

 Cygnus®

Wireless Everywhere

# Control Panel User Manual

## Cygnus Group Limited

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## 1 Introduction

The Cygnus Control and Indicating Equipment (CIE) is the hub of the Cygnus SmartNet and SiteNet Wireless Fire Detection and Alarm Systems, most commonly referred to as the Control Panel.

Each network comprises of a control panel and up to 511 devices. A maximum of five control panels can be linked together to create a single system. The maximum number of devices that can be connected together to form a system is 2560 connected devices.



*Figure 1: Smartnet control panel*



*Figure 2: SiteNet control panel*

Power supplies for the control panel comes from a 230 VAC mains supply, with two 12 VDC, 7 Ah standby batteries. The fully rechargeable batteries are expected to maintain a consistent supply for seventy-two hours.

The SiteNet and SmartNet CIE control panels communicate with their respective network devices using radio links on a self-forming, and self-healing mesh network.

The devices comprise of manual call points, smoke and/or heat detectors, motion sensors, audible alarms, visual alarms, and various combinations of the above.

Network reliability and robust link connections are ensured through an advanced protocol, unique to Cygnus, which establishes two communication paths to each device. The advanced mesh network technology makes it possible for a much wider variety of site and building installations to be fully protected than a conventional system. Wireless radio units reduce the dependency on cable. Installation costs are minimal when compared to wired installations.

The CIE control panel can also be used to modify the configuration of the network and networked devices.

## 1.1 Installation of CIE control panels

Installation of the CIE control panels is to be found in Chapter 28.

## 1.2 Software

All SmartNet devices are configured using the CygnusConfig configuration tool which has been designed to run on Windows® 7 (or later) operating systems.

Designed to be downloaded and installed from a central remote server, devices can be reprogrammed in remote locations, thus making the process quicker and more effective.

## 1.3 Appendices

The appendices section at Chapter 29, supports the main document by including large amounts of necessary material and information that is required by the user but which, if not kept apart, would have to be included within the document.

1. A list of system specific acronyms, abbreviations, and terms used throughout this document are to be found in Appendices, paragraph 29.1.
2. A list of system specific icons and symbols used throughout this document are to be found in Appendices, paragraph 29.2.
3. A list of the figures in this document can be found in Appendices, paragraph 29.3
4. A list of the tables in this document can be found in Appendices, paragraph 29.4
5. Technical specifications for the SiteNet and SmartNet control panels can be found in Appendices, paragraph 29.5
6. Technical, electrical, environmental specifications, datasheets and alarm tones that apply to the SmartNet system and devices in this document can all be found in the Appendices from paragraph 30 onwards.
7. A System flow diagram (Appendices, paragraph 13) gives an overview of the system controlled from the CIE control panel.

## 1.4 Associated Documents

The full suite of associated documents relating to the Cygnus fire detection and alarm system products is listed below:

*Table 1: Associated documents*

Subject	Document	Document number
SmartNet	SmartNet User Manual	2000-MAN-0001
Configuration	Cygnus Configuration Manual	2000-MAN-0002
Maintenance	SmartNet & SiteNet Service Manual	2000-MAN-0003
Control and Indicating Equipment	CIE Control Panel User Manual	2008-MAN-0002

## 2 Safety

These icons are used throughout this manual to indicate a safety issue:

*Table 2: Safety warnings*

Warning	
	This symbol warns the user of a potential hazard to the user or equipment. It is important to ensure that all relevant electrical supplies are isolated before work is started.
	This symbol warns the user of a potential electrostatic hazard to the equipment. For example, appropriate anti-static protection. Earthed wrist straps must be worn when handling PCBs.
	This symbol warns the user when special care is necessary to make sure that the control panel system operate effectively.
	These symbols identify the need to wear Personal Protective Equipment (PPE) when necessary

### 2.1 General Safety

All persons who do work (install, remove, operate, or do maintenance) with the Cygnus CIE control panels must have read this manual before they begin an installation, service or maintenance, or operate the control panel. Where clarification is required, the installer and/ or supplier should be contacted for guidance.

Each Cygnus product has been designed to comply with the requirements of Low Voltage Safety, EMC, and Radio Equipment Directives.

Each Cygnus product has been designed to meet the requirements of UL 94 flammability rating V-0 including the CIE control panel.

The CIE control panel has two standby NP7-12FR lead acid batteries in case of loss of mains electrical power.

The installer of the CIE control panel is responsible for the connection of the CIE control panel to the building electrical supply. It is also the responsibility of the installation engineer that the protective earth terminal be connected to the building protective earth system.

All work must be done in accordance with the latest building regulations.

Only fully trained and authorised service engineers who are certified to work on these control panels, can do installation, programming, commissioning, and maintenance of the equipment.

## 3 Regulatory Information

The Cygnus SmartNet product range meets the essential requirements of the following standards and EU Directives:

*Table 3: Regulatory Information*

Device	Regulations
89/106/EEC	Construction Products Directive
2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
EN 54	European Norm Fire detection & alarm systems
IEC 62133	Standard Safety Testing of secondary cells and batteries containing alkaline or other non-acid electrolytes
IEC 62368	Product Safety Standard.
UL 94	Flammability ratings
IEC 60529	The Ingress Protection Code specifies the necessary level of protection required for mechanical casings and electrical enclosures against impact and ingress damage from dust, water, and the working environment.
WEEE	Waste Electrical and Electronic Equipment Recycling 2013
EN 300 220-1, V3.1.1 (02-2017).	Short Range Devices (SRD) operating in the frequency range 25 MHz to 1000 MHz; Part 1: Technical characteristics and methods of measurement
2014/53/EU	Radio Equipment Directive (RED)
EN 301 489-1 V2.2.2 (2019-09)	Electromagnetic Compatibility (EMC) standard for radio equipment and services

### 3.1 EN 54 Compliance

*Table 4: EN 54 Compliance*

Device	Regulations
Control panel	EN 54-2:1997+A1-2006
	EN 54-4:1997+A1:2002+A2:2006
	EN 54-25:2008

## 3.2 Limitations

As with other manufacturers' EN 54 approved wireless fire alarm systems, have some limitations with their radio technology, meaning a system may not be fully compliant in some cases:

### 3.2.1 Wireless Sounders - EN 54-2:1997, clause 7.7.2 Outputs to 'C'

When an alarm event is triggered, the control panel sends out an alarm message to the alarm devices. As soon as the devices receive this message, they turn the sounders, beacons and visual indicator rings on.

Under some circumstances, the alarm messages may take more than 3 seconds to reach some of the alarm devices, making these devices not compliant with Outputs to 'C'. Delays over 3 seconds will normally affect more complex installations with multiple ranks where messages must propagate further over the network. This means the messages may not reach the device in time to meet this clause but will be received shortly after.

### 3.2.2 Devices Re-joining the Network – EN 54-25:2008

Installed systems can occasionally lose wireless connection with the control panel due to human intervention, such as moving large objects nearby, removing batteries, extending buildings, interference, etc. The Cygnus mesh network has been designed to automatically re-form under these circumstances. EN 54-25:2008, clause 12.5.2 requests that devices should re-join within 300 seconds.

If a device loses communication with the control panel, that device will attempt to re-connect to the control panel as quickly as possible. If that device has children, then these could also lose connection to the control panel, but all other devices connected to the control panel will not be affected.

If a device can see two parents, then this redundancy prevents them from losing communication with the control panel if one parent drops off, as the device will stay connected through the other parent. It is likely that a small number of devices may connect to one parent (parents are limited to a maximum of 24 children), so on a large system of 512 devices, most of the network will remain connected to the control panel.

