



SmartCell Wireless Gateway Programming Guide

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Chapter 1

Introduction

Summary

The introduction outlines safety and handling guidelines, packaging and access details, and a system overview including device addressing and log-on methods. It also highlights gateway features and explains how to navigate menus and view events.

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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.

Access codes

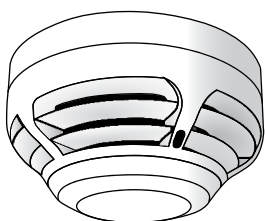
The user will be prompted to change the default access code immediately upon installation. Consider changing frequently to prevent unauthorised access.

Equipment familiarisation

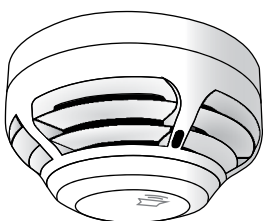
It is important to establish which devices have been supplied for the installation. Examples of each of the systems products are shown below:



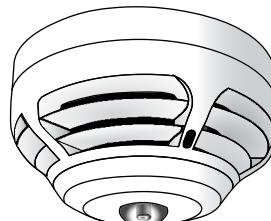
Wireless Gateway



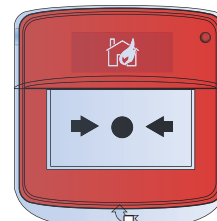
Wireless dual smoke / heat detector



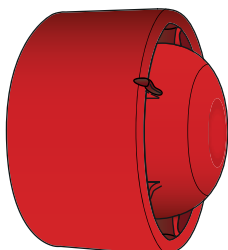
Wireless dual smoke / heat detector & combined sounder



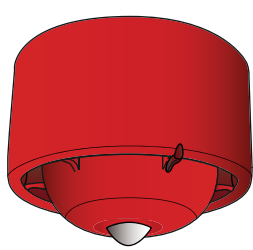
Wireless dual smoke / heat detector & combined sounder beacon



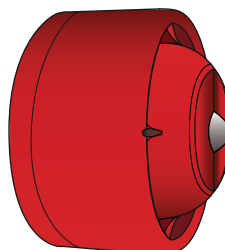
Wireless manual fire call point



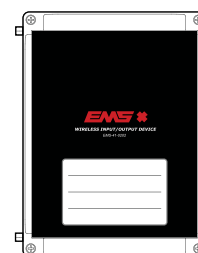
Wireless sounder



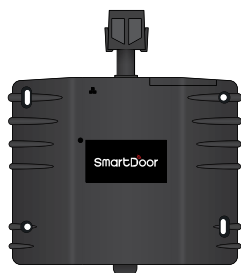
Wireless sounder & ceiling beacon



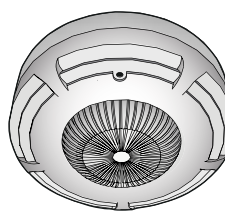
Wireless sounder & wall beacon



Wireless input / output device



SmartDoor

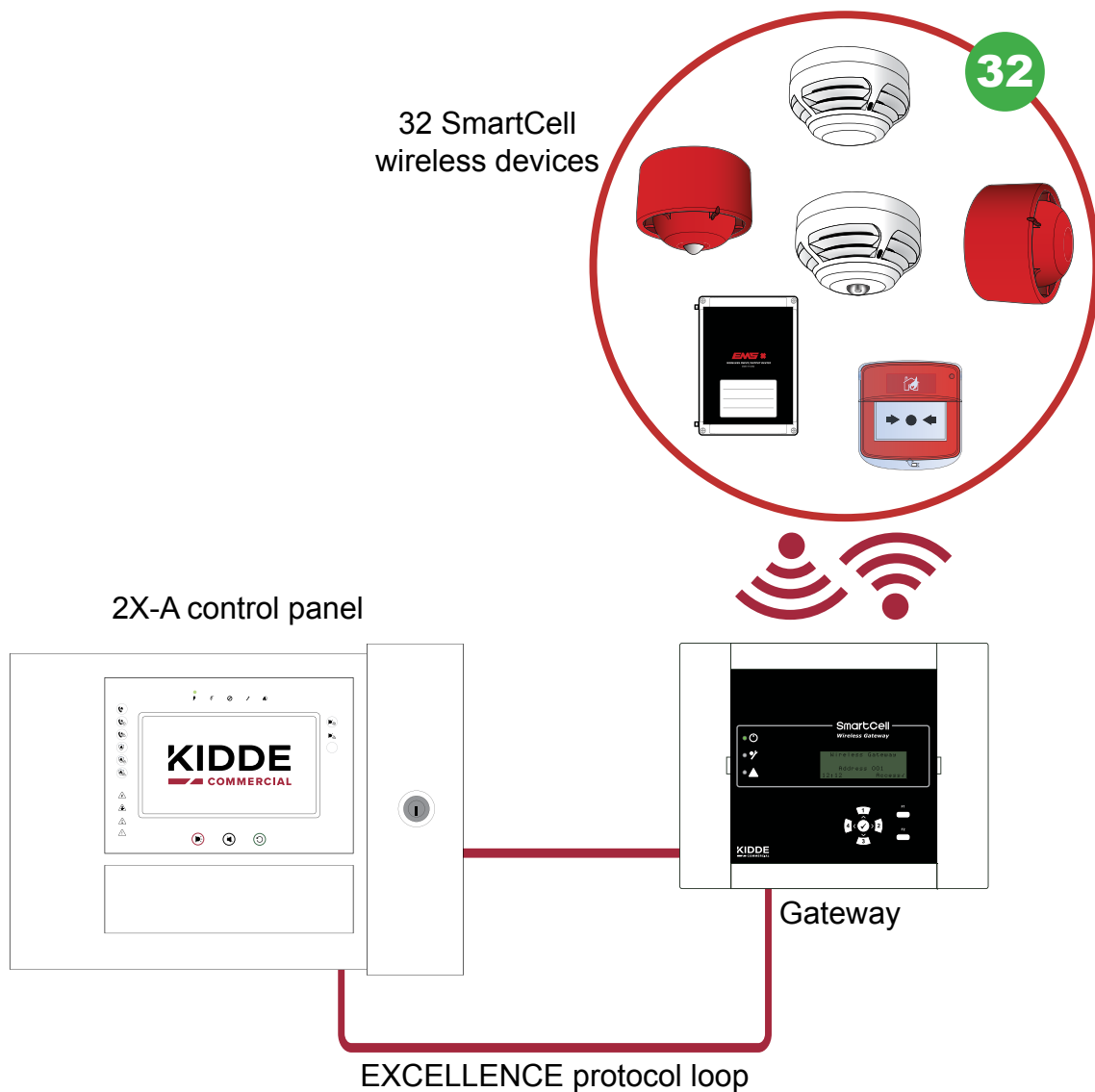


Wireless remote indicator

System overview

The SmartCell Wireless Gateway connects to the loop of a 2X-A Series Fire Alarm Control Panel running the EXCELLENCE loop protocol.

A maximum of 4 Gateways can be connected to a loop and each Gateway can accommodate up to 32 wireless fire devices.



System design

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

Wireless Gateway

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

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 Gateway. The default sensitivity is setting 8.

Sensitivity is programmable at the control panel.

Setting	Smoke sensitivities	Heat Sensitivities
1	Standard	OFF
4	OFF	58°c fixed
5	OFF	58°c rate of rise
6	OFF	72°c fixed
7	OFF	72°c rate of rise
8	Standard	58°c fixed
9	Standard	58°c rate of rise
10	Standard	72°c fixed
11	Standard	72°c rate of rise

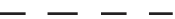
Wireless fire sounders and beacons

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 at high volume.

Sounders have 32 tones available.

Sounder and beacons are programmable at the control panel.

Available tones are shown overleaf:

STONE	STONE TYPE	STONE 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 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
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.

Input / output devices

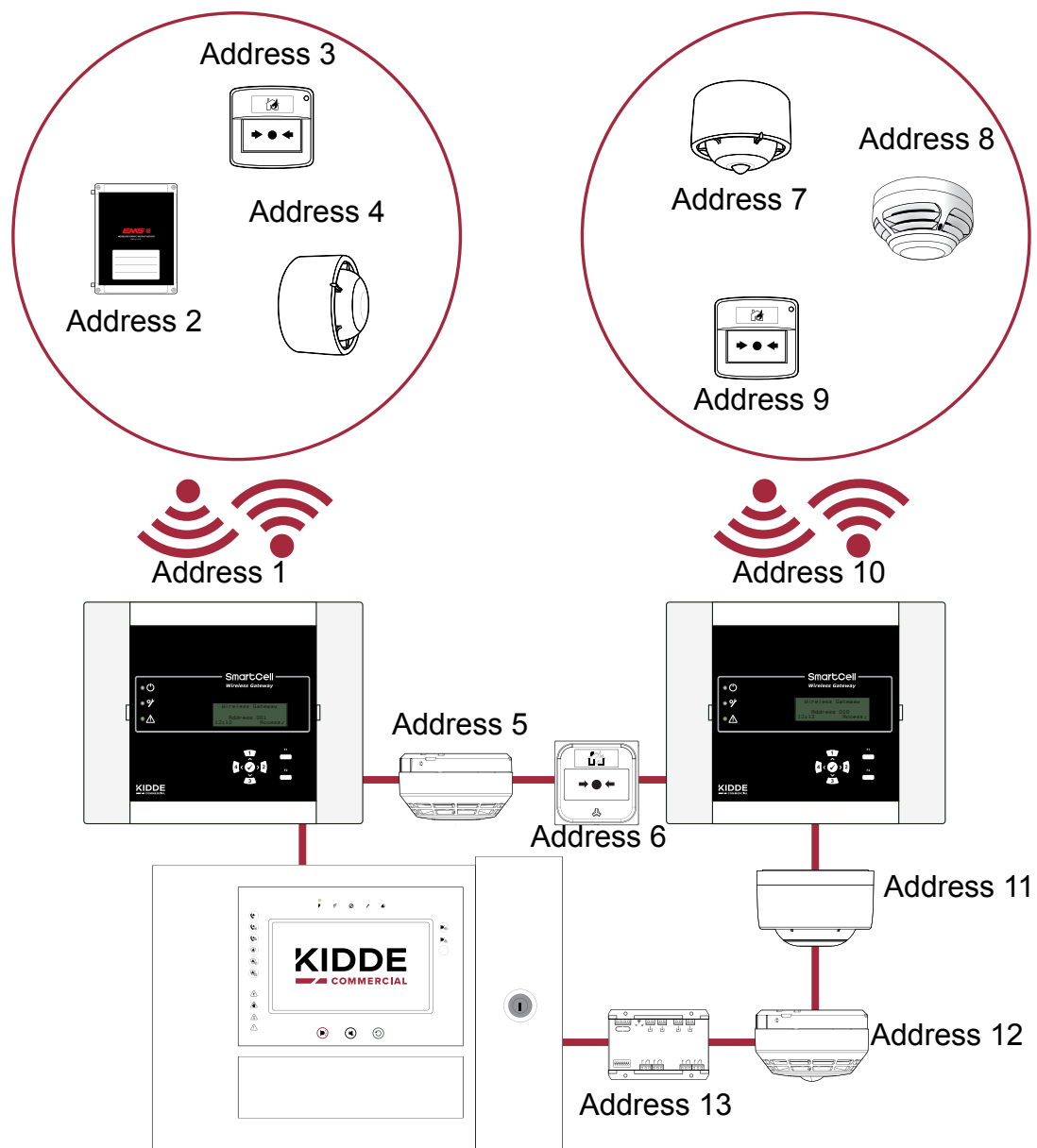
Input / output devices have two resistor monitored fire inputs and two fire relay outputs. Both fire relay outputs are rated 1 A at 30 VDC.

Device addressing

Addresses set for the Gateways and wireless devices will be the loop addresses displayed at the control panel.

Care must be taken to ensure that all devices on the control panel's loop are unique to avoid any double addressing.

The example below illustrates the unique device addressing required for all Gateways, wireless devices and hardwired devices programmed on the same loop.



Device log on methods

Devices can be programmed to the Gateway in three ways, for maximum flexibility. They are as follows:

Method 1 ‘at Gateway’ (recommended)

This is the recommended method for adding devices. It involves powering the device at the Gateway, by inserting the 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 Gateway and involves applying a 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.



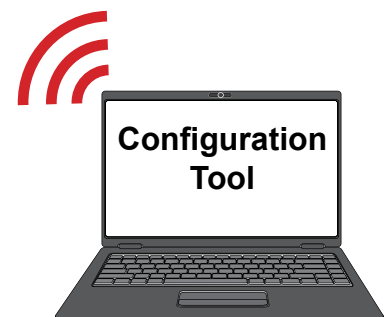
Note: Magnet not supplied.

Note: SmartDoor does not have a magnet type device log on point. Instead it has an alternative log on button.

Refer to the [Device log on points](#) section for details on each device’s log on point.

