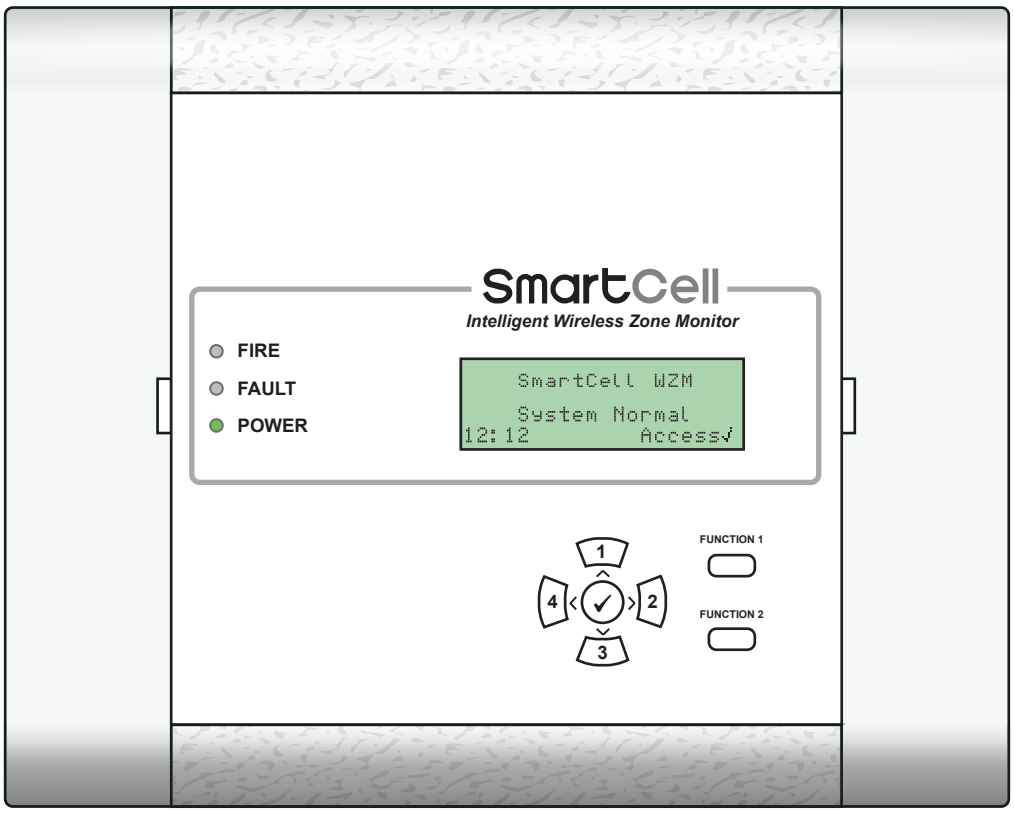
SmartCell



Intelligent Wireless Zone Monitor
Programming Guide

MK067-0001-99 (Issue 1) 04/11/2020 AJM

Welcome

to SmartCell

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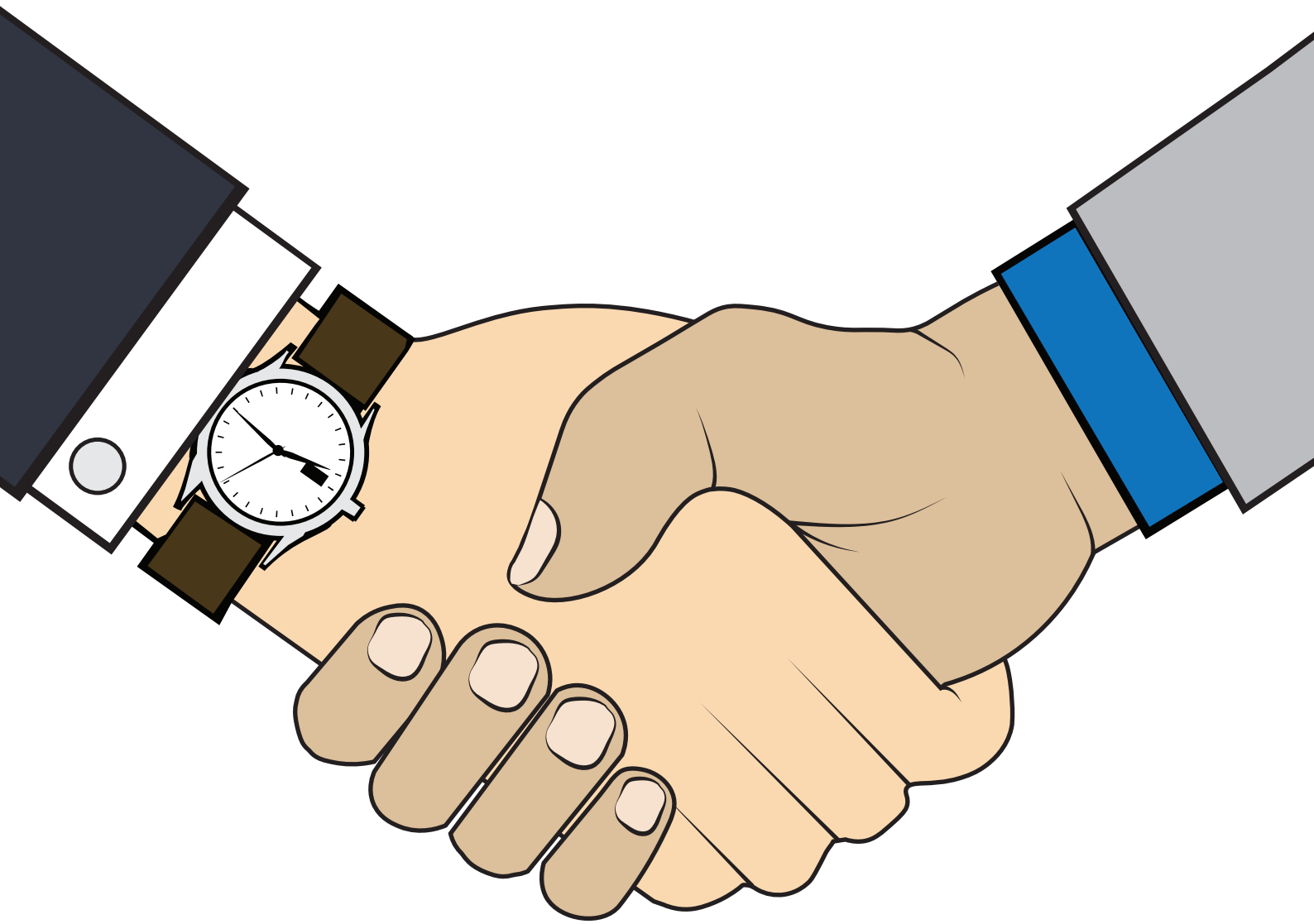
Introduction



General warnings

The system should only be installed and programmed by a fully trained competent person.

The procedures outlined in this programming guide and associated instructions must be carefully followed.

All of the options detailed within this programming manual are available via the SmartCell configuration tool. See the configuration tool's inbuilt engineer manual for operational details.

Handling precautions

General: care should be taken when handling this wireless fire system. Avoid dropping any of the parts on to hard surfaces, as damage may occur to the case and internal circuitry.

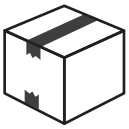
ESD precautions: This wireless fire system includes components that are susceptible to damage from Electrostatic Discharge (ESD). Permanent damage may be caused to these components through routine handling if precautions are not observed. To reduce the risk of damage from ESD, the following precautions should be observed.

Minimise the handling of PCBs which contain static sensitive components.

Where handling is unavoidable, always ensure that you have taken adequate earthing precautions. An earthed wrist strap is recommended.

When storing or transporting a "loose" PCB, always use a container, which has been designed and manufactured with ESD protective properties.

Avoid placing static sensitive devices on any surfaces, which may increase the risk of a static discharge



Packaging

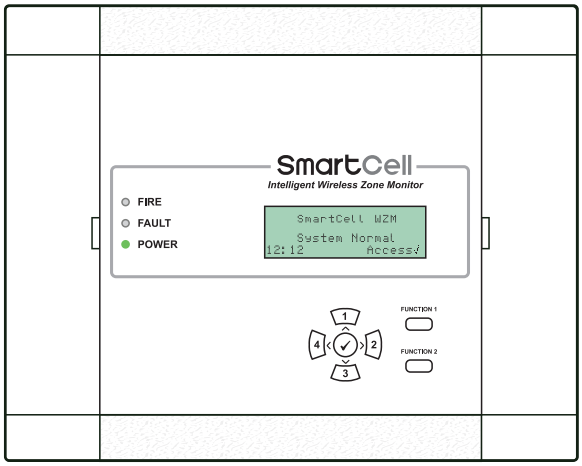
Products should be kept in their packaging until they are due to be installed, to minimise the risk of damage. Retain all packaging until the installation activities have been completed. Should any product be found to be surplus to requirements, or require returning to your supplier, the original packaging should be used.

PIN numbers

It is advised that you change the default PIN immediately on first installation and consider changing frequently to prevent unauthorised access.

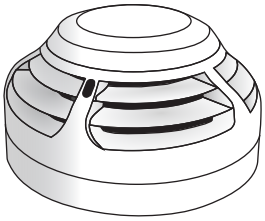
Equipment familiarisation

It is important to establish which devices have been supplied for the installation. Examples of each of the systems products are shown below:

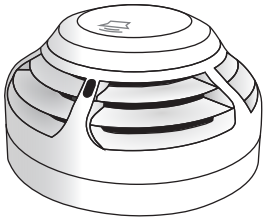


Wireless zone monitor

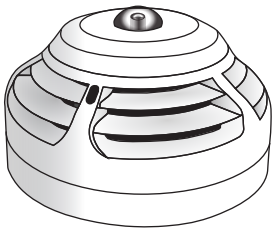
Wireless fire devices



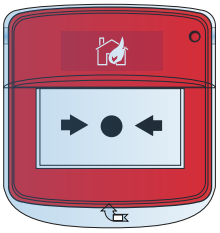
Wireless dual smoke / heat detector



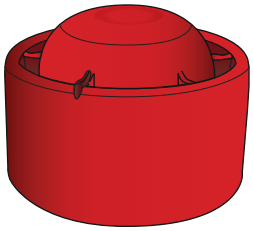
Wireless dual smoke / heat detector & combined sounder



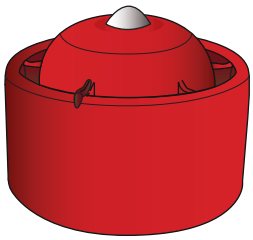
Wireless dual smoke / heat detector & combined sounder beacon



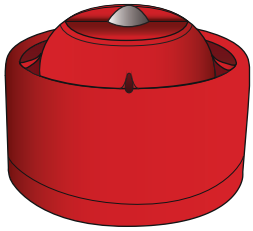
Wireless manual fire call point



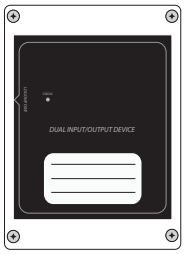
Wireless sounder



Wireless sounder & ceiling beacon



Wireless sounder & wall beacon

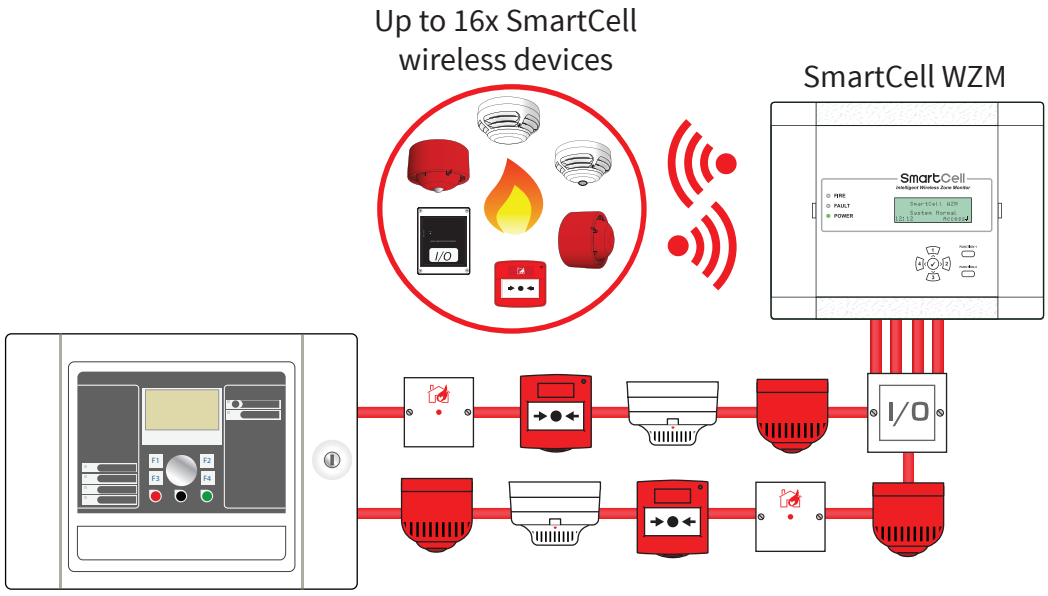


Wireless input / output device

System overview

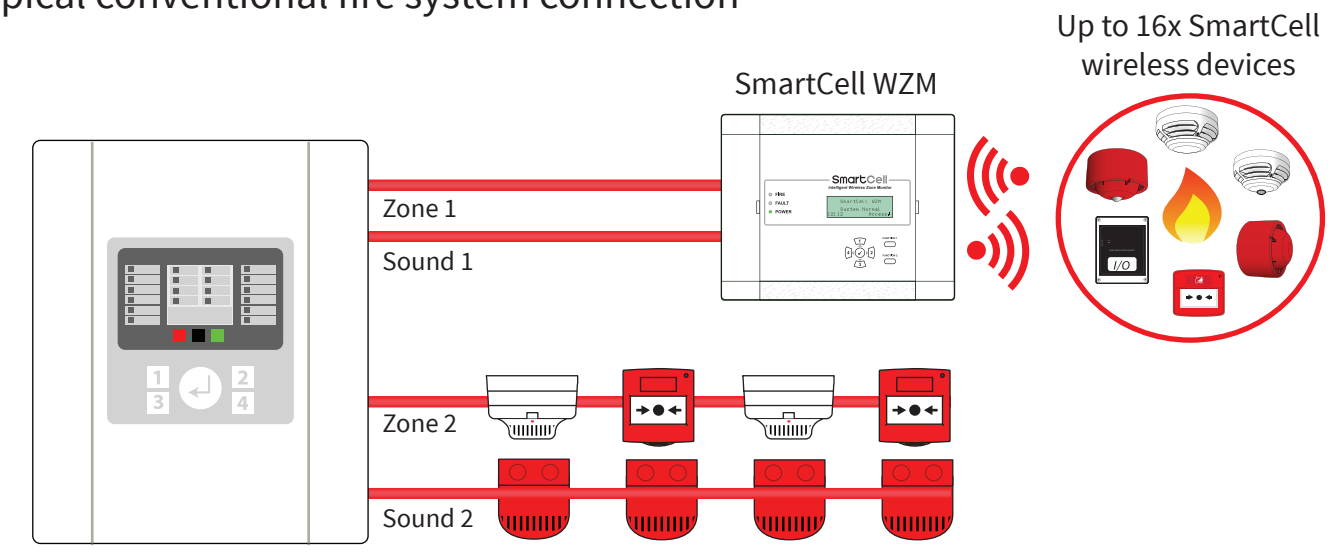
The Intelligent Wireless Zone Monitor (WZM) allows for 16 SmartCell wireless devices to be added to conventional or addressable fire system.

Typical addressable fire system connection



Example addressable panel

Typical conventional fire system connection



Example Conventional panel

The WZM is programmed for operation with Conventional or Addressable fire control panels in the 'WZM Settings' menu. The default setting is 'Conventional'. See page 35 for more information.

System design

All installation work should be carried out in accordance with the system design.

Wireless zone monitor (WZM)

230 VAC and 24 VDC powered WZMs are available.

Communication between devices and the WZM is bidirectional and operates in the European harmonised 868 MHz frequency band. The WZM's features are detailed in the 'Controls and Displays' section.

The WZM can be connected to conventional and addressable fire systems. See pages 25 to 26 for wiring configurations.

Wireless dual smoke and heat detectors

Detectors are available as standalone devices and alternatively with integrated sounders or integrated sounder and beacons. Their fire detection can be configured for smoke, heat or dual smoke and heat.

Available sensitivities are listed below. When configuring as dual detectors, one smoke and one heat sensitivity is selected. If either of these settings is reached, the detector will send an alarm condition to the WZM. The detectors are programmable via the WZM.

Smoke sensitivities	Heat sensitivities
Normal	58˚c static (A2S)
Normal + AVF *	58˚c rate of rise (A2R)
	72˚c static (BS)
	72˚c rate of rise (BR)

* Alarm Verification Feature (AVF). Upon receipt of a fire alarm condition, the WZM waits to check that the device remains alarm, before acting on the event.

Wireless fire sounders and beacons

Sounders can be set to high or low volume, whilst sounder or beacons can also be independently enabled or disabled. The default fire sounder tone is tone 5.

Sounders have 31 tones available, that can be played on the configuration tool for verification.

Available tones are shown overleaf:

TONE	TONE TYPE	TONE DESCRIPTION / APPLICATION
1.		970Hz
2.		800Hz/970Hz at 2Hz
3.		800Hz - 970Hz at 1Hz
4.		970Hz 1s OFF / 1s ON
5.		970Hz, 0.5s / 630Hz at 1 Hz ***Default fire tone***
6.		554Hz, 0.1s / 440Hz, 0.4s (AFNOR NF S 32 001)
7.		500 - 1200Hz, 3.5s / 0.5s OFF (NEN 2575:2000 Dutch slow whoop)
8.		420Hz 0.6s ON / 0.6s OFF (Australia AS1670 Alert tone)
9.		1000 - 2500Hz, 0.5s/ 0.5s OFF x 3/1.5s OFF (AS1670 Evacuation)
10.		550Hz / 440Hz at 0.5Hz
11.		970Hz, 0.5s ON / 0.5s OFF x 3 / 1.5s OFF (ISO 8201)
12.		2850Hz, 0.5s ON / 0.5s OFF x 3 / 1.5s OFF (ISO 8201)
13.		1200Hz - 500Hz at 1Hz (DIN 33 404)
14.		400Hz
15.		550Hz, 0.7s / 1000Hz, 0.33s
16.		1500Hz - 2700Hz at 3Hz
17.		750Hz
18.		2400Hz
19.		660Hz
20.		660Hz 1.8s ON / 1.8s OFF
21.		660Hz 0.15s ON / 0.15s OFF
22.		510Hz, 0.2s / 610Hz, 0.2s
23.		800 / 1000Hz 0.5s each (1Hz)
24.		250Hz - 1200Hz at 12Hz
25.		500Hz - 1200Hz at 0.33Hz
26.		2400Hz - 2900Hz at 9Hz ***Default information tone***
27.		2400Hz - 2900Hz at 3Hz
28.		500 - 1200Hz, 0.5s/ 0.5s OFF x 3/1.5s OFF (AS1670 Evacuation)
29.		800Hz - 970Hz at 9Hz
30.		800Hz - 970Hz at 3Hz
31.		800Hz, 0.25s ON / 1s OFF
32.		500Hz - 1200Hz, 3.75s / 0.25s OFF (AS2220)

Note: Tones 1, 4, 5 and 7 are EN54-3 approved tones.

Note: Default sounder operation is global. Alternative operation, such as zonal and two stage, plus sounder and output delays are also available, via the SmartCell configuration tool.

Input / output devices

Input / output devices have two resistor monitored fire inputs and two fire relay outputs. Both fire relay outputs are rated 1 A at 30 VDC.

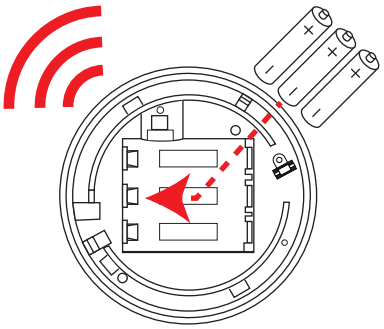
The device's two relay outputs are programmable. Upon a fire condition, both outputs will automatically change state. The outputs can be independently programmed to return to their normal state upon either, when the control panel's 'Silence' button is pressed, or when the control panel's 'Reset' button is pressed.

Device log on methods

Wireless devices can be programmed to the WZM in two ways, for maximum flexibility. They are as follows:

Method 1 ‘at WZM’

This method is accessed at the WZM and involves powering the device at the WZM, by inserting the device’s batteries. Devices can therefore be added to the system, prior to installing them into location.

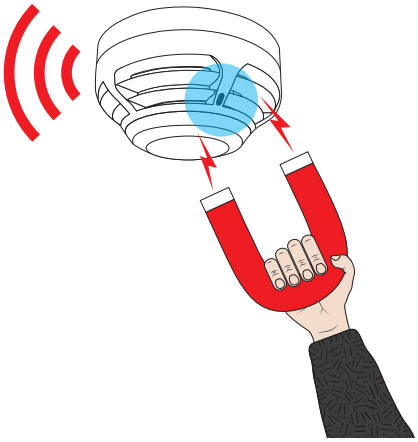


Method 2 ‘at device location’

This method is accessed at the WZM and involves applying the supplied magnet to the device. Devices can therefore be added to the system, with device batteries already fitted. E.g. when fitted in its final device location.

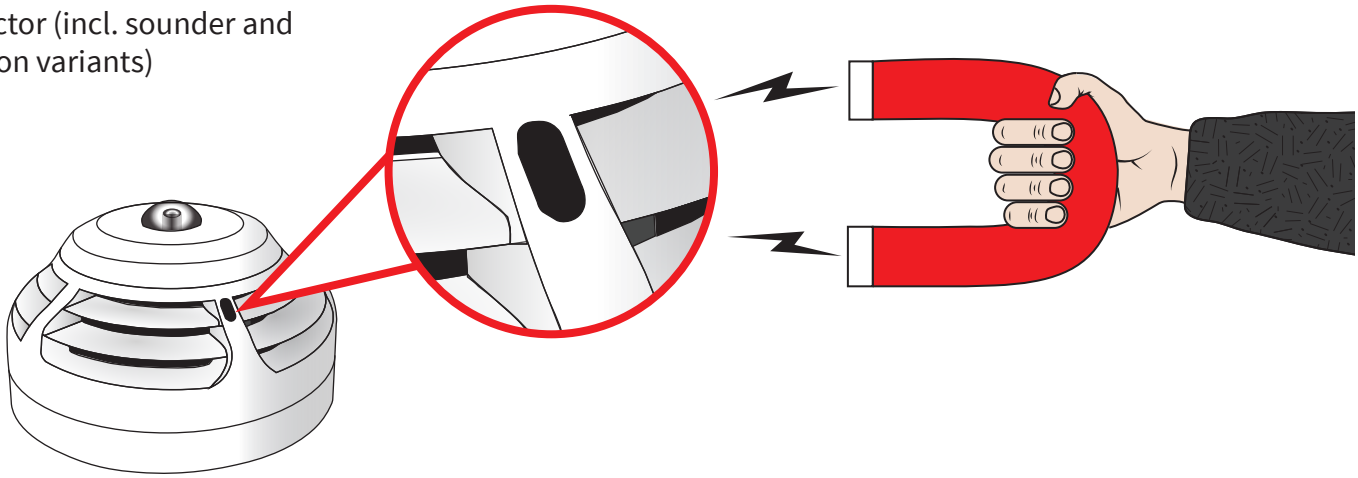
The magnet must be held in place (on the device log on point) for 4 seconds. The device’s LED will flash by way of confirmation.

Refer to the ‘Device log on points’ section for details on each device’s log on point.

