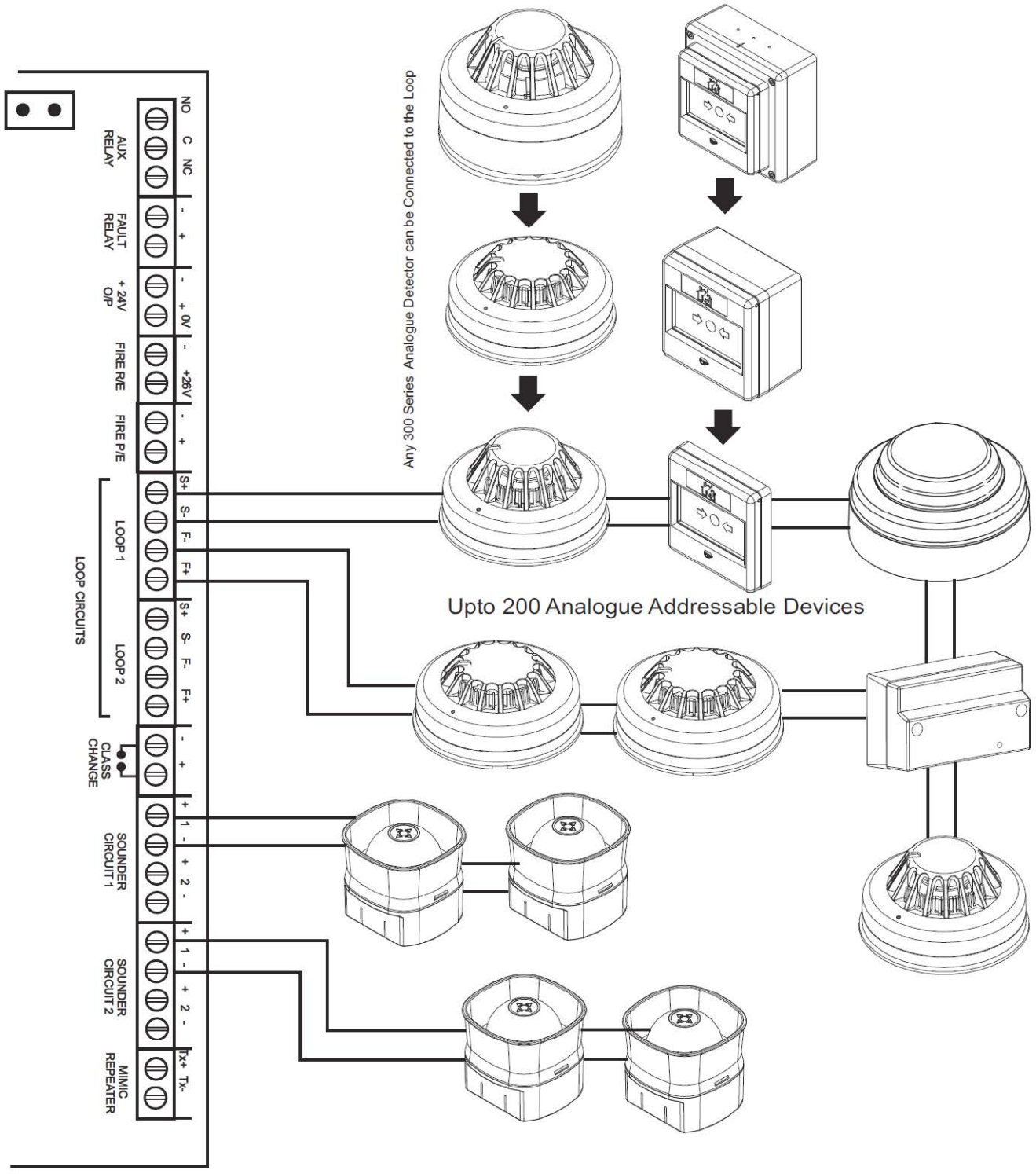


Figure 41. Typical System Wiring

Detector Base Wiring CAB300

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

Wiring Hints

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

General

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

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

⚠ WARNING

DO NOT USE HIGH VOLTAGE TESTERS WHEN SENSORS OR CONTROL PANEL ARE CONNECTED TO THE SYSTEM

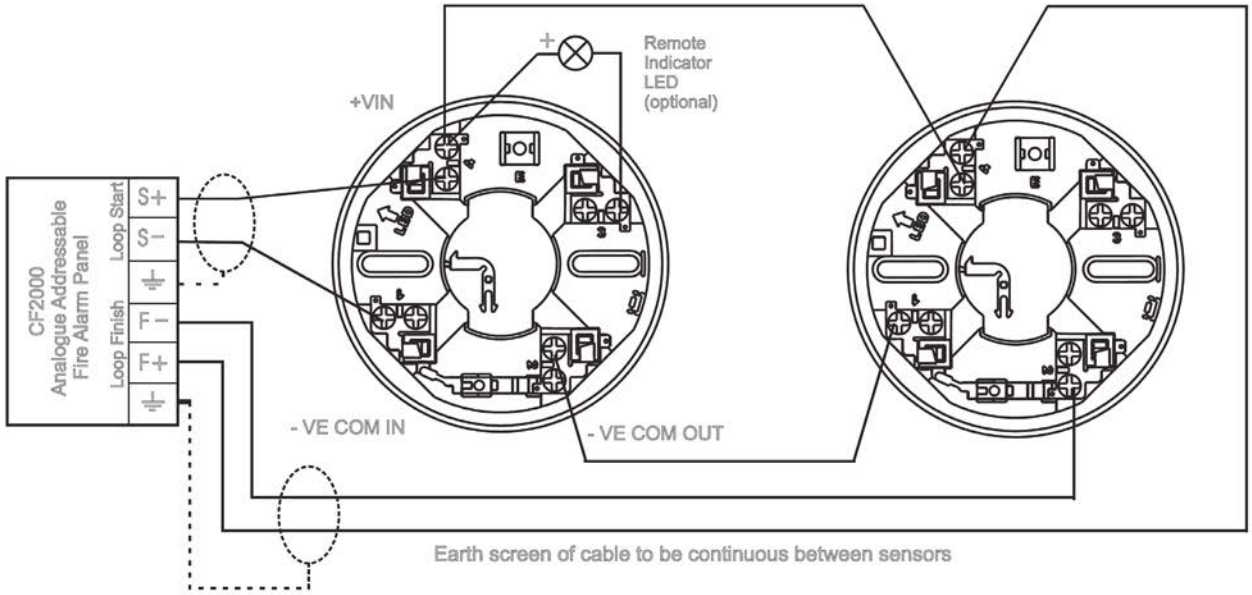


Figure 42. Wiring Diagram for CAB300 Sensor Base