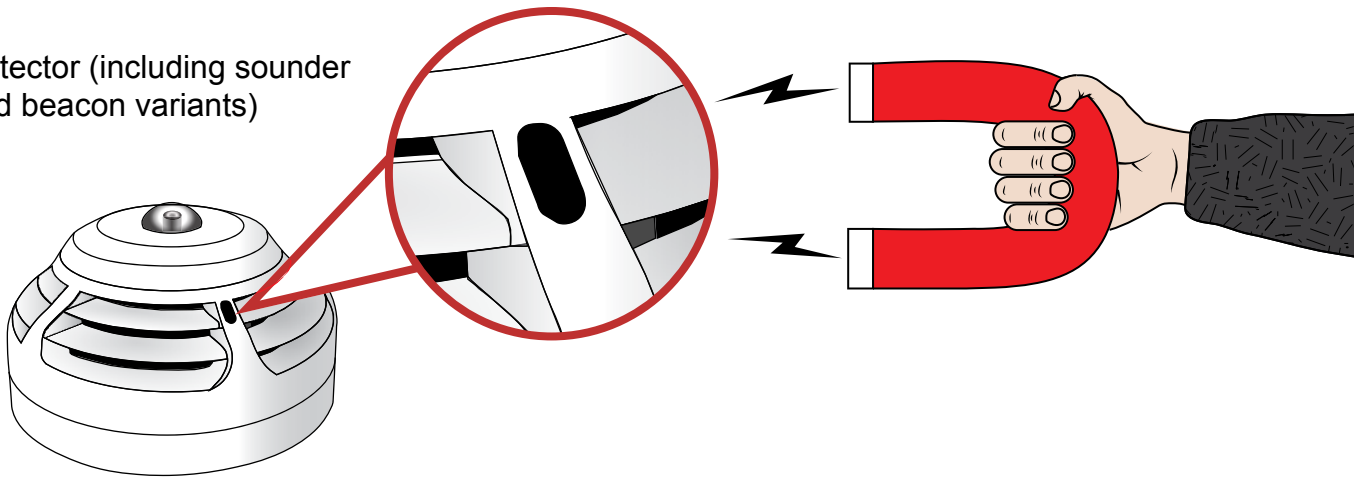
Method 3 via the SmartCell configuration tool

This method allows devices to be programmed on a PC or Laptop and can be achieved locally with a USB cable.

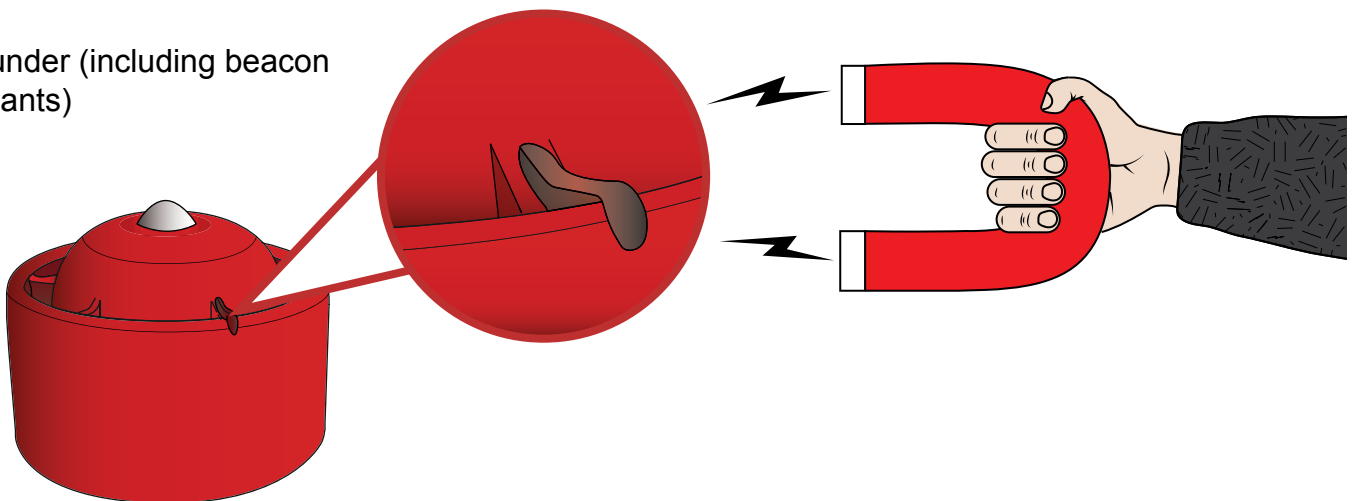


Device log on points

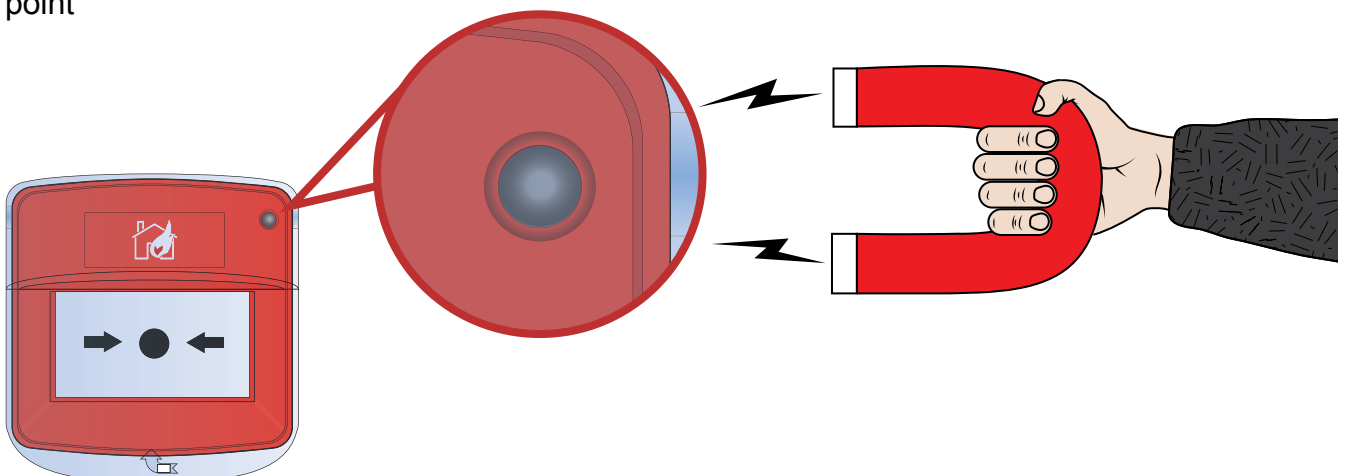
Detector (including sounder and beacon variants)



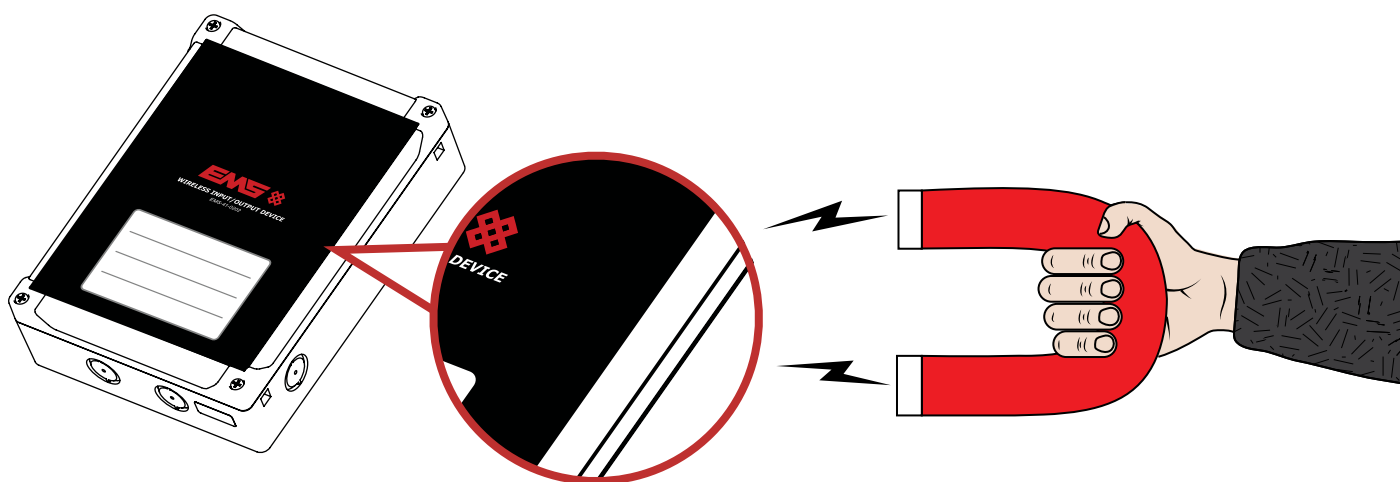
Sounder (including beacon variants)