Forming times vary depending on the number of ranks away from the control panel the device is. If devices lose connection and can't reconnect within 300s, then the control panel raises a fault (as required by EN54:25-2008, clause 4.2.6). If the devices re-connect after 300s, then the faults can be cleared.

To mitigate this scenario, ensure that there are sufficient redundant pathways provided at the time of installation to provide continuous communication through other parent devices, so if a parent device is lost, there is another existing path to the control panel.

### 3.2.3 915MHz Band Devices

Cygnus manufacture 868MHz and 915MHz radios in the SmartNet and SiteNet product ranges to cover different markets. Note that the 915MHz products have not been though formal EN 54 testing therefore are not EN 54 approved. However, hardware and software are identical, but a different frequency channel allocation is used.

### 3.2.4 PIR Detection

Some models have a PIR detector fitted. A PIR detects movement based on change of heat across areas of the lens and cannot differentiate between people and animals/wildlife. If configured, it gives indication that movement has occurred and notifies the panel.

The PIR is not intended for outdoor use, due to the high infrared light output from the sun. Although it shares the same IP rating as the rest of the products, PIR sensors do not operate as efficiently in wet conditions, therefore it is recommended that the PIR function is disabled in these conditions.

Note that the PIR function on SiteNet is not EN 54-18 approved.

### 3.2.5 Ancillary Functions not required by EN 54

The following functions are not a requirement of European Standard EN 54 and are not covered by certification, therefore cannot be tested or approved by the notified body organisation, but have been provided as fully functional facilities.

### 3.2.6 Networking of up to 5 CIEs via Acumesh

Panel networking using the Accumesh radios is not a tested or certified EN 54 function, but is a fully functional facility.

### 3.2.7 Mobile Phone app

The mobile phone app and GSM Modem is out of scope of EN 54 is not a tested or certified EN 54 function, but is a fully functional facility allowing the user to monitor the fire alarm system. To be compliant with EN 54, its default functions do not allow the user to control the panel remotely, but only view the current status.

### 3.2.8 First Aid

A First Aid call point function is an optional function available on SiteNet devices. Although it has been tested during EN 54 assessment, the function is not covered by EN 54, therefore is not a certified EN 54 function, but is a fully functional facility.

### 3.2.9 Security/ Intruder Alert

The PIR intruder detection function is not a tested or certified EN 54 function, but is a fully functional facility. The SiteNet PIR function does not currently have approval to EN 54-18.

See additional limitation at 3.2.4.

## 4 CIE Control Panel introduction

The CIE Control panel is a complex piece of equipment that is the central hub of the SiteNet and SmartNet systems. All systems are totally wireless. Where SiteNet is designed more for temporary locations and construction sites, SmartNet is designed for permanent fit outs and new build structures.

Control panels can have a maximum of 511 other devices wirelessly linked to them, as well as a number of wired inputs.

Table 5 lists all of the major CIE Control Panel major components that can be replaced. Many parts are common, including the fixings which are not listed.

*Table 5: CIE Control Panel major components*

Component	Part Number
CIE Door - SmartNet - GREY	2008-PRT-0002
CIE Door - SiteNet - RED	2008-PRT-0036
CIE Main Enclosure - WHITE SmartNet	2008-PRT-0001
CIE Main Enclosure - RED SiteNet	2008-PRT-0035
CIE Door Hinge	2008-PRT-0004
Main Hinge	2008-PRT-0003
Door Latch	2008-PRT-0007
Level Access key	1000-PRT-0033
Cabinet key	1000-PRT-0031
20 mm Camlock	1000-PRT-0008
Field Wiring PCB Assembly	2008-ASY-0002
MCU-Zone LED cable assembly	2008-ASY-0013
MCU & display PCB assembly	2008-ASY-0001
Zone LED PCB assembly	2008-ASY-0004
Radio board C - PCBA - MCP + IOU - 868 MHz	2001-ASY-0006
Level access key switch cable assembly	2008-ASY-0011
MCU-FWB ribbon cable assembly	2008-ASY-0012
Main Wiring Loom	2008-ASY-0010
FWB Earth Cable	2008-ASY-0028
PSU Earth Cable	2008-ASY-0027

Component	Part Number
Power Cable with UK Plug	1000-PRT-0039
Cable Gland with Locknut	1000-PRT-0021
Hirose RF Coaxial Cable	1000-PRT-0015
NP7-12FR, 12 V 7 Ah Fire Retardant Sealed Lead Acid Battery	1000-BAT-0004
Velcro strapping	1000-PRT-0014
Battery Link Cable	2008-ASY-0029
Touchscreen DLC Display	1000-PRT-0035
Gasket, EMI Shielding	1000-PRT-0011
LCD Display Spacer	2008-PRT-0009
CIE Ingress Protection Sticker - SmartNet	2008-PRT-0043
CIE Ingress Protection Sticker - SiteNet	2008-PRT-0044
Battery Label	2008-PRT-0037
ESD Label	1000-PRT-0030
Product Label	2000-PRT-0018
SmartNet & SiteNet facia label	2008-PRT-0013
Adhesive-backed Loop coins	1000-PRT-0010
Tie bases	1000-PRT-0017
4-way terminal block	1000-CMP-0002
Internal mounting plate	2008-PRT-0008
C-Tec PSU	1000-PRT-0036
PSU Mains power fuse T1A H250V, 1 A (slow blow)	No details
PSU Battery fuse 3 A Mini-Automotive Blade Fuse	No details
HDP Antenna 868 MHz and 915 MHz	2008-PRT-0012
Yellow bubble level	1000-PRT-0007
Rivet Lock Farnell 2494555	1000-PRT-0038
4K7 Resistor	1000-CMP-0006
10K Resistor	1000-CMP-0007

Not all components can be removed and for some items it is more cost effective to replace the next highest assembly than change the item itself. The table identifies components that cannot be replaced. (Table 6: CIE Control Panel components that cannot be replaced.)

*Table 6: CIE Control Panel components that cannot be replaced.*

Component	Reason	Part Number
SmartNet & SiteNet panel facia label	Damage would be caused to surface – Affix new one over top or replace door.	2008-PRT-0013
Individual main wiring loom cables	Cannot be supplied individually – Replace loom	No details
Main wiring loom ferrite bead	Cannot be supplied individually – Replace loom	No details

Table 7 documents apply to all CIE Control panels and should be used unless otherwise stated.

*Table 7: Applicable documents.*

Documents	Part Number
CIE Production Assembly Guide	2008-MBI-0001
SN.CIEx0.A CN.CIEx0.2 [All Variants] CIE General Assembly (868 Hz)	2008-DWG-0001
SN.CIEx1.A CN.CIEx1.A [All Variants] (CIE General Assembly (915 Hz)	2008-DWG-0003

## 4.1 Control Panels

SiteNet control panels covered by this manual.

*Table 7: SiteNet devices*

Device	Part Number
Control Panel 16 Zone, 868MHz	CN.CIE00.2
Control Panel 32 Zone, 868MHz	CN.CIE10.2
Control Panel 16 Zone, 868MHz, no Zone LEDs	CN.CIE50.2
Control Panel 32 Zone, 868MHz, no Zone LEDs	CN.CIE60.2
Control Panel 16 Zone, 915MHz	CN.CIE01.2
Control Panel 32 Zone, 915MHz	CN.CIE11.2
Control Panel 16 Zone, 915MHz, no Zone LEDs	CN.CIE51.2
Control Panel 32 Zone, 915MHz, no Zone LEDs	CN.CIE61.2

SiteNet control panels covered by this manual.