Call Point CBG370, CBG370/S, CBG370/WP

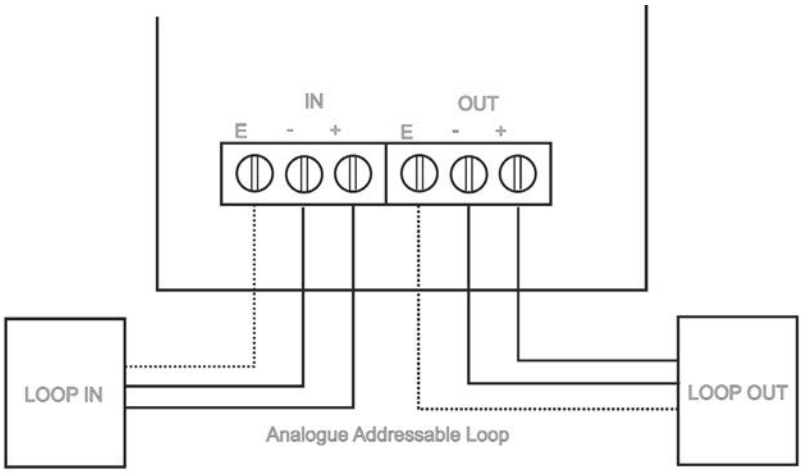


Figure 43. Call Point

Base Sounder CAS380 + CASBB384

Refer to Figure 44 for details of the base sounder wiring.

Supply Voltage	17 ~ 32V DC
Cable Size/type	0.5 ~ 2.5mm FIRETUF, FP200 or MICC
Standby current	< 320 uA
Operating temperature	-10 to +55 degrees C (95%RH)
Sound output @ +/-3dB	Low volume: 84dB @ <4mA
	(set by panel) :
	Medium volume: 92dB @ <8mA
	High volume : 95dB @ <12mA
Tones (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