Call point

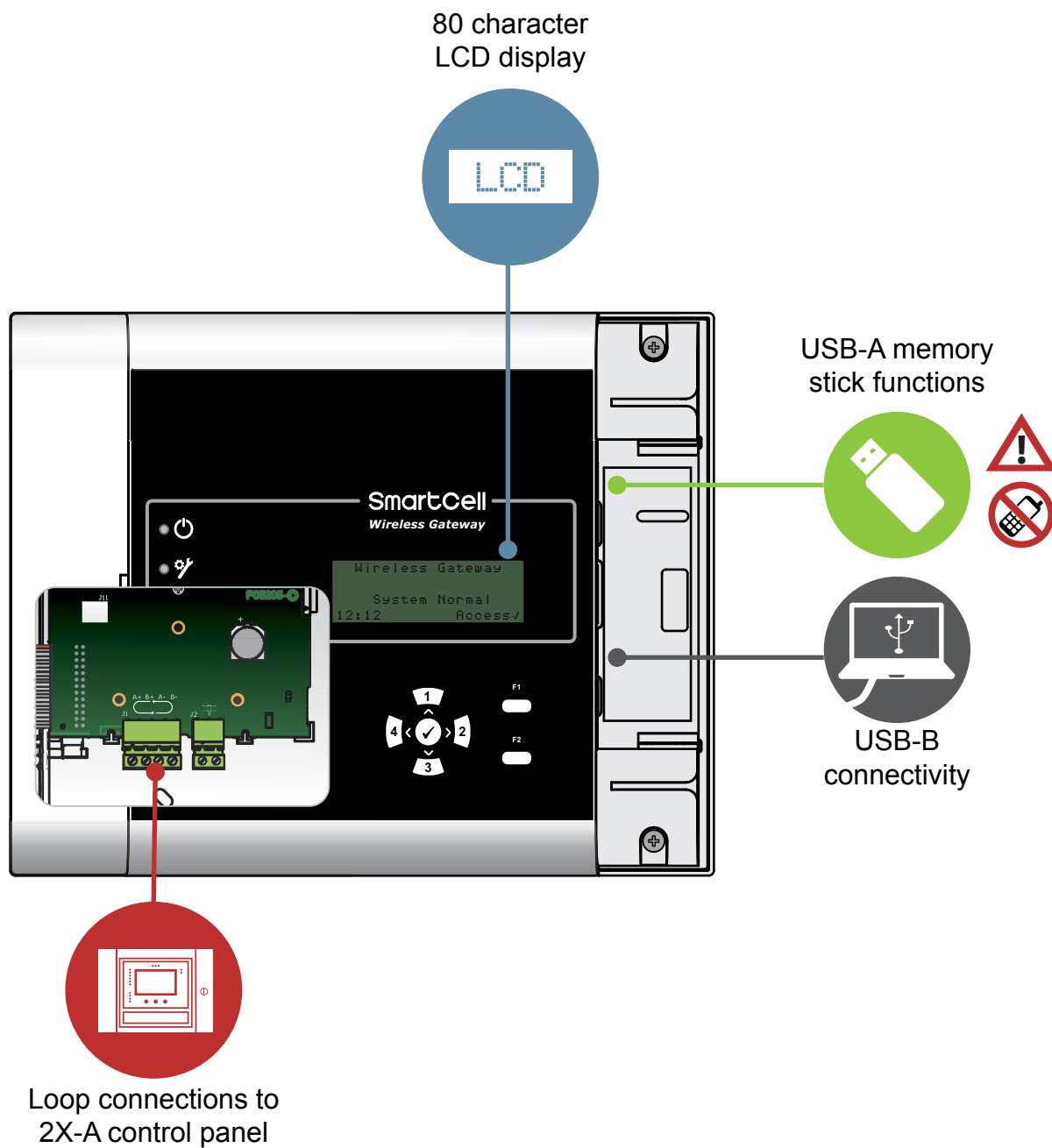


Dual input / dual output device



Gateway connections

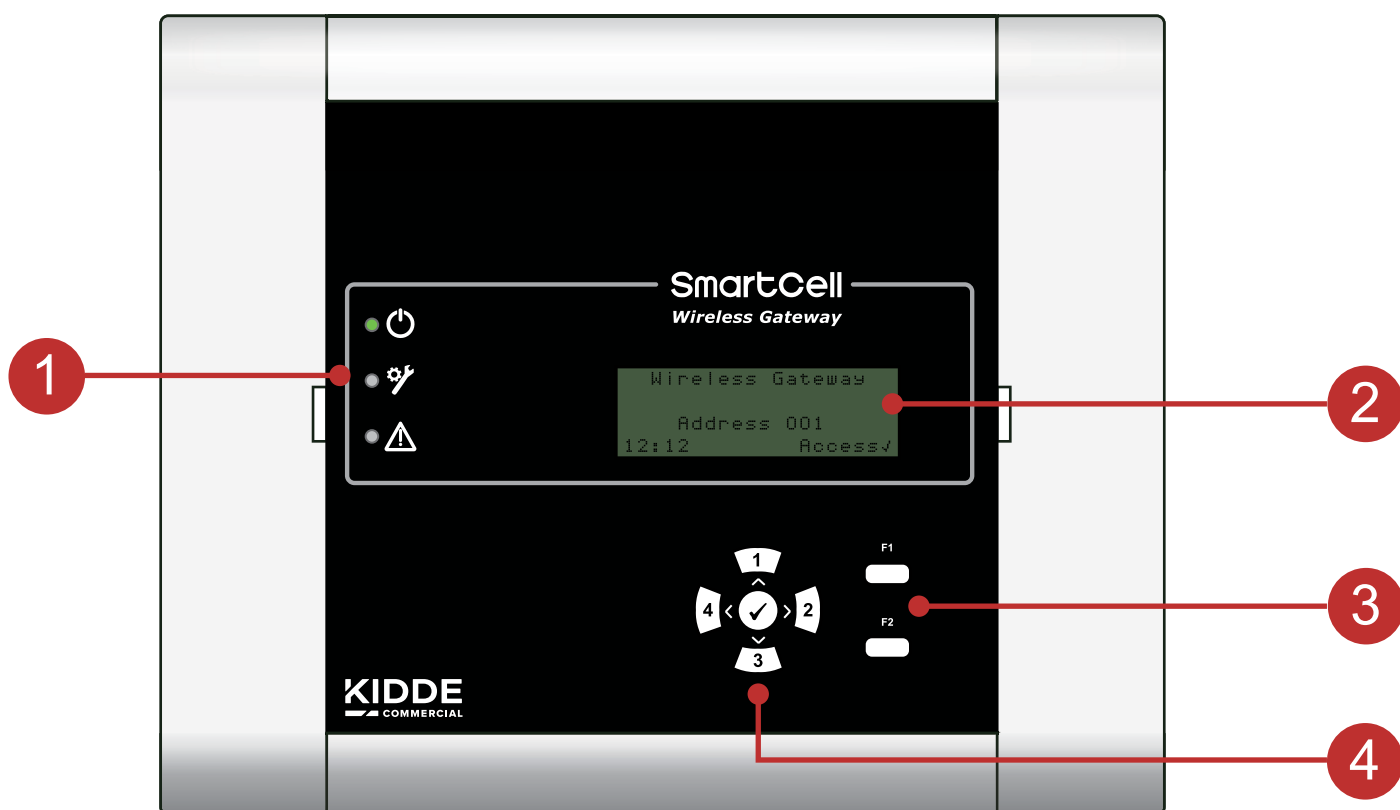
The Gateway has a number of connections and features, as detailed below:



Gateway fascia

The Gateway provides status information via the display and status lamps. The Gateway's functions are achieved via the entry of the 6-digit access code.

The Gateway's features are shown below.



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

Gateway status LEDs

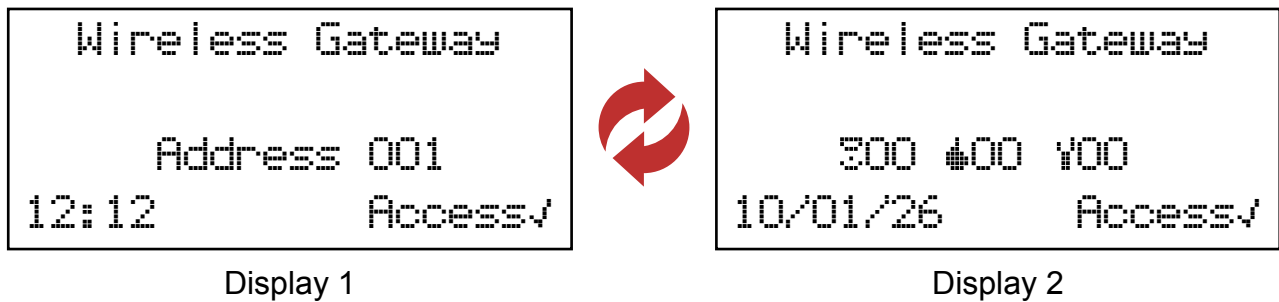
LED indicator	LED colour	Function
		The power LED Indicates a good power supply.
		The fault LED illuminates when any fault condition is present at the Gateway itself, or if an associated device is in fault.
		The isolator active LED Illuminates when the isolator becomes active.

Gateway buttons

Button	Function
	This button is always active and is used for number entry (number 1) and for upwards menu navigation.
	This button is always active and is used for number entry (number 2) and for forwards menu navigation.
	This button is always active and is used for number entry (number 3) and for downwards menu navigation.
	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.
F1 	When a valid access code has been entered, pressing the F1 button will switch between the first and second language selected for the system.
F2 	When a valid access code has been entered, pressing the F2 button will perform a status LED / display test on the Gateway. All of the Gateway's status LEDs will illuminate. Additionally, the Gateway's firmware version will be displayed. After 5 seconds, all status LEDs will extinguish and the LED screen will revert to the normal display.

Gateway display

Once the Gateway has been installed and powered up, the Gateway will show the following alternating displays.



This is described in full below.

LCD display lines 1 & 2

Programmable text that can be changed as required, e.g. site name.

LCD display line 3

Alternates between the loop address number of the Gateway (display 1) and the following (display 2):

300 - Amount of devices added to the Gateway.

400 - Amount of devices currently in fire alarm condition.

Y00 - Amount of devices currently in fault condition.

Quantities shown will vary as devices are added to the Gateway and as events occur.

LCD display line 4

The time and date are alternatively shown here, plus access to other options.

Entry to the menu and then into the required menu options can be achieved by entering a valid access code and using the Gateway'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.

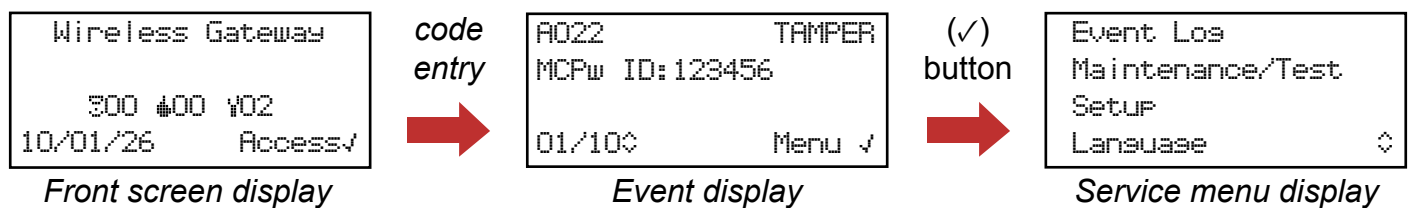
Viewing events / menu entry

Upon entering a valid 6-digit access code, the display will change to show the event display.

The events can be viewed by pressing the (1) and (3) buttons. Refer to the [Event display](#) section for details.

The menu can also be viewed by pressing the (✓) button. Refer to the [Menus](#) section for details.

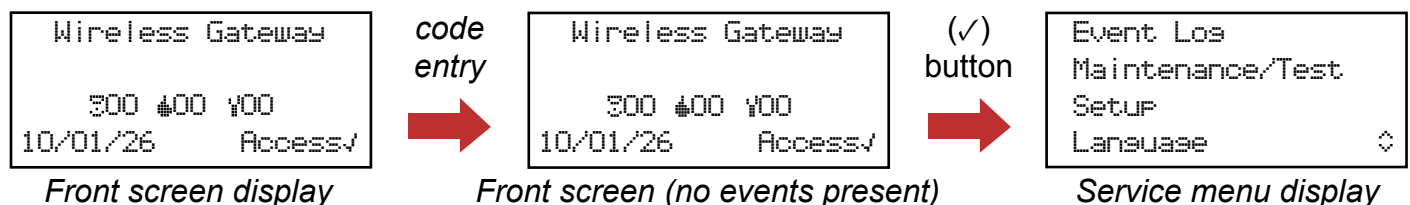
Example menu entry via event display



However, if there are no events currently on the system, the display will revert to the front screen after entering a valid 6-digit access code. .

The menu can be viewed by pressing the (✓) button. Refer to the [Menus](#) section for details.

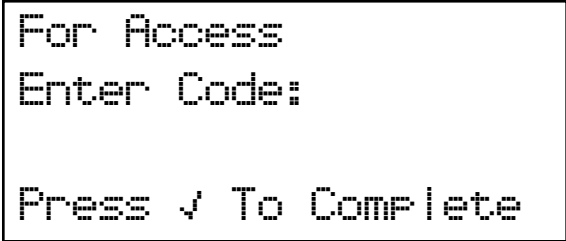
Example menu entry (event free system)



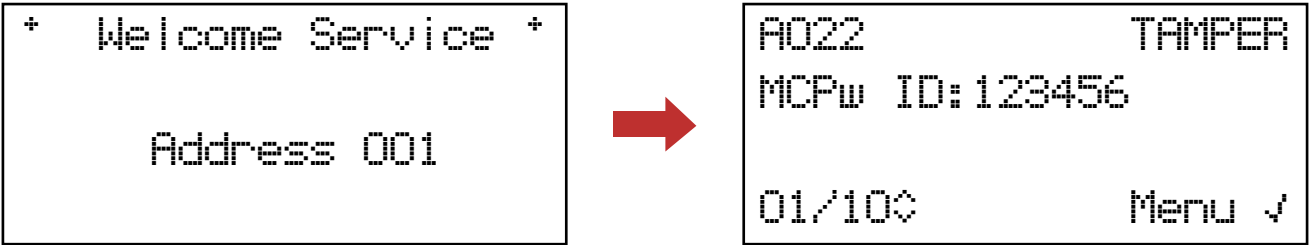
Event display

A valid 6-digit access code is required to view the current events.

Press the (✓) button. The display will change to show:



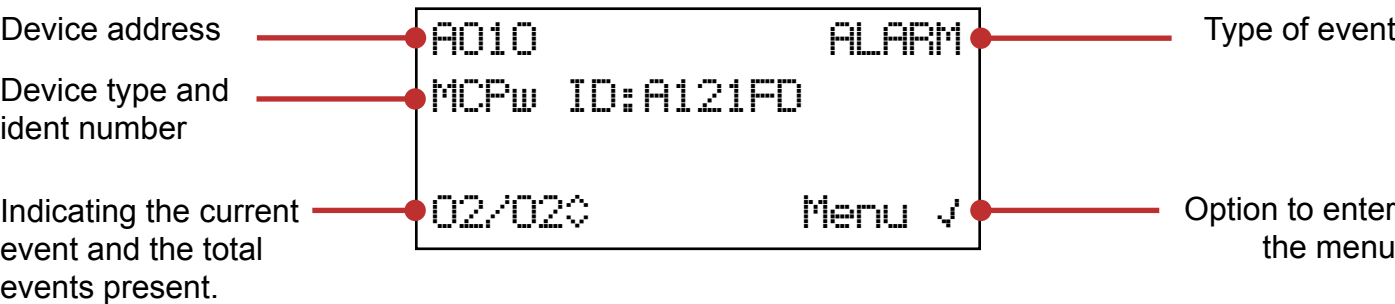
Press the relevant numbered arrows to enter the 6-digit access code required. For example 333333. On completion of the last number entered, press the (✓) button. The display will change to briefly show a welcome screen, followed by an event screen:



More events, if applicable, can be viewed by pressing the (1) and (3) buttons.

Note: If there are no events, the front screen is displayed.

An example display is shown below:



Exiting from the event display is achieved automatically after two minutes, or by pressing the (4) button.

Alternatively, pressing the (✓) button will take the user into the service menu. Refer to the Menu entry section for details.

Menu entry

A valid 6-digit access code is required to access the menu.

Note: Entering an incorrect PIN three times will lock the Gateway, preventing access for 2 minutes.

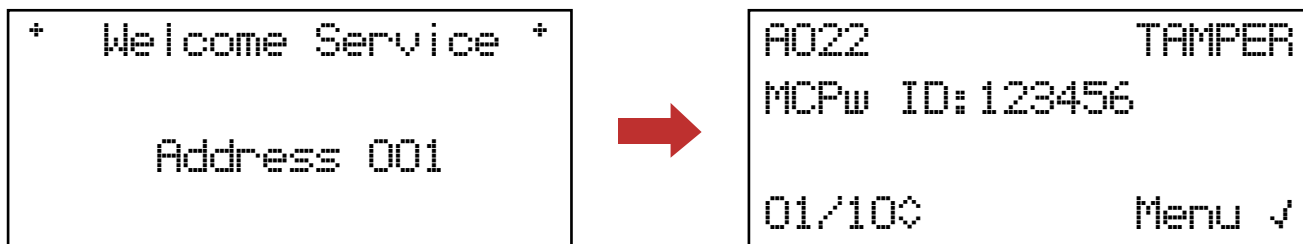
Once entered, the full service menu access structure is available at this level. Refer to the [Menus](#) section for details.

To enter the service menu, press the (✓) button. The display will change to show:

```
For Access
Enter Code:

Press ✓ To Complete
```

Press the relevant numbered arrows to enter the 6-digit access code required. For example 333333. On completion of the last number entered, press the (✓) button. The display will change to briefly show a welcome screen, followed by an event screen:



All buttons are now active.