*Table 8: SmartNet panels*

Device	Part Number
Control Panel 16 Zone, 868MHz	SN.CIE00.A
Control Panel 32 Zone, 868MHz	SN.CIE10.A
Control Panel 64 Zone, 868MHz	SN.CIE20.A
Control Panel 96 Zone, 868MHz	SN.CIE30.A
Control Panel 16 Zone, 868MHz, no Zone LEDs	SN.CIE50.A
Control Panel 32 Zone, 868MHz, no Zone LEDs	SN.CIE60.A
Control Panel 64 Zone, 868MHz, no Zone LEDs	SN.CIE70.A
Control Panel 96 Zone, 868MHz, no Zone LEDs	SN.CIE80.A
Control Panel 16 Zone, 915MHz	SN.CIE01.A
Control Panel 32 Zone, 915MHz	SN.CIE11.A
Control Panel 64 Zone, 915MHz	SN.CIE21.A
Control Panel 96 Zone, 915MHz	SN.CIE31.A
Control Panel 16 Zone, 915MHz, no Zone LEDs	SN.CIE51.A
Control Panel 32 Zone, 915MHz, no Zone LEDs	SN.CIE61.A
Control Panel 64 Zone, 915MHz, no Zone LEDs	SN.CIE71.A
Control Panel 96 Zone, 915MHz, no Zone LEDs	SN.CIE81.A

## 5 User Access

Users can interrogate the control panel through the touchscreen. How much the user can see will depend on the level of access that person has been given. Most personnel will only be given a User Level 1 profile and will not need a personal identification number (PIN). User level 1 personnel will not be able to make changes to the control panel, except to silence a buzzer or acknowledge a fire. Refer to paragraph 15 to read about the touchscreen and what information can be seen on it.

If a person is required to change settings, or do maintenance on the control panel, they will be given a Personal Identification Number (PIN) that will allow them to do that work.

*Table 8: User access levels*

User	User Job	Access description
1	General use	User Level 1 is the default security level. At this level fire alarms, fault messages, and current disablements can be viewed. The CIE internal buzzer can also be muted.
2	Admin	User Level 2 is intended for use only by an authorised person on the site (e.g., site manager). A Level 2 user can also reset the CIE's fire and fault messages, to silence or re-sound alarm devices, disable and enable devices, use the Test mode to add or remove delays, initiate an evacuation, and view the site configuration.
3	Installation/ maintenance engineer	A qualified engineer with Level 3 access can add/ remove devices, alter device configurations, configure delays, set day/ night timer, change re-sound options, and identify the CIE's software version reference.
4	Service engineer/ manufacturer	User Level 4 access is restricted to qualified service engineers and the manufacturer. Typically, it is also used to update the CIE firmware.

## 6 Log On/Log Off

This chapter looks at the requirements of logging On and Off, who can, and who cannot logon, personal identification numbers (PINs) and basic touchscreen knowledge.

### 6.1 Personal Identification Number

All personnel who need to interrogate the network, configure devices, or make changes to the control panel will need a Personal Identification Number (PIN). These personnel will be identified as User Level 2, 3, or 4 users. PINS for User Levels 2 and 3 will be assigned to the user organisation. User Level 4 engineers are more usually reserved for installers and service engineers.

Accessing User Level 2 or higher can be done by one of two methods

1. Method 1 requires access with a User Access key. Refer to paragraph 6.4.
2. Method 2 requires the person to input a PIN into the system when requested. Refer to paragraph 6.4.2.

### 6.2 Touch buttons

Touch buttons are enabled or disabled.

Enabled touch buttons are available to the user if the box is filled with a strong grey colour, and clear lettering.

Touch buttons that are disabled to the user have a clear fill in the box and faint grey lettering.

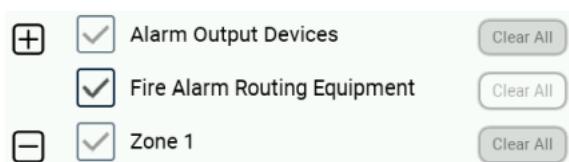


Figure 3: Enabled Disabled example

## 6.3 User Level 1

User Level 1 is the default security level, intended for the general worker. At this level fire alarms, fault messages, and current disablements can be viewed, and the CIE internal buzzer can be muted. User Level 1 workers do not need a Personal Identification Number (PIN).

Each time a tab (Fires, Faults, Other Events, Disablements, or On Test) is opened the tab is highlighted in blue.

### 6.3.1 User Level 1 Status bar



Figure 4: User Level 1 Status bar

### 6.3.2 User Level 1 Status pages

#### Fires

The Fires status page (Figure 5) at User Level 1 shows the Fires tab [1] highlighted in blue.

The two touch buttons enabled on the Control bar are **Mute Buzzer** [2] and the **Log On/Off** [3] touch buttons. In the event of a fire, anyone with User Level 1 or higher (everyone) can acknowledge the fire [4] at the control panel. The acknowledge action will be recorded on the control panel.

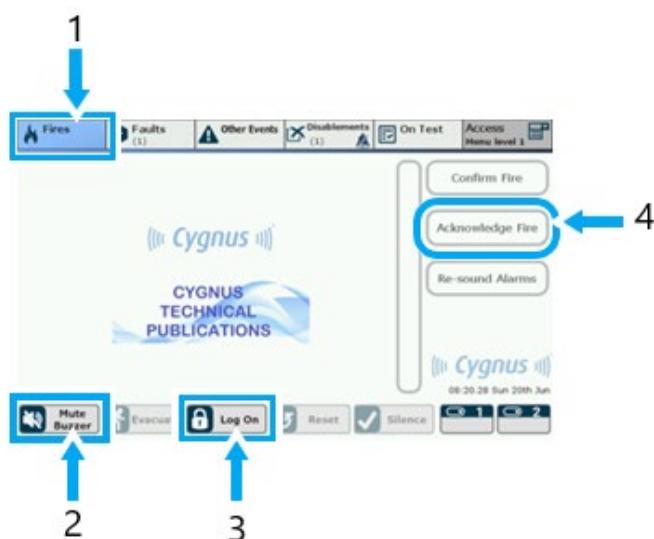


Figure 5: User Level 1-Fire's status page

## Faults

The **Faults** status page (Figure 6) at User Level 1 shows the **Faults** tab [1] highlighted in blue.

All faults that have not been cleared will be shown on this page [4] at the control panel.

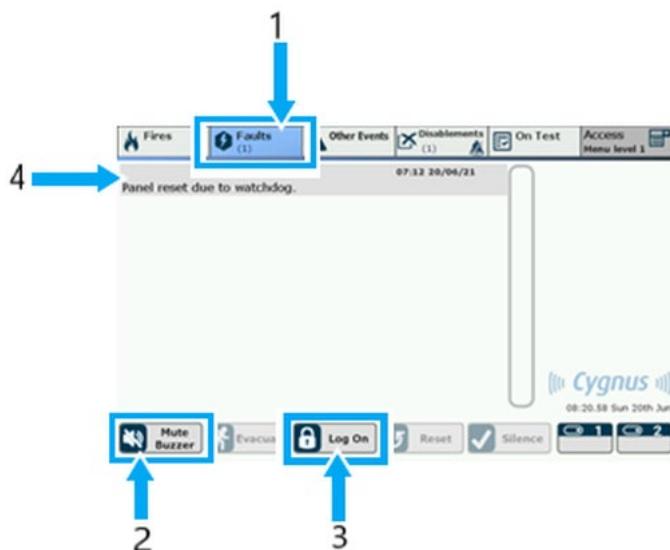


Figure 6: User Level 1-Faults status page

## Other Events

The **Other Events** status page (Figure 7) at User Level 1 shows the **Other Events** tab [1] highlighted in blue.