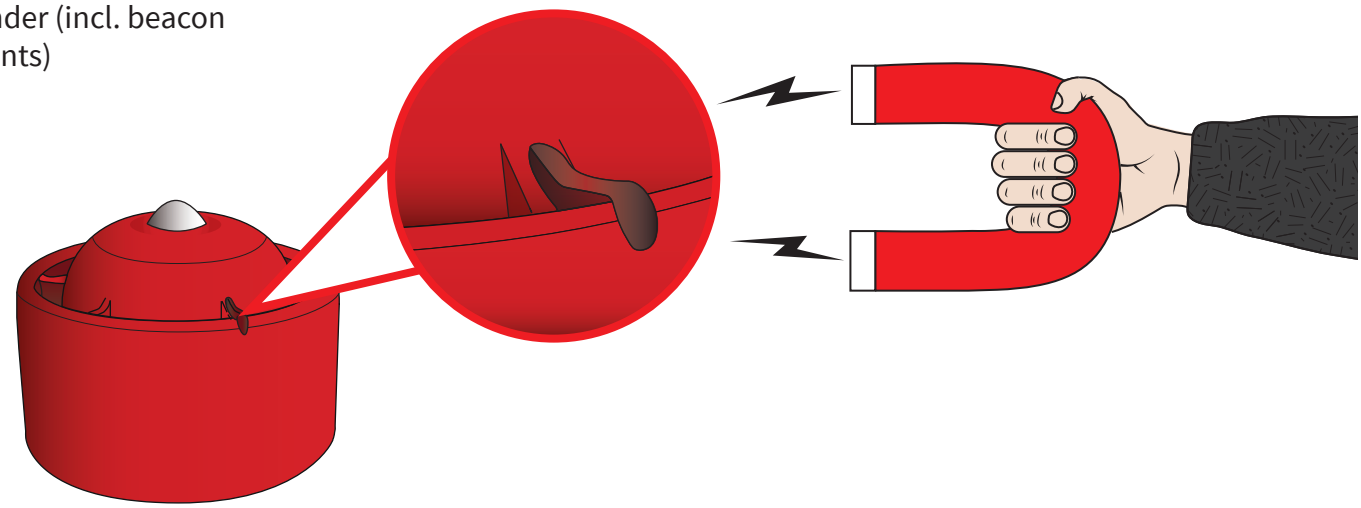


Device log on points

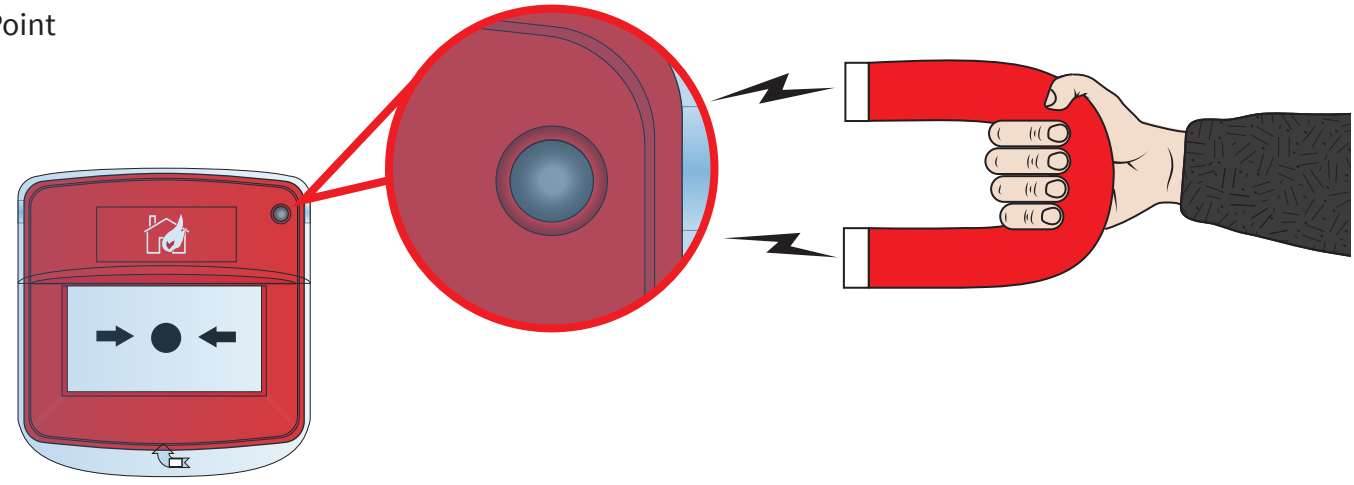
Detector (incl. sounder and beacon variants)



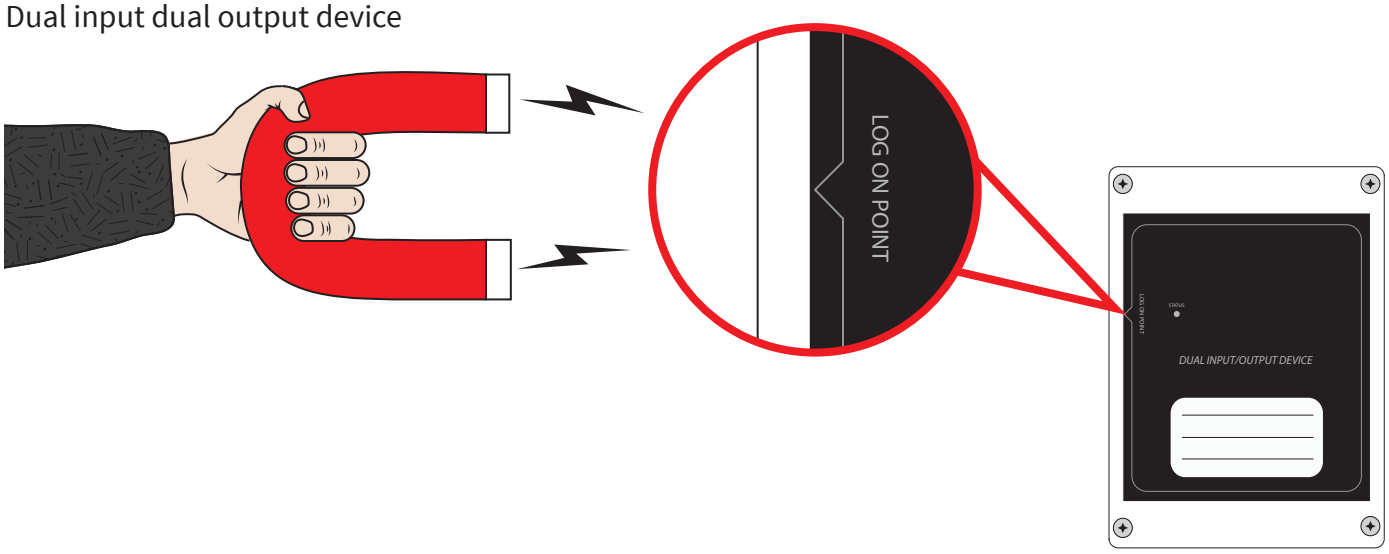
Sounder (incl. beacon variants)



Call Point

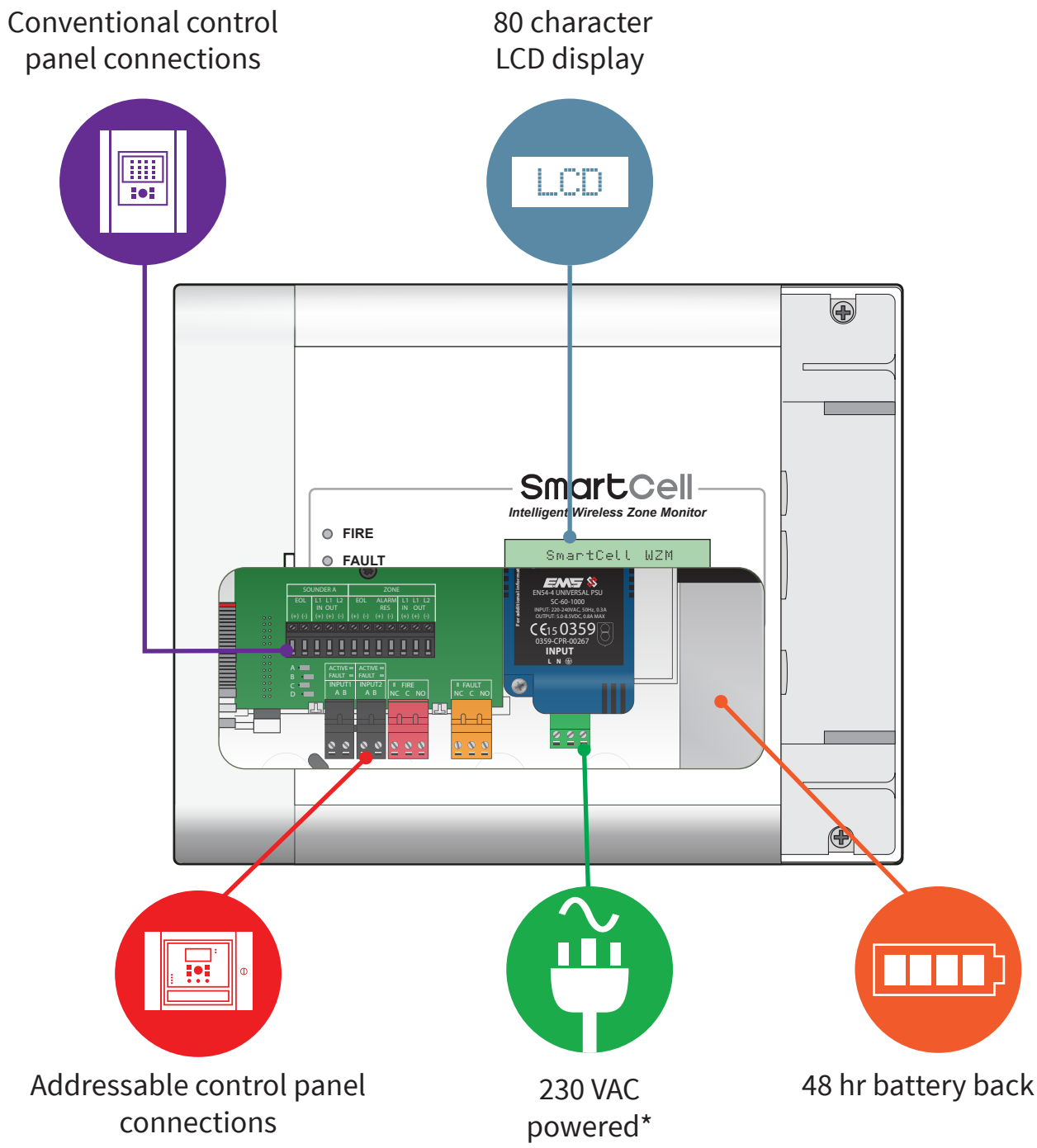


Dual input dual output device



WZM connections

The WZM has a number of connections and features, as detailed below:

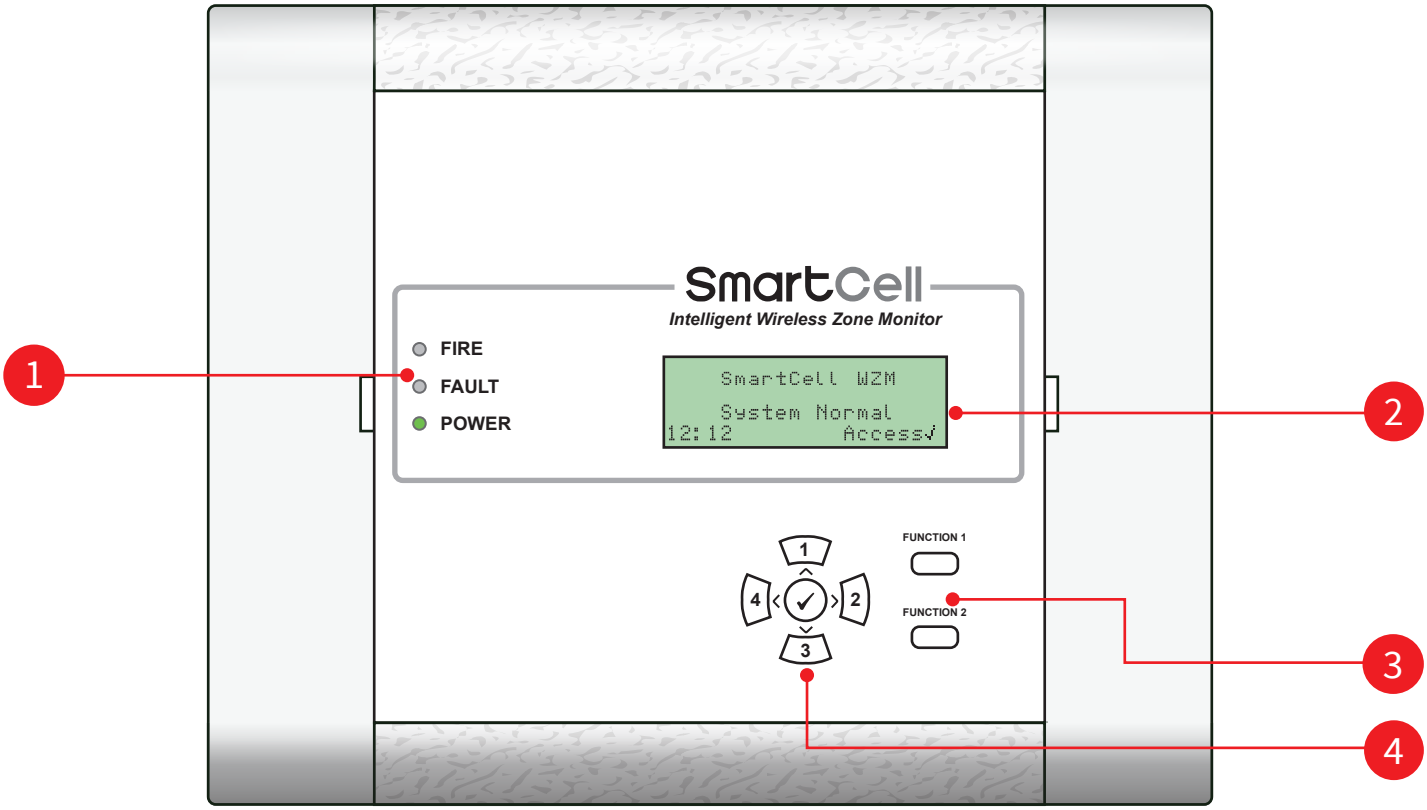


** An alternative 24 VDC version WZM is also available for use with a seperate power supply for extended battery standby time.*

WZM fascia

The WZM provides status information via the display and status lamps. The WZM's functions are achieved via the entry of a user access code.

The WZM's features are shown below.



1. Status LEDs
2. 80 character display
3. Function buttons
4. Navigation & confirmation buttons

WZM Status LEDs

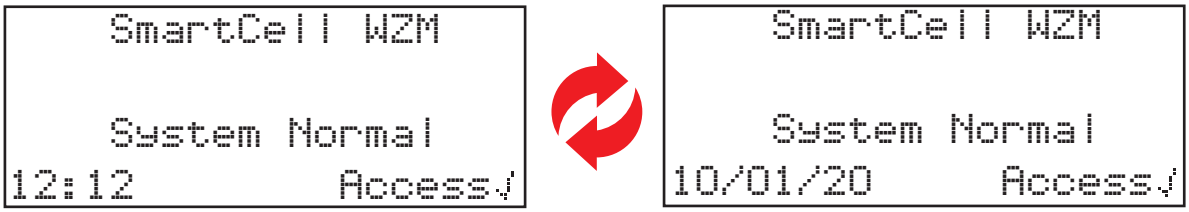
LED Indicator	LED Colour	Function
FIRE		Illuminates when any device is in fire alarm condition.
FAULT		Illuminates when any fault condition is present at the WZM itself or if an associated device is in fault.
POWER		Indicates a good power supply.

WZM buttons

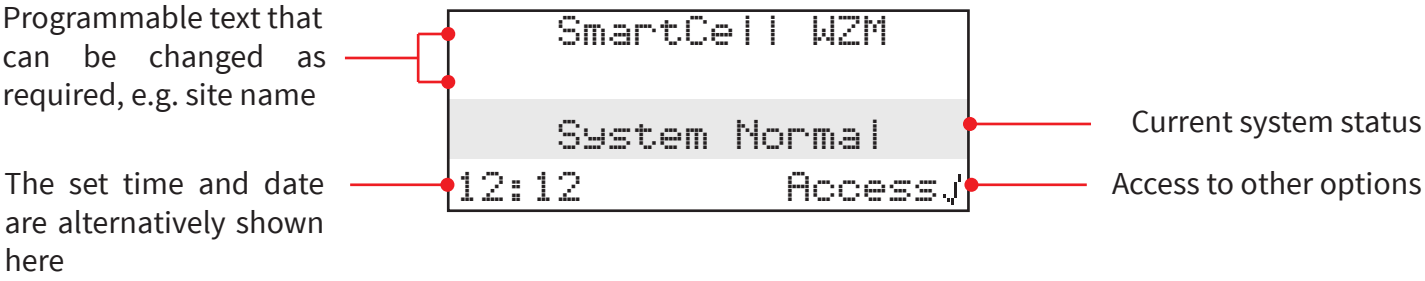
Button	Function
1	This button is always active and is used for number entry (number 1) and for upwards menu navigation.
2	This button is always active and is used for number entry (number 2) and for forwards menu navigation.
3	This button is always active and is used for number entry (number 3) and for downwards menu navigation.
4	This button is always active and is used for number entry (number 4) and for backwards menu navigation.
✓	This button is always active and is used as a menu entry button.
FUNCTION 1	When a valid User PIN has been entered, pressing the Function 1 button will switch between the first and second language selected for the system.
FUNCTION 2	When a valid User PIN has been entered, pressing the Function 2 button for 2-3 seconds will send a resynchronisation signal to the WZM's wireless devices.

WZM display

Once the WZM has been fully installed and powered up, the WZM will show the following alternating default ‘System Normal’ displays.



This is described in full below.



Entry to the menu and then into the required menu options can be achieved by entering a valid access code and using the WZM’s navigation buttons. Exiting from a menu option is achieved automatically via a time-out period, by pressing the 4 button or by selecting the logout menu option.

Access level 1 entry

No valid access code is required for access level 1. To view events on the WZM, the 2 button can be pressed to select the type of event to be viewed i.e. faults, disablements etc. The 1 and 3 buttons can be used to scroll through these events.

Access level 3 entry

A valid user access code is required for access level 3. One entered the full service menu access structure is available at this level. This is shown and detailed fully in this programming manual.

To enter access level 3 press the ✓ button. The display will change to show:

```
For Access
Enter Code:

Press √ To Complete
```

Press the relevant numbered arrows to enter the access level 3 access code required (1= 1, 2= 2, 3= 3, 4= 4). Access level 3 default access code is 333333. On completion of the last number entered, press the ✓ button. The display will change to briefly show the display below, then the relevant menu options will be available. During this display all buttons are immediately active.

```
* Welcome Service *
   Access Level 3
   Now Available
 All Buttons Active
```

By selecting the access level 3 option and entering the correct access 3 entry code additional menus will be available.

Example menu display

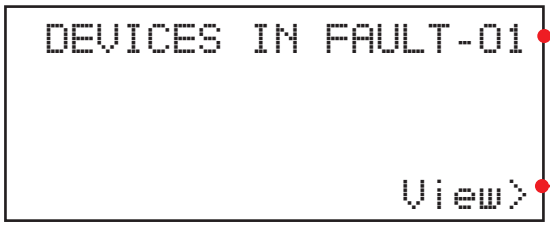
An example display is shown below:

```
→View System Status
 Maintenance/Test
 Device Options
 WZM Settings      ◇
```

The menus can be navigated by pressing the 1 and 3 buttons until the desired option to be entered has the arrow (→) adjacent to it. Pressing the ✓ button enters this option.

Exiting from a menu option is achieved automatically after two minutes, or by pressing the 4 button.

Fault event display



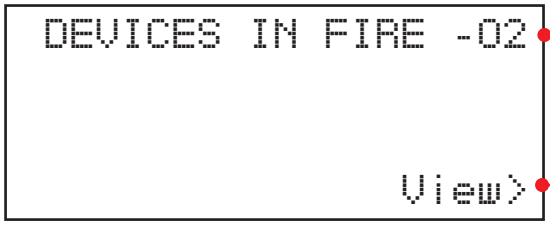
Number of devices currently in a fire condition

Option to view more information *

* See the 'How to view more information' section below for further details on this feature.

Fire event display

An example fire event screen is detailed below.



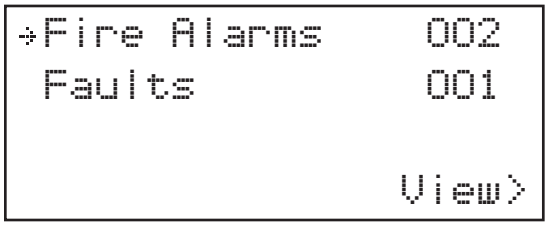
Number of devices currently in a fire condition

Option to view more information *

* See the 'How to view more information' section below for further details on this feature.

How to view more information

Whilst fire events or fault conditions are present on the system, pressing the 2 button, will allow the user to view more information:

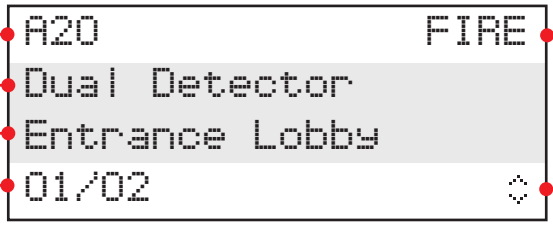


Press the 1 and 3 buttons so that the arrow (➔) is highlighting the desired event type, then press the 2 button. The LCD display will change to show more information as detailed below:

Device Address

Device type and location text *

Indicating the current event and the total events present.

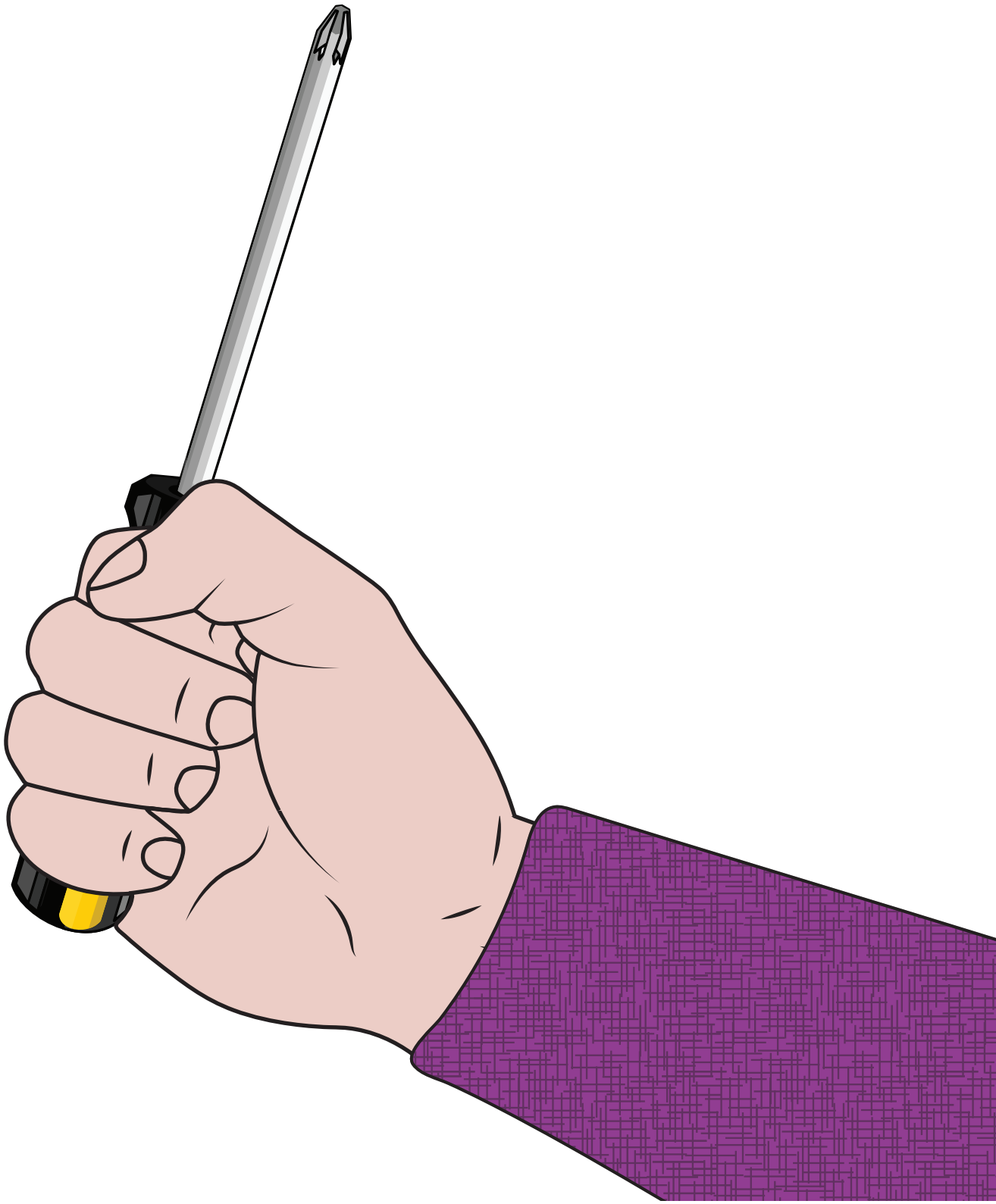


Event type

Option to scroll is only available whilst multiple events are present

* Note; refer to 'System Setup' section for details on location text programming.

System Setup



System setup introduction

This system setup section will show you how to configure the WZM and connect it to a fire alarm panel. The 'at WZM' (via power-up) method of adding devices to the WZM will be used. For advanced programming, refer to the 'Panel Menus' section of this document.

Important system setup notes

The installation must conform to applicable local installation codes and should only be installed by a fully trained competent person.

Always select an appropriate device type for the application as per local codes of practice, or as advised by a qualified professional.