Note: If there are no events, the front screen is displayed.

The menu can also be viewed by pressing the (✓) button.

```
→Event Log
Maintenance/Test
Setup
Language ◊
```

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.

Chapter 2

Quick start

Summary

The following steps must be followed to ensure correct system operation. These steps are also covered in more detail in the [System setup](#) and [System testing](#) sections. Advanced programming options are also shown in detail, in the [Menus](#) section.

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Quick start

1 Install the Gateway

Install in accordance with local codes of practice and referencing the Installation Guide (MK406). [More details>](#)

2 Power the Gateway

Make wiring connections and apply power to the Gateway. [More details>](#)

3 Set language & access code

Enter a new 6-digit access code. For example 333333.

Note: Store your access codes in a secure manner. Consider changing frequently to prevent unauthorised access. This code will be required to access all of the engineer menu functions. [More details>](#)

4 Set Gateway address

The address set for the Gateway will be the loop address displayed at the control panel. Refer to the [Device addressing](#) section for an overview of the methodology. [More details>](#)

5 Log on devices and set device addresses

The address set for the device will be the loop address displayed at the control panel. This can be achieved using three alternative methods. Refer to the [Device logon methods](#) section for an overview of the available options. [More details>](#)

6 Panel programming

Add devices to the 2x-A panel.

7 Check device signal levels

Check all device signal levels are stated as 'GOOD'. [More details>](#)

8 Test devices

Test every device for correct operation, using appropriate test equipment and in accordance with local codes of practice. [More details>](#)

Chapter 3

System Setup

Summary

This section takes you through the basic steps of installing and configuring Wireless Gateways.

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System setup introduction

This system setup section will show you how to configure the Gateway and connect it to the 2X-A series fire control panel. For advanced programming, refer to the [Menus](#) section of this document.

Before commencing with the installation, the important notes below must be observed.

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 programming 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.

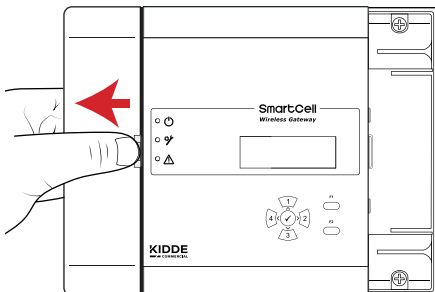


To ensure correct operation, products must be used within the specified environmental operating conditions.

Side cover removal

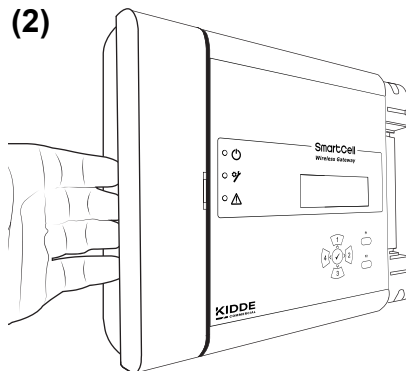
The following steps illustrate how to remove the side covers:

(1)



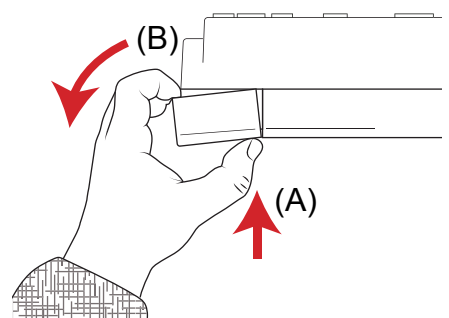
Slide the side cover sideways, creating a gap as shown.

(2)



Position your fingers behind the cover's protruding edge.

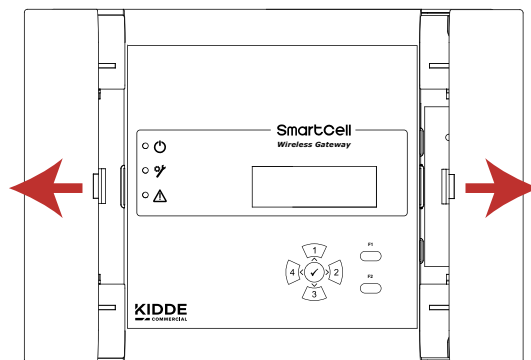
(3)



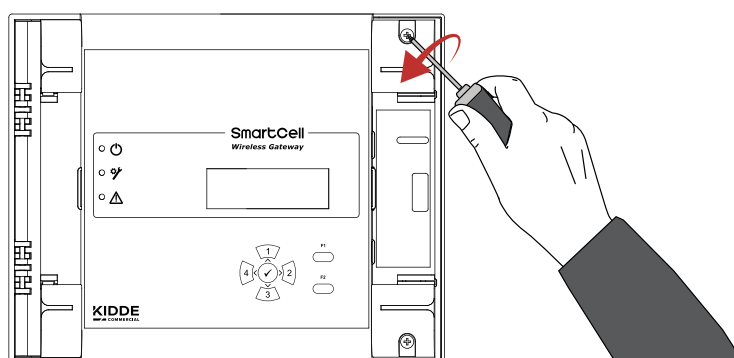
Press the cover's releasing clip with your thumb (A), and simultaneously rotate the side panel anti-clockwise (B), as viewed overhead to remove the cover.

Open the Gateway

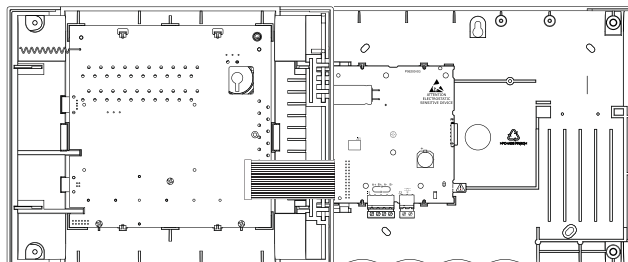
Unclip the side panels.



Loosen the two screws.



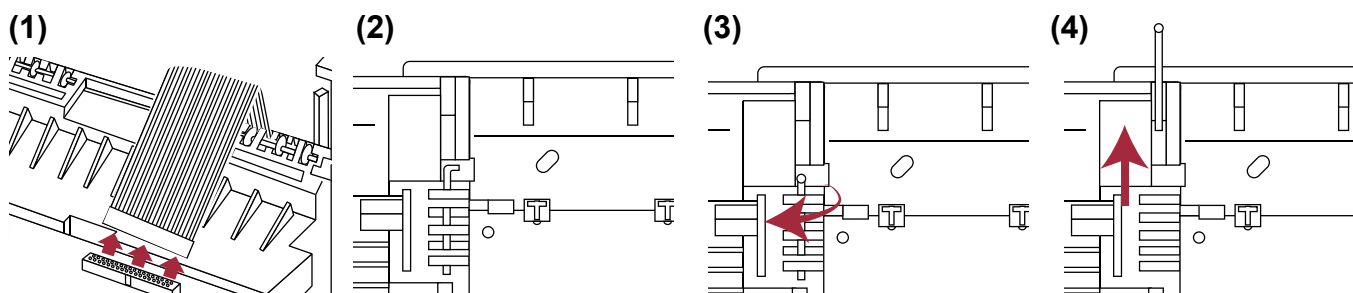
Open the door.



Optional door removal

Disconnect the ribbon cable.

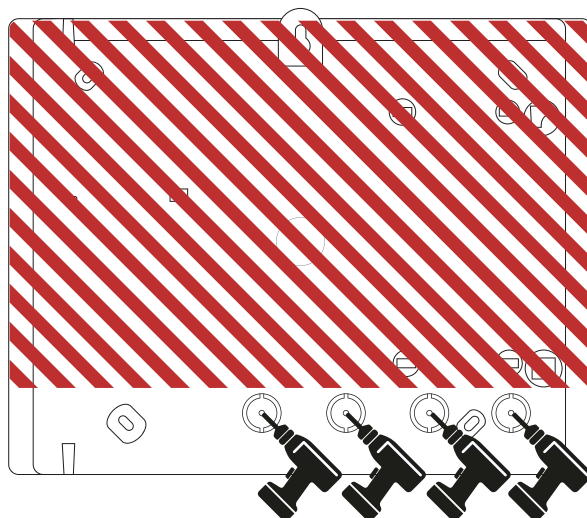
Turn and release the door hinges.



Cable entry

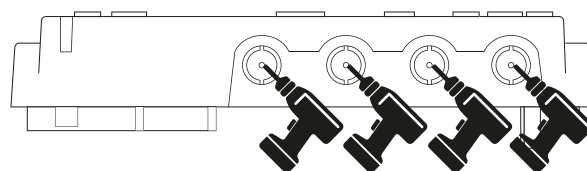
Select cable entry points as required, before fitting to the wall.

Rear side view



Caution: No cable access at the top of the unit!

Under side view

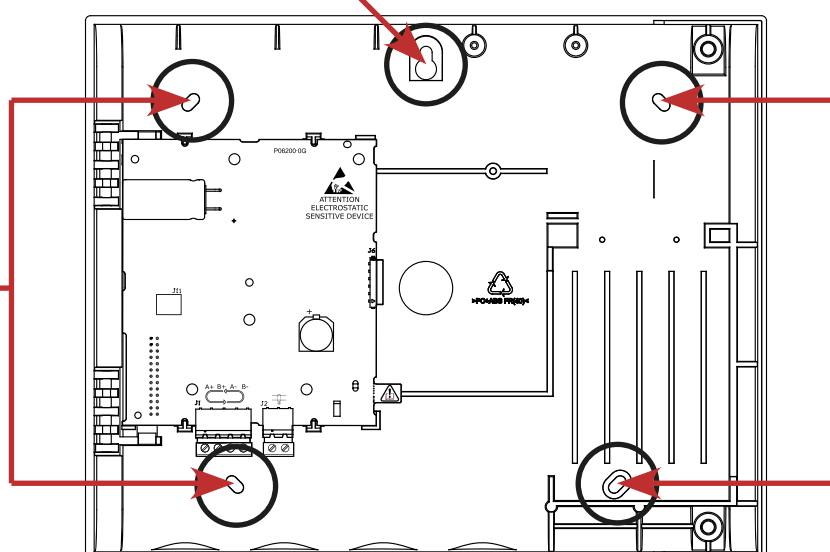


 = Available entry point

Fix Gateway to wall

Key hole

Fixing positions



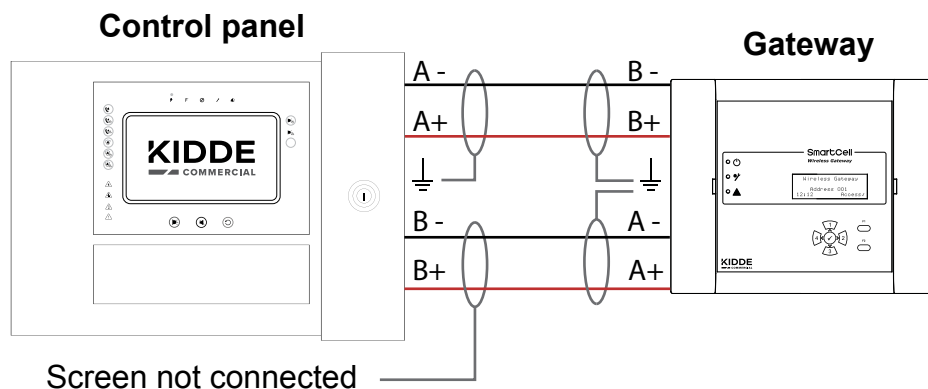
Fixing positions

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

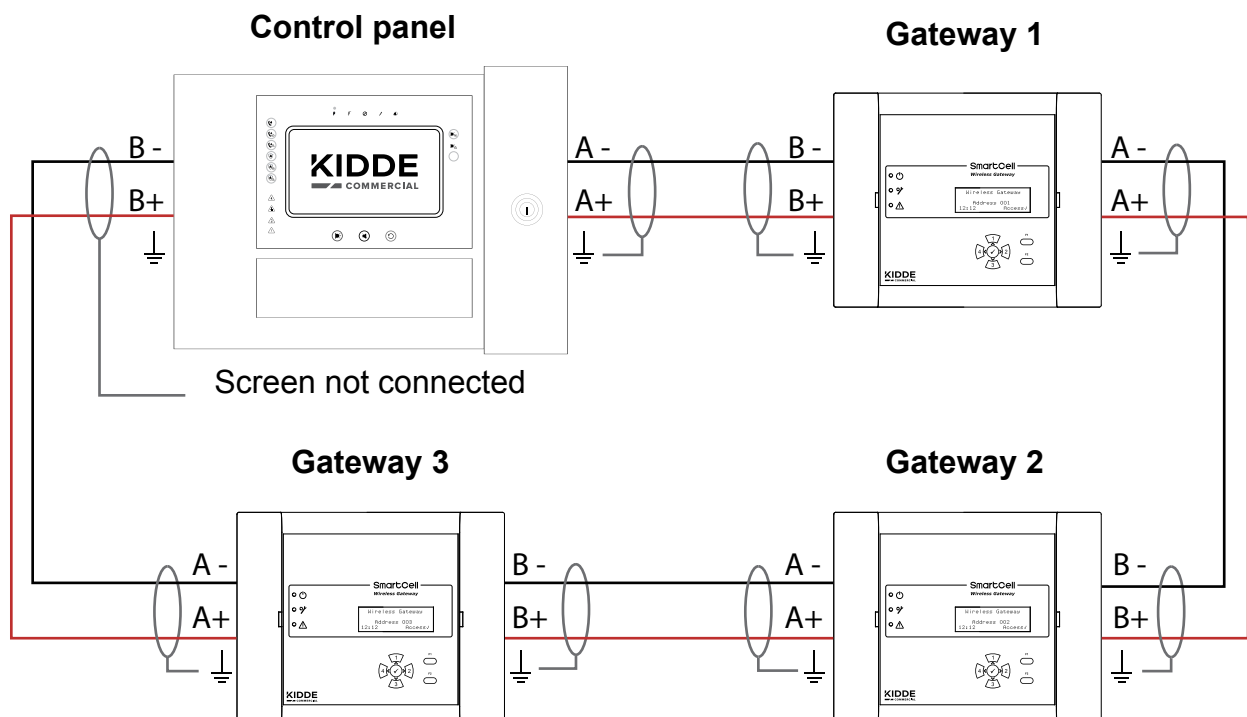
Wiring connections (Gateway to 2X-A)