All **Other Events** that have not been cleared will be shown on this page [4] at the control panel.

The worker can also re-enable the sounder alarms if they have been muted by a previous action. If there are no fires or other event warnings occurring, the Re-Sound Alarms will not work.

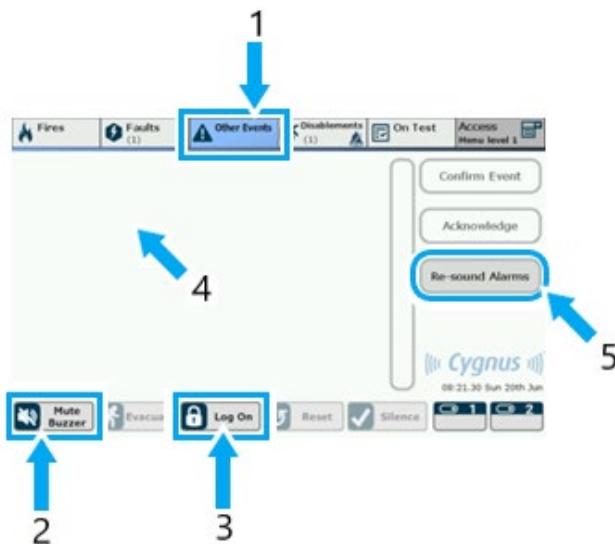


Figure 7: User Level 1-Other Events status page

### Disablements

The Disablements status page (Figure 8) at User Level 1 shows the Disablements tab [1] highlighted in blue.

All Disablements that have not been cleared will be shown on this page [4] at the control panel.



Figure 8: User Level 1-Disablements status page

### On Test

The On Test status page (Figure 9) at User Level 1 shows the On Test tab [1] highlighted in blue.

All ongoing tests will be shown on this page [4] at the control panel.

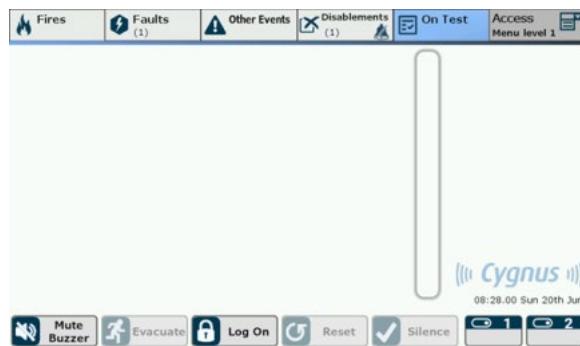


Figure 9: User Level 1-On Test status page

#### Access menu

The Access menu is not accessible without a User Level 2 profile, or higher.

If an attempt to open the Access menu is made without the correct PIN or User Access key then the attempt will be denied, and the touchscreen will display a screen similar to Figure 10.



Figure 10: User Level 1 attempt to Access menu

#### 6.3.3 User Level 1 Control bar

The User Level 1 **Control Bar** looks like Figure 11 and will stay the same, whichever Status page is selected.

You cannot Log Off from a User Level 1 page.

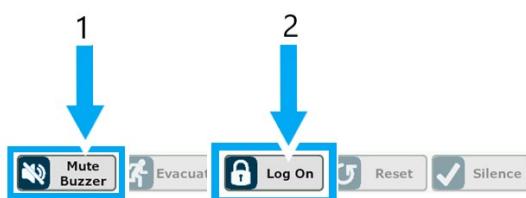


Figure 11: User Level 1-Control bar

### Mute Buzzer

The **Mute Buzzer** touch button will stop/cancel the control panels internal alarm until the fault is rectified or another event makes the alarm sound again.

### Log On/Off

The Log On/Log/Off touch button is necessary for all users with User Level PINs to get access to the administrative or engineering data in the panel. Refer to paragraph 6.4 for more information.

## 6.4 Log On (User Level 2, and 3)

The Log On/Log/Off touch button is necessary for all users with User Level PINs to get access to the administrative or engineering data in the panel.

There are two methods to Log on at User Level 2, PIN entry or key entry. This gives the organisation the freedom to allow multiple people to gather information from the control panel without necessarily issuing and recording PINs. However, Personnel with User Level 2 PINs cannot adversely change system settings.

### 6.4.1 Log On to User Level 2 with a User Level Access key

---

#### Warning

---



When the Access Level key is turned to the Log Off position, no matter which status page the user is on, the Access menu will return to Menu Level 1 immediately.

---

The User Level 2 access key (Figure 12; [1]) will, when turned clockwise through 90 degrees, change the Access menu touch button (Figure 13 [2]) to **Menu Level 2** (Figure 13, [3]) and (Figure 14, [1]) without the need to input a PIN. The **Log On** [2] touch button changes to **Log Off**.



*The Log On touch button changes to Log Off as soon as the level access key has been turned in the key switch.*



*Select Cancel to exit the window and remain at the current level.*

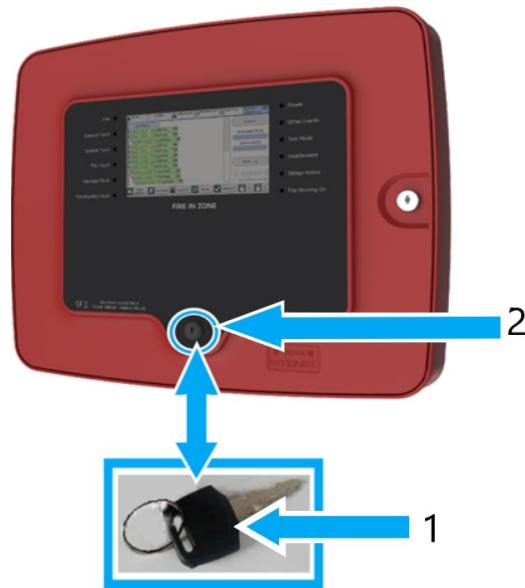


Figure 12: Key switch

Before the User Level Access Key is inserted and turned the touchscreen will look like Figure 13.

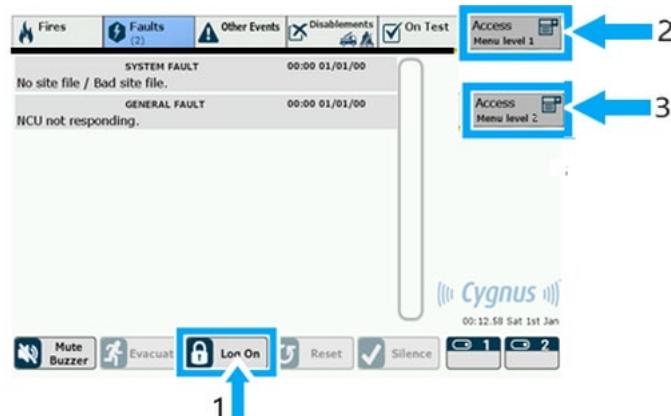


Figure 13: Log On to User Level 2

After the User Level Access Key has been turned the touchscreen will look like Figure 14.

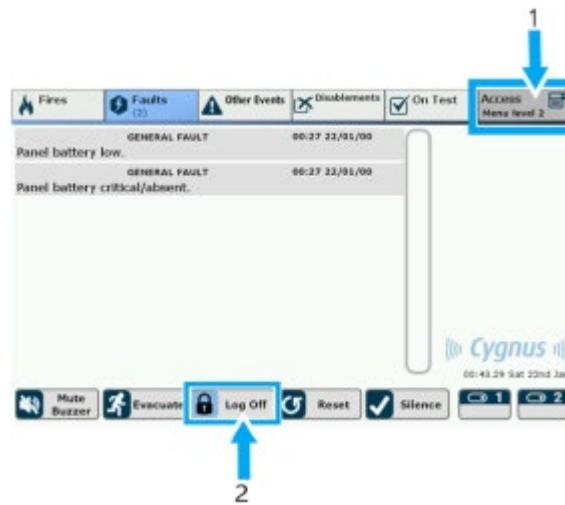


Figure 14: Log On touch button User Level 2

#### 6.4.2 Log On with a PIN

To access User Level 2 or a higher level with a Personal Identification Number (PIN) user must first always **Log Off** from the level they are working in. This action will return the touch screen to User Level 1 (Figure 15).