The procedures outlined in this installation guide must be carefully followed.

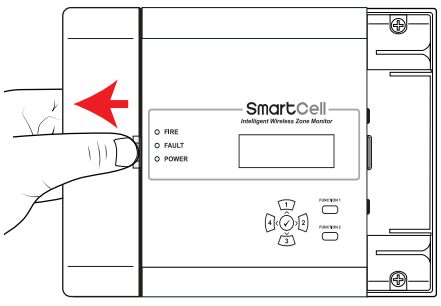
SmartCell devices contain electronics that may be susceptible to damage from Electro Static Discharge (ESD). Take appropriate precautions when handling electronic boards.

To ensure correct operation, products must be used within the specified environmental operating conditions.

Side cover removal

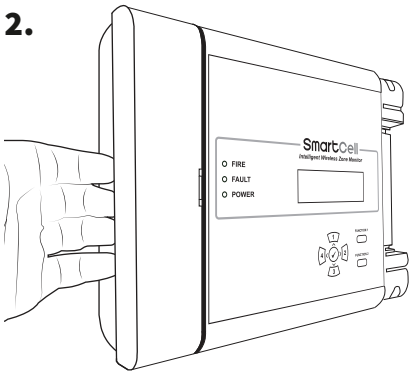
The following steps illustrate how to remove the side covers:

1.



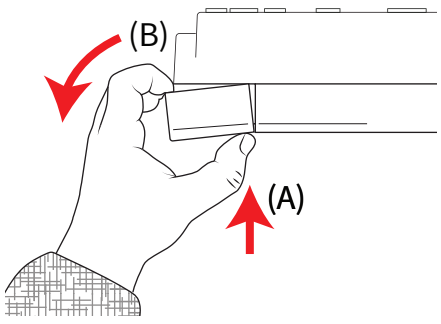
Slide the side cover sideways, creating a gap as shown.

2.



Position your fingers behind the cover's protruding edge.

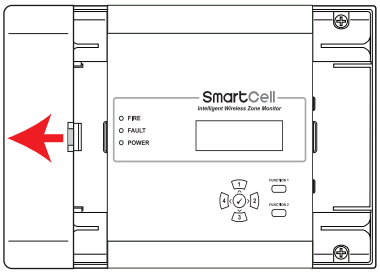
3.



Press the cover's releasing clip with your thumb (A), and simultaneously rotate the side cover anti-clockwise (B), *as viewed overhead* to remove the cover.

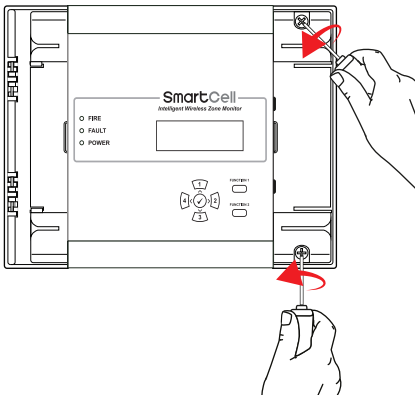
Open WZM

1. Unclip side cover.

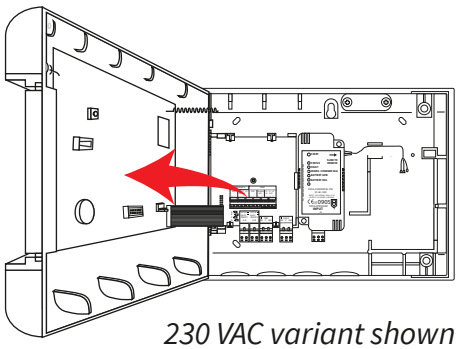


Refer to the 'Side cover removal' section for details.

2. Loosen screws.



3. Open door.

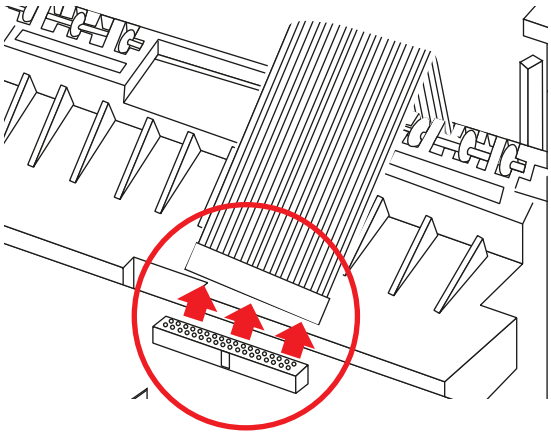


230 VAC variant shown

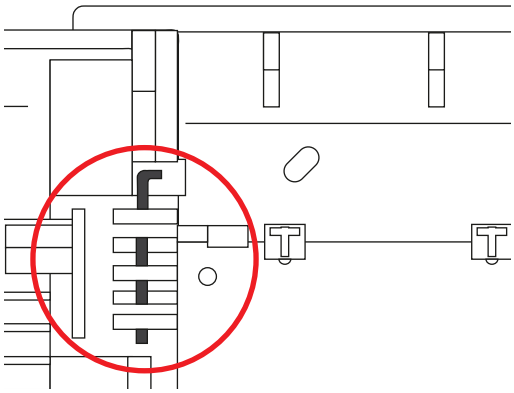
Optional door removal

Disconnect the ribbon cable, then turn and release the door hinges.

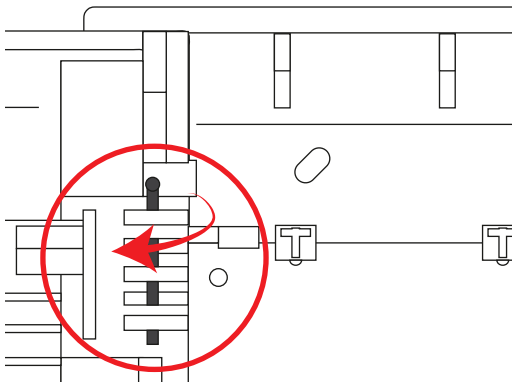
1.



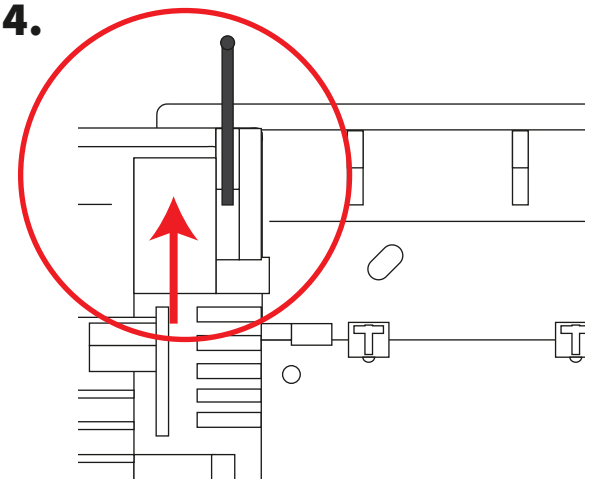
2.



3.



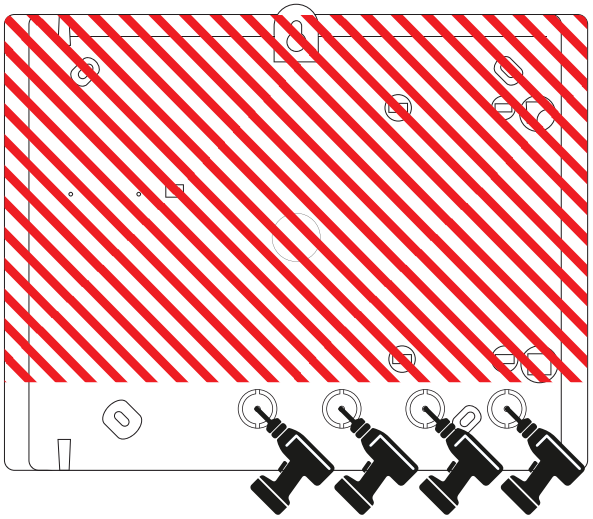
4.



Cable entry

Select cable entry points as required, before fitting to the wall.

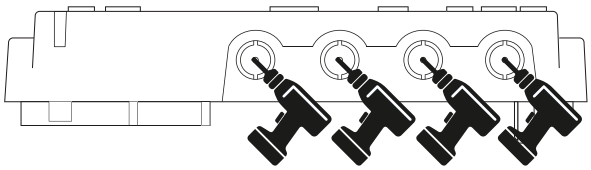
Rear side view



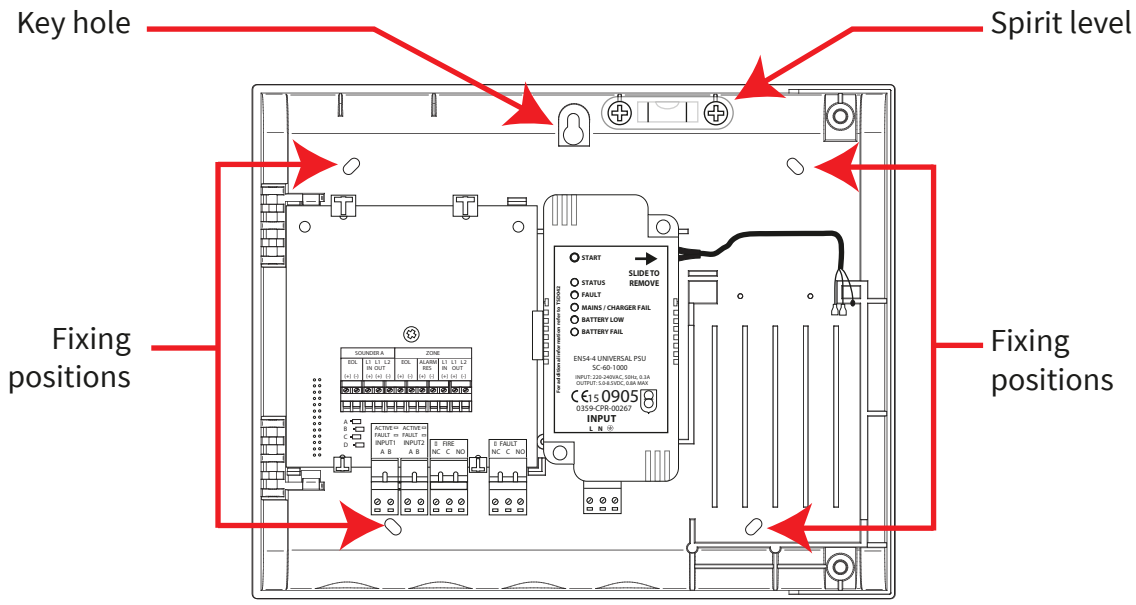
NO CABLE ACCESS AT THE TOP OF THE UNIT!

= Available entry point

Under side view



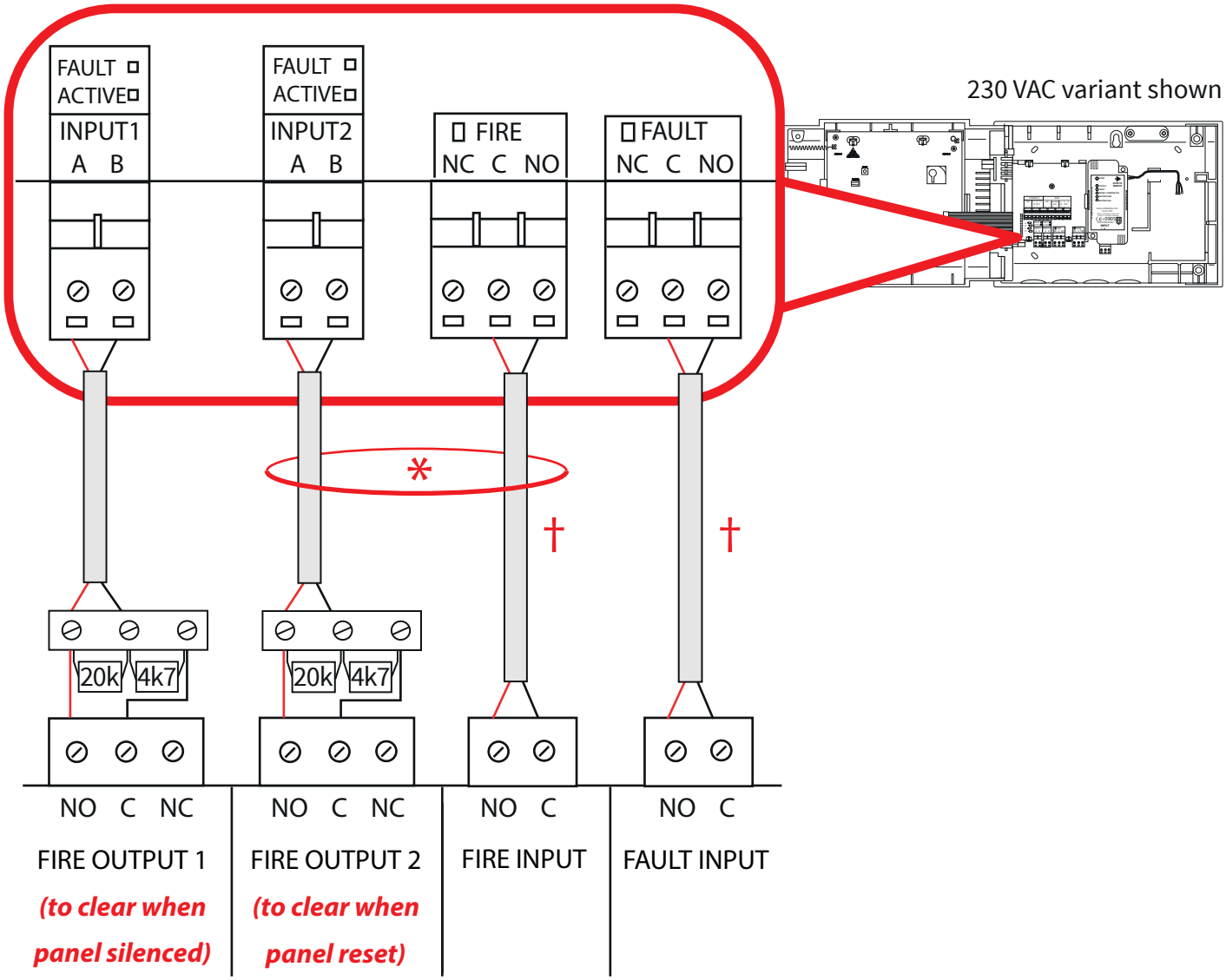
Fix WZM to wall



Note: the supplied back box mounting template can be used to drill the fixing positions.

Addressable fire system wiring

- SKIP THIS STEP IF CONNECTING TO A CONVENTIONAL FIRE SYSTEM.
- Wire the inputs as shown below, using the resistor pack provided.
- If an input is not being used, leave the 20 kΩ resistor as factory fitted.
- Both outputs are voltage free and rated 30 V @ 1 A.
- The maximum cable length to connected devices is 10 m.



Addressable fire system connections

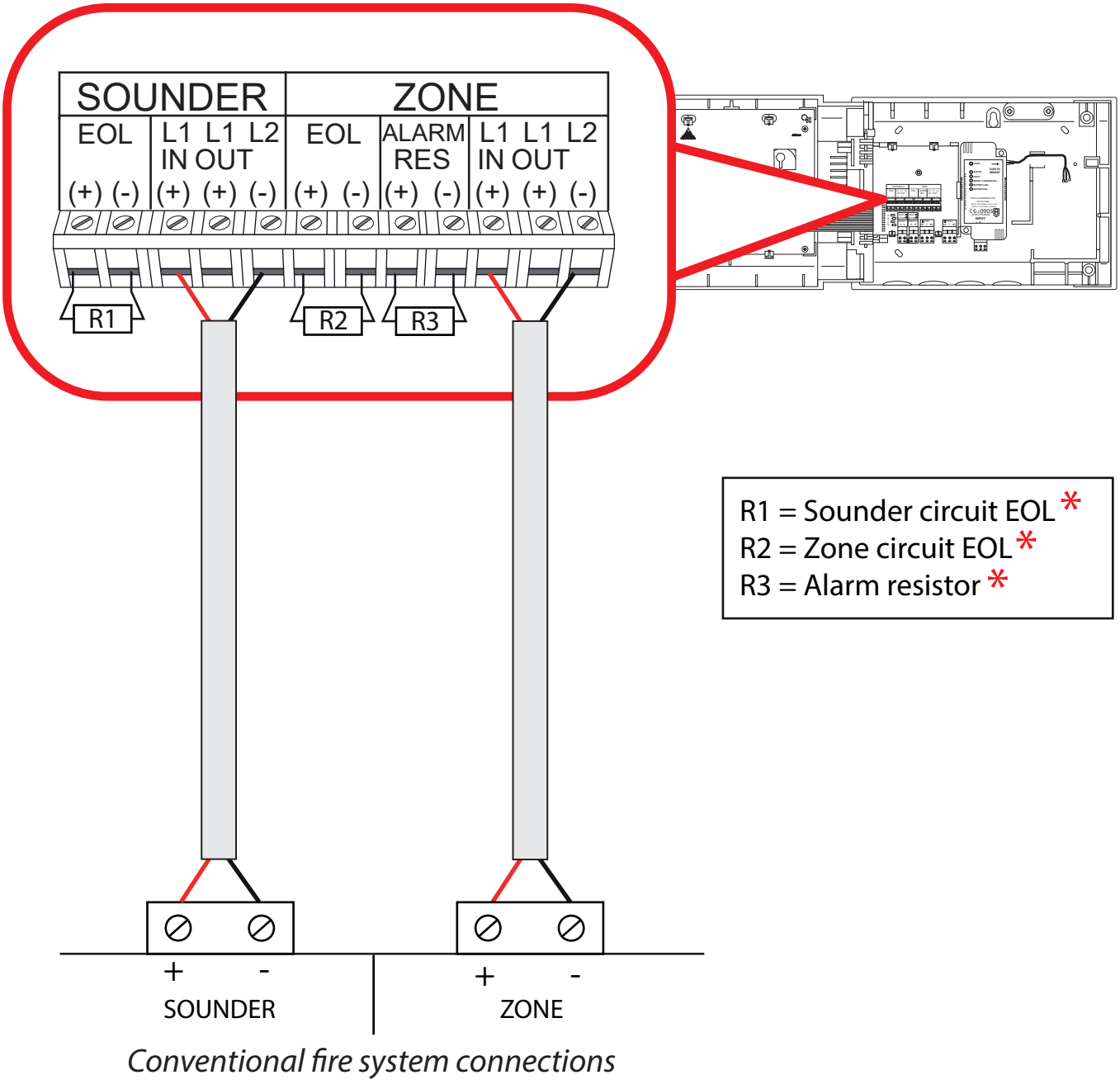
FOOTNOTES

* Optional cabling, required only when the following SmartCell devices are added to the WZM; detectors, call points and I/O Units *(I/O units when set to 'Off When Reset')* - see page 30 for details on this feature.

† Wiring can be normally open or normally closed operation as required.

Conventional fire system wiring

- SKIP THIS STEP IF CONNECTING TO AN ADDRESSABLE FIRE SYSTEM.
- The WZM must be connected to a dedicated zone and sounder output.
- The maximum cable length to connected devices is 10 m.



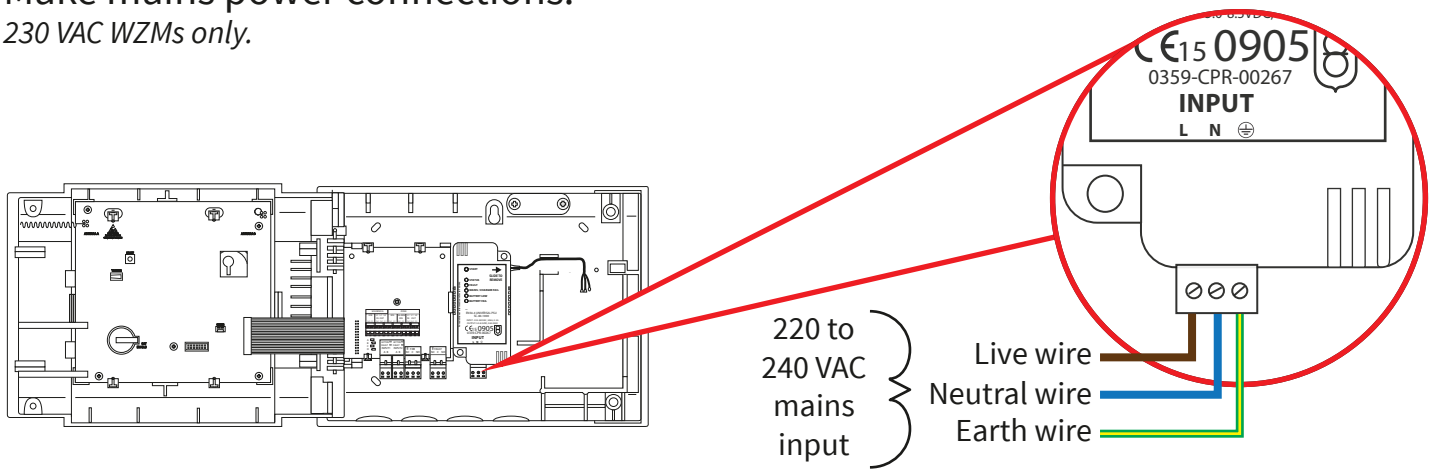
Conventional fire system connections

FOOTNOTES

* Ensure that the manufacturer's specified end of line components and triggering resistors are fitted. See the control panel's instructions for more information.

Make mains power connections:

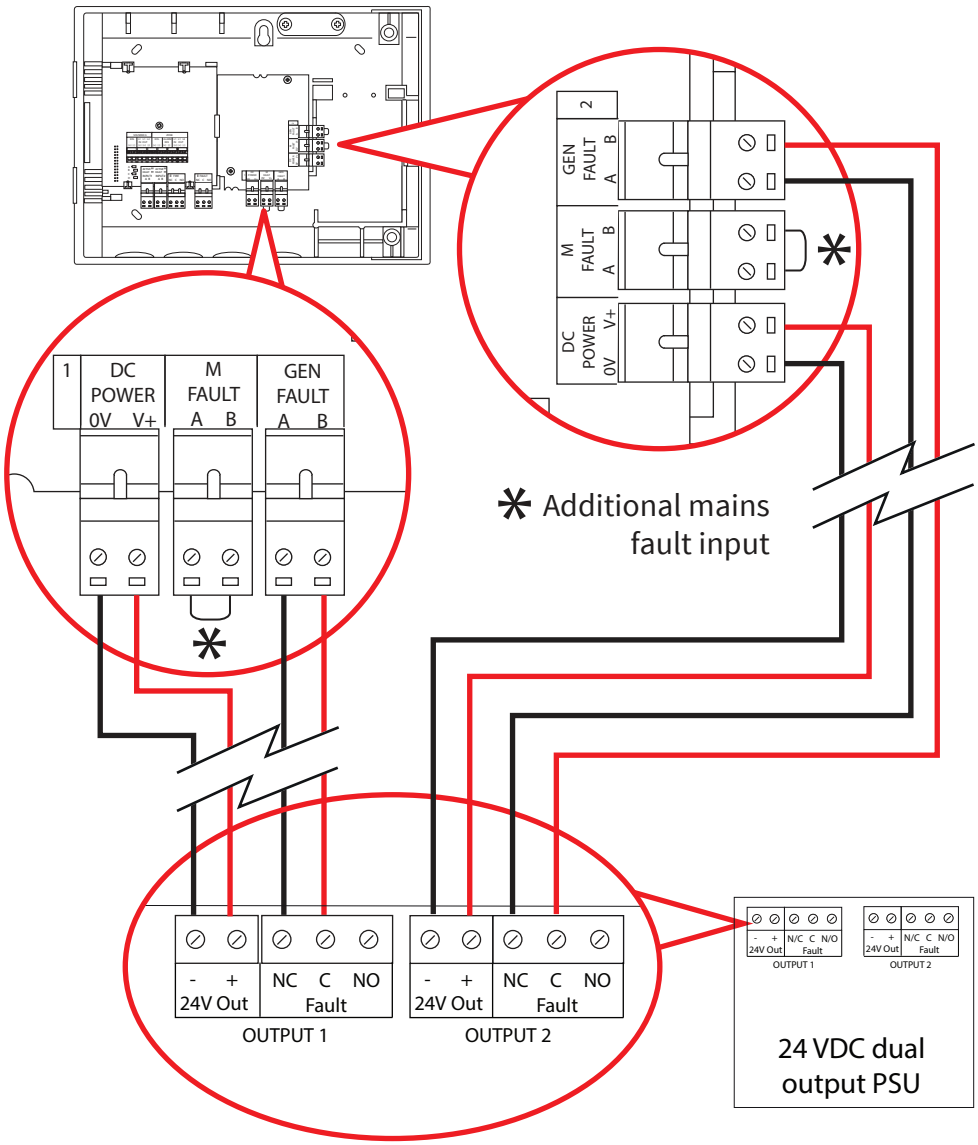
230 VAC WZMs only.