The Gateway has up to four separate sets of loop connections: A-, A+, B- and B+ for each available loop. There are also two screen connections. The loop cable must be passed through the entry points provided. Typical connections are detailed below:

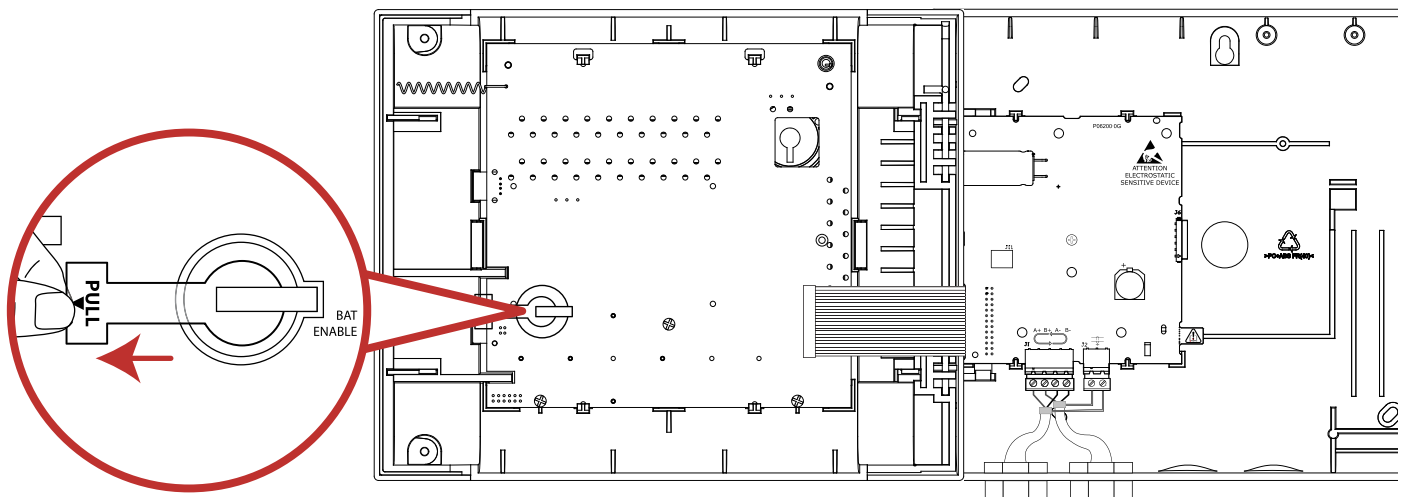
Single Gateway



Multiple Gateways (maximum 4 per loop)

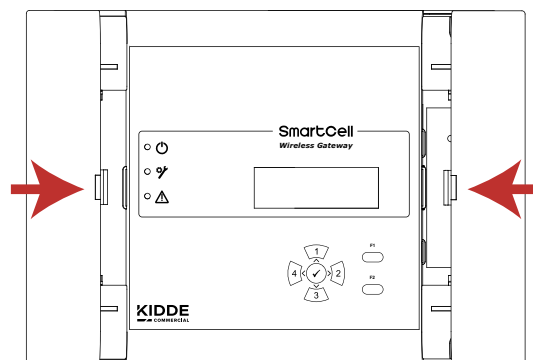
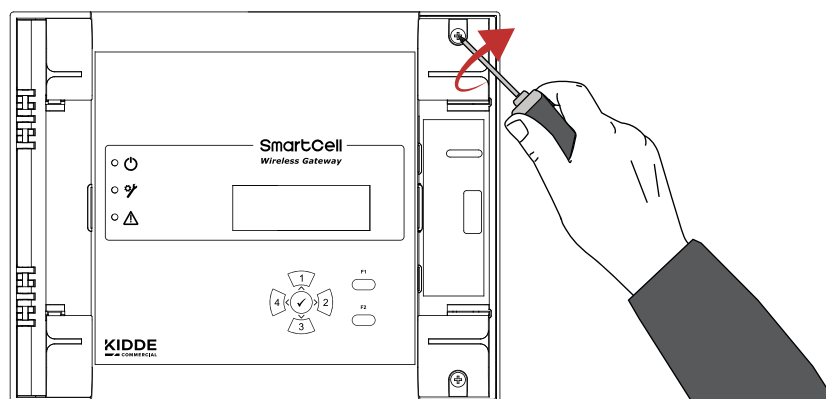


Remove 3V battery tab



Close the Gateway

Reassemble the Gateway.



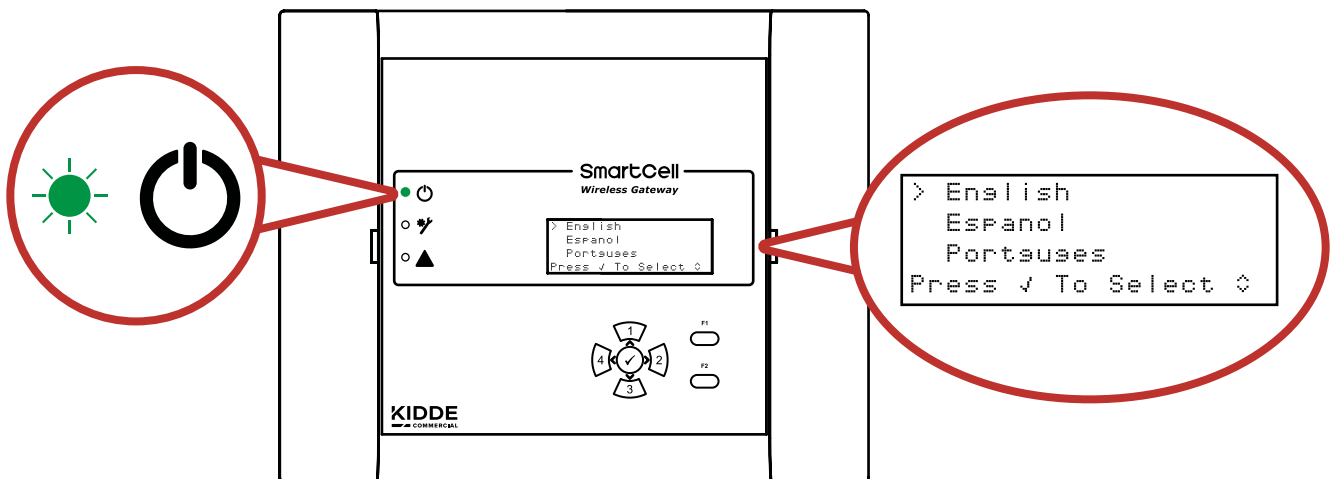
Apply power

Apply power to the Gateway.

The green power LED will illuminate.

The other LEDs should be extinguished.

The screen should also display language selection options.



Upon powering the Gateway for the first time, the user will be prompted to select the default language. Refer to the [Initial power up - Language / access code setting](#) section for details.

Initial power up - Language / access code setting

Upon powering the Gateway for the first time, the user will be prompted to select the default language.

```
→English
Español
Português
Press ✓ To Select  ↵
```

Press the (1) and (3) buttons to change the required language and press the (✓) button to confirm. The user will now be requested to enter a new 6-digit access code. For example 333333.

```
Enter New Code
SERVICE
* * * * *
Press ✓ To Complete
```

Enter a new code using the (1), (2), (3) and (4) buttons. Once entered, press the (✓) button to confirm.

```
Re-enter New Code
To Confirm
* * * * *
Press ✓ To Complete
```

Re-enter the new code, again using the (1), (2), (3) and (4) buttons. Once entered, press the (✓) button to confirm. Confirmation will be displayed:

```
New Code for
SERVICE
```

Shortly afterwards, the front screen will be displayed.

```
Wireless Gateway

Address 001
12:20 Access✓
```

Note: Store your access codes in a secure manner. Consider changing frequently to prevent unauthorised access. This code will be required to access all of the engineer menu functions.

Set Gateway address

Upon entry to the service menu (refer to the [Menu entry](#) section for details), press the (3) button until the screen displays:

```
Event Log
Maintenance/Test
→Setup
Language ◇
```

Press the (✓) button and the screen will display:

```
→Gateway
Devices
Passwords
Configuration ◇
```

Press the (✓) button and the screen will display:

```
→Set Address
Radio Channels
Front Screen Text
View Gateway ◇
```

Press the (✓) button and the screen will display:

```
Gateway Address
001
Edit ◇      ✓ To Enter
```

Press the (1) and (3) buttons to change the required address and press the (✓) button to confirm. Confirmation will be shown:

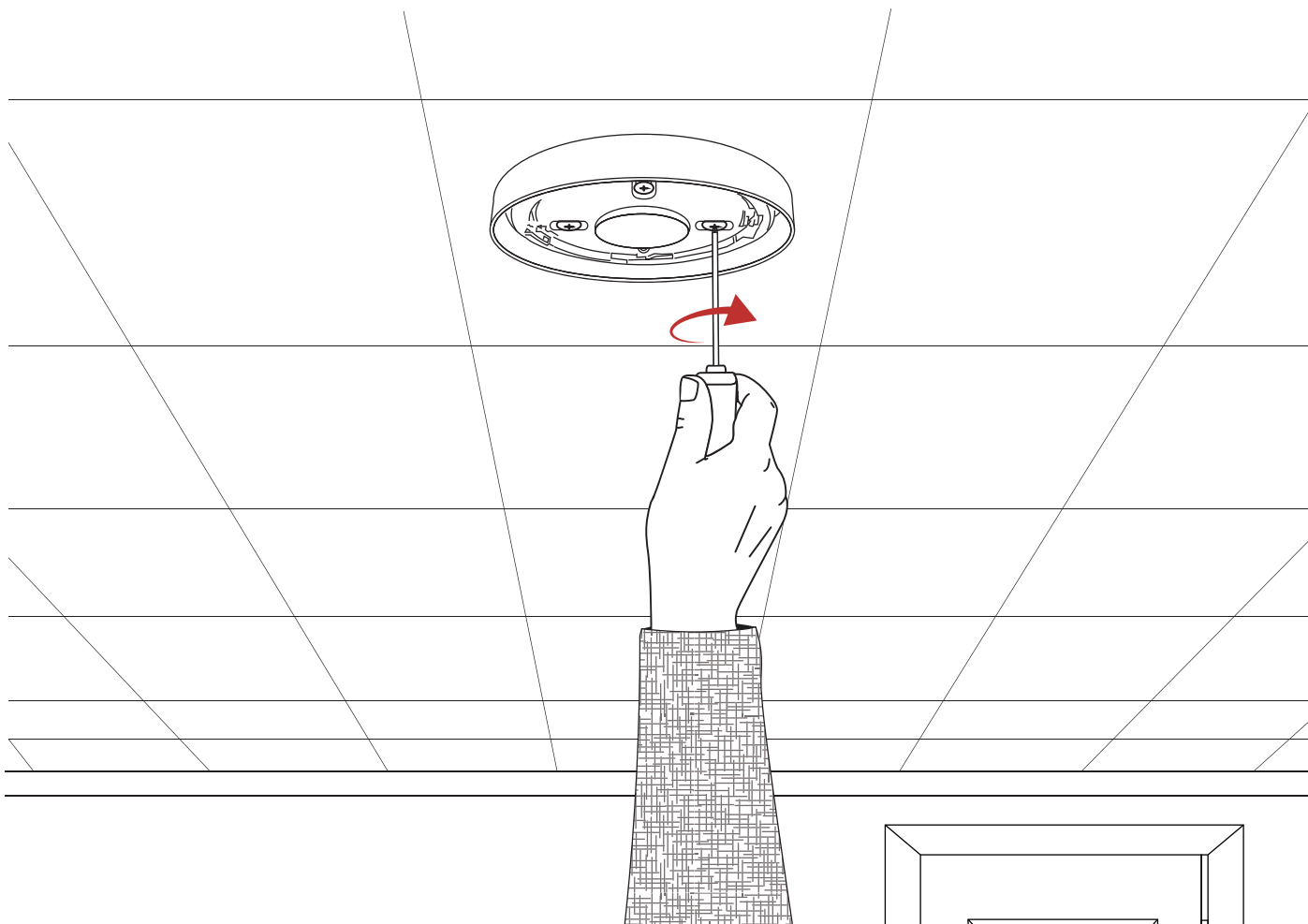
```
New Address: Gate
004
```

Press (4) until the front screen is displayed.

```
Wireless Gateway

Address 004
12:21      Access✓
```

Install devices



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

Note: There are three different device logon methods available. The method taken may change the ordering of device installation and logon. Refer to the Device logon methods section for details.