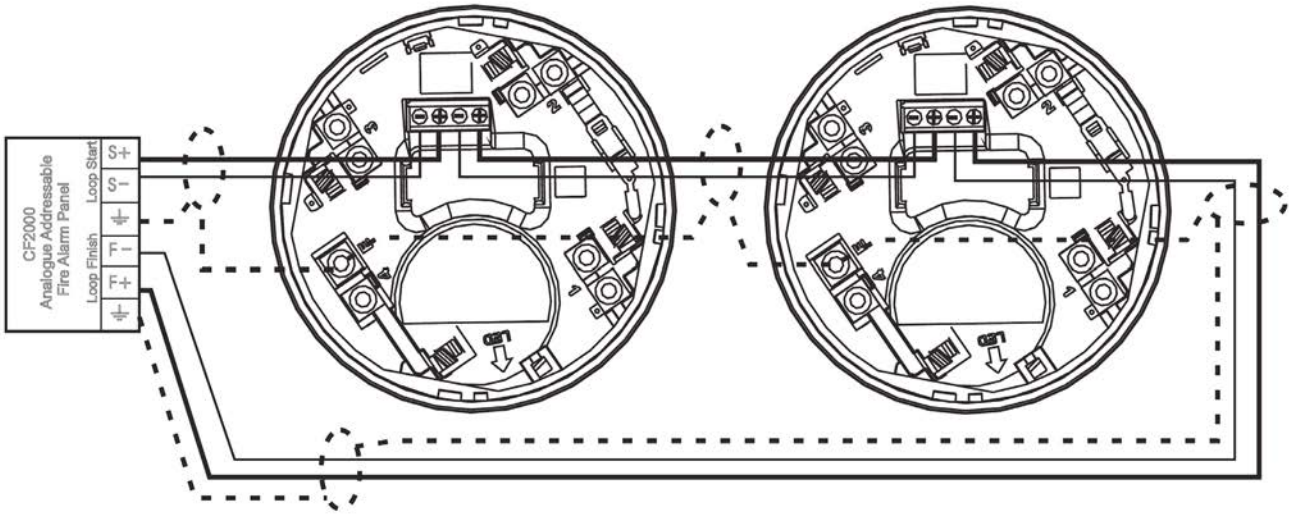


Figure 44. Base Sounder (CAS380 + CASBB384) wiring

Loop powered beacon CAB382

Connection Details: Earth screen of cable to be continuous between beacons (Figure 45).

⚠ WARNING

DO NOT USE HIGH VOLTAGE TESTERS IF ANY EQUIPMENT IS CONNECTED TO THE SYSTEM.

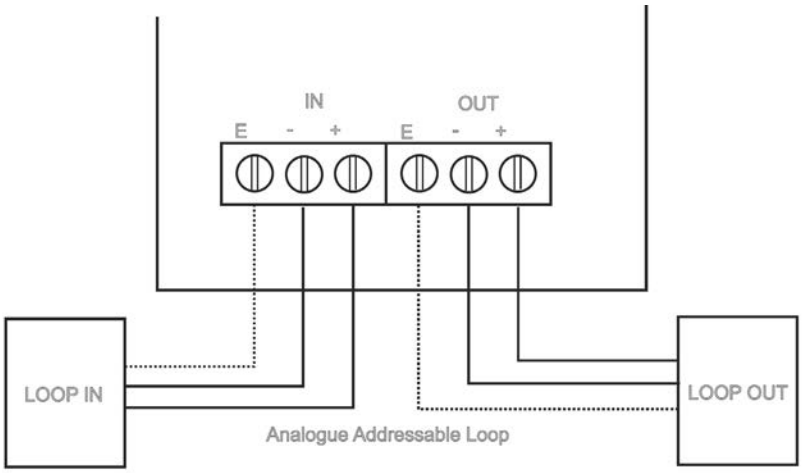


Figure 45. Loop powered beacon (CAB382)

Internal Wall Sounder CAS381, CASB383

To install the device, fix to mounting surface using two suitable screws. The rear gasket fits underneath the base and the sounder gasket fits inside the base.

Connect the device as shown in Figure 46.

⚠ 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.

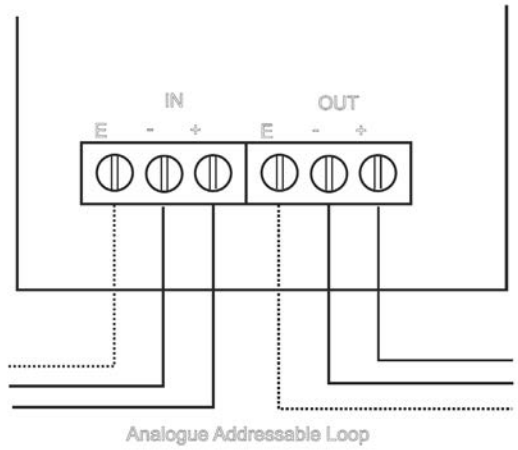


Figure 46. Internal Wall Sounder CAS381

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

IP66 Wall Sounder Wiring CAS381WP, CASB383-WP

To install the device

1. Drill required holes for the cable gland fixing
2. Drill out the required fixing holes
3. Fix to mounting surface using two suitable screws

⚠ 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.

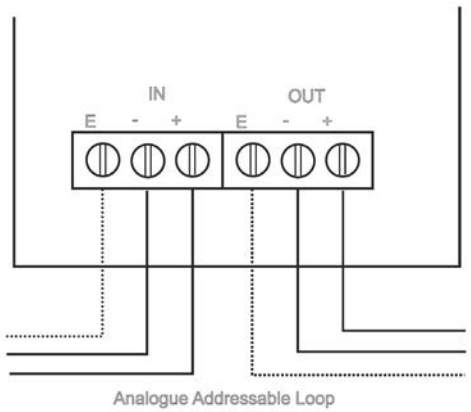


Figure 47. IP66 Wall Sounder Wiring CAS381WP

3 Way Input/Output unit CIO351, CIO351S, CIO351SST

Install the device as follows.

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.

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

Figure 48 shows the standard connections.