Make 24 VDC power connections:

24 VDC WZMs only.

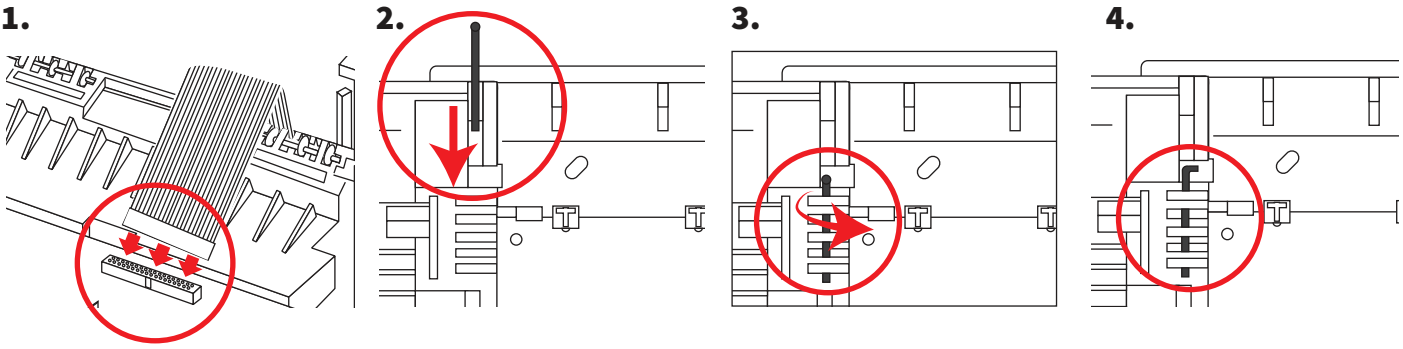
The 24 VDC SmartCell WZM is designed to be powered from 2x 24 VDC power sources, to meet country specific requirements.



- Connect both power inputs.
- There are also general fault inputs (GEN FAULT) and mains fault (M FAULT) available.
- The fault inputs are NC and voltage free.
- If a fault input (GEN FAULT or M FAULT) is not being used, leave the link as factory fitted.

Re-fit door

Re-connect the ribbon cable and re-fit the door hinges.

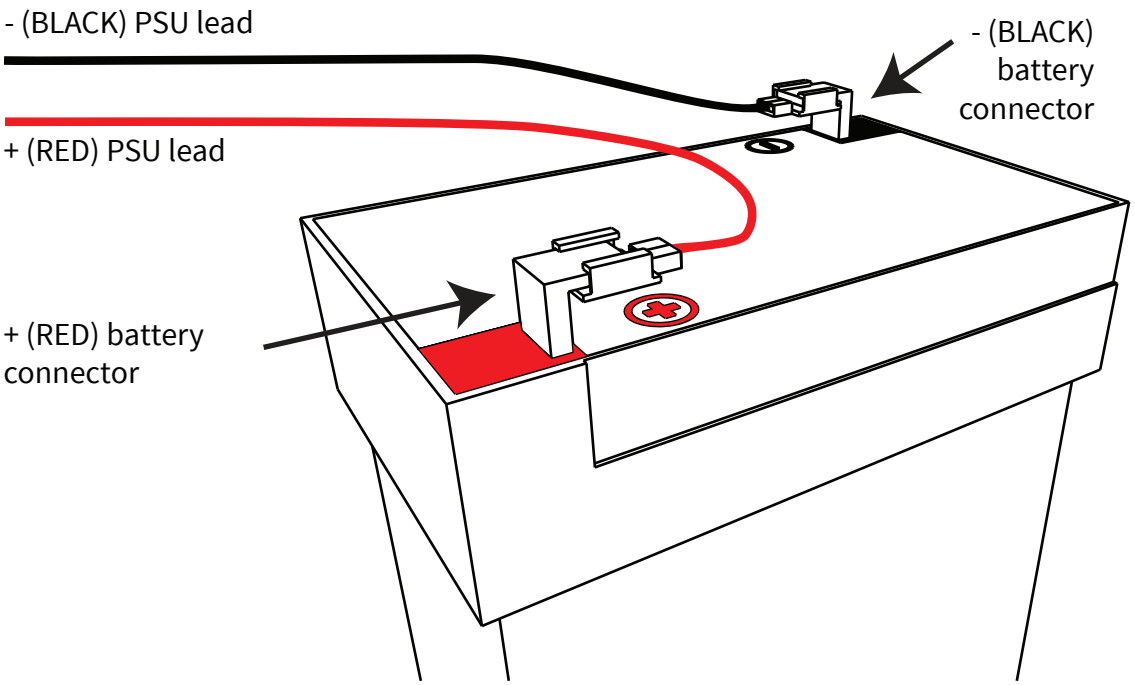


Connect backup battery

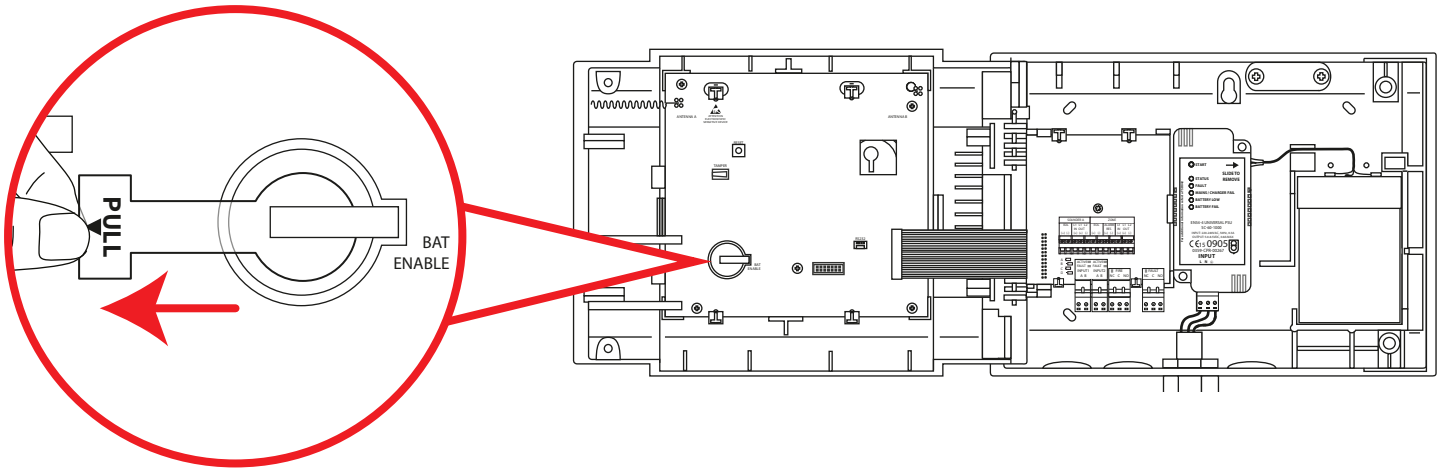
230 VAC WZMs only.

Warning

Observe battery polarity!

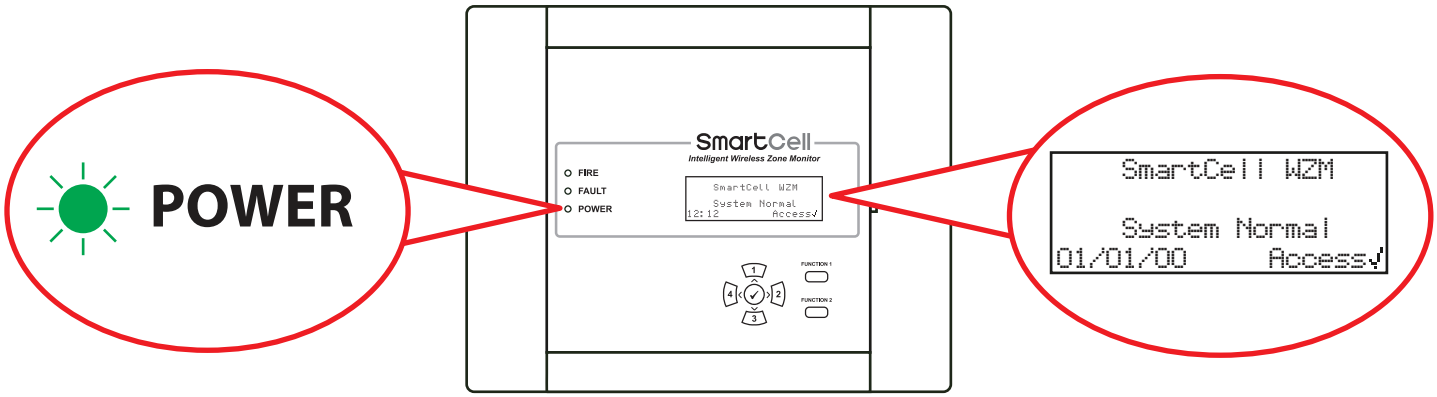


Remove 3 V battery tab.



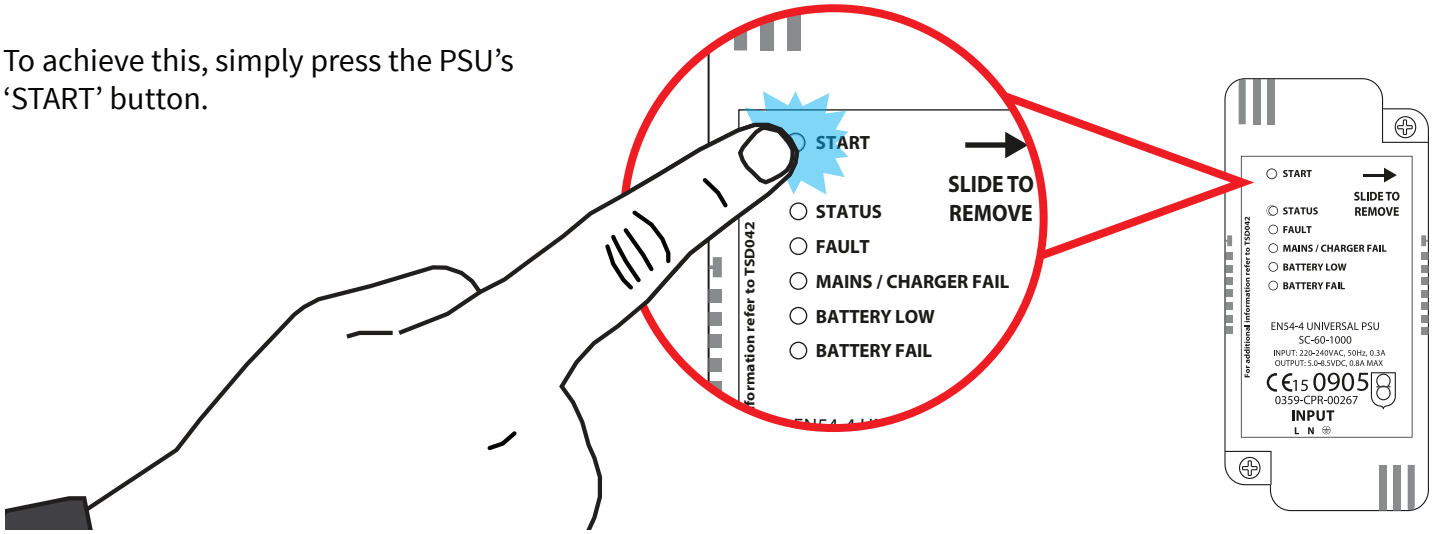
Apply power

The power supply to the WZM can now be switched on.



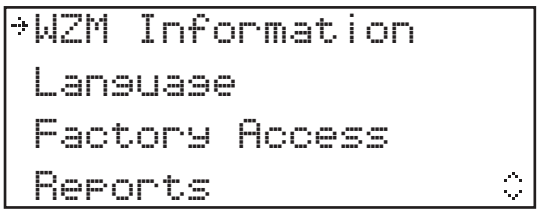
Note: If mains supply is unavailable at this point, the WZM can be temporarily powered by the back-up battery.

To achieve this, simply press the PSU's 'START' button.

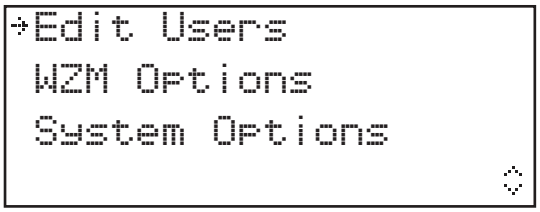


Set time & date

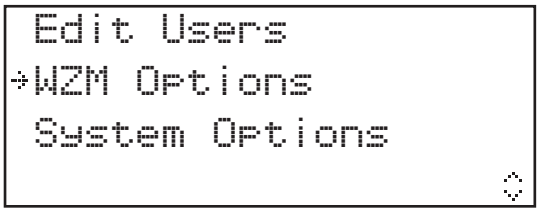
From access level 3 (refer to the 'Access Level 3' section for details), press the 3 button until the screen displays:



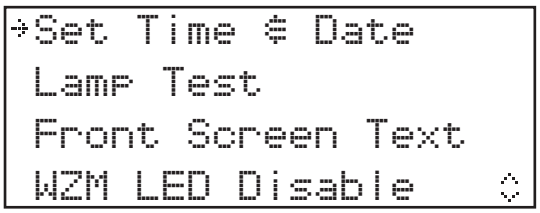
Press the ✓ button and the screen will display:



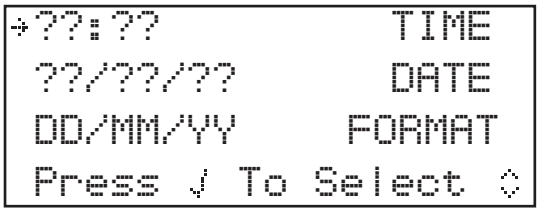
Press the 3 button once. The screen will display:



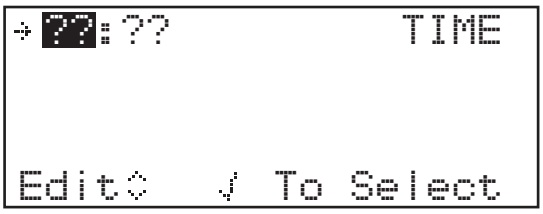
Press the ✓ button and the screen will display:



Press the ✓ button and the screen will display:



To change the time, press the ✓ button and the screen will display:

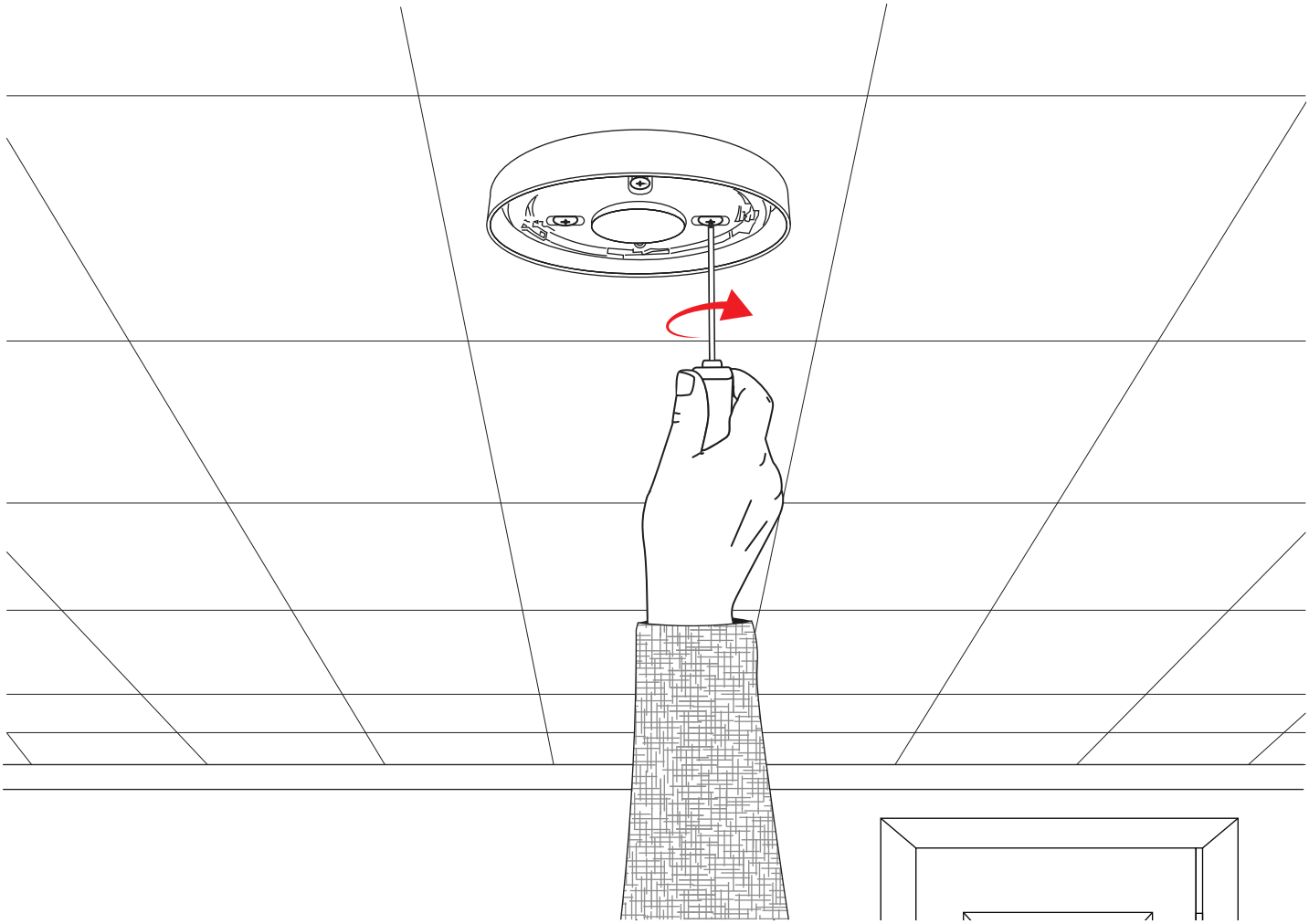


The following buttons are required to set the time:

Button(s)	Action
1 3	Increases and decreases the selected value.
4 2	Moves the cursor between the hour and minute selections.
✓	Saves the changes and returns to the previous screen.

Note: the same process is used for changing the date.

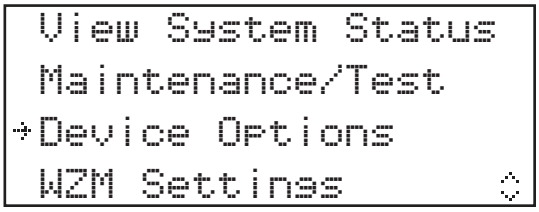
Install devices



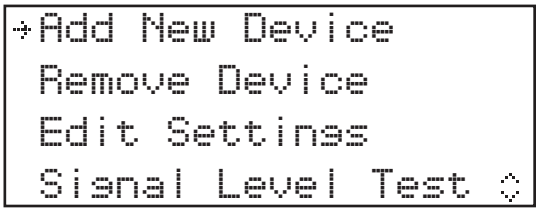
Note: Refer to the associated device installation guide for full details.

Add devices to system

From access level 3 (refer to the 'Access Level 3' section for details), press the 3 button until the screen displays:



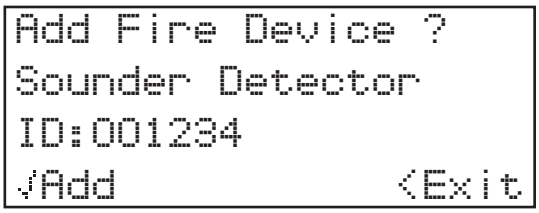
Press the ✓ button and the screen will display:



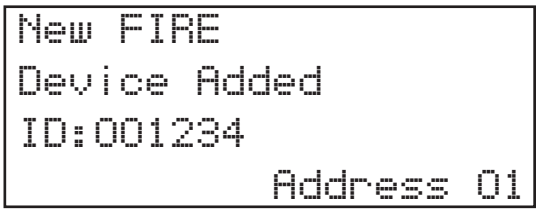
Press the ✓ button and the screen will display*:

Press the ✓ button and the screen will display:

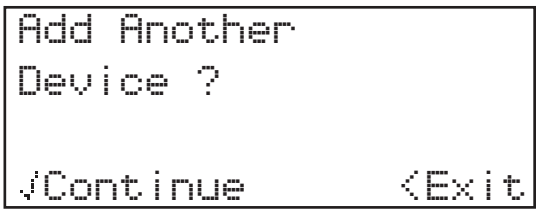
Insert the device's batteries and the screen will change to show:



Check that the device ident on-screen matches the device ident shown on the barcode label. Press ✓ to confirm, or 4 to cancel. If accepted, the screen will display:



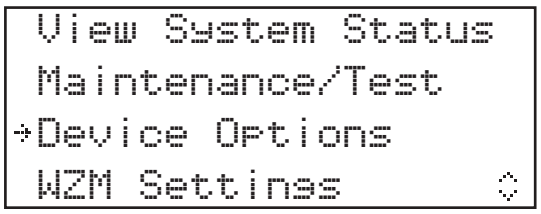
Followed by:
Either continue adding new devices (by inserting batteries, or press 4 until the front screen is displayed.



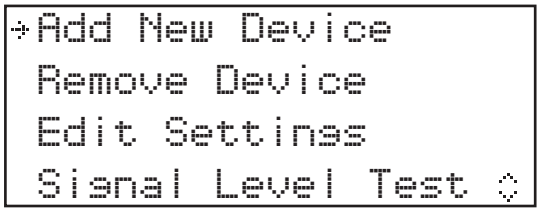
** Refer to the 'WZM menus' section for alternative programming methods.*

Device attributes

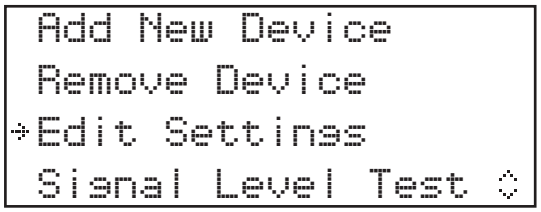
From access level 3 (refer to the 'Access Level 3' section for details), press the 3 button until the screen displays:



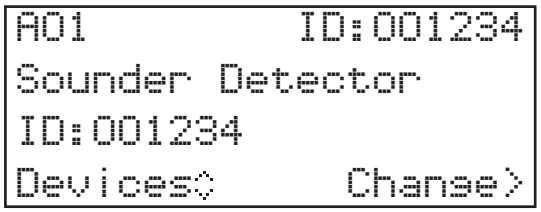
Press the ✓ button and the screen will display:



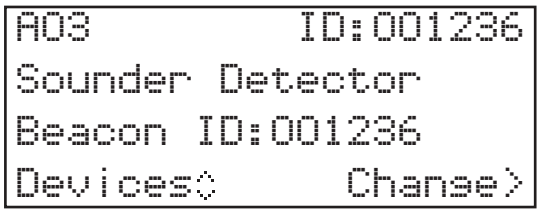
Press the 3 button until the screen displays:



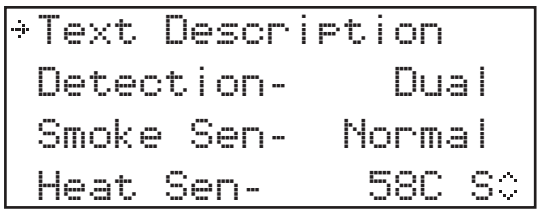
Press the ✓ button and the screen will display:



Press the 3 button until the device to configure is shown. Press the ✓ button and the screen will display:



Press the ✓ button and the screen will display:



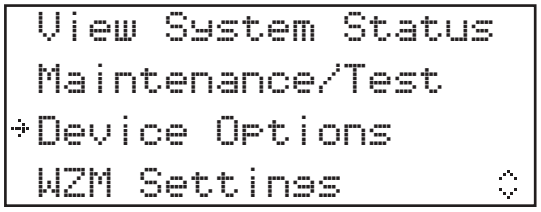
Available options for each device type are shown overleaf.

Menu Selection	Available options
Text Description	Refer to the ‘Device location text’ section overleaf *f*or details.
Detection	Detection selection of ‘Dual’ (smoke & heat), ‘Smoke Only’ or ‘Heat Only’.
Smoke Sen	Smoke sensitivity selection of; ‘Normal*†’ and ‘Normal + AVF’. (The AVF option allows additional verification of the alarm condition before reporting).
Heat Sen	Heat sensitivity selection of; ‘58 °C Static*†’, ‘58 °C Rate Of Rise*’, ‘72 °C Static*’, ‘72 °C Rate Of Rise*’.
Sound Volume	Allows device sounder levels of; ‘High’ or ‘Low’.
Self Sound	When enabled, the will device sound upon local alarm detection, whilst wireless communication with the WZM is lost.
Audio/Visual	Allows device sounder and beacon selection of; sounder & beacon, sounder only and beacon only.
O/P 1 OFF	Choose to switch the device’s ‘Output 1’ off, when either the ‘silence’ or ‘reset’ button is pressed.
O/P 2 OFF	Choose to switch the device’s ‘Output 2’ off, when either the ‘silence’ or ‘reset’ button is pressed.