Add devices to system - at Gateway (recommended method)

SKIP IF ADDING DEVICES AT THE DEVICE LOCATION.

Upon entry to the service menu (refer to the [Menu entry](#) section for details), press the (3) button until the screen displays:

```
Event Log
Maintenance/Test
→Setup
Language
```

Press the (✓) button and the screen will display:

```
→Gateway
Devices
Passwords
Configuration
```

Press the (3) button until the screen displays:

```
Gateway
→Devices
Passwords
Configuration
```

Press the (✓) button and the screen will display:

```
→Add
View/Edit
Remove
```

Press the (✓) button and the screen will display:

```
→At Gateway
At Device Location
Configure Devices
```

Press the (✓) button and the screen will display:

Note: During this process, the Gateway's Fault LED will illuminate, and a Configuration Fault will be displayed on the control panel.

```
Insert Batteries
Into Device
NOW
```

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

```
Add Device ?
MCPw ID:012345

✓Add <Exit
```

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:

Press the (1) and (3) buttons to change to the required address number and press the (✓) button to confirm. The device will update to ask if another device is to be added.

Either press the (✓) button to continue adding new devices, or press (4) until the front screen is displayed.

```
Add Device ?  
MCPw ID:012345  
  
Address > ■.....
```

```
Device Added  
MCPw ID:012345  
Address 003  
Edit◊      ✓To Select
```

```
Add Another  
Device ?  
  
✓Continue      <Exit
```

```
Wireless Gateway  
  
Address 004  
12:22      Access✓
```

Add devices to system - at device location (requires a magnet)

SKIP IF ADDING DEVICES AT THE GATEWAY.

Upon entry to the service menu (refer to the [Menu entry](#) section for details), press the (3) button until the screen displays:

```
Event Log
Maintenance/Test
→Setup
Language
```

Press the (✓) button and the screen will display:

```
→Gateway
Devices
Passwords
Configuration
```

Press the (3) button until the screen displays:

```
Gateway
→Devices
Passwords
Configuration
```

Press the (✓) button and the screen will display:

```
→Add
View/Edit
Remove
```

Press the (✓) button and the screen will display:

```
→At Gateway
At Device Location
Configure Devices
```

Press the (3) button until the screen displays:

```
At Gateway
→At Device Location
Configure Devices
```

Press the (✓) button and the screen will display:

```
Place Magnet Onto
New Devices
.....
00 Found      ✓ To End
```

Note: During this process, the Gateway's Fault LED will illuminate, and a Configuration Fault will be displayed on the control panel.

Place the magnet on to the device log on point *. The device's LED will flash and the screen will display:

```
Place Magnet Onto
New Devices
*****
01 Found      ✓ To End
```

Press the (✓) button to end. The screen will display:

```
→MCPw ID:012345

✓ Add Device      ◇
```

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:

```
Add Device ?
MCPw ID:012345

Addins > █.....
```

Followed by:

```
Device Added
MCPw ID:012345
Address 003
Edit◇      ✓To Select
```

Press the (1) and (3) buttons to change to the required address number and press the (✓) button to confirm. The device will update to ask if another device is to be added.

```
Add Another
Device ?

✓Continue      <Exit
```

Either press the (✓) button to continue adding new devices, or press (4) until the front screen is displayed.

```
Wireless Gateway

Address 004
12:22      Access✓
```

* See the Device log on points section for device log on points.

Set front screen text

Upon entry to the service menu (refer to the [Menu entry](#) section for details), press the (3) button until the screen displays:

```
Event Log
Maintenance/Test
→Setup
Language
```

Press the (✓) button and the screen will display:

```
→Gateway
Devices
Passwords
Configuration
```

Press the (✓) button and the screen will display:

```
→Set Address
Radio Channels
Front Screen Text
View Gateway
```

Press the (3) button until the screen displays:

```
Set Address
Radio Channels
→Front Screen Text
View Gateway
```

Press the (✓) button and the screen will display:

```
_ Wireless Gateway

F1 ABC      F2 Delete
```

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.
F1 	Used to toggle character entry format between; upper case, lower case and number.
F2 	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.

Chapter 4

Testing

Summary

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.

Contents

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Test devices

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

It is recommended to carry out testing while the system is in Zone Test mode, which is controlled at the control panel. Upon selection of this mode, detectors will be placed into a rapid test mode, for ease of testing.

Device LED operation whilst in the Zone Test mode condition, is as follows:

Device Type	Initial LED sequence	LED sequence upon activation(s)
Dual detector	Green - amber (continuous loop)	Upon smoke test only: Red (solid light) <i>'when device is in alarm followed by</i> Amber (continuous loop) <i>'heat test still required</i>
		Upon heat test only: Red (solid light) <i>'when device is in alarm followed by</i> Green (continuous loop) <i>'smoke test still required</i>
		Upon smoke and heat test completion: Red - red (continuous loop)
Smoke detector	Green (continuous loop)	Red (solid for 3 seconds) <i>followed by</i> Red (continuous loop)
Heat detector	Amber (continuous loop)	Red (solid for 3 seconds) <i>followed by</i> Red (continuous loop)

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.

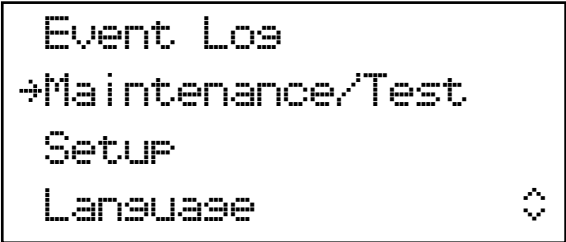
Call Points should be tested in accordance with local codes of practice.

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

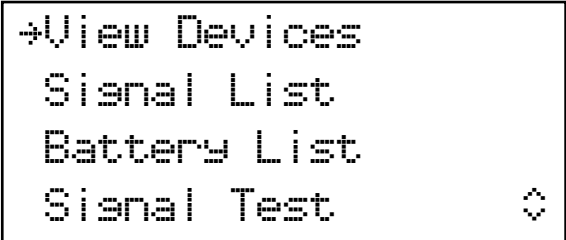
Input / Output devices should also be tested in conjunction with associated 3rd party equipment and in accordance with local codes of practice.

Device signal levels

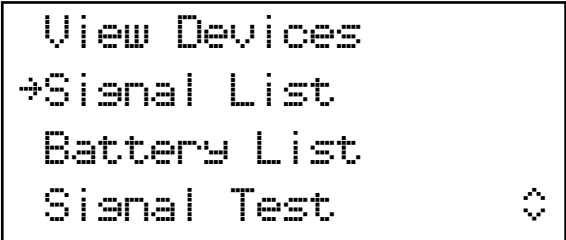
Upon entry to the service menu (refer to the [Menu entry](#) section for details), press the (3) button until the screen displays:



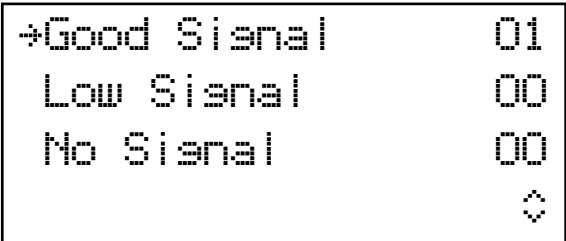
Press the (✓) button and the screen will display:



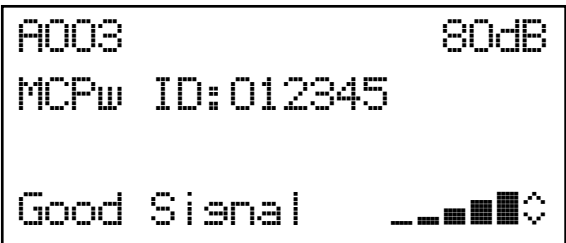
Press the (3) button and the screen will display:



Press the (✓) button and the screen will display:



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

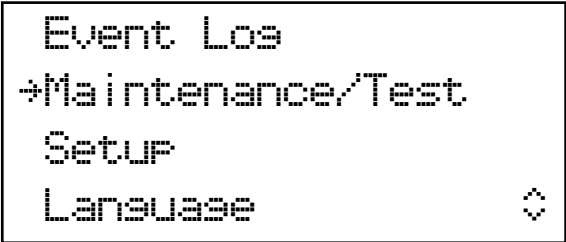


Note: It is important that all devices have ‘Good’ signal levels to ensure the maximum robustness of wireless signalling.

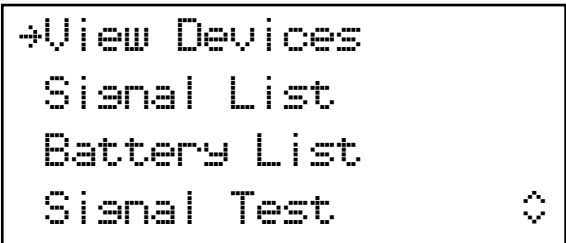
If a device does not achieve a good signal level, refer to the [How to improve device signal levels](#) section for additional guidance.

Device battery levels

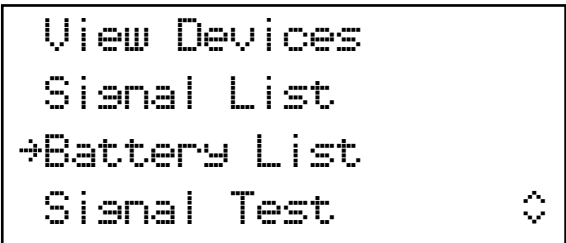
Upon entry to the service menu (refer to the [Menu entry](#) section for details), press the (3) button until the screen displays:



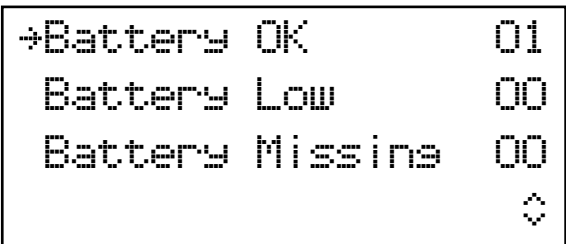
Press the (✓) button and the screen will display:



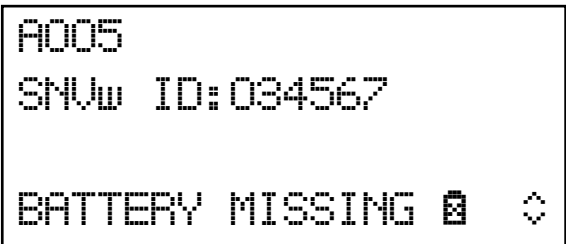
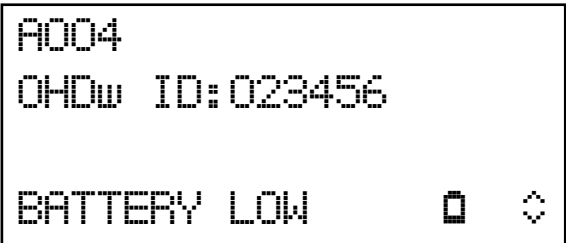
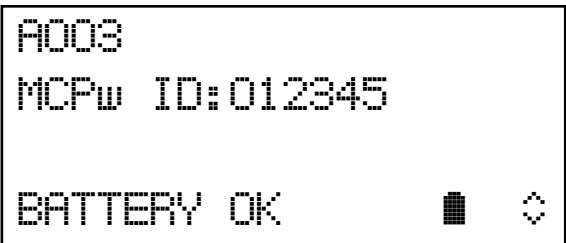
Press the (3) button until the screen displays:



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:



Chapter 5

Diagnostics

Summary

This section explains how to diagnose common device faults and outlines steps to resolve them. It also provides recommendations on optimal wireless signal levels and practical ways to improve them.

Contents

Fault rectification	44
Signal level requirements	46
How to improve signal levels	47

Fault rectification

Device type	Fault displayed	Rectification process
Call Point	Alarm	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	Heat Alarm	Ensure that the sensitivity setting is appropriate for the device's location.
Detector	Smoke Alarm	Ensure that the environment in the device's location is free of smoke, residue and dust. Ensure that the sensitivity setting is appropriate for the device's location.
Input/Output	I1 Alarm	Check the 20 k Ω end of line resistor is in place and that connections are secure.
Input/Output	I2 Alarm	Check the 20 k Ω end of line resistor is in place and that connections are secure.
All device types	Tamper	Check the device is assembled correctly.
All device types	Batt Low	Replace all device batteries with specified batteries - see the associated device installation guide and replace within 30 days
All device types	Batt Missing	Check all batteries are inserted correctly. Check voltage on batteries. Replace batteries if necessary or re-insert correctly.
Detector	OD Head Fault	It is recommended that the detection device be replaced due to a fault with the head being reported.
Detector	HD Head Fault	It is recommended that the detection device be replaced due to a fault with the head being reported.
All device types	No Radio Comms	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).
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.
Input/Output	I1 Fault O/C	Check the 20 k Ω end of line resistor is in place and that connections are secure.
Input/Output	I2 Fault O/C	Check the 20 k Ω end of line resistor is in place and that connections are secure.