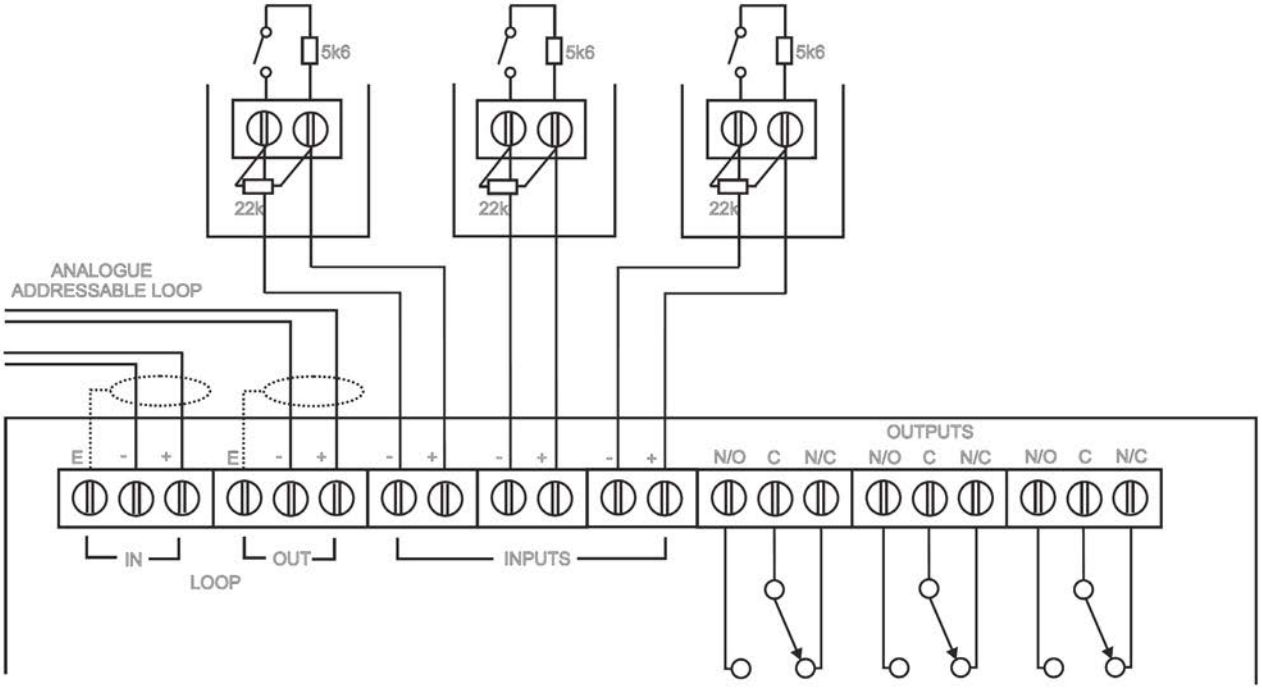


Figure 48. Wiring for 3 way Input/Output unit CIO351

Notes

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

1 Channel Mains Rated I/O Wiring CMIO353

To install the device

1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting backbox.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according the diagram in Figure 49.

Note:

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

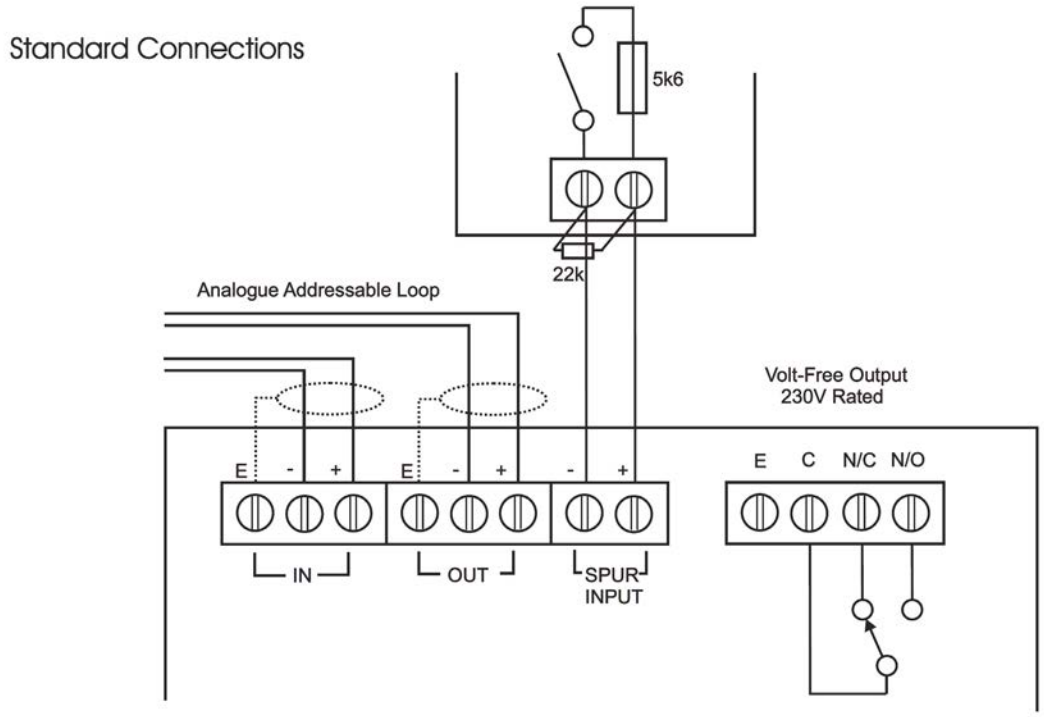


Figure 49. 1 Way Input Output Unit CMIO353

Notes: :