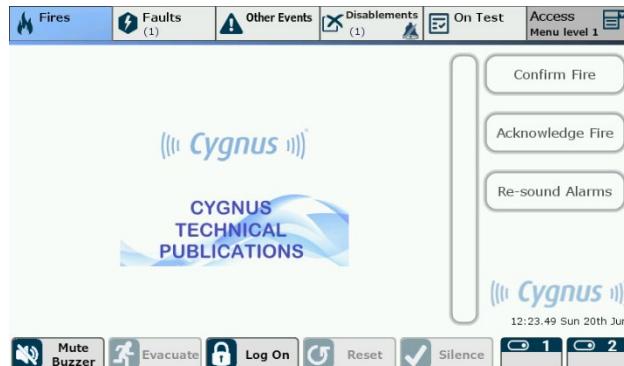


Figure 15: Revert to Log On

To access a User Level 2 only (unless you have the Level 2 access key), you will need to input a PIN. To access a User Level 3 or User Level 4 you will only need a PIN.

*Remember: You will not be allowed to Log On to a new level if you have not logged off from the previous level.*

Select the **Log On** touch button (Figure 20, [2]) on any user level screen to display the page shown in Figure.

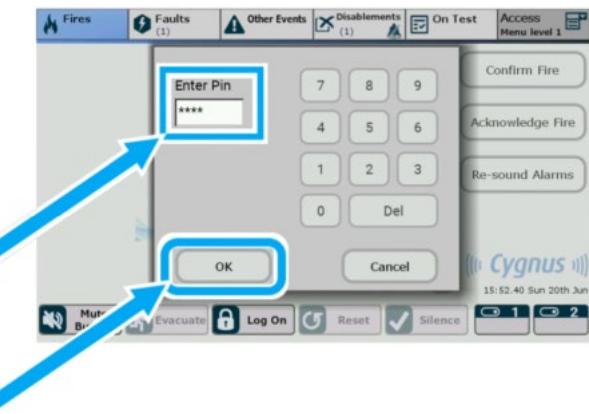


Figure 16: Log On with a PIN

The Log On panel will appear. Enter the PIN assigned to you (Figure 16, [1]), then select **OK** [2]. If the PIN is correct the panel will flash the word **Accepted** for approximately two seconds (Figure 17, [1]).

If the PIN is incorrect the touchscreen will flash the word **Denied** for approximately two seconds (Figure 17, [2]).

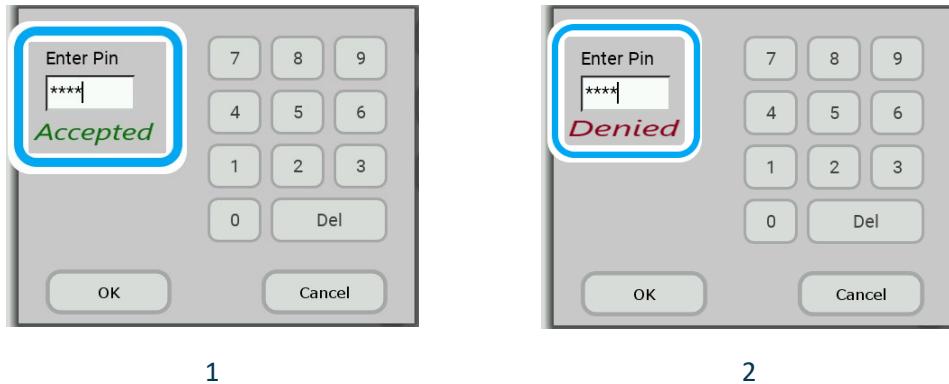


Figure 17: PIN screens

Immediately after a user has logged onto a screen, the PIN screen will disappear.

The Access menu level will change to the level required and the **Log On** touch button will change to show **Log Off** (Figure 18).

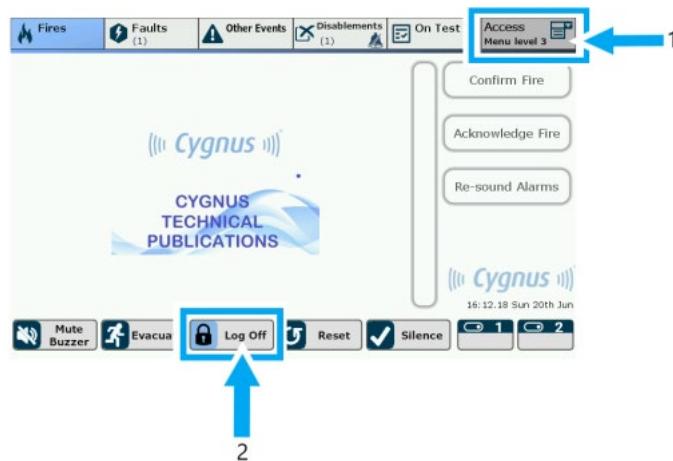


Figure 18: Log On completed

## 6.5 Access menu overlay

When the Access dropdown menu is selected it will overlay whatever is already on screen. This provides clarity between the two layers, the dropdown menu will display a dark shadow to make it stand out from the layer below.

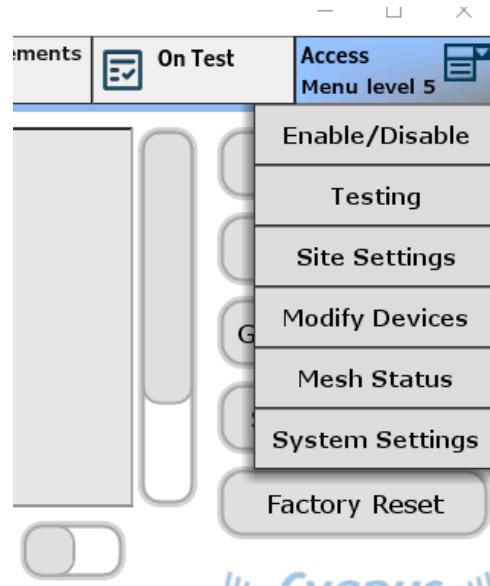


Figure 19: Access menu overlay

## 6.6 Log Off (User Level 2, and 3)

### 6.6.1 Log Off with the User Level 2 Access key

To **Log Off** from any level with the Access level key, simply turn the user access key thru 90-degrees to the upright position. The Touchscreen display will revert to the Initial Log On page (similar to Figure 20) where the Access tab shows **Menu level 1** and the Log On/Log Off touch button will display **Log On**.