Fault rectification - *continued*

Device type	Fault displayed	Rectification process
Input/Output	I1 Fault S/C	Check the 20 kΩ end of line resistor is in place and that connections are secure.
Input/Output	I2 Fault S/C	Check the 20 kΩ end of line resistor is in place and that connections are secure.
Input/Output	O1 Relay Fault	Check that output connections are secure. If no problems are found with wiring connections, it is recommended that the device is replaced.
Input/Output	O2 Relay Fault	Check that output connections are secure. If no problems are found with wiring connections, it is recommended that the device is replaced.
SmartDoor	Closure Fault	Check for obstructions to the plunger
SmartDoor	Motor Fault	Remove and re-insert batteries
SmartDoor	Internal Fault	Remove and re-insert batteries (If fault persists, return to manufacturer)
Gateway	Tamper	Check that the door is closed correctly.
Gateway	High RFI	Has any electrical equipment recently been installed in close proximity of the Gateway. If so it may need to be moved to an acceptable distance. See Wireless Gateway Installation instructions (MK406) for details.
Gateway	Mains Fault	Check the mains supply.
Gateway	Batt Fault	Check the battery voltage and battery connection.
Gateway	3V Int Batt Flt	Check that the 3V battery on the back of the door is fitted correctly and that the battery tab is fully removed. If connection is good, replace with the same type of battery.
Gateway	3V Int Batt Low	Replace the 3V battery on the back of the door. Replace with the same type of battery.
Gateway	Isolator Active	Check loop wiring connections.

Signal level requirements

To ensure the signal levels for each device are at an acceptable level, the '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 text, 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:

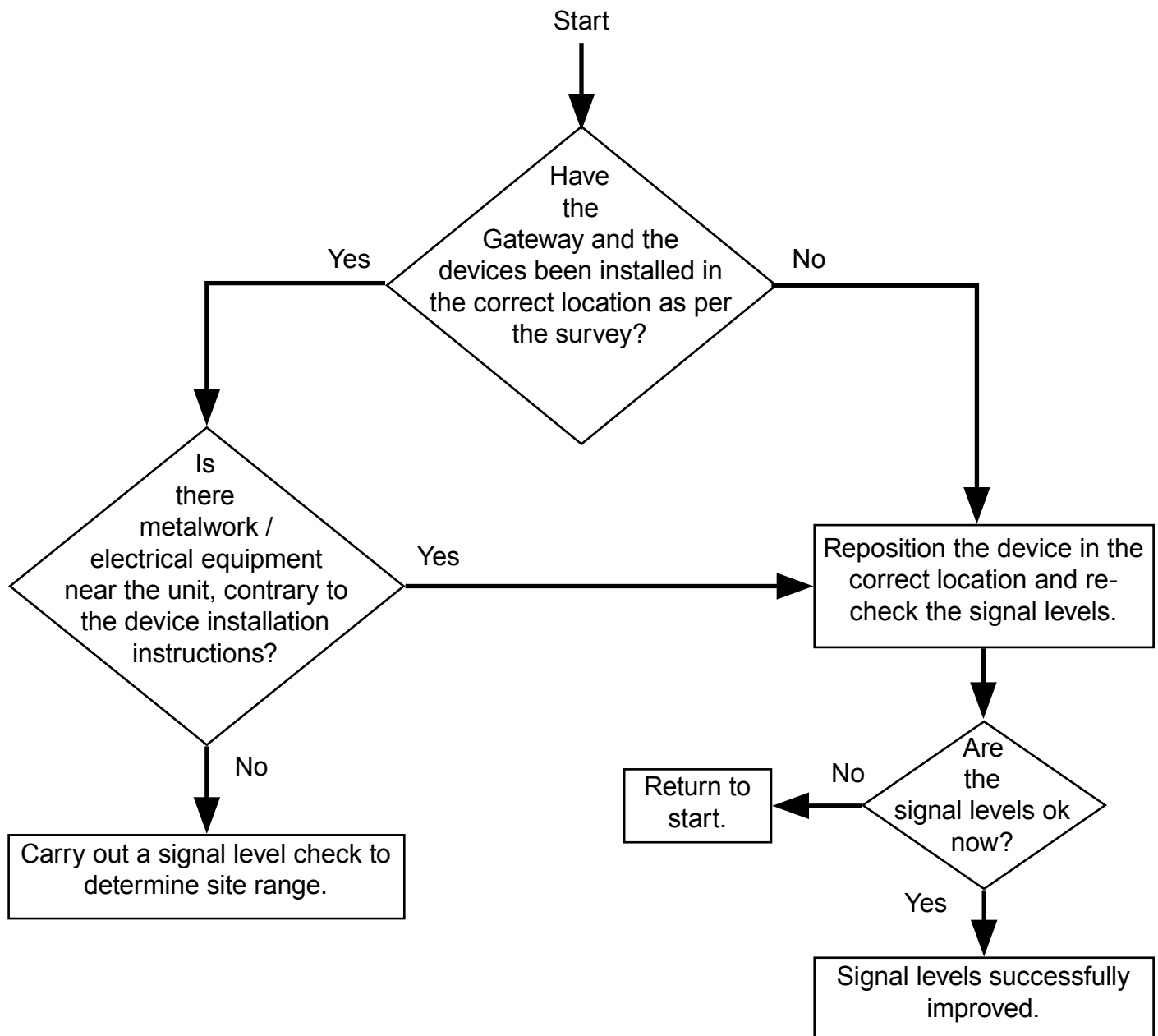
Device type	Device number	Menu display	Acceptable level
Dual detector	Device 01	40dB Good Signal 	✓
Dual detector	Device 02	35dB Good Signal 	✓
Dual detector	Device 03	45dB Good Signal 	✓
Manual call point	Device 04	40dB Good Signal 	✓
Dual detector/ sounder	Device 05	40dB Good Signal 	✓
Dual detector/ sounder	Device 06	45dB Good Signal 	✓
Dual detector/ sounder	Device 07	45dB Good Signal 	✓
Manual call point	Device 08	30dB Good Signal 	✓
Manual call point	Device 09	35dB Good Signal 	✓
Sounder	Device 10	35dB Good Signal 	✓

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

Device type	Device number	Menu display	Acceptable level
Dual detector	Device 01	0dB No Signal 	×
Dual detector	Device 02	10dB Low Signal 	×
Dual detector	Device 03	45dB Good Signal 	✓
Manual call point	Device 04	40dB Good Signal 	✓
Dual detector/ sounder	Device 05	15dB Low Signal 	×
Dual detector/ sounder	Device 06	15dB Low Signal 	×
Dual detector/ sounder	Device 07	45dB Good Signal 	✓
Manual call point	Device 08	0dB No Signal 	×
Manual call point	Device 09	35dB Good Signal 	✓
Sounder	Device 10	35dB Good Signal 	✓

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 signals



Chapter 6

Menus

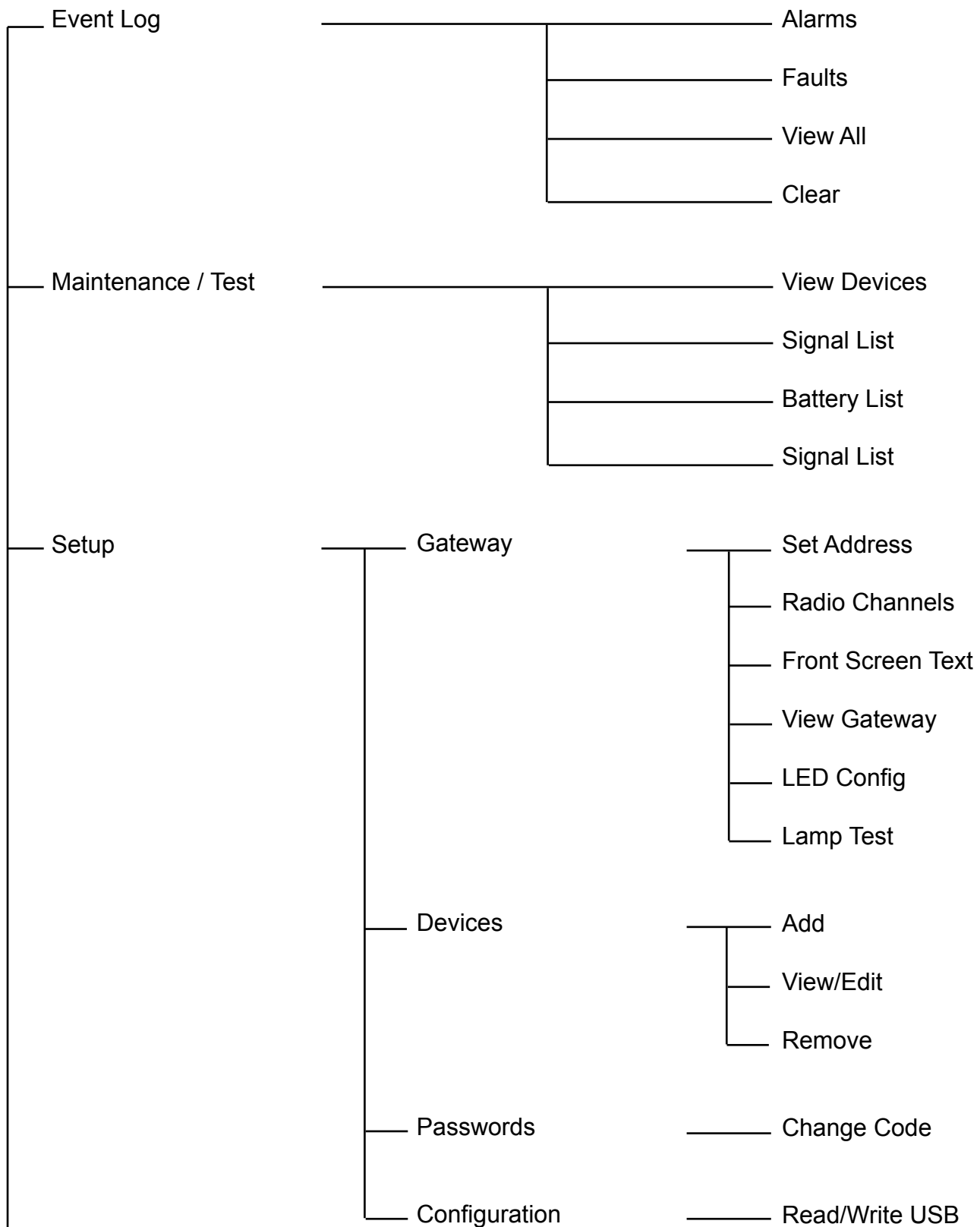
Summary

This section provides a detailed guide to the engineer menu options, explaining how each option functions.

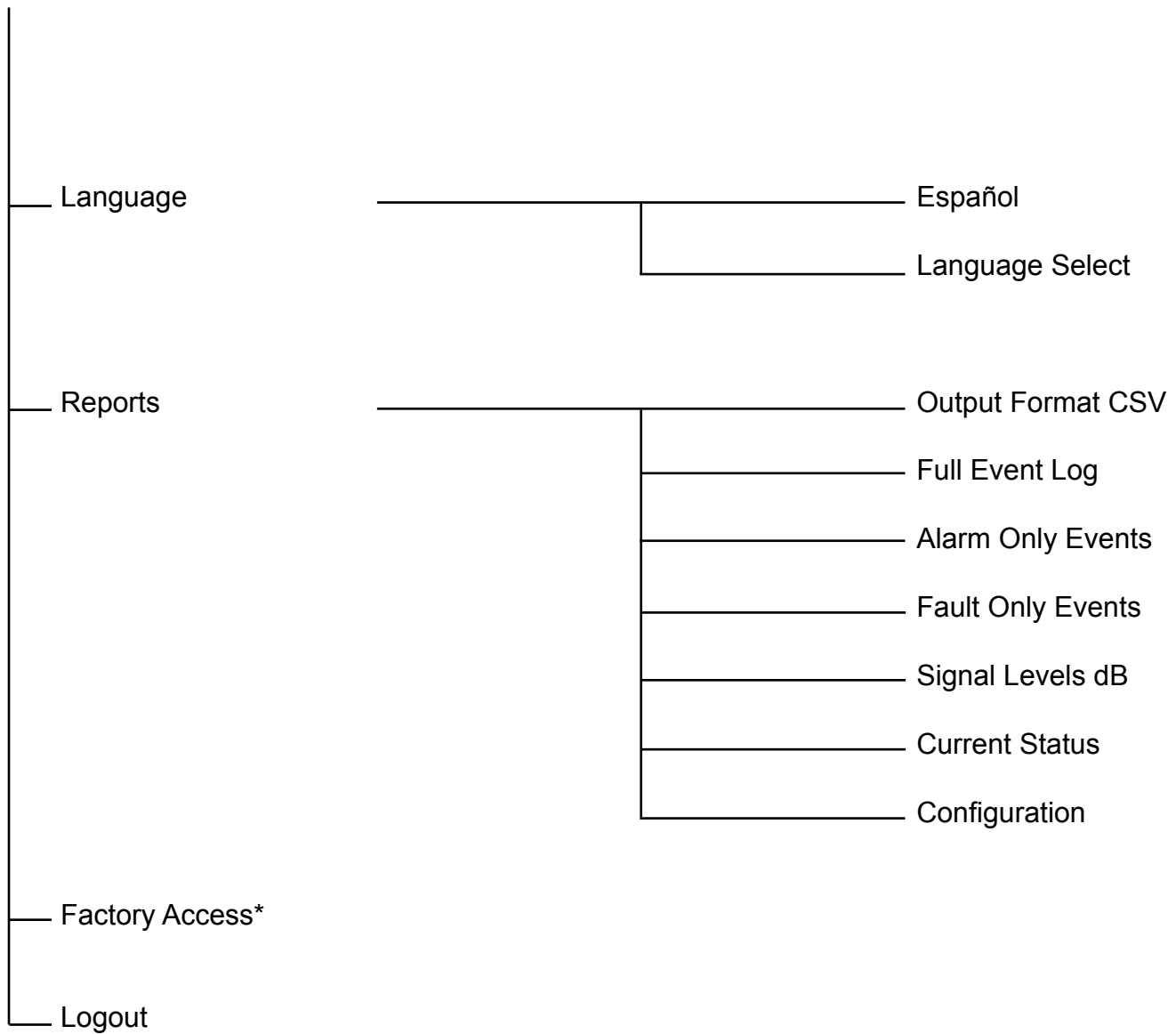
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Menu tree view



Continued overleaf...