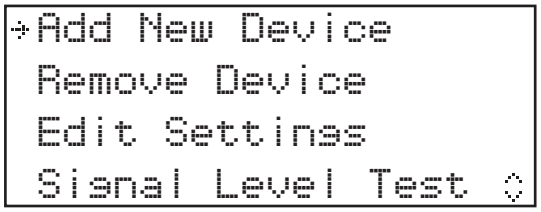
** EN54 approved sensitivities † Default dual sensitivities*

Device location text

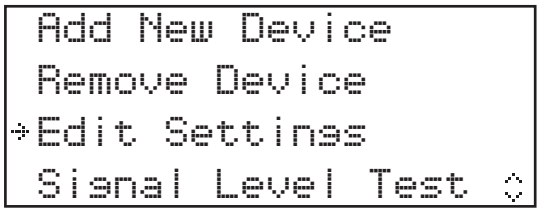
From access level 3 (refer to the 'Access Level 3' section for details), press the 3 button until the screen displays:



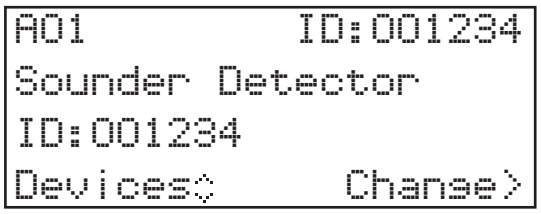
Press the ✓ button and the screen will display:



Press the 3 button until the screen displays:

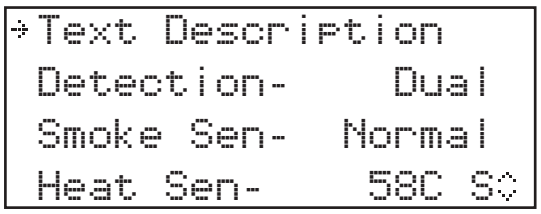


Press the ✓ button and the screen will display the first device logged on to the system:

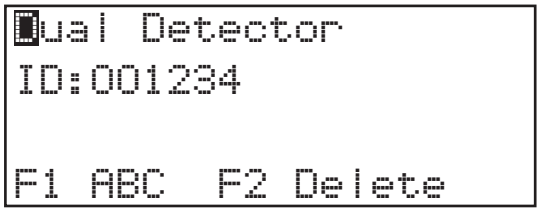


Press the 3 button to scroll through the devices until the required device is shown. Press the ✓ button:

Press the ✓ button and the screen will display:



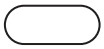
Press the ✓ button and the screen will display:



Refer to the 'Text entry' section overleaf.

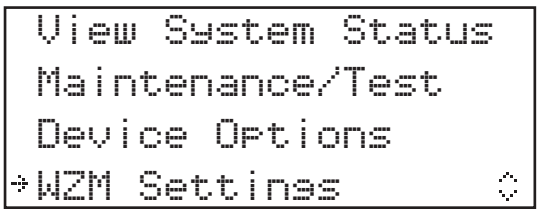
Text entry

The following buttons will be required to enter new text descriptions:

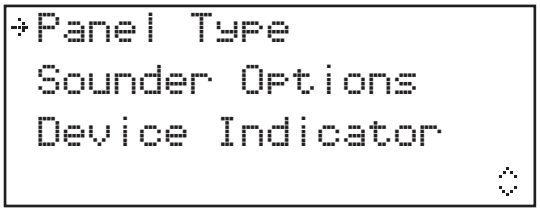
Button	Action
	Moves the selected character through the alphabet (forwards), one character at a time.
	Moves the selected character through the alphabet (backwards), one character at a time.
	Moves the cursor (selected character) left, one character at a time.
	Moves the cursor (selected character) right, one character at a time.
FUNCTION 1 	Used to toggle character entry format between; upper case, lower case and number.
FUNCTION 2 	Provides a delete function; press for single character deletion, or press and hold to delete all text.
	Exits from the current screen. The user is asked whether to save the changes (button for yes and 4 button for no).

Set the panel type

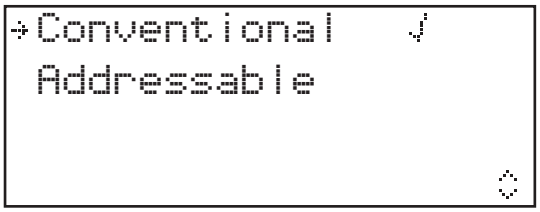
Default panel type is 'Conventional'. If the WZM is to be connected to a conventional type fire panel, skip this section. Otherwise, to change the panel type to 'Addressable', from access level 3 (refer to the 'Access level 3' section for details), press the 3 button until the screen displays:



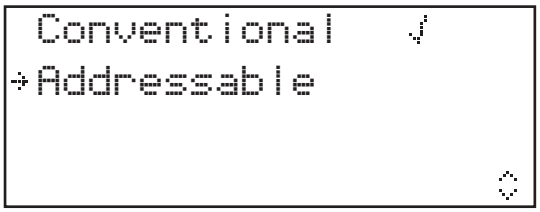
Press the ✓ button and the screen will display:



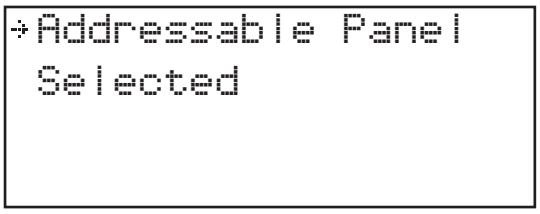
Press the 3 button and the screen will display:



Press the ✓ button and the screen will display:

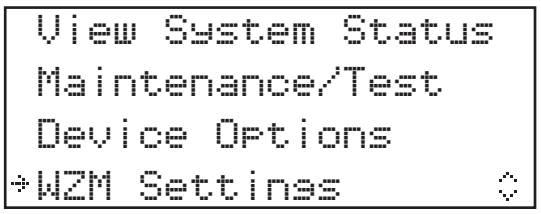


Press the ✓ button and the screen will display:

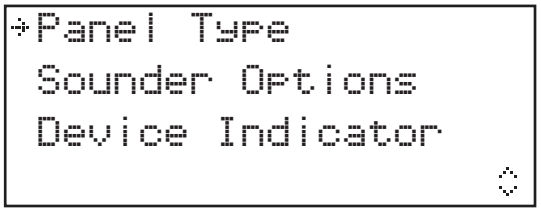


Sounder tones

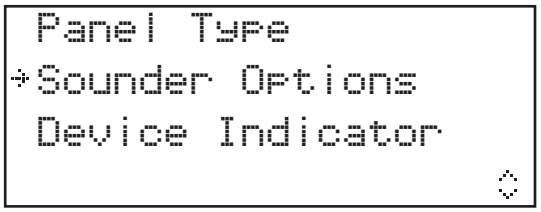
To change the fire tone, from access level 3 (refer to the 'Access level 3' section for details), press the 3 button until the screen displays:



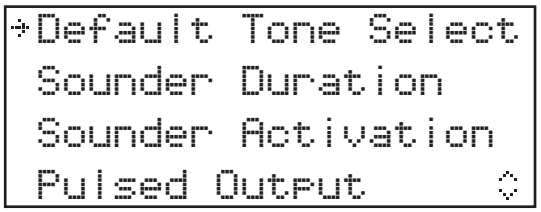
Press the ✓ button and the screen will display:



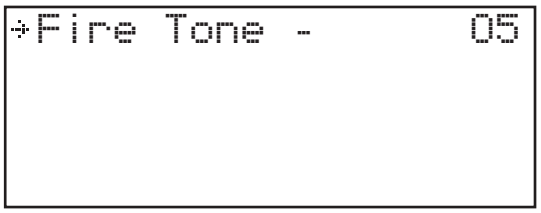
Press the 3 button until the screen displays:



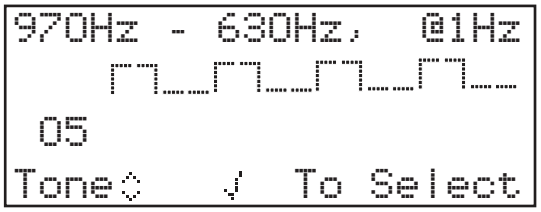
Press the ✓ button and the screen will display:



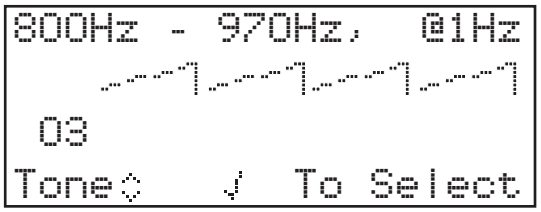
Press the ✓ button and the screen will display:



Press the ✓ button and the screen will display :



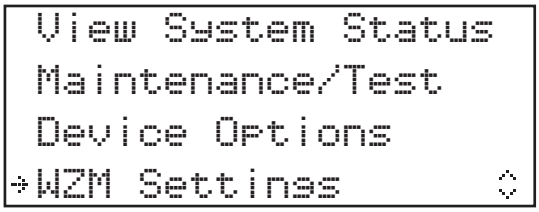
Press the 1 and 3 buttons to view the available tones and press the ✓ button to select the required tone:



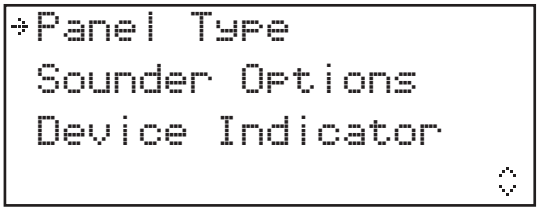
Sounder duration

As default, wireless sounders automatically switch off after 30 minutes, to conserve battery life. Sounders can also be configured for continuous uninterrupted operation, until switched off by the control panel.

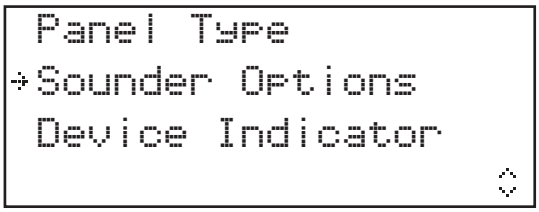
If the sounder duration is to be changed to continuous operation, from access level 3 (refer to the 'Access level 3' section for details), press the 3 button until the screen displays:



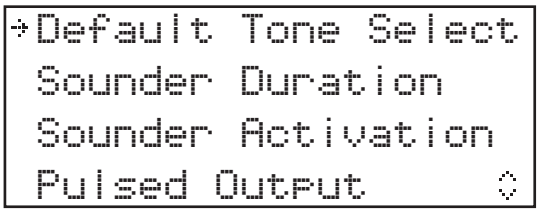
Press the ✓ button and the screen will display:



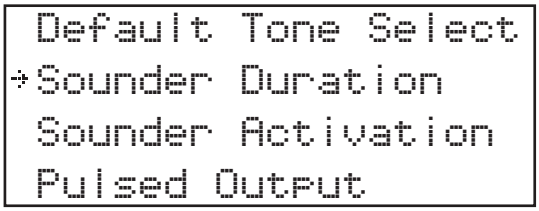
Press the 3 button until the screen will displays:



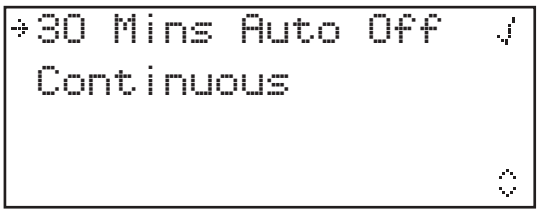
Press the ✓ button and the screen will display:



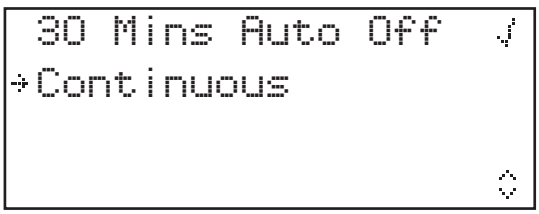
Press the 3 button until the screen will displays:



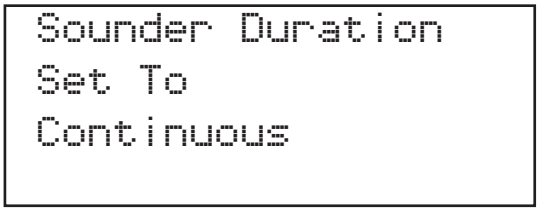
Press the ✓ button and the screen will display:



Press the 3 button until the screen will displays:



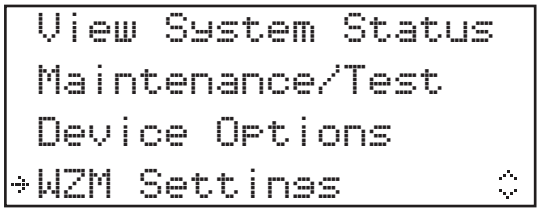
Press the ✓ button and the screen will display:



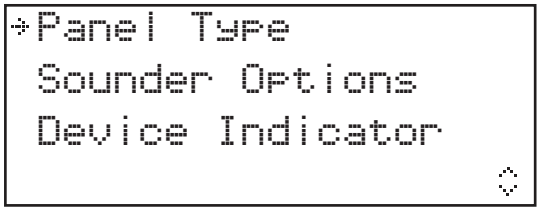
Sounder activation method

As default, wireless sounders will only operate upon activation of the WZM's fire input. This however can be changed to 'immediate mode', so that sounders also operate upon the activation of one of the WZM's wireless devices.

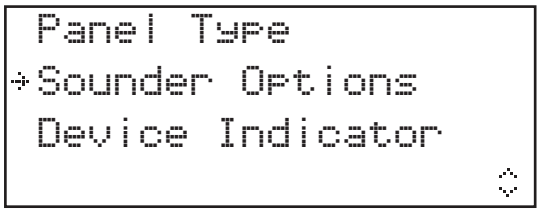
If the sounder activation method is to be changed to immediate mode, from access level 3 (refer to the 'Access level 3' section for details), press the 3 button until the screen displays:



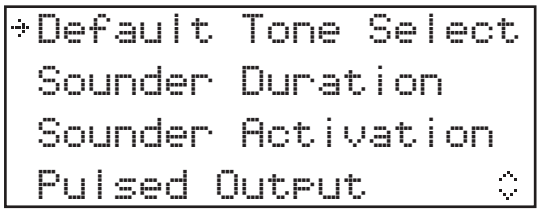
Press the ✓ button and the screen will display:



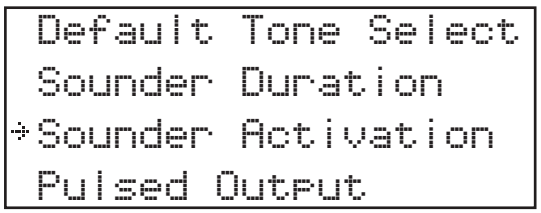
Press the 3 button until the screen will displays:



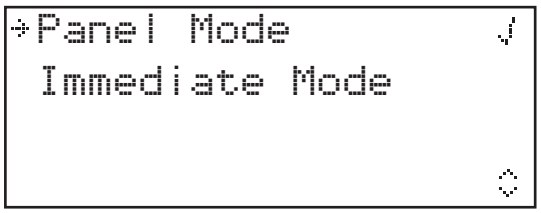
Press the ✓ button and the screen will display:



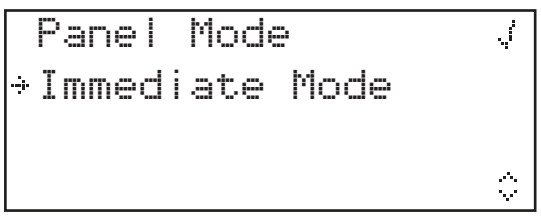
Press the 3 button until the screen will displays:



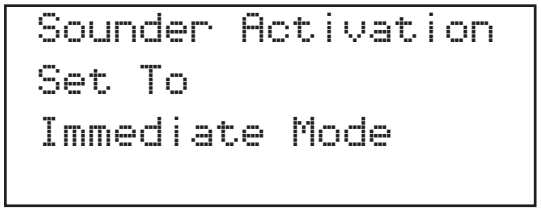
Press the ✓ button and the screen will display:



Press the 3 button until the screen will displays:



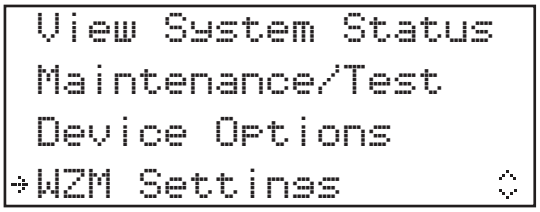
Press the ✓ button and the screen will display:



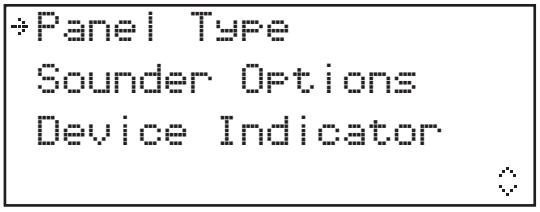
Pulsed output

As default, the pulsed output, for the fire and the fault relays, is set to latched. Upon an activation, the relay will remain latched in alarm until the WZM is reset. This however can be changed to pulse into alarm for a pre-defined period of time, before automatically clearing. Permitted times range from 5-60 seconds.

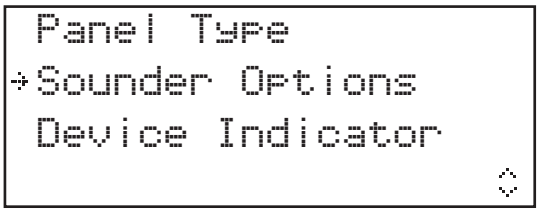
If the pulsed out is to be changed , from access level 3 (refer to the 'Access level 3' section for details), press the 3 button until the screen displays:



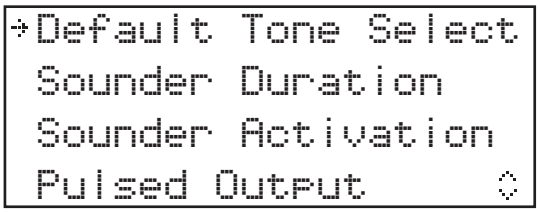
Press the ✓ button and the screen will display:



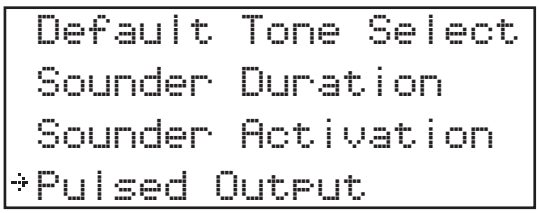
Press the 3 button until the screen will displays:



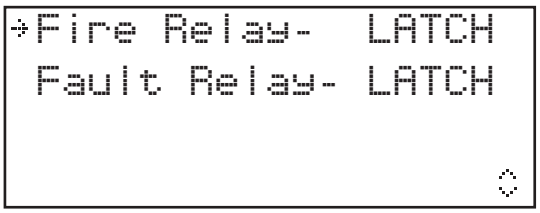
Press the ✓ button and the screen will display:



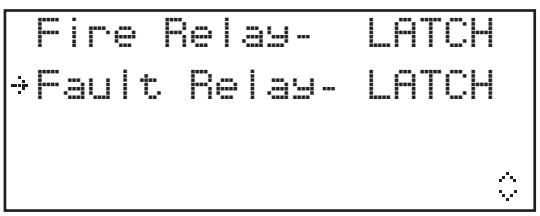
Press the 3 button until the screen will displays:



Press the ✓ button and the screen will display:

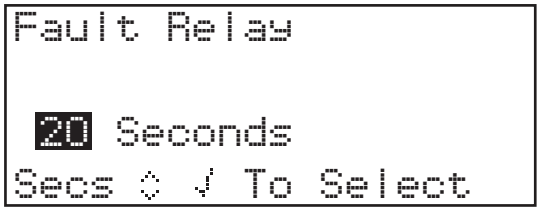


Press the 1 and 3 buttons, until the screen displays the required relay type:
In this example, the fault relay has been chosen.

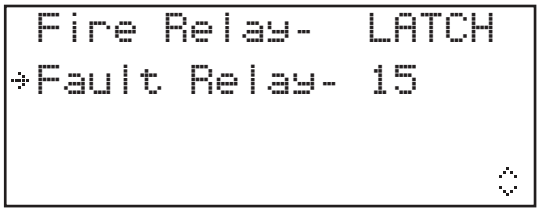


Press the ✓ button and the screen will display:

Press the 1 and 3 buttons, until the required time is displayed:
In this example, 20 seconds has been chosen.



Press the ✓ button and the screen will display:

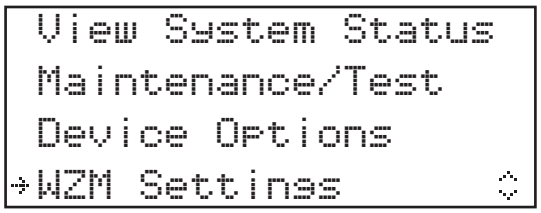


Note: the same options are available for the fire and fault relays.

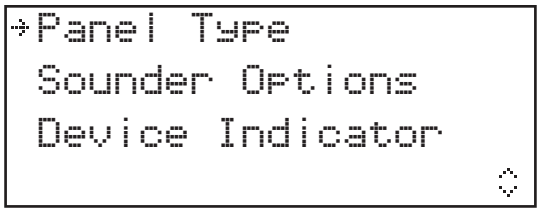
Device indicator operation

This feature is only available when the 'Panel Type' is set to 'Addressable'. As default, the device LED indicators are switched 'Off When Silenced' (upon receipt of a silence command signal from the control panel). Alternatively 'Off When Reset' can be selected (where the device LED indicators switch off upon the receipt of a reset command signal from the control panel .