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

Zone Monitor Unit Wiring CZMU352

To install the device

1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting backbox.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according to the diagram in Figure 50.

Note:

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

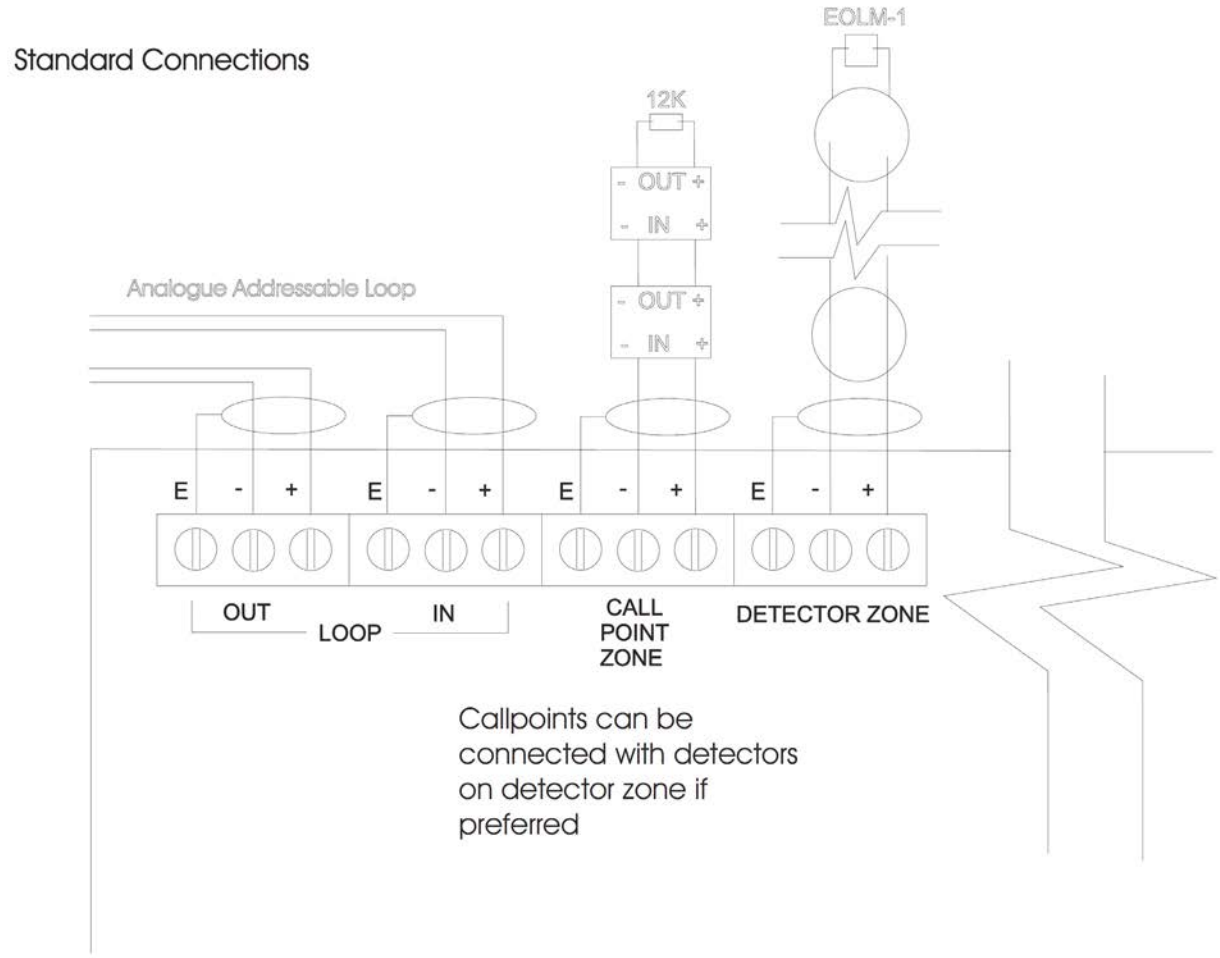


Figure 50. Zone Monitor Unit CZMU352

Notes:

1. This unit can only be used with CDBB300 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 Part1:2002 for Zone Coverage.
5. Maximum number of call points allowed is unlimited.
6. Detector zone end of line device is EOLM-1 (supplied).
7. Callpoint zone has end of line resistor.