* Available only when Gateway is in tamper.

Menu options

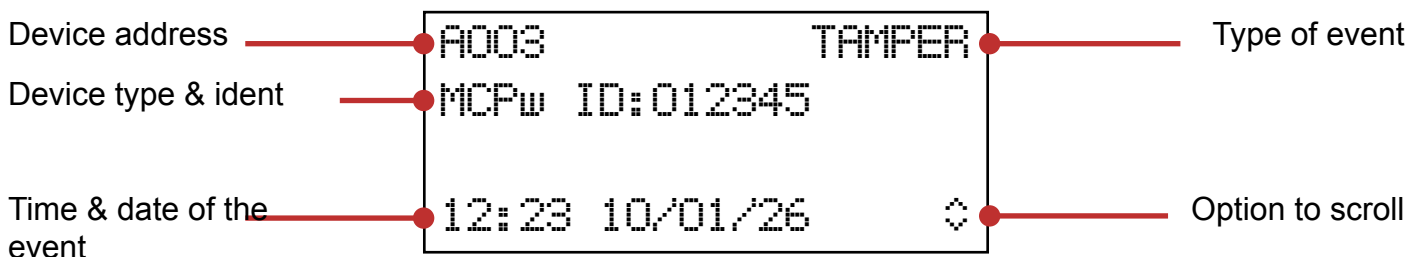
Event log

When entered, options are available to view filtered 'Alarms', or 'Faults' or alternatively, 'View All' 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 device address, the event type, the device type, the device ident 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 by entering the 6-digit access code and entering the relevant menu if required.

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



Alarms

This menu displays the total number of historic fire alarm events. The events can be viewed by pressing the (✓) button and using the (1) and (3) buttons to scroll through the events.

Faults

This menu displays the total number of historic fault events. The events can be viewed by pressing the (✓) button and using the (1) and (3) buttons to scroll through the events.

View All

This menu displays the total number of historic events. The events can be viewed by pressing the (✓) button and using the (1) and (3) buttons to scroll through the events.

Clear

This menu option allows the user to clear the event log.

Maintenance/test

This menu option enables the engineer to view; devices, signal and battery information and perform a device signal test.

This menu option is fully shown and detailed below:

View Devices

This menu option allows the engineer to view all of the devices on the system. You can scroll through the list using the (1) and (3) buttons. Information includes; device address, device status, device type and the device ident.

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.

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.

Signal Test

This menu option displays the signal strength of a single device or all devices on the system using the devices' onboard 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 updates periodically to allow an updated reading to be shown.

View the Signal List for details on the signal strengths received.

Setup

This menu option enables the engineer to; configure the Gateway, configure the devices, change passwords and read/write USB.

This menu option is fully shown and detailed below:

Gateway > Set Address

This menu option allows the engineer to change the address of the Gateway.

Gateway > Radio Channels

This menu allows viewing of the frequency channels currently used by the system along with the background levels of these selected channels, the RFI fault detect level setting and the auto radio channel mode of operation.

Channels Used

This menu allows the radio channels used by the system to be viewed. The radio channels used are factory set. The channels can be changed using the configuration tool.

Channel Background

This menu allows the background interference level to be viewed for each of the five operating channels. The background levels are displayed in real time and fluctuate as the signals rise and fall.

RFI Detect Level

This menu allows the engineer to change the background detection level between -110dB and -80dB. The default setting is -96dB. A High RFI Fault is indicated if all channels are at or above the set level.

Auto Radio CH

This menu allows the engineer to see whether the auto radio channel mode is ON or OFF. The default setting is ON. The Auto Radio CH mode can be changed using the configuration tool.

When set to ON, the Gateway will monitor the radio channels and dynamically change them to ensure the best possible communication channels are used. The channels will be changed no more than once every 24 hours and is a logged only event.

Gateway > Front Screen Text

This menu option allows the engineer to change the front screen text. Refer to the [Set front screen text](#) section for more details.

Gateway > View Gateway

This menu allows the engineer to view details about the Gateway.

Soft and Build Ver

These menus allow the software build version currently programmed into the Gateway to be viewed.

Devices

This menu displays the total number of wireless devices currently connected to the Gateway.

LED Polling

This menu allows the Control Panel's programming for the Device LED operation of the Gateway to be viewed. The Control Panel can configure the LED polling behaviour of the wireless devices.

If enabled the wireless devices will flash their LEDs on every poll, which is every 2 minutes. If the device is fault free, the LED will flash green. If the device is in a fault condition, the LED will flash yellow.

Fail Safe

This menu allows the Control Panel's programming for the Fail Safe operation of the Gateway to be viewed. The Control Panel can configure the alarm behaviour in the event of a communication failure between the Gateway and the Control Panel. If enabled, a new alarm detected by a device linked to the Gateway activates the sounders (and output devices) when communication with the control panel is lost.

Self Sound

This menu allows the Control Panel's programming for the Self-Sound operation of the Gateway to be viewed. The Control Panel can configure the sounder behaviour for wireless all-in-one devices in the event of a communication failure between the device and the Gateway. If enabled, a new alarm detected by the all-in-one device activates the integrated sounder when communication with the Gateway is lost.

Cont.Sound

This menu allows the Control Panel's programming for the Continuous Sound operation of the Gateway to be viewed. The Control Panel can configure the sounder duration time. If disabled, wireless sounders stop sounding after 30 minutes. If enabled, wireless sounders continue to sound until the Control Panel is reset or a stop command is received.

Gateway > Lamp Test

This menu option allows the engineer to perform a status LED / display test on the Gateway.

All of the Gateway's status LEDs will illuminate.

Additionally, the Gateway's LED will display system information, including; gateway firmware version, loop card firmware version, Gateway radio ident and gateway manufacturing serial number.

After 5 seconds, all status LEDs will extinguish and the LED screen will revert to the normal display.

Device > Add

This menu option allows the engineer to add devices to the system. This can be achieved; At the Gateway, or at the device location. Refer to the [Add devices](#) sections for more details.

Additionally the Configure Devices option is also available. This feature is selected after setup is added to the Gateway. 'New Devices Found' will be displayed on the front display and this feature ensures that the devices are configured correctly.

Device > View/Edit

This menu option allows the engineer to view the devices. The address for each device can also be changed in this menu.

Device > Remove

This menu option allows the engineer to remove devices from the Gateway.

Passwords > Change code

This menu option allows the engineer change the access code.

Configuration > Read/Write USB

This menu allows a new setup file to be read and write, to and from, a USB memory stick connected to the Gateway's USB-A connection.

Language

This menu option enables the engineer to to display the Gateway's menus in a secondary language, plus the ability to program the Gateway's primary and secondary languages.

Secondary language select

The language option which has been programmed as the secondary language for the Gateway 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 Gateway. 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 Gateway's primary language are able to be selected.

Select secondary

When this option is entered the languages that are available for use as the Gateway'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 Gateway'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 Gateway programmed parameters will be downloaded.

Factory Access

This option is only available when the Gateway is in tamper. The Gateway's factory menu is fully accessible allowing full software configuration.

Logout

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

Chapter 7

Conformance

Summary

This section specifies the range of compatible SmartCell wireless fire products, including ordering codes and conformance data.

Contents

Device listing	58
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WIRELESS GATEWAY



Part number:
SH-14-3201-0001-99

EN APPROVALS

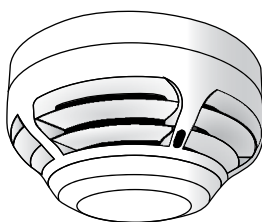


CERTIFICATION



DoP DoP0081

WIRELESS DETECTOR



Part number:
SC-21-0200-0001-99

EN APPROVALS

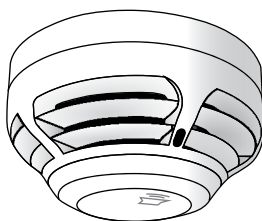


CERTIFICATION



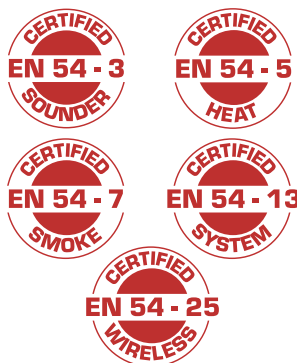
DoP 0359-CPR-00265

WIRELESS DETECTOR/ SOUNDER



Part number:
SC-22-0200-0001-99

EN APPROVALS



CERTIFICATION



DoP 0359-CPR-00268

WIRELESS DETECTOR/ SOUNDER BEACON



Part numbers:
SC-23-0210-0001-99
SC-23-0220-0001-99

Variation:
Red flash
White flash

EN APPROVALS

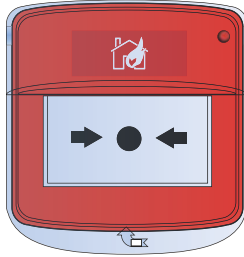


CERTIFICATION



DoP 0359-CPR-00268

CALL POINT



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

EN APPROVALS

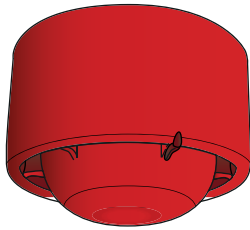


CERTIFICATION



DoP 0359-CPR-00266

WIRELESS SOUNDER



Part numbers: SC-31-0100-0001-99
SC-31-0200-0001-99
Variation: Red
White

EN APPROVALS

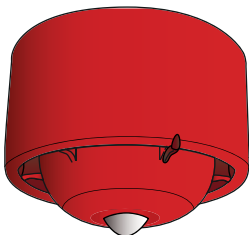


CERTIFICATION



DoP 0359-CPR-00428

WIRELESS CEILING SOUNDER BEACON



Part numbers: SC-33-0110-0001-99
SC-33-0120-0001-99
SC-33-0210-0001-99
SC-33-0220-0001-99
Variation: Red, red flash
Red, white flash
White, red flash
White, white flash

EN APPROVALS

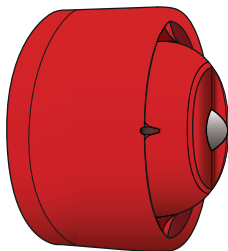


CERTIFICATION



DoP 0359-CPR-00428

WIRELESS WALL SOUNDER BEACON



Part numbers: SC-32-0110-0001-99
SC-32-0120-0001-99
SC-32-0210-0001-99
SC-32-0220-0001-99
Variation: Red, red flash
Red, white flash
White, red flash
White, white flash

EN APPROVALS

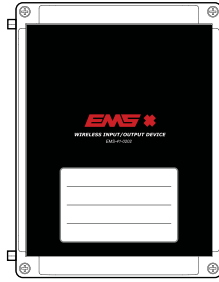


CERTIFICATION



DoP 0359-CPR-00428

WIRELESS I/O UNIT



Part number:
EMS-41-0202-0001-99

EN APPROVALS

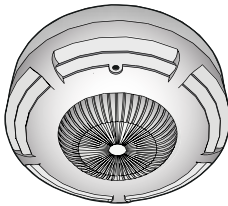


CERTIFICATION



DoP DoP0051

WIRELESS REMOTE INDICATOR



Part numbers:
SC-62-0210-0001-99
SC-62-0211-0001-99

Variation:
No text
With text

EN APPROVALS

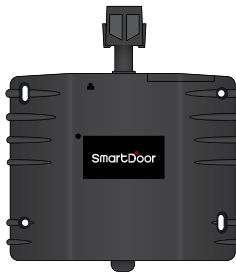


CERTIFICATION



DoP 0905-CPR-202116

SMARTDOOR



Part numbers:
SC-44-0200-0001-99
SC-44-0300-0001-99

Variation:
White
Black

EN APPROVALS



CERTIFICATION



DoP 0905-CPR-202117

Notes

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