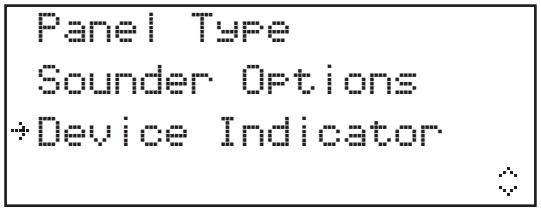
If the indicators are to be switched 'Off When Reset', from access level 3 (refer to the 'Access level 3' section for details), press the 3 button until the screen displays:



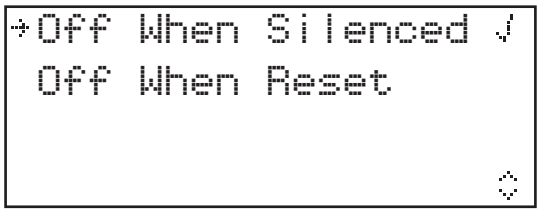
Press the ✓ button and the screen will display:



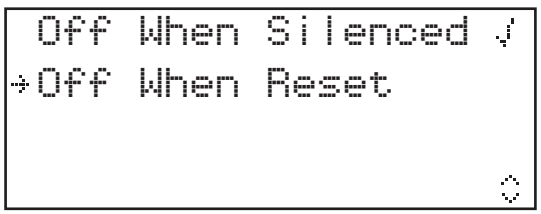
Press the 3 button until the screen will displays:



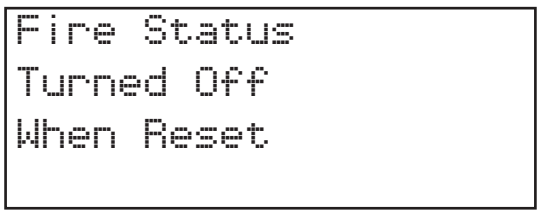
Press the ✓ button and the screen will display:



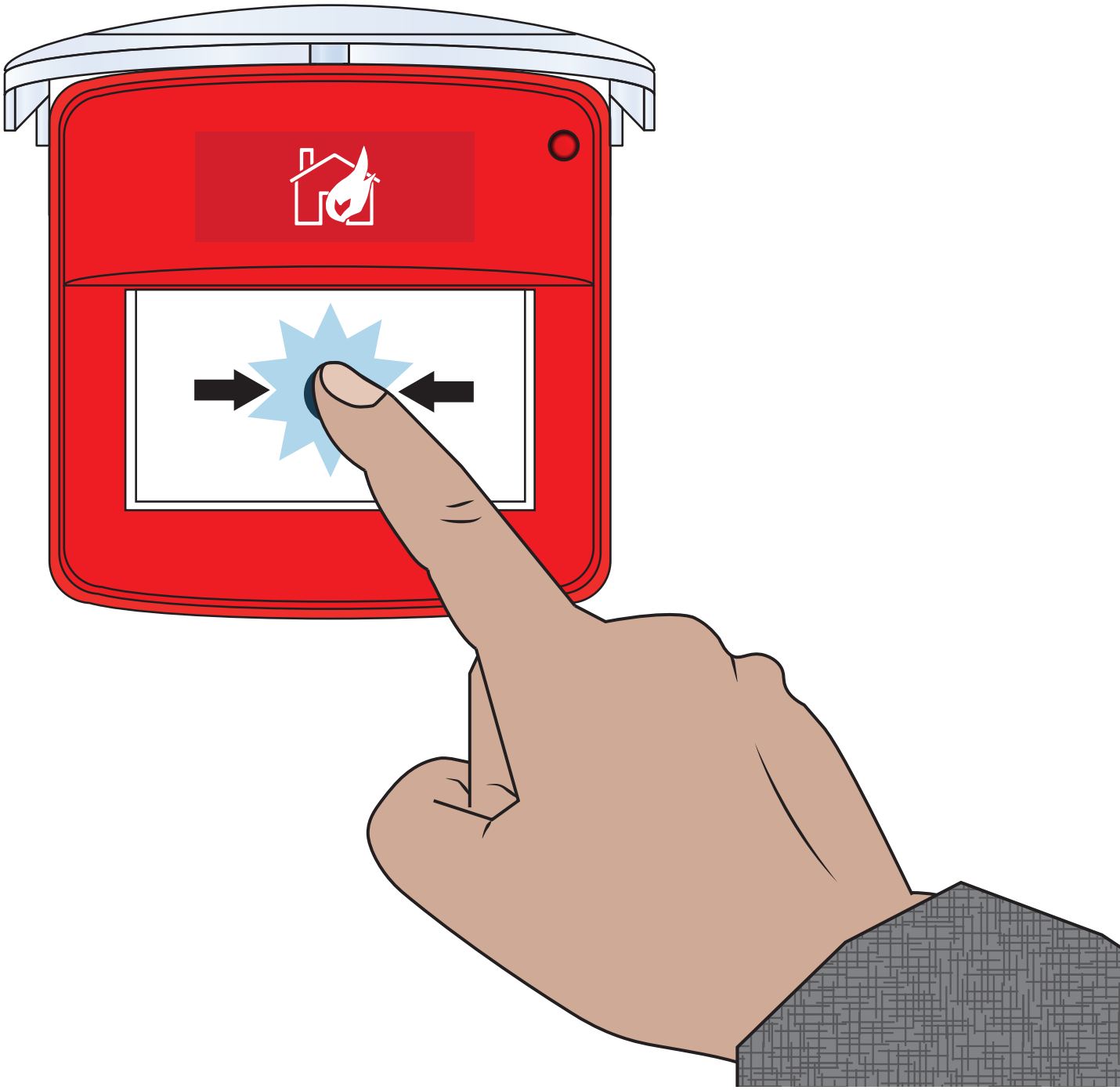
Press the 3 button until the screen will displays:



Press the ✓ button and the screen will display:



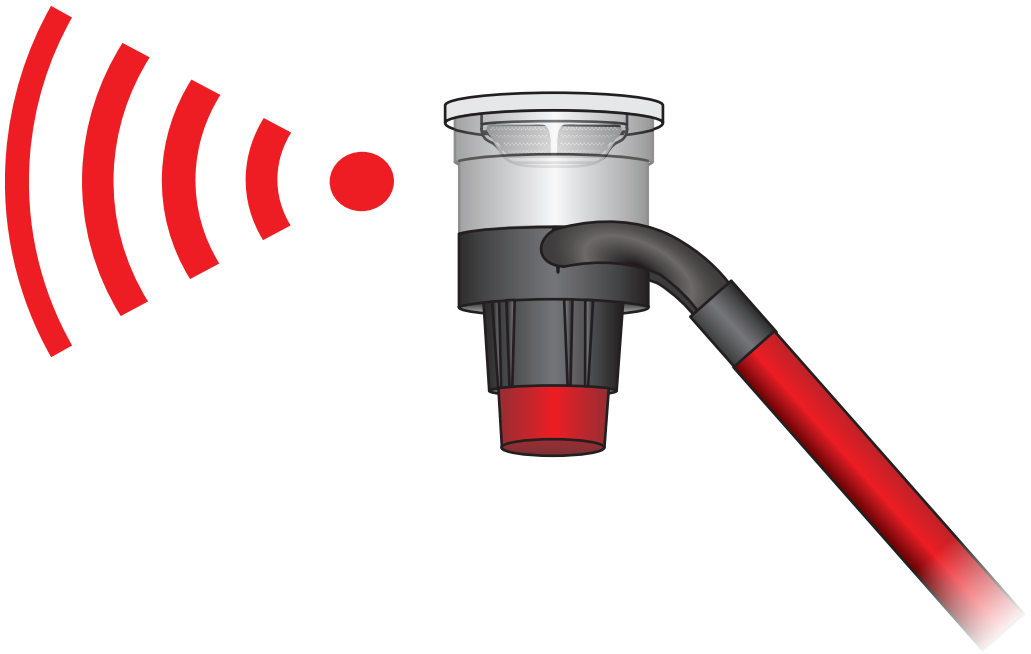
System testing



This section shows how to test the systems devices along with checking device signal and battery levels to ensure they are operating within the correct parameters. This section can be used as a guide. Local fire alarm maintenance procedures should be followed to comply with the relevant standards.

Test devices

Every device should be function tested, to ensure correct functionality.



Smoke detectors should be tested using a smoke detector tester and in accordance with local codes of practice.

Heat detectors should be tested using a heat detector tester and in accordance with local codes of practice.

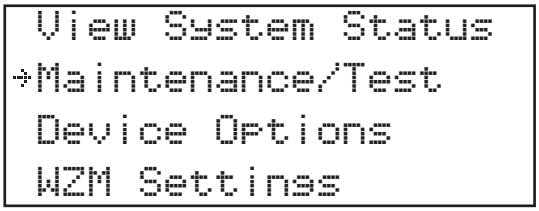
Call Points should be tested in accordance with local codes of practice.

Sounder operation should also be tested in accordance with local codes of practice.

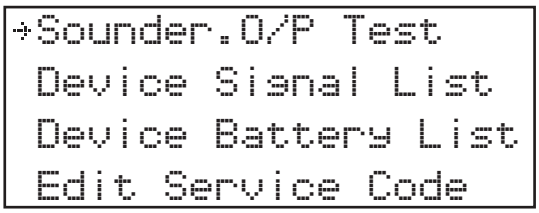
Input / Output devices should also be tested in conjunction with associated 3rd party equipment and in accordance with local codes of practice.

Device signal levels

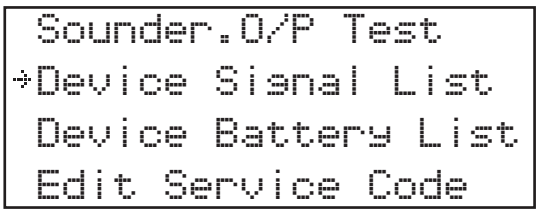
From access level 3 (refer to the 'Access Level 3' section for details), press the 3 button until the screen displays:



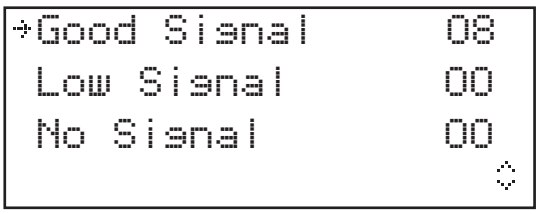
Press the ✓ button and the screen will display:



Press the 3 button until the screen displays:



Press the ✓ button and the screen will display:



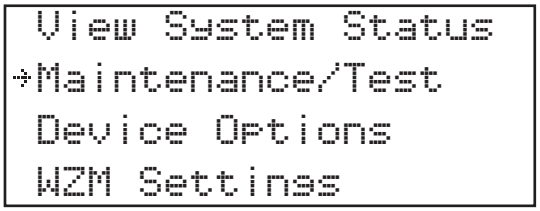
Pressing the ✓ button will provide more information on the category highlighted:

Note: It is important that all devices have 'GOOD' signal levels to ensure the maximum robustness of wireless signalling.

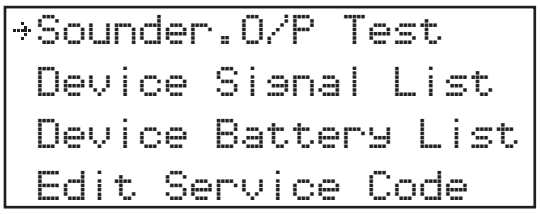
If a device does not achieve a good signal level, refer to the 'How to improve device signal levels' section for additional guidance.

Device battery levels

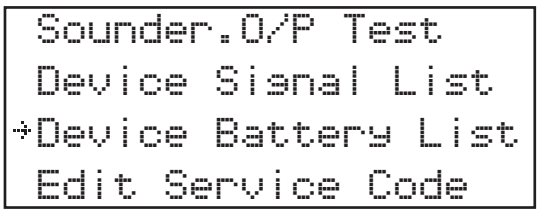
From access level 3 (refer to the 'Access Level 3' section for details), press the 3 button until the screen displays:



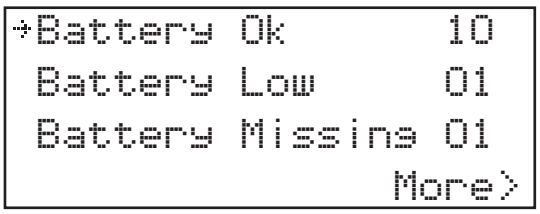
Press the ✓ button and the screen will display:



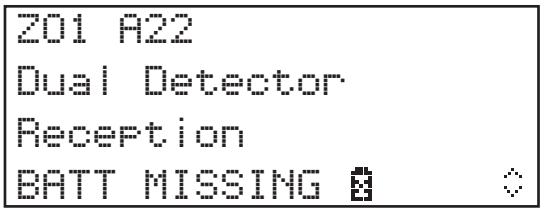
Press the 3 button until the screen displays:



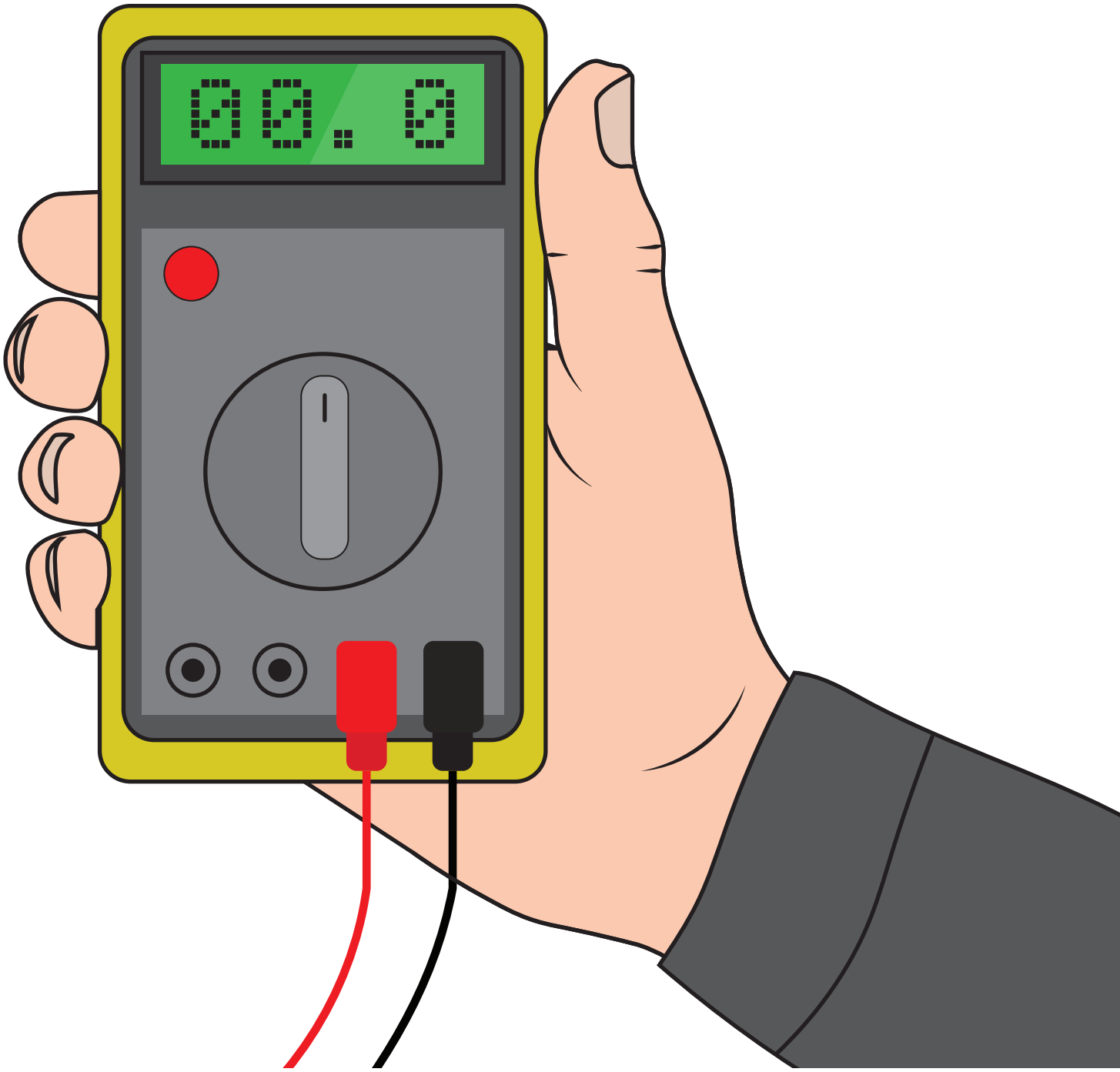
Press the ✓ button and the screen will display:



To view individual devices within specific battery level categories, press the 2 button, whilst the arrow (→) is adjacent to the category to be viewed. Example displays for a device in each category are shown:



Diagnostics



Fault rectification

Device type	Fault displayed	Rectification process
All device types	Battery Missing	Check all batteries are inserted correctly. Check voltage on batteries. Replace batteries if necessary or re-insert correctly.
WZM	Mains Fail	Check the mains supply to the unit.
Detector	Head Fault	It is recommended that the detection device be replaced due to a fault with the head being reported.
Detector	Head Dirty	Clean with compressed air if necessary, as the device is reporting that the chamber is dirty. Check the device is in a clean environment and is free from smoke, dust and dirt.
All device types	Tamper	Check the device is assembled correctly.
Input/output	Open Circuit / Short Circuit	Check the 20 kΩ end of line resistor is in place and that connections are secure.
All device types	Radio signal strength No Signal Fault	Check the devices location to ensure no visible cause can be seen. Check that the device is still powered and has been added to the system. (See the 'How to improve device signal levels' section for more information).
All device types	Battery Low	Replace all device batteries with specified batteries - see the associated device installation guide and replace within 30 days.
WZM	Battery Supply Failure	Check the integrity of the battery and it's connection.
All device types	Low signal	Note: no fault will be indicated as communication is still taking place, albeit at a low signal level. Check the device's location to ensure there is no obvious cause. (See the 'How to improve device signal levels' section for more information).
All device types	Good signal	No action required.
Call point	Fire	Check the device's resettable element is correctly in place and that the yellow area is not being displayed. If shown, reset the device using the reset key.
Detector	Fire	Ensure that the environment in the device's location is free of smoke, residue and dust.

Signal level requirements

To ensure the signal levels for each device are at an acceptable level, the 'Device Signal List' menu should be checked. This menu will display the signal level in two formats. The first format is a system overview that will detail how many devices have a 'GOOD' or 'LOW' signal, or have 'NO SIGNAL'. This can be used as a guide, so if you have a system with ten devices and the overview shows ten 'GOOD' signal levels, then there is no need to view the devices individually. The second format allows you to view each individual device. A pictorial representation coupled with Signal Level Test, is displayed for each device on the system. This is listed in address number order. If any devices are under the signal level requirements, check the 'How to improve device signal levels' section for guidance.

An example system with all devices showing acceptable signal levels is shown below:

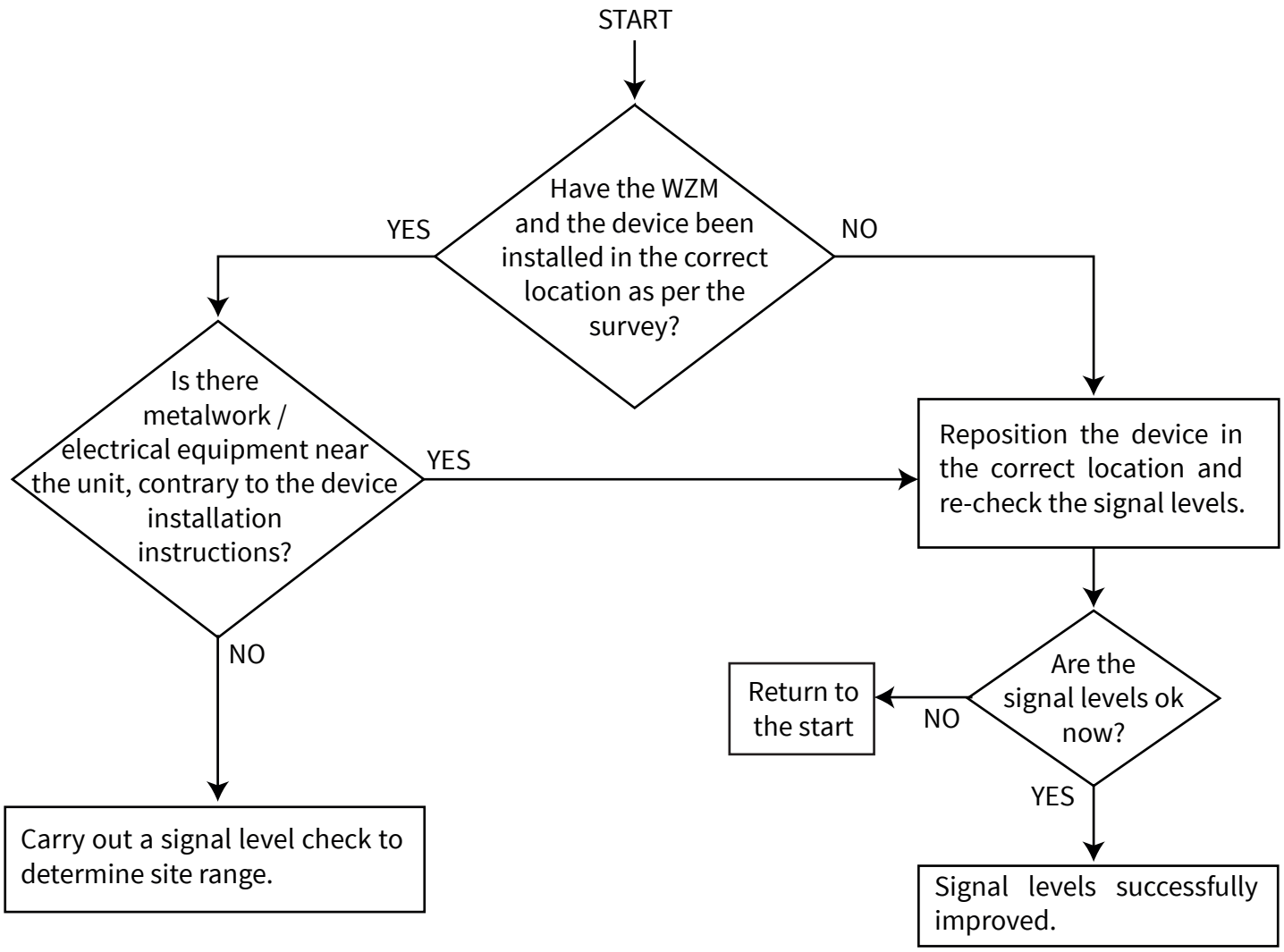
Wireless system setup	Device number	Shown on menu display	Acceptable level
Dual detector	Device 01	Z1 A01 GOOD	✓
Dual detector	Device 02	Z1 A02 GOOD	✓
Dual detector	Device 03	Z1 A03 GOOD	✓
Manual call point	Device 04	Z1 A04 GOOD	✓
Dual detector/ sounder	Device 05	Z2 A05 GOOD	✓
Dual detector/ sounder	Device 06	Z2 A06 GOOD	✓
Dual detector/ sounder	Device 07	Z3 A07 GOOD	✓
Manual call point	Device 08	Z4 A08 GOOD	✓
Manual call point	Device 09	Z4 A09 GOOD	✓
Dual detector	Device 10	Z4 A10 GOOD	✓
Dual detector	Device 11	Z4 A11 GOOD	✓
Dual detector/ sounder beacon	Device 12	Z4 A12 GOOD	✓
Sounder	Device 13	Z4 A13 GOOD	✓

An example system with devices showing both acceptable and unacceptable signal levels is shown below:

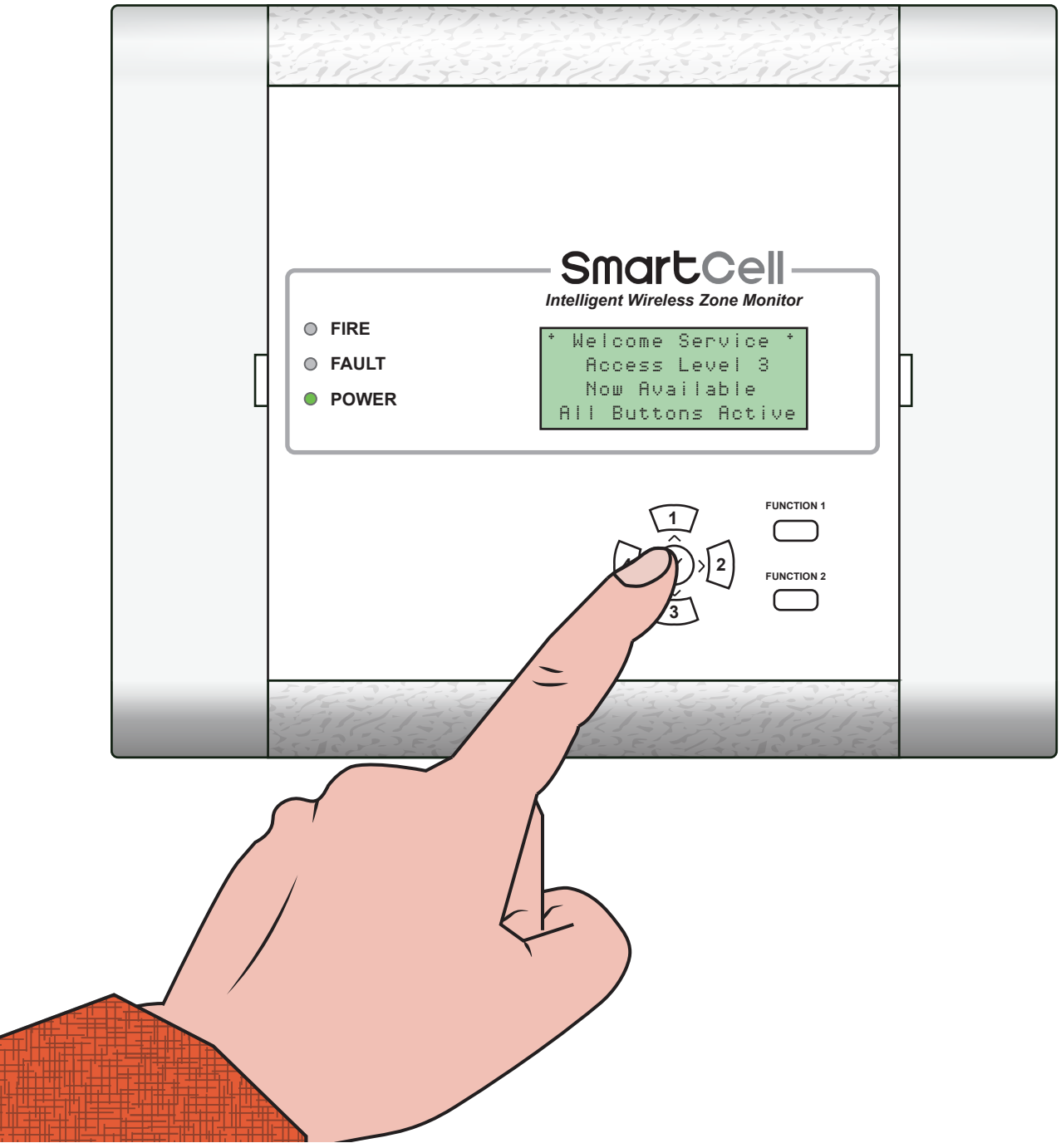
Wireless system setup	Device Number	Shown on Menu Display	Acceptable Level
Dual detector	Device 01	Z1 A01 NO SIGNAL	✗
Dual detector	Device 02	Z1 A02 LOW	✗
Dual detector	Device 03	Z1 A03 GOOD	✓
Manual call point	Device 04	Z1 A04 GOOD	✓
Dual detector/ sounder	Device 05	Z2 A05 LOW	✗
Dual detector/ sounder	Device 06	Z2 A06 LOW	✗
Dual detector/ sounder	Device 07	Z3 A07 GOOD	✓
Manual call point	Device 08	Z4 A08 NO SIGNAL	✗
Manual call point	Device 09	Z4 A09 GOOD	✓
Dual detector	Device 10	Z4 A10 GOOD	✓
Dual detector	Device 11	Z4 A11 GOOD	✓
Dual detector/ sounder beacon	Device 12	Z4 A12 GOOD	✓
Sounder	Device 13	Z4 A13 GOOD	✓

Meeting the acceptable signal levels shown ensures immunity to site attenuation (path loss) is met, as required in clause 4.2.1 and annexe B of EN54-25.