Intrinsically Safe Zone Monitor Unit Wiring CZMU352-IS

To install the device

1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting backbox.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according to the diagram in Figure 51.
5. Recommended Cable Type: FIRETUF, FP200, MICC

Note:

No addressing of the interface is required. See control panel operation for details. There are no serviceable parts so no maintenance procedures apply.

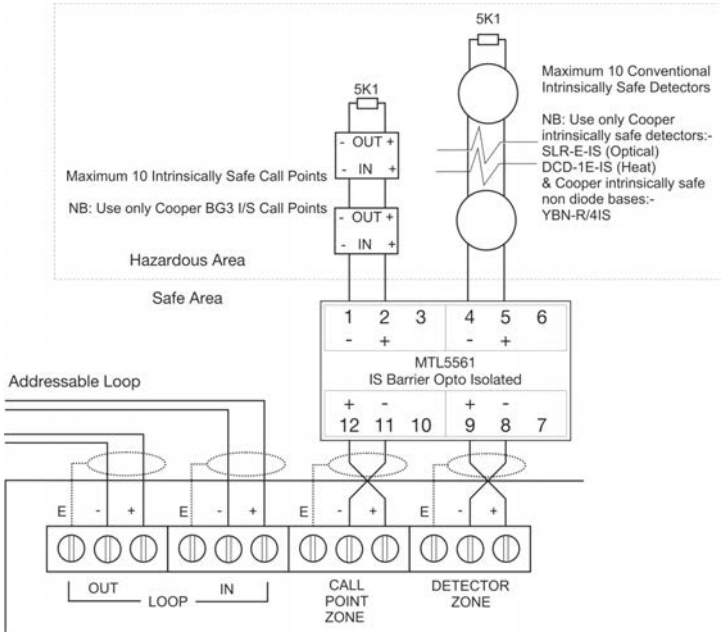


Figure 51. Standard connections CZMU352-IS

Notes:

1. This detection zone can only be used with intrinsically safe detectors SLR-E-IS (optical)/ DCD-1E-IS (heat) with the non-diode base YBN-R/4IS.
2. The call point zone can only be used with BG3 I/S call points.
3. Only connect cable screen to its adjacent earth terminal.
4. The end of line resistor must always be fitted, each if the spur is unused.
5. Maximum spur length - See BS5839 Pt1:2001 for Zone Coverage.

Shop Monitor Unit MSU840

To install the device

1. Separate the two halves of the unit.
2. Drill out (or knock out) the required cable entries in the surface mounting backbox.
3. Fit the back-box in position and pass the wires into it.
4. Connect the unit according to the diagram in Figure 52

Note:

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

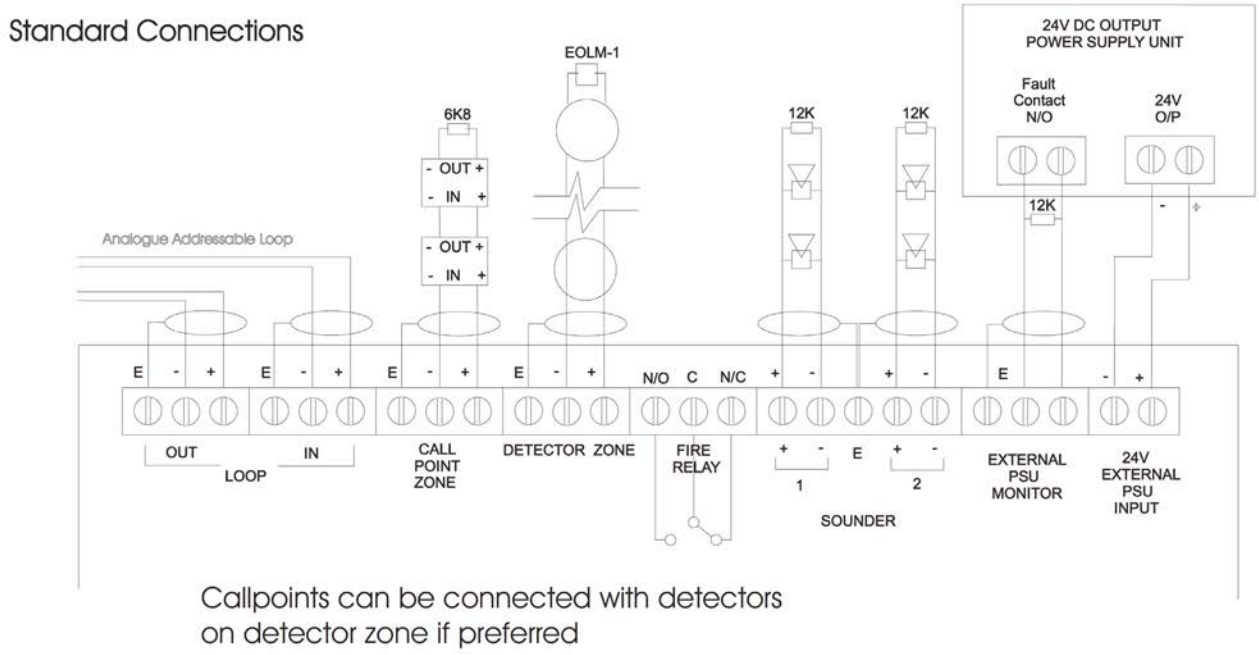


Figure 52. Shop Monitor Unit MSU840

Notes:

1. This unit can only be used with CDBB300 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 Part1:2002 for Zone Coverage.
5. Maximum number of call points allowed is unlimited.
6. Detector zone end of line device is EOLM-1.
7. Callpoint zone has end of line resistor.