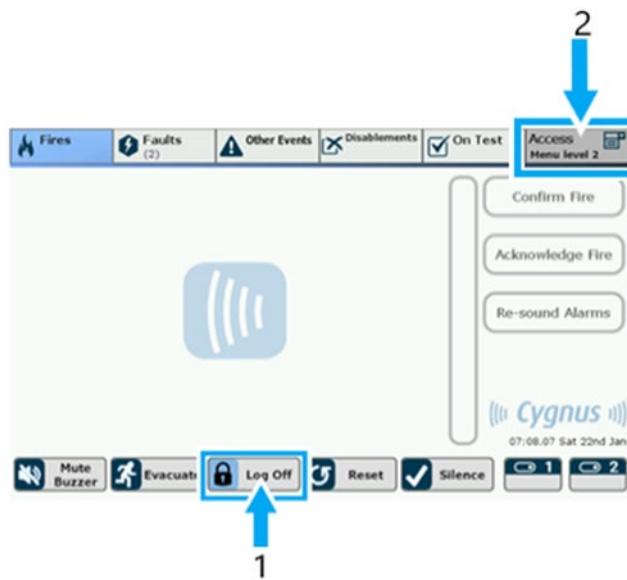


Figure 20: Initial Log On page

### 6.6.2 Log Off without the Access level key

To **Log off without the Access level key** select the **Log Off** touch button at the bottom of the screen to return. The touchscreen will return to access User Level 1.

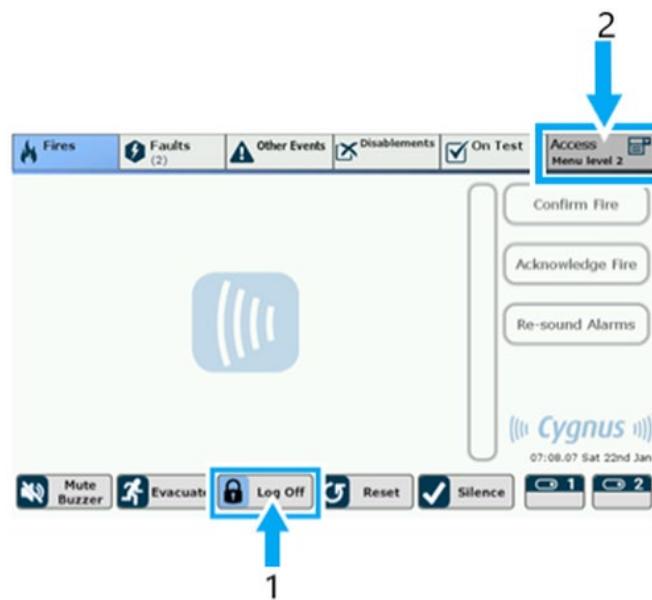


Figure 21: Log Off touch button

The **Log Off** touch button (Figure 21.[1]) changes from whatever status page the user is on to **Log On** as soon as you have logged off. The **Access** touch button will return to **Menu Level 1** regardless of the position of the key-switch.

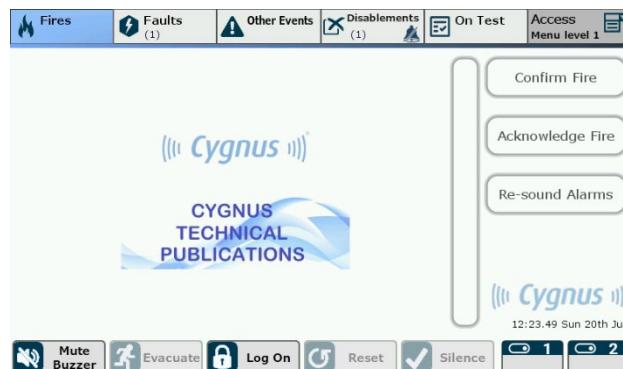


Figure 22: Revert to Log On

## 6.7 Touchscreen basics

### 6.7.1 Status bar

The tabs on the **Status bar** never change but the amount of information available to each user will. This is decided by their user access level.



Figure 23: Level 2 Status bar

## 6.7.2 Control bar

The tabs on the **Control bar** never change but the number of tabs available to each user will. This is decided by their user access level.

The first thing to be aware of after logging in at User Level 2 or higher is that the tabs on the Control bar are different. More of them have been enabled and appear less faint.



Figure 24: Control bar User Level 1

On the User Level 1 Control bar only the **Mute Buzzer** and the **Log On/Log Off** touch buttons are enabled.



Figure 25: Control bar User Level 2

The notable changes are that on the User Level 2 Control bar the **Evacuate**, **Reset** and **Silence** touch buttons have now been enabled.

## 6.7.3 Scroll bars

Scroll bars will appear whenever there is insufficient space to show all the information at one time.

To move the scroll bar, press firmly on the bar with a finger until the colour of the scroll bar changes to blue. Slowly slide the finger in the direction required.

*Note: the screen is a resistive touch screen unlike a mobile phone screen. It requires pressure to trigger a touch command. Whether you are pressing a touch button or scrolling down you will need to apply a certain amount of pressure on the screen.*

## 7 Administrative tasks

User Level 2 is suggested for all administrative tasks. The procedures shown below are the ones set at the control panel when the installer makes it available to the user organisation.

User Level 2 tasks are accessed from the Access menu.

### 7.1 Enable/Disable menu

All alarm output devices can be disabled from this page.

- All top-level zones can be disabled from this page
- All devices can be disabled from this page
- All options that are enabled for user level 2 have a Clear All touch button enabled.

The following tasks cannot be done with a User Level 2 profile:

- Disable buzzer. This will be Visible but cannot be enabled or disabled from this page.

### 7.2 Testing menu

Every selection on the touch screen can be selected. Each selection will illuminate the Test Mode LED.

All zones can be selected, individual zones can be tested.

All individual devices, detectors, sound, and visual indicators. can also be tested.

Testing can be employed at three levels: System, Local and Silent.

The following tasks can be done with a User Level 2 profile:

1. Test Display.
2. Test LEDs/ Buzzer

## 7.3 Site Settings menu

With the exception of enabling or disabling output delays, there are no touch buttons available on the main touchscreen information area to users with a User Level 2 PIN.

The following options can be done with a User Level 2 profile:

1. Day/Night Times can be viewed but not changed,
2. SMS Settings can be viewed but not changed.
3. View site settings

## 7.4 Modify Devices menu

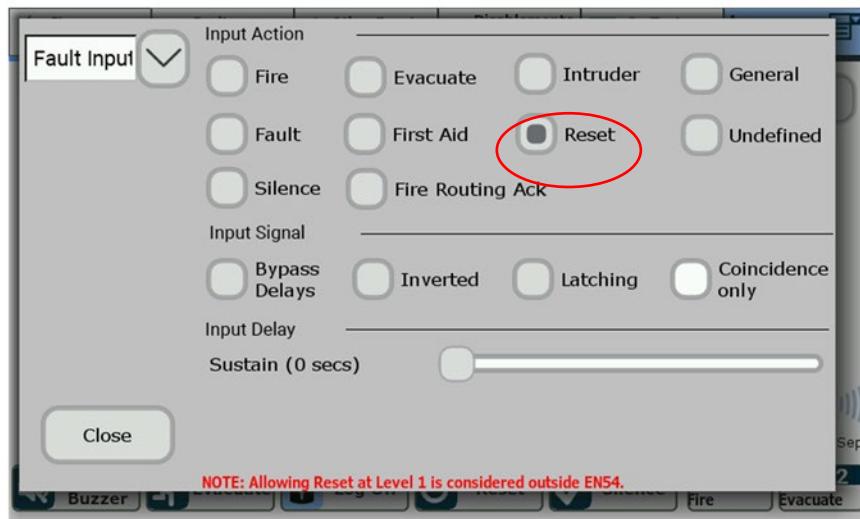
The Modify devices menu is not available to persons with User Level 2 PINs.

## 7.5 Using an Input as Reset

Resetting the control panel is only allowed by EN 54 while in user Level 2 or above. Inputs configured to reset when the input state changes will be at Level 1 in normal operation which are outside of EN 54 and therefore not compliant. If an input is configured to be used to reset the control panel (as shown in the image below), then a message will appear in red text on the configuration window, stating:

**NOTE: Allowing Reset at Level 1 is considered outside EN54**

Configuring an input as a Reset function should only be carried out if absolutely necessary and only by trained installation engineers.