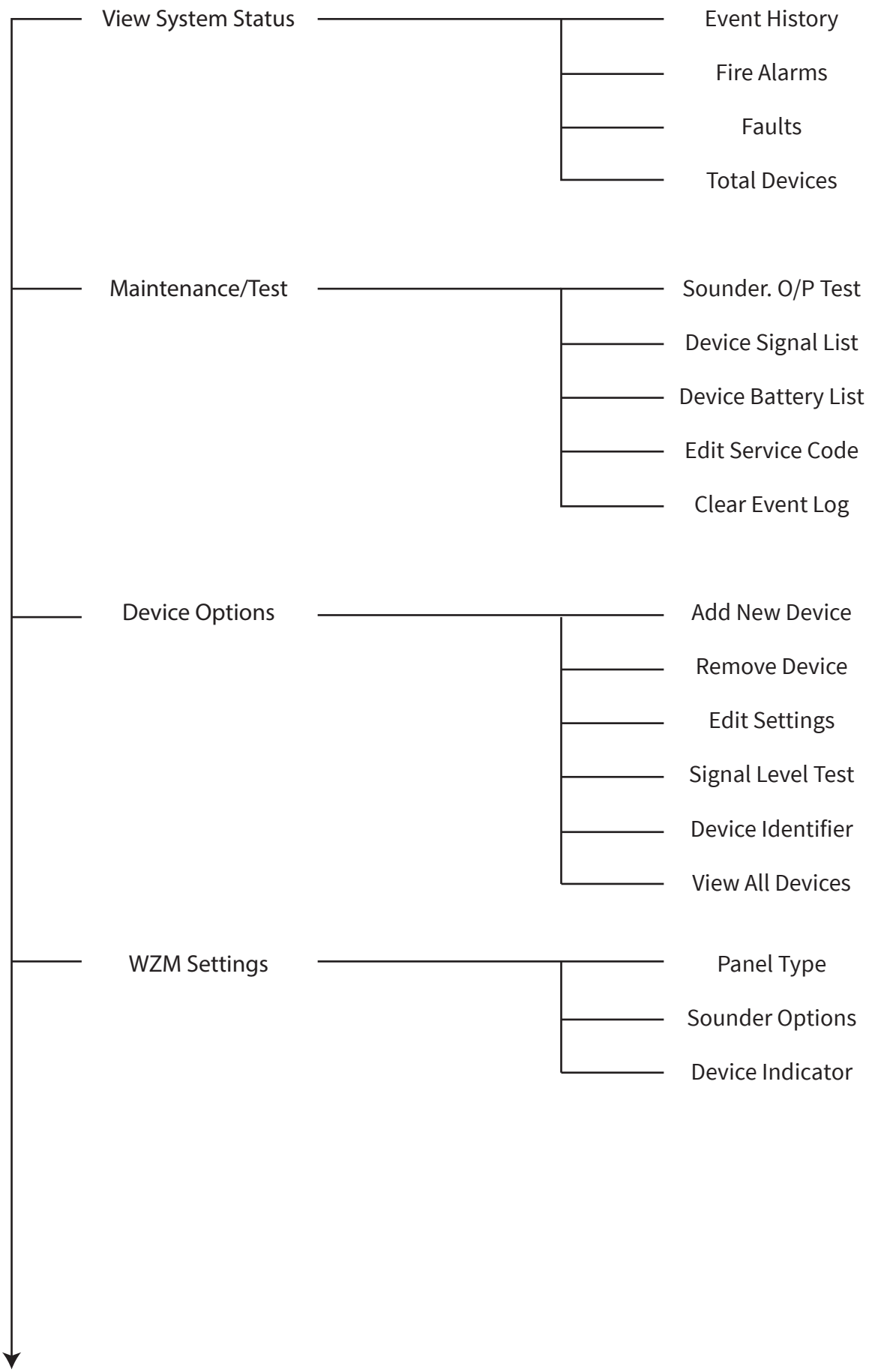
How to improve device signal levels



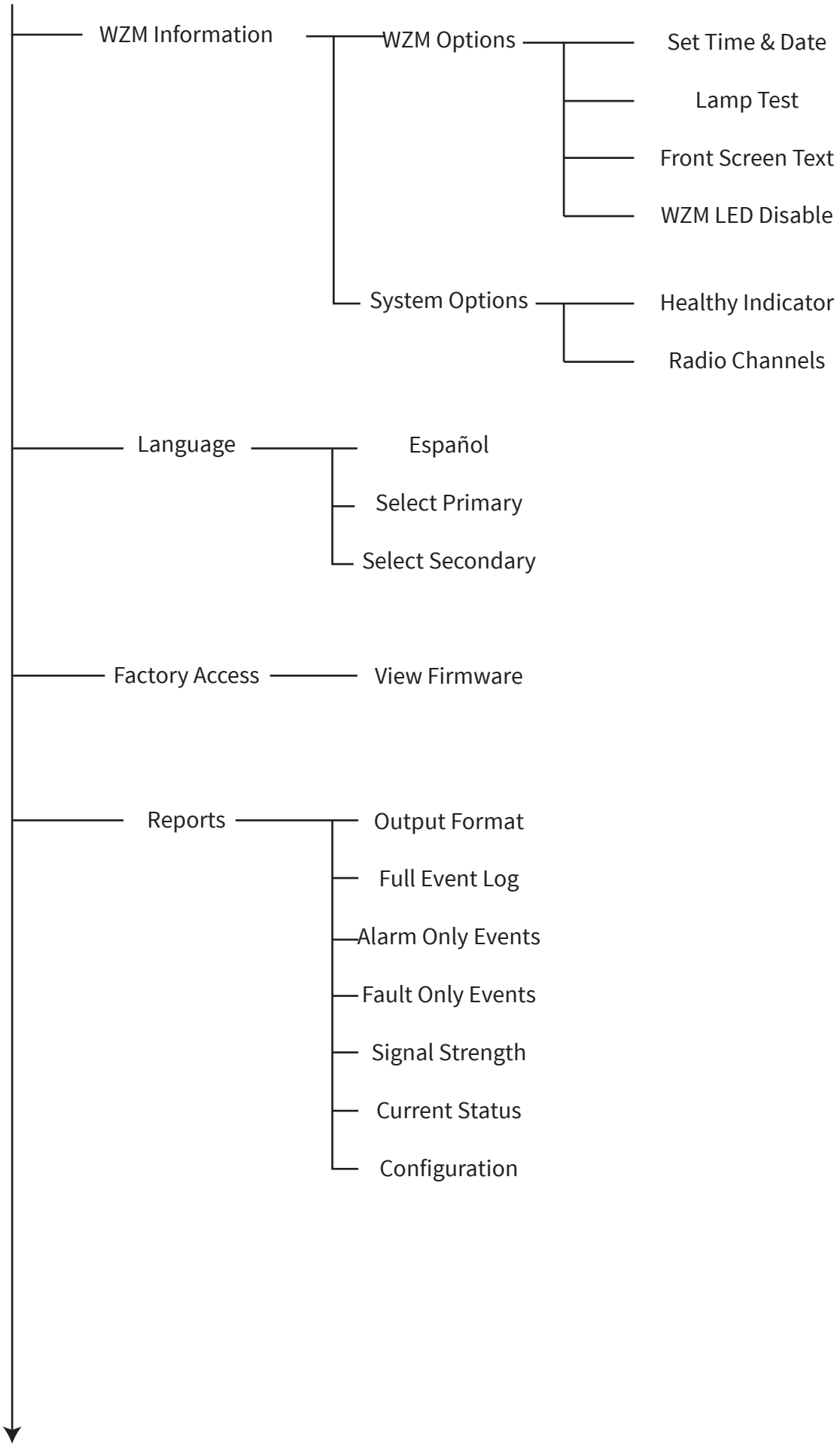
WZM menus



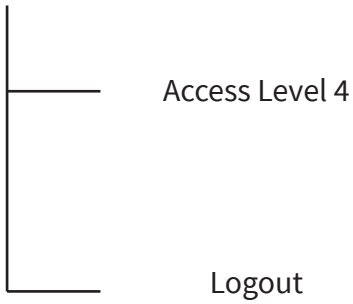
Access level 3 tree view



Continued overleaf...



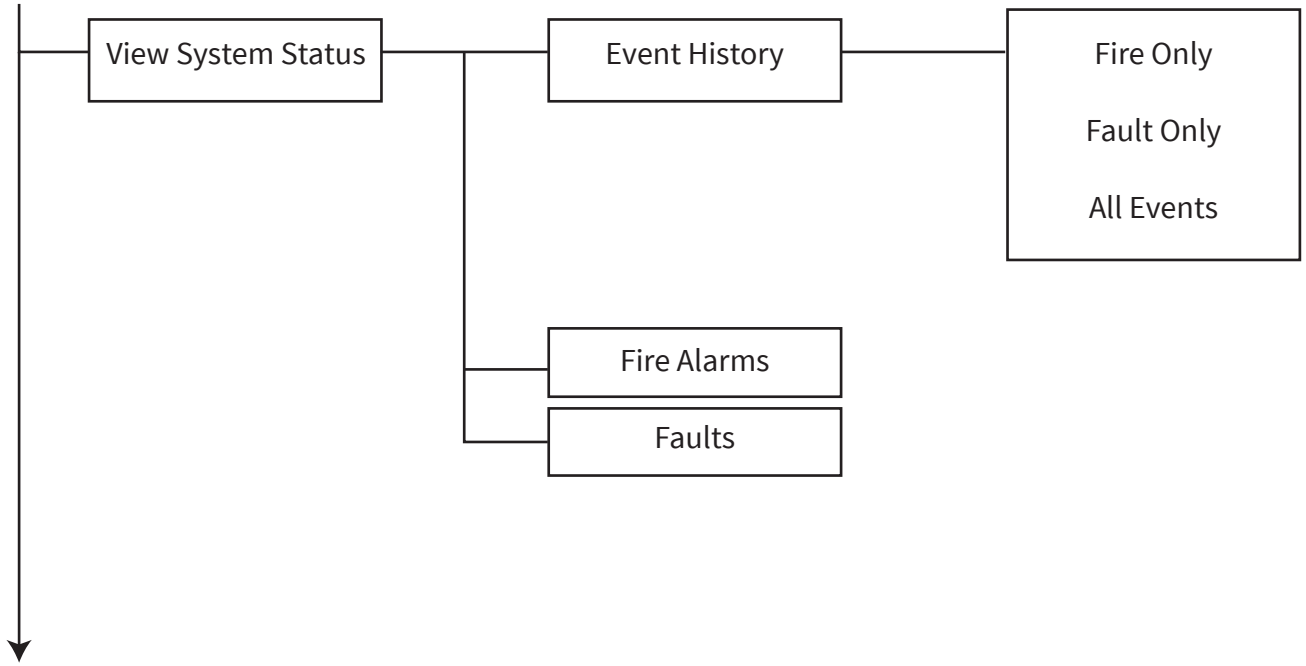
Continued overleaf...



Access level 3 menu options

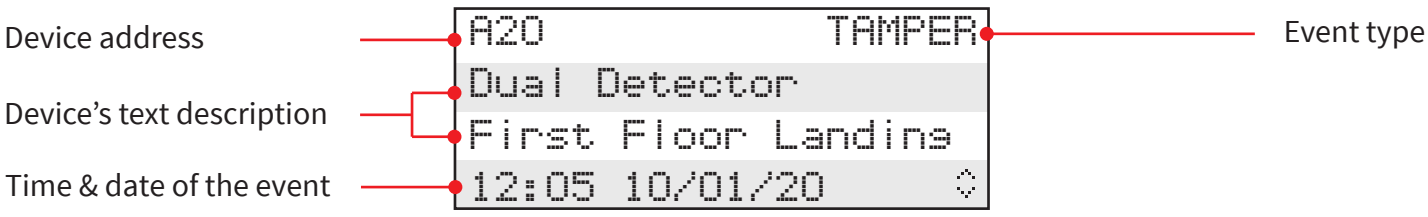
View system status

The view system status menu allows the engineer to view the historical event log, along with viewing the status of individual devices on the system and current disablements/test states. This menu option is shown in detail below:



Event history
When entered, options are available to view filtered 'Fire', or 'Information' events only or alternatively, 'All Events' can be viewed. A total number of events for each option is also indicated. When the event option is entered, the display will show the latest event first. The events can then be scrolled through by using the 1 and 3 buttons. Each log entry records the event type, the device's zone (at the time of the event), the device address (text description if allocated) and time and date at which the event occurred. The event log is a scrolling log, shown in chronological order and will automatically overwrite the oldest events when the 1000 event capacity is reached. The log can however be cleared using an access level 3 code and entering the relevant menu if required. Note: the default access level 3 code is 333333.

The example below shows a historical event, logged for a 'TAMPER' fault on a device.



Fire only
This menu displays the total number of fire alarms that are currently on the system. The total number is shown next to the fire alarm text. Pressing the ✓ button details the individual devices in fire alarm. The devices in fire alarm condition can then be scrolled through, using the 1 and 3 buttons.

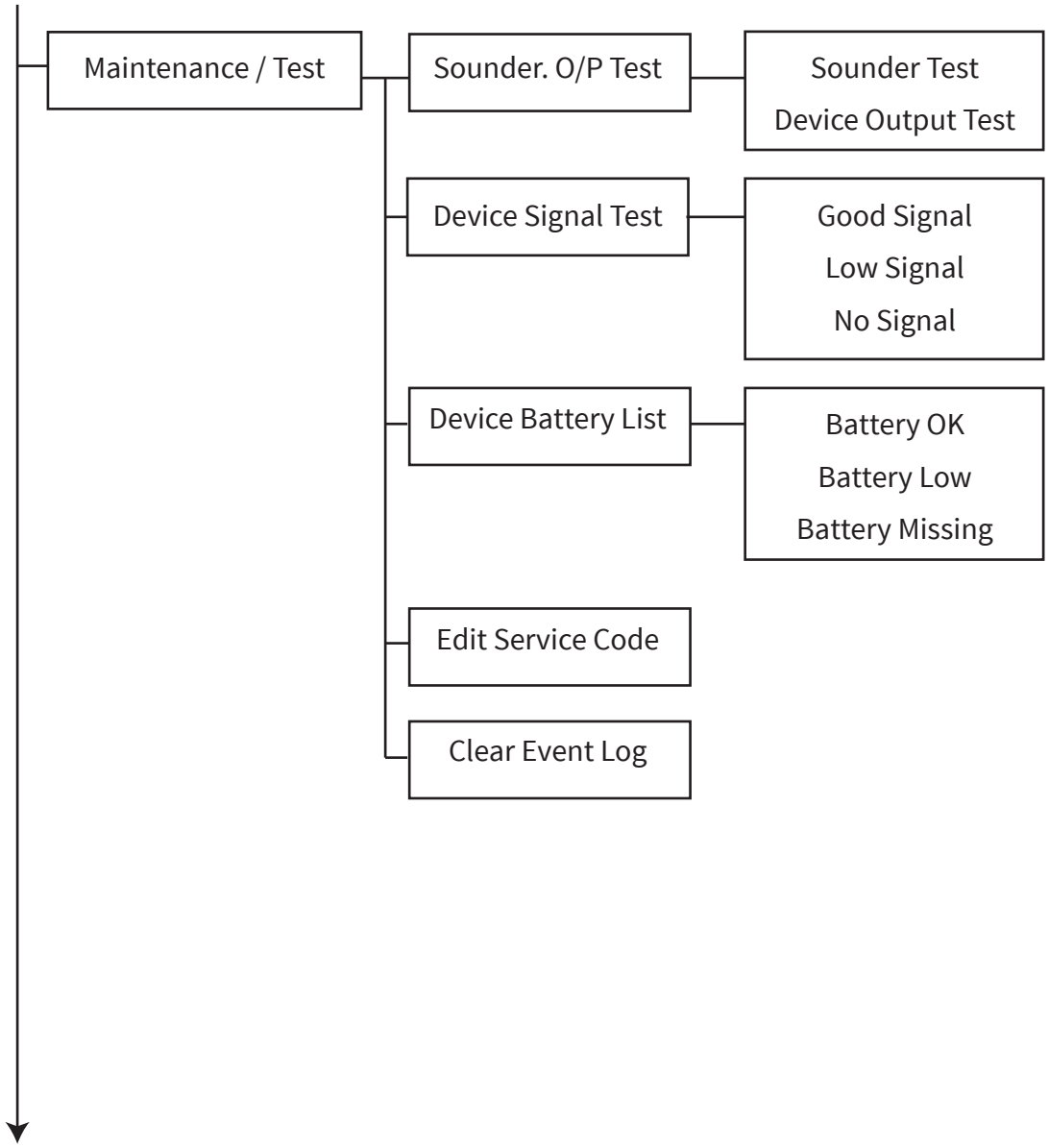
Fault only
This menu displays the total number of faults that are currently on the system. The total number is shown next to the fault text. Pressing the ✓ button will show individual devices in a fault condition. The devices which can be either information or fire devices can be scrolled through, using the 1 and 3 buttons. A fault description will be associated with any devices.

All events
This menu displays the total number of devices on the system. When entered, the individual device details along with it's current status are shown. The device list starts at the lowest address fire and these can be scrolled through, using the 1 and 3 buttons. When all of the fire devices have been scrolled through, the list will subsequently show all of the information devices, again in address number order.

Maintenance/test

This menu option enables the engineer to test devices and to view their test statuses. Additionally, in this menu, individual sounders can be tested and device signal and battery levels can be viewed.

This menu option is fully shown and detailed below:



Sounder O/P Test

This menu option allows the engineer to send individual sounder devices a command to switch its sounder elements on and off. Individual output devices can also be selected to turn the units relay outputs on and off.

Note: If the unit is a dual output device, both outputs will operate.

Device Signal List

This menu option allows the engineer to view signal information for all devices on the system. You can scroll through the list using the 1 and 3 buttons. The signal levels will be shown as GOOD, LOW and NO SIGNAL.

Device Battery List

This menu option allows the engineer to view battery information for all devices on the system. You can scroll through the list using the 1 and 3 buttons. The battery levels will be displayed for each device using BATTERY OK, BATTERY LOW and BATTERY MISSING icons.

Edit Service Code

This menu option allows the engineer to change the four digit service code, that is required for entry to access level 3.

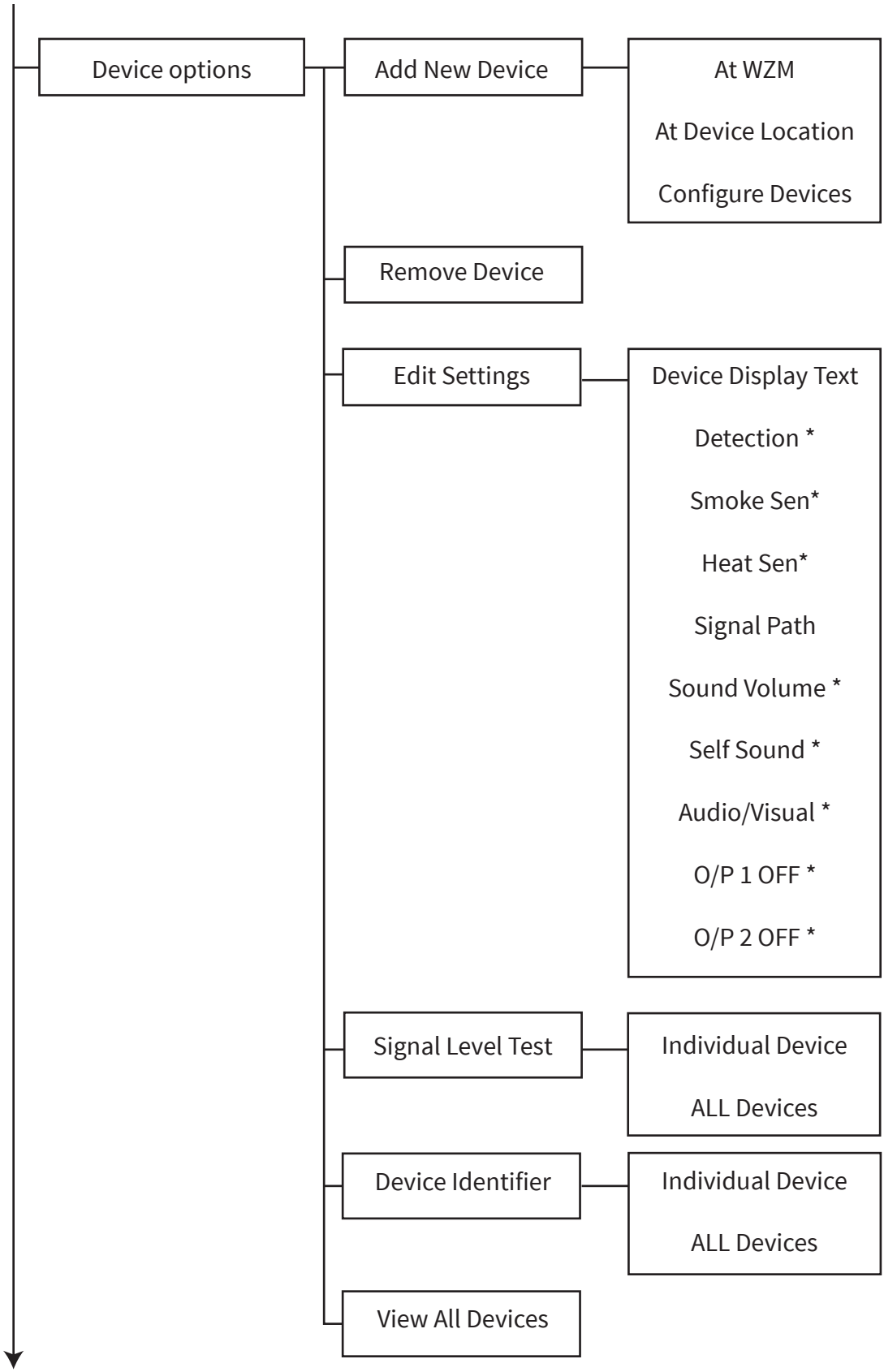
Clear event log

This menu option allows the event log to be cleared.

Device options

This menu allows the engineer to add, remove and replace devices. The user can also edit the devices programming parameters, view device information and identification modes of test operation.

This menu option is fully shown and detailed below:-



* *Option available dependant upon device type*

Add new device

This menu allows all wireless device types to be added to the system. The function allows the device to be added in two different ways. Both methods are shown in more detail below:-

At WZM

This option is used when devices are logged onto the system prior to the devices being installed. The step by step process is shown below:

A) Log on /adding is undertaken whilst standing in front of the WZM with each device.
B) This involves entering the 'Add WZM' menu, then fit the device's batteries.
C) The device details are then received and displayed on the WZM.
D) Check the device ident number shown on screen against the ident shown on the device's barcode label. If correct and details are accepted, the device is added to the WZM.
E) The device can then be installed in the required location.

Add Device Location

This option is usually used when the devices have already been installed and the user requires them to be added to the system via the devices magnetic log on switch. The step by step process is shown below:

A) Log on /adding is undertaken by visiting each installed device.
B) This involves entering the 'Add Device Location' menu and then placing a magnet against the devices magnetic log on switch. *See the 'Magnet log on points' section for device log on points.*
C) The device's LED will flash to indicate that the device has successfully communicated with the WZM.
D) The device details are then received and displayed on the WZM.
E) It is possible to accept the new device, or add another device in the same fashion, therefore creating a list at the WZM.
F) When these details are accepted, the device is added to the WZM.

Remove device

This section allows wireless devices to be removed from the system. A list of devices already allocated to the system are shown, these can be scrolled through by using the 1 and 3 buttons. The required device to be removed can be selected by using the ✓ button.