Spur Isolator CSI350

To install the device

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

Notes:

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

The standard connections are shown in Figure 53.

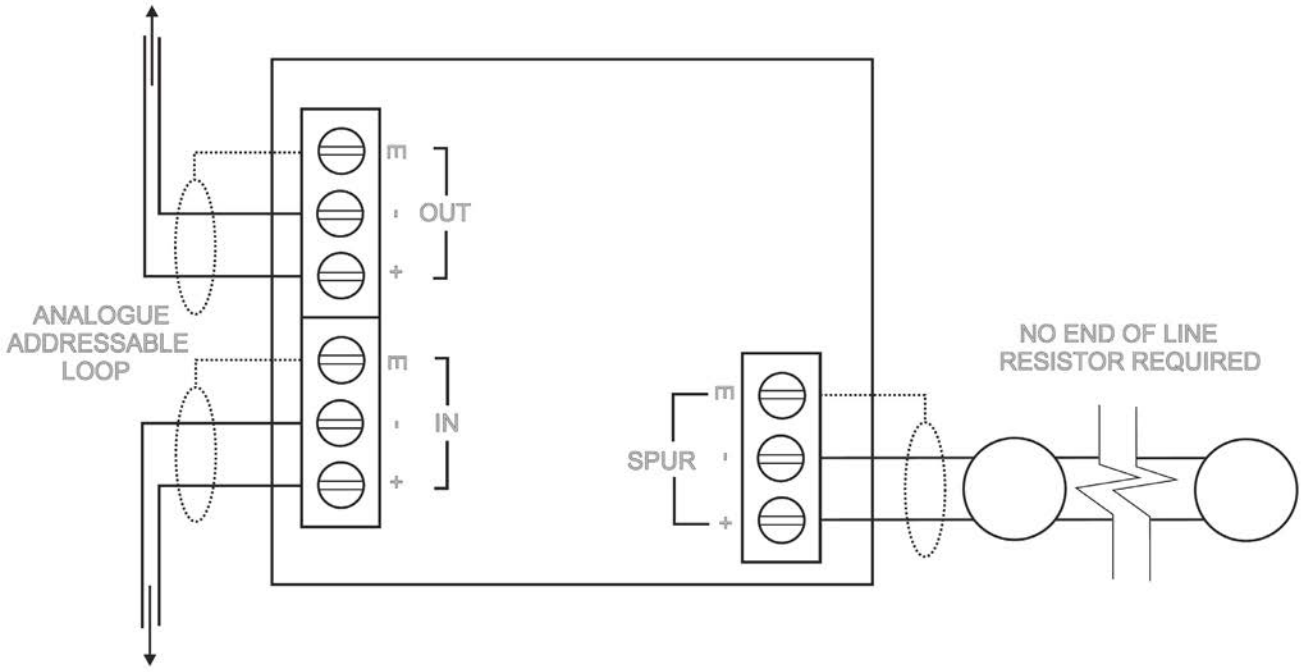


Figure 53. Spur Isolator CSI350

Notes:

1. Only connect cable screen to its adjacent earth terminal.
2. For maximum spur length / load see BS5839 Part1:2002.
3. This unit can only be used with Eaton CAB300 detector bases and compatible sensors.

4 Way Sounder Controller CSC354CPR

To install the device

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

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

The standard connections are shown in Figure 54.