## 7.6 Mesh Status menu

The Mesh Status menu displays the live status of the mesh on the user's network. If the panel devices are all green then this means all devices are stable on the network.

The number of devices detected on the mesh network and devices active on the network are shown on the panel, below the access menu tab.

The following tasks can be done with a User Level 2 profile:

1. Restart Mesh. The control panel will drop all devices and allow them to re-join again.
2. Optimize Mesh. This will allow devices to select a different secondary communication path back to the panel. This is known as a secondary parent or secondary node but is essentially another radio device.
3. Check Mesh Firmware. This will check all devices connected on the mesh to ensure they are running the same radio firmware as the control panel. If any devices are running a different firmware the control panel will list the devices in the faults list.
4. Examine Mesh Log. A new window will display all the logs at the current time. Previous logs can be isolated into groups for easier analysis.

## 7.7 System Settings menu

The System Settings menu is not available to persons with User Level 2 PINs.

## 8 Engineers tasks

User Level 3 is suggested for all engineers within the user organisation, or from the certified installers organisation who may need to manage information, interrogate the information available at the control panel, change operational settings, or train others.

### 8.1 Enable/Disable menu

Every selection on the touchscreen can be selected.

- All alarm output devices can be disabled from this page.
- All top-level zones can be disabled from this page
- All devices can be disabled from this page
- All options that are enabled for user level 3 have a Clear All touch button enabled

The following tasks cannot be done with a User Level 3 profile:

- Disable buzzer. This will be Visible but cannot be enabled or disabled from this page.

### 8.2 Testing menu

Every selection on the touchscreen can be selected. Each selection will illuminate the Test Mode LED.

All zones can be selected, individual zones can be tested.

All individual devices, detectors, sounders, and visual indicators. can also be tested.

Testing can be employed at three levels: System, Local and Silent.

The following tasks can be done with a User Level 3 profile:

1. Test Display. Shows a video colour card.
2. Test LEDs/Buzzer: Runs sequential testing of the LEDs.

## 8.3 Site Settings menu

On the **Site Settings** touchscreen all of the touch buttons are available for the user with a Level 3 PIN.

Allow Intruder Alerts:

1. Daytime touch buttons can be enabled or disabled.
2. Night-time touch buttons can be enabled or disabled.

Re-sound: The Re-sound touch button can be enabled or disabled.

Output Delays:

1. The Output Delays touch button can be enabled or disabled.
2. The Use global settings for all fire alarms touch button can be enabled or disabled.
3. The First Delay and Investigative Delay sliders can be enabled or disabled.

The following tasks can be done with a User Level 3 profile:

1. Day/Night Times can be viewed and changed,
2. SMS Settings can be viewed and changed, New and existing user details can be added, or removed.
3. Change PIN code. Users can change their PIN code.
4. Setup AcuMesh Radio. New AcuMesh radios be added, configured, or existing AcuMesh radios can be reconfigured.

## 8.4 Modify Devices menu

The Modify Devices menu allows engineers to amend the details of existing devices or add new devices.

The touchscreen page menu allows engineers to amend the details of existing devices.

The **Add a Device** task can be done with a User Level 3 profile.

## 8.5 Mesh Status menu

The Mesh Status menu displays the live status of the mesh on the user's network If the panel devices are all green then this means all devices are stable on the network.

At the touch screen the details of each device can be interrogated, Reset, or the device can be removed from the network.

The number of devices detected on the mesh network and devices active on the network are shown on the panel, below the access menu tab.

The following tasks can be done with a User Level 3 profile:

1. Restart Mesh. The control panel will interrogate and refresh the system information
2. Optimize Mesh
3. Check Mesh Firmware
4. Examine Mesh Log.

## 8.6 System Settings menu

The System Settings menu displays the current (live) operating status of the control panel.

At the touchscreen two touch buttons will enable/disable the SMS tool, and the Phone app.

At the bottom of the touchscreen a slider can change the **Brightness** of the touchscreen backlight

The following tasks can be done with a User Level 3 profile:

1. View Log. This will display fires, other events, faults and logins.
2. Set Time: Time and Date settings
3. GSM App Support: Edit details
4. System Restore: Restore system settings to default
5. Factory Reset: Delete all system and site data. All devices will be removed.

## 9 Service engineers tasks

Service engineers have two requirements when it comes to working with the CIE control panels.

6. First, they are required to be able to remove, replace and install components in the CIE control panels. All removal and replacement procedures are included in the SmartNet & SiteNet Service Manual 2000-MAN-0003.
7. Second, they can run critical investigative programmes to troubleshooting problems and to identify causes of failures.

Service engineers are assigned a User Level 4 access code. This is suggested for all service engineers within the certified installers organisation, and OEM staff who need to do maintenance, servicing, testing, replacements, and repairs.

### 9.1 SmartNet & SiteNet Service Manual

This information is included in the SmartNet & SiteNet Service Manual 2000-MAN-0003.

1. Replacement of all user parts of the CIE Control Panel.
2. Replacement of all user parts of the Fire Alarm Interface units.
3. Replacement of all user parts of the SmartNet Manual Call Point.
4. Replacement of all user parts of the Site Net Combi-Detector.
5. Replacement of all user parts of the SiteNet Call Points.
6. Replacement of all SiteNet and SmartNet batteries.

### 9.2 Service engineers tasks in this manual

Service engineer's tasks in this manual allow an engineer greater flexibility to interrogate and set all ranges, limitations and determinations required by the user organisation without fear of random change from that organisation. At the touchscreen this means:

### 9.2.1 Enable/Disable menu

Every selection on the touchscreen can be selected.

1. All alarm output devices can be disabled from this page.
2. All top-level zones can be disabled from this page
3. All devices can be disabled from this page
4. All options that are enabled for user level 4 have a clear selectable touch button.

The Disable buzzer tasks can be done with a User Level 4 profile:

The touch button changes to blue. When disabled and the Disablement LED on the front panel is lit.

### 9.2.2 Testing menu

Every selection on the touchscreen can be selected. Each selection will illuminate the Test Mode LED.

All zones can be selected, individual zones can be tested.

- All individual devices, detectors, sounders, and visual indicators. can also be tested.
- Testing can be employed at three levels: System, Local and Silent.

The following tasks can be done with a User Level 4 profile:

- Test Display. Shows a video colour card.
- Test LEDs/ Buzzer: Runs sequential testing of the LEDs.

### 9.2.3 Site Settings menu

On the **Site Settings** touchscreen all of the touch buttons are available for the user with a Level 4 PIN.

Allow Intruder Alerts:

- Daytime touch buttons can be enabled or disabled.
- Nighttime touch buttons can be enabled or disabled.

The Re-sound touch button can be enabled or disabled.

#### Output Delays:

- The Output Delays touch button can be enabled or disabled.
- The Use global settings for all fire alarms touch button can be enabled or disabled.
- The First Delay and Investigative Delay sliders can be enabled or disabled.

### 9.2.4 Modify Devices menu

The Modify devices settings menu allows engineers to amend the details of existing devices, or add new devices, only when connected on the network.

### 9.2.5 Mesh Status menu

The Mesh Status menu displays the live status of the mesh on the user's network. If the panel devices are all green then this means all devices are stable on the network.

At the touch screen the details of each device can be interrogated, Reset, or the device can be removed from the network.

The number of devices detected on the mesh network and devices active on the network are shown on the panel, below the access menu tab.

The following tasks can be done with a User Level 4 profile:

- Restart Mesh. The control panel will interrogate and refresh the system information
- Optimize Mesh
- Check Mesh Firmware
- Examine Mesh Log.

### 9.2.6 System Settings menu

The System Settings menu displays the current (live) operating status of the control panel.

At the touchscreen two touch buttons will enable/disable the SMS tool, and the Phone app.

At the bottom of the touchscreen a slider can change the **Brightness** of the touchscreen backlight

## 10 CygnusConfig configuration

The system is configured using the CygnusConfig tool on a windows PC. This software includes full system design, including cause and effect, device setup and networking. Some configuration options can also be made using the panel itself, after the system is setup but the control panel however when the control panel is upgraded it will overwrite all existing configurations.

The CygnusConfig tool is also used to update and install new firmware on control panel or devices.

The control panel communicates with the system through the wireless mesh protocol. The system is always alert to all types of alarms, system faults and low battery levels. These can be notified to different users by visual and sound alerts, or to management personnel through SMS messages. At the control panel a user can interrogate the system to locate every device and cancel alarms.

Refer to the 2000-MAN-0002 Cygnus Configuration Manual for more information.

## 11 Cause and Effect Options with Requirements

The Cause & Effect engine within Cygnus Config can be used to configure Cygnus SmartNet and SiteNet CIE devices to implement Dependencies on more than one alarm signal before the CIE enters the full Fire Alarm mode. The full details of dependencies are described in EN54 Part 2 Options with Requirements, clause 7.12.

### 11.1 Cause and Effect ‘Type A’ dependencies

The Type A dependency will stop the CIE entering full fire alarm mode until it receives confirmation of a fire event from the same detector or a detector in the same Zone.

This would typically be within an industrial kitchen where a heat detector is triggered, but the system can be configured only to sound the full fire alarm sound and visual indicators once the CIE receives a second confirmation fire alarm event. This can be from the same detector (a smoke trigger on a Combi detector) or a detector in the same zone.



*Note: when using Dependency Type A and B with the combi-detector smoke and heat detectors, note that the confirmation signal will only be coming from the same combi-detector device, therefore in the case of a low heat fire it will cause the heat sensor on a multi detector not to trigger a confirmation signal to Control Panel until the smoke sensor on the detector has also triggered.*

#### 11.1.1 EN 54-2, Clause 7.12.1 Type A dependency (option with requirement) functionality

Following the receipt of a first alarm signal from a fire detector, the entry to the fire alarm condition may be inhibited until the receipt of a confirmation alarm signal from the same fire detector, or from a fire detector in the same zone. In this case, the first alarm state need not be indicated, and the following shall apply:

- a) the mode of operation is configurable at access level 3 for individual zones;
- b) reception of a confirmation alarm signal is not inhibited for more than 60 seconds following the receipt of the first alarm signal.
- c) the first alarm state is automatically cancelled within 30 minutes of the receipt of the first alarm signal;

d) information on the values of the configured delay times is accessible at access level 2 or 3.

### 11.1.2 Setting up the Type A dependency

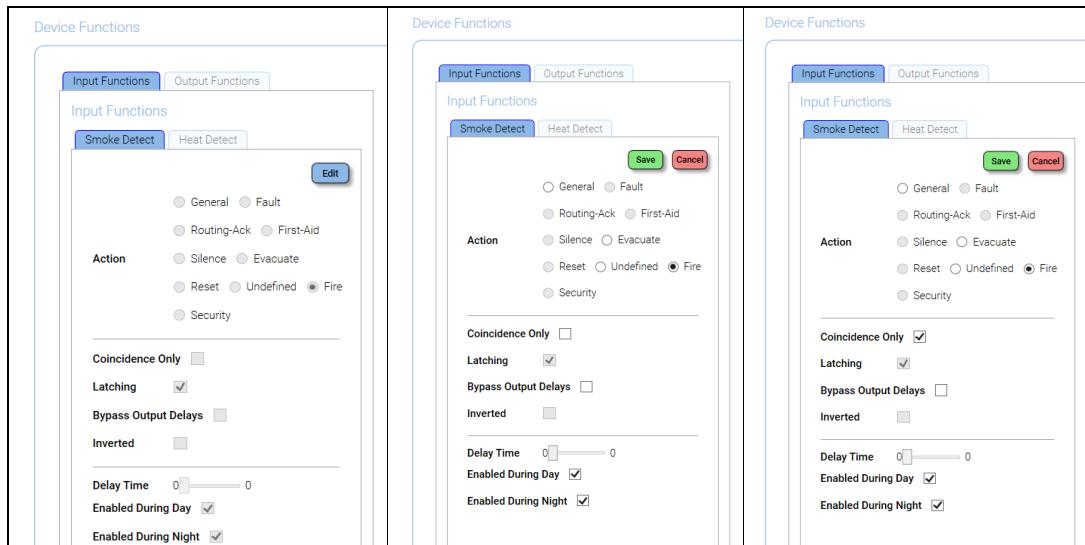
See also Cygnus config user guide 2000-MAN-0002

### 11.1.3 Setting the Detectors to Coincidence Only

Open Cygnus Config, login and then select the site you want the Type A rule applied to.

Select Devices using the Devices button to see the devices on the site.

Select the Device you want to apply the rule to and scroll down the Device Configuration section to the Device Functions area.



Press on the Edit button

Select the Coincidence Only Option

Press Save to save the settings

Also change the Coincidence Only setting for the for the Heat Detect and press Save to save this setting.

Repeat this process for all the detector devices you would like the Type A rule applied to.

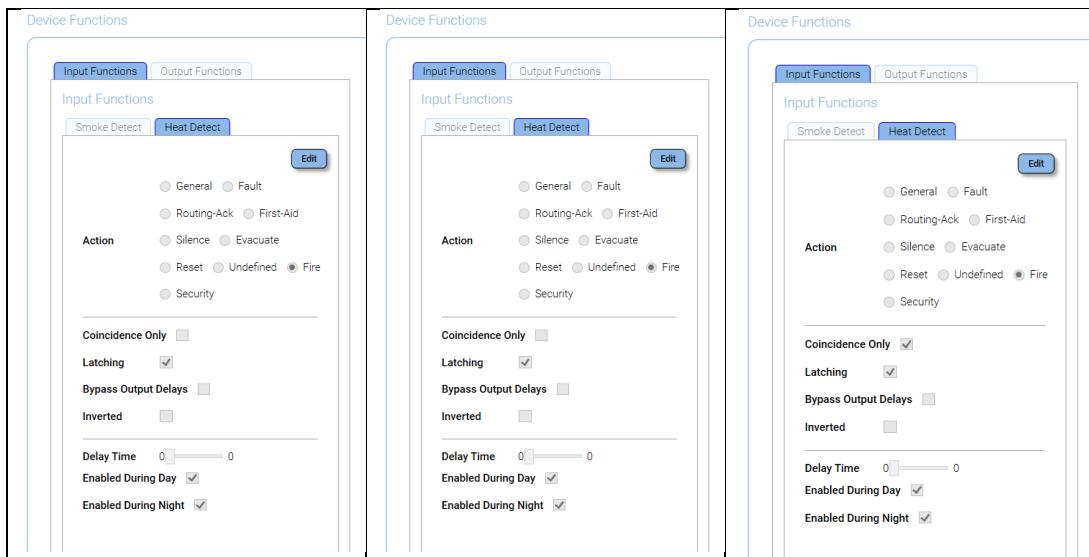


Figure 26: Cause and Effect screen

#### 11.1.4 Setting the Type A Input Conditions

Use the Cause & Effect button to view the Cause & Effect screen.



In the Input Conditions Screen, use the + icon to create a new Input Condition