Edit settings

This menu allows the user to change device text descriptions, allocate the device to a zone, allocate detection type, select detector sensitivity settings, change sounder volume and I/O operation for inputs and outputs. All of the above will have default settings. The available options and the default settings are shown in the following tables for each device type;

Dual detector

Attribute Type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)
Detection	Dual
Smoke Sen	Normal
Heat Sen	58°C static

Fire manual call point

Attribute type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)

Sounder

Attribute type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)
Sounder volume	High

Sounder beacon

Attribute Type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)
Sounder volume	High
Audio/Visual	On

Detector sounder

Attribute type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)
Detection	Dual
Smoke Sen	Normal
Heat Sen	58°C static
Sound volume	High

Detector sounder and beacon

Attribute type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)
Detection	Dual
Smoke Sen	Normal
Heat Sen	58°C static
Sound volume	High
Audio/Visual	On

Dual input / output device

Attribute type	Default setting
Address number	Next available address number on system
Device Display Text	The device type followed by the devices unique ident number (where xx = represents the ident number of the device)
O/P 1 OFF	Reset
O/P 2 OFF	Reset

Signal level test

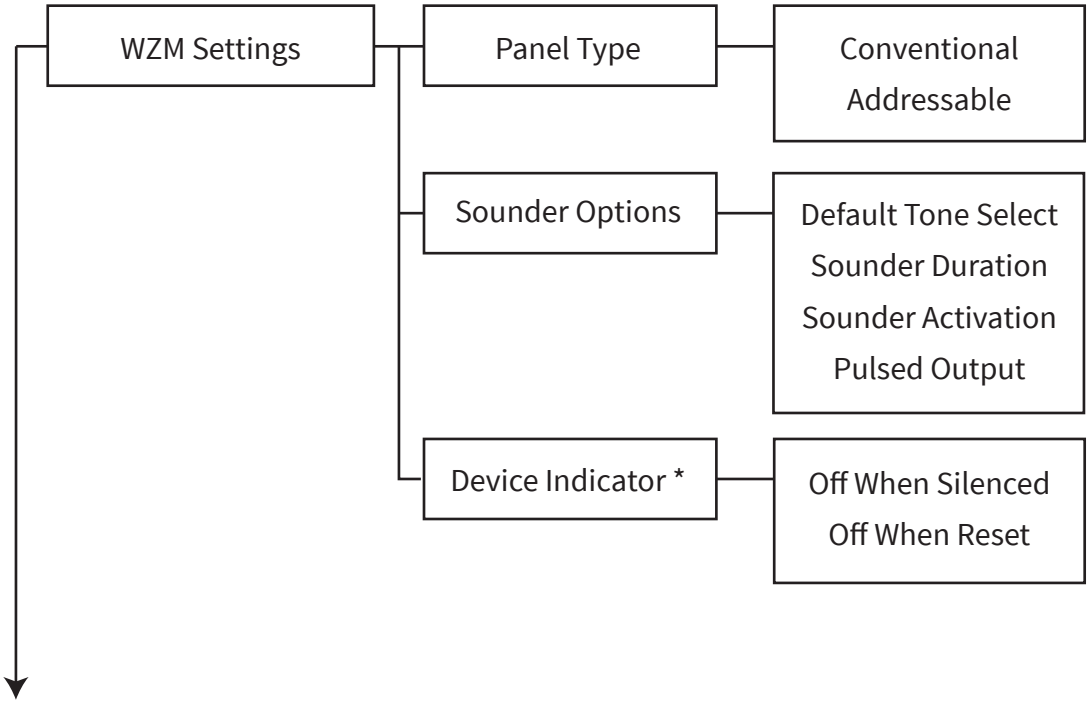
This mode of operation allows the signal strength of a single device on the system or all devices globally on the system to be indicated via the devices on board LEDs. The signal strength level is shown by flashing the individual devices LED to ascertain the devices signal strength level. This is split into two colours :- green for 'GOOD' signal and red for 'LOW' signal. The signal strength status LED would update periodically to allow an updated reading to be shown.

View all devices

When entered the screen will show the current settings for the devices on the system. The device listings can be scrolled through by using the 1 and 3 buttons.

WZM settings

The ‘WZM settings’ menu allows an engineer to program various WZM options. The available options are explained in more detail below.



* Option only available when ‘Panel Type’ is set to ‘Addressable’

Panel type

This menu option changes the operation of the WZM; to work in conjunction with either a conventional fire control panel, or an addressable fire control panel. The default setting is ‘Conventional’.

The LCD front display will state whether conventional mode or addressable mode is selected.

Sounder Options

The operation of the wireless sounders to be programmed in this menu. Available options are as follows:

Default Tone Select
This menu option allows the selection of the default sounder fire alarm tone.

Sounder Duration
This menu option allows has two available options. They are as follows:

- Continuous ‘Upon a fire event, wireless sounders will continue to ring, until they are silenced.
- 30 Min Cut Off ’Upon a fire event, wireless sounders will be automatically switch off after 30 minutes, to conserve battery life. Subsequent fire alarm activations will re-activate the sounders.

The default setting is 30 min cut off.

Sounder Activation
As default, the WZM's wireless sounders will only operate upon the WZM's Fire Input being triggered. This however can be changed, so that sounders operate, upon the activation of one of the WZM's wireless devices.

Pulsed Output
This menu option allows has two available options. They are as follows:

- Fire Relay 'Allows the relay output to change state upon a fire event for a preset period of time. Available durations in seconds are 0 (output off), or 5-60 seconds (in 5 second increments).

- Fault Relay 'Allows the relay output to change state upon a fault event for a preset period of time. Available durations in seconds are 0 (output off), or 5-60 seconds (in 5 second increments).

The default setting is 0 seconds (output off).

Device Indicator

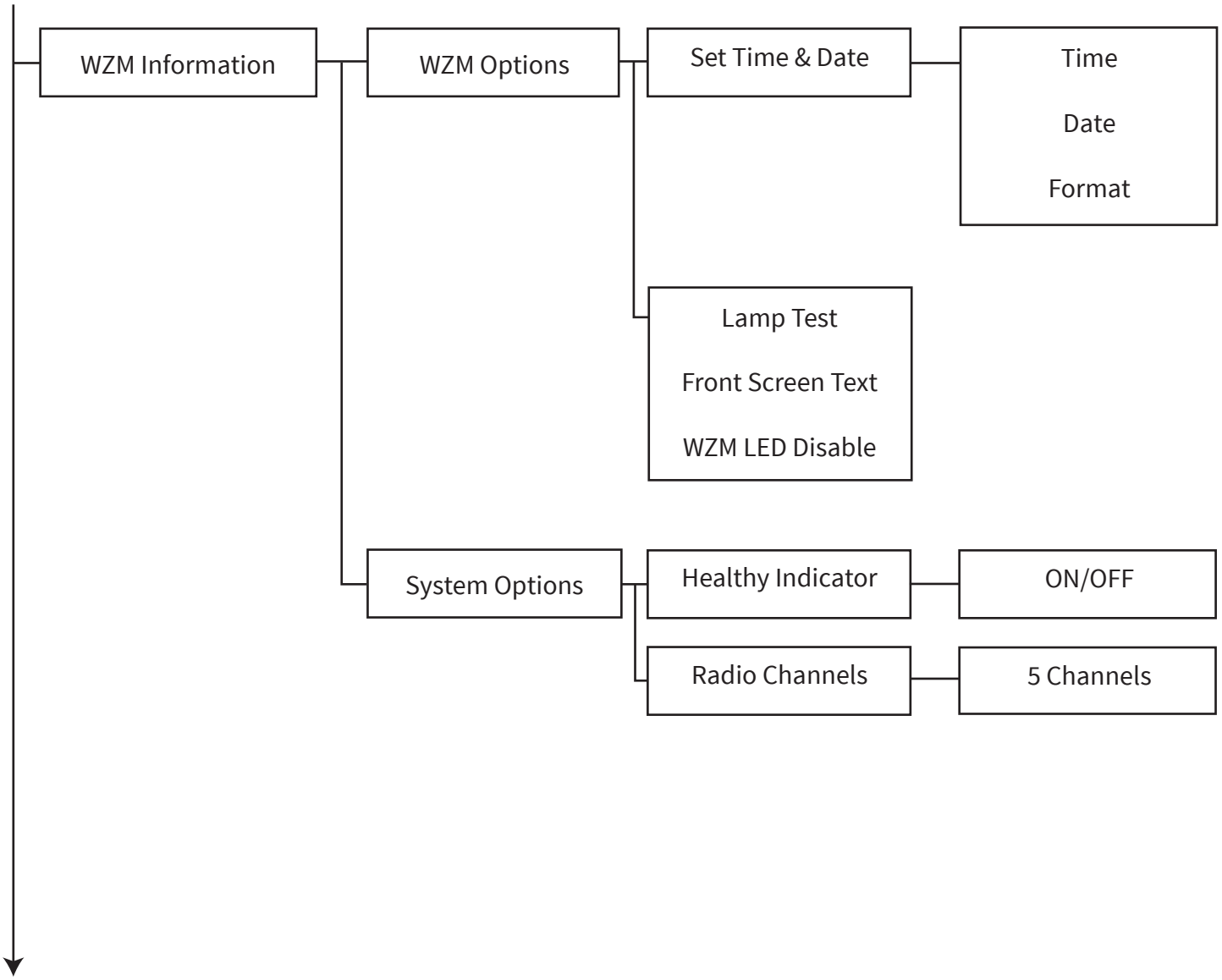
This menu allows the programming of the wireless devices alarm indicator led operation. If the devices led operation is required to be controlled by a separate Reset input (Input 2) then this function should be selected (EN requirement). A change of state will be required on Input 2 when the system is reset. This will allow the Wireless Zone Monitor to send a reset signal to the wireless devices to extinguish their alarm indicator LED's if they have been triggered.

Off When Silenced
This menu allows the method of control for the wireless devices individual alarm indicator to be selected. The options are for the devices indicator which has alarmed and is in the on state to turn off on receipt of a SILENCE command signal. This is generated when the fire input clears (Input 1) and will therefore work the same as sounders on the Zone Monitor.

Off When Reset
This menu allows the method of control for the wireless devices individual alarm indicator to be selected. Alternatively the devices indicator can be selected so it extinguishes only after a RESET command (Input 2 clear) has been activated. This requires a reset input wired from the control panel to Input 2 on the Wireless Zone Monitor. When this input is activated and subsequently clears a reset signal can be sent. This can be therefore be wired into a relay which changes state on a reset event or returns to a normal state when the panel is reset. The default operation is to turn off on a Silence command when the fire input clears (Input 1).

WZM information

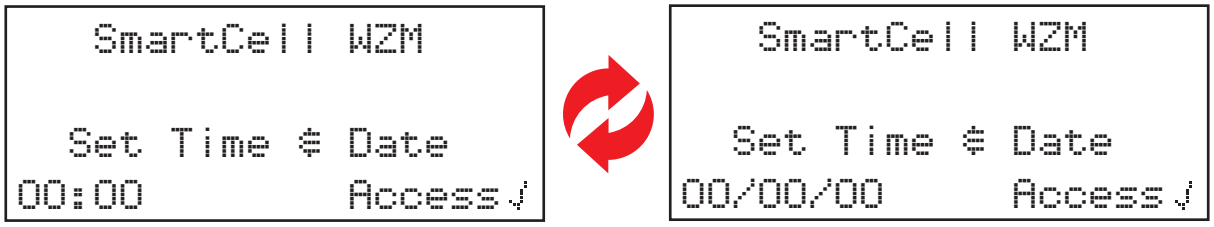
The ‘WZM information’ menu allows an engineer to program various WZM options. The available options are explained in more detail below.



WZM Options

Set time & date
The ‘Set Time & Date’ menu allows an engineer to program the systems time and date. The time will be displayed on the WZM display and the time and date is also used for time stamping events in the event log. This menu option also allows the date format to be changed.

If the time and date is not set on the WZM the following display will be shown:



Lamp Test
This option when entered performs a lamp test on the WZM.

Front Screen Text
The front screen text can be edited in this menu.

WZM LED Disable
This menu option allows the engineer to disable the WZM’s external status LEDs.

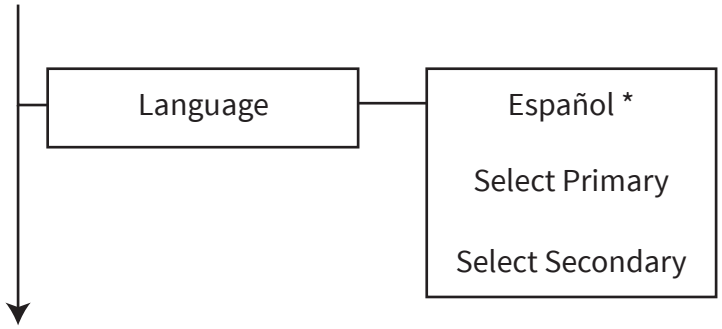
System Options

Healthy Indicator
The system has the capability of showing on each individual device a health indication LED. This menu allows this functionality for the devices to be selected. The default setting is for the LED to flash on a device every poll, which is every 2 minutes. If the device is in a fault free healthy condition this will flash green, if the device is in any fault condition the flash will be a yellow flash. Once the device is fault free the indicator LED will return to green. This indication feature can be turned ‘ON’ or ‘OFF’ from this menu.

Radio Channels
This menu allows you to view the frequency channels currently used by the system. The radio channels used for the system are factory set. Any monitoring and channel changes can be undertaken using the configuration tool.

Language

The ‘Language’ menu allows an engineer to display the WZM’s menus in a secondary language, plus the ability to program the WZM’s primary and secondary languages.



* Example showing Spanish as the secondary language.

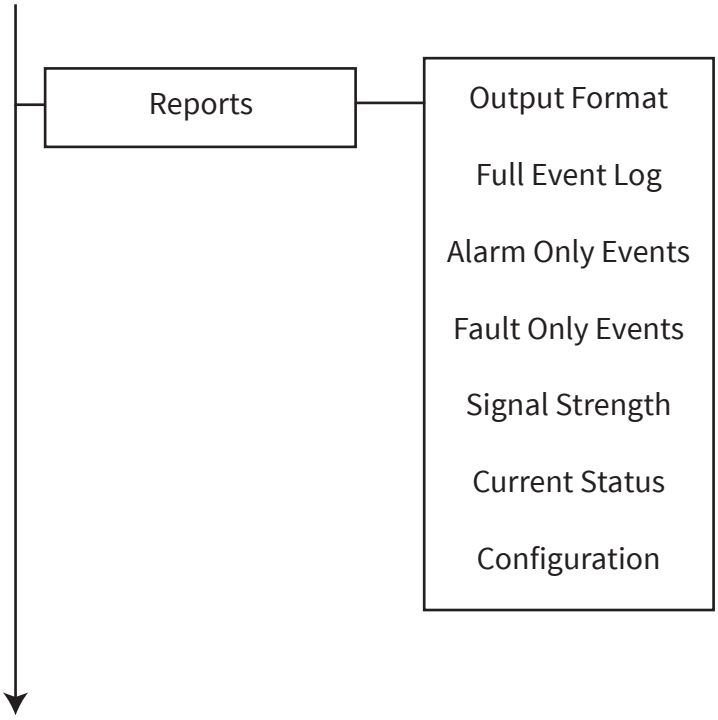
Secondary language select
The language option which has been programmed as the secondary language for the WZM is shown on the top line of the display. Once selected the menu structure will be displayed in this language for the time duration that the user has menu access to the WZM. When the menu structure has been exited to the front display and after a further 30 seconds of inactivity, the system will revert back to the primary language.

Select primary
When this option is entered the languages that are available for use as the WZM’s primary language are able to be selected.

Select secondary
When this option is entered the languages that are available for use as the WZM’s secondary language are able to be selected.

Reports

A number of reports are available to be written to a USB memory stick, connected to the WZM's USB-A connection. These can be saved or printed out accordingly thereafter. The available options are explained in more detail below.



Output format
When selected, exported data can be downloaded in 'CSV', 'JSON' and 'XML' formats.

Full event log
When selected, the full event log will be downloaded.

Alarm Only Events
When selected, an event log containing alarm events only will be downloaded.

Fault Only Events
When selected, an event log containing fault events only will be downloaded.

Signal strength
When selected, all device signal levels including current, minimum and maximum levels will be downloaded. These are displayed as 'GOOD', 'LOW', 'NO SIGNAL', along with their associated level in dB.

Current status
When selected, the current status information from all devices will be downloaded.

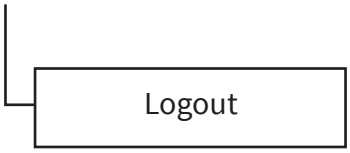
Configuration
When selected details of the full system setup including all zone, device details and WZM programmed parameters will be downloaded.

Access level 4

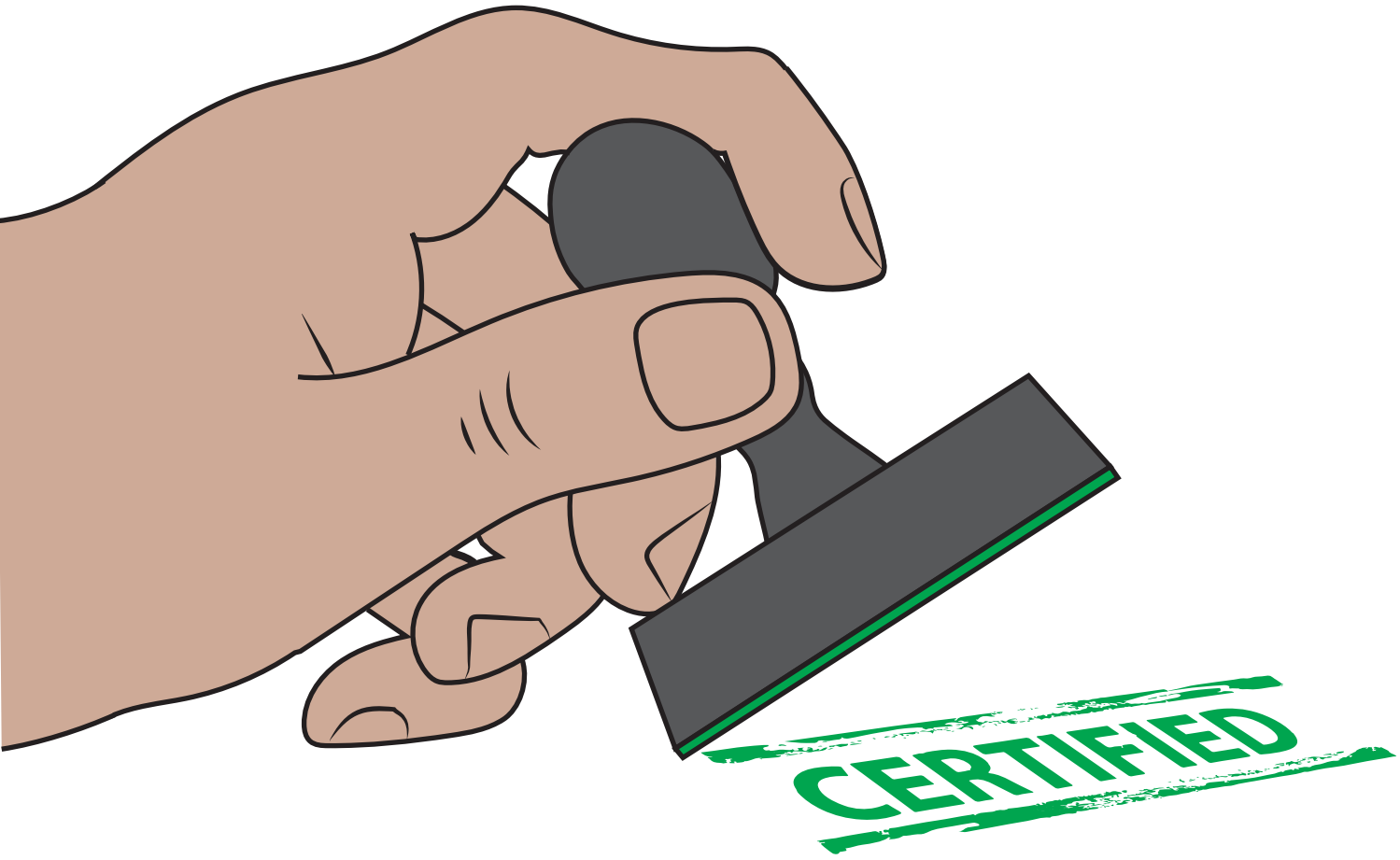
This option allows the ability for an access level 4 factory access code to be entered. At access level 4, all the WZM's controls are functional and the WZM's factory menu is fully accessible allowing full software configuration. Access level 4 access is reached by entering the factory access code.

Logout

When selected the logout option will return the user to the front display immediately. Access to the WZM's menus would need to be re-started I.e. access code re-entered.

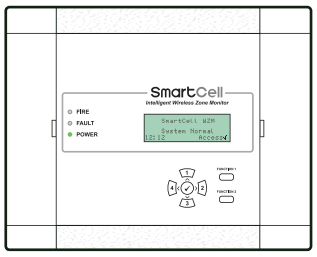


Product conformance



Compatible wireless fire products and details of their conformance and part numbers are listed below:

Wireless Zone Monitor

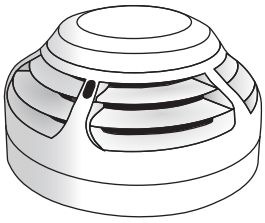


CPR certificate DoP:
0359-CPR-00427

Approved to:
EN54-13, EN54-18 and EN54-25.

Part numbers:	Variation:
SC-13-1100-0001-99	Intelligent Wireless Zone Monitor (230 VAC version)
SC-13-2100-0001-99	Intelligent Wireless Zone Monitor (24 VDC version)

Wireless dual smoke / heat detector

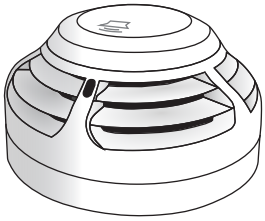


CPR certificate DoP:
0359-CPR-00265

Approved to:
EN54-5, EN54-7, EN54-13 and EN54-25.

Part number:	Variation:
SC-21-0200-0001-99	Dual smoke / heat detector

Wireless dual smoke / heat detector and combined sounder

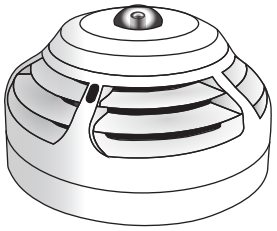


CPR certificate DoP:
0359-CPR-00268

Approved to:
EN54-3, EN54-5, EN54-7, EN54-13 and EN54-25.

Part number:	Variation:
SC-22-0200-0001-99	Dual smoke / heat detector and combined sounder

Wireless dual smoke / heat detector & combined sounder beacon

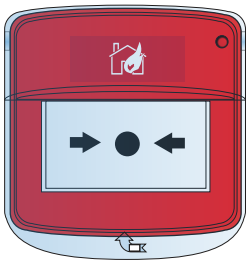


CPR Certificate DOP:
0359-CPR-00268

Approved to:
EN54-3, EN54-5, EN54-7, EN54-13, EN54-23 and EN54-25.

Part Numbers:	Variation:
SC-23-0220-0001-99	Dual smoke / heat detector and combined sounder-beacon (VAD white flash)

Wireless fire manual call point

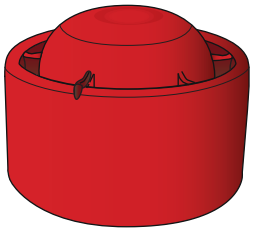


CPR certificate DoP:
0359-CPR-00266

Approved to:
EN54-11, EN54-13 and EN54-25.

Part number:
SC-51-0100-0001-99

Wireless sounder

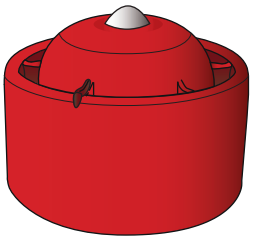


CPR certificate DoP:
0359-CPR-00428

Approved to:
EN54-3, EN54-13 and EN54-25.

Part numbers:	Variation:
SC-31-0100-0001-99	RED sounder
SC-31-0200-0001-99	WHITE sounder

Wireless sounder and ceiling beacon

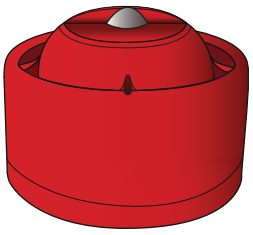


CPR certificate DoP:
0359-CPR-00428

Approved to:
EN54-3, EN54-13, EN54-23 and EN54-25.

Part numbers:	Variation:
SC-33-0120-0001-99	RED sounder and ceiling beacon (VAD white flash)
SC-33-0220-0001-99	WHITE sounder and ceiling beacon (VAD white flash)

Wireless sounder and wall beacon



CPR certificate DoP:
0359-CPR-00428

Approved to:
EN54-3, EN54-13, EN54-23 and EN54-25.

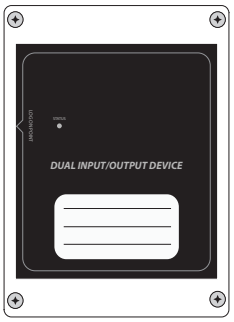
Part numbers:	Variation:
SC-32-0120-0001-99	RED sounder and wall beacon (VAD white flash)
SC-32-0220-0001-99	WHITE sounder and wall beacon (VAD white flash)

Wireless dual input dual output device

CPR certificate DoP:
0359-CPR-00269

Approved to:
EN54-13, EN54-18 and EN54-25.

Part number:
SC-41-0200-0001-99



SmartCell

www.mysmartcell.co.uk

MK067-0001-99 (Issue 1) 04/11/2020 AJM