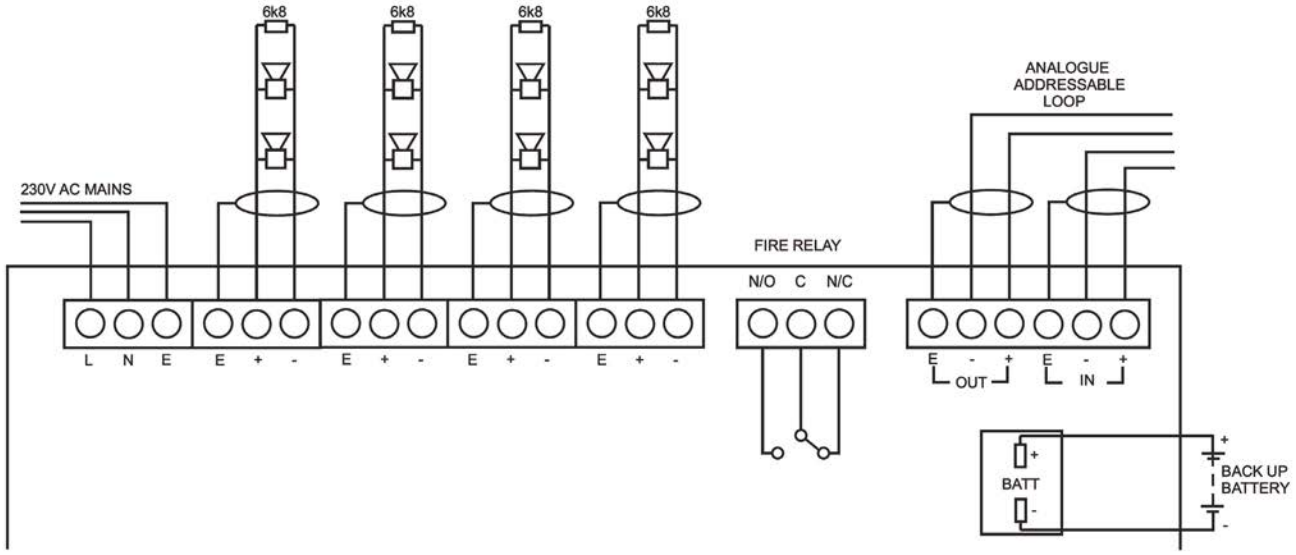


Figure 54. 4 Way Sounder Controller CSC354CPR

Notes:

1. Only connect cable screen to its adjacent earth terminal.
2. The end of line resistors must always be fitted, even if the sounder circuits are unused

Micro Zone Monitor Wiring MIU872

To install the device

1. Fit the box in position using the mounting details below.
2. Connect the unit according to the diagram in Figure 55.
3. Recommended Cable Type: FIRETUF, FP200, MICC.

Note:

No addressing of the interface is required. See control panel operation for details. There are no serviceable parts so no maintenance procedures apply.

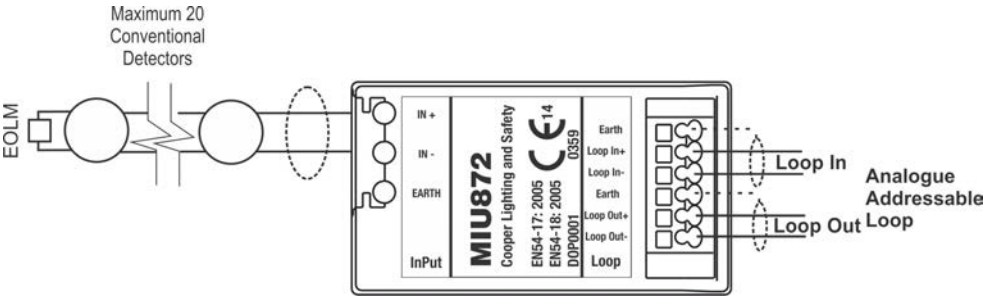


Figure 55. Standard connections MIU872

1. This unit can only be used with Cooper FXN520 detector base and compatible.
2. Only connect cable screen to its adjacent earth terminal.
3. The end of line resistor provided 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 (supplied).

Micro Input Module Wiring MCIM

To install the device

1. Fit the box in position using the mounting details below.
2. Connect the unit according to the diagram in Figure 56.
3. Recommended Cable Type: FIRETUF, FP200, MICC.

Note:

No addressing of the interface is required. See control panel operation for details. There are no serviceable parts so no maintenance procedures apply.

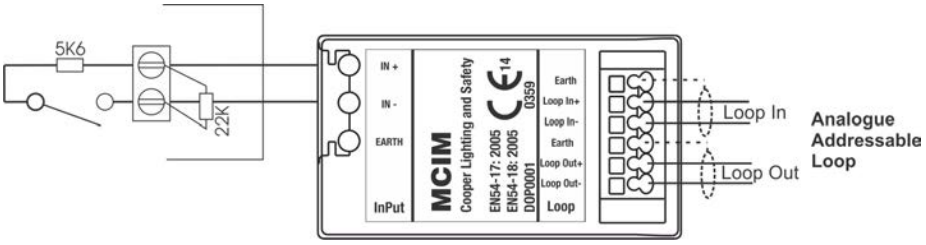


Figure 56. Standard connections MCIM

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.

Battery Disposal Instructions

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

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

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09

EN 54-2 1997 & A1:2006

CF2000

Control and indicating equipment for fire detection and fire alarm systems for buildings

EN 54-2 Clause

Options Provided

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

Other technical data:

see Doc. PR202-50-502 held by the manufacturer

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09

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

CF2000

Power Supply equipment for fire detection and fire alarm systems for buildings

EN 54-2 Clause

Other technical data:

see Doc. PR202-50-502 held by the manufacturer

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June 2017
Publication No. PR202-50-502-22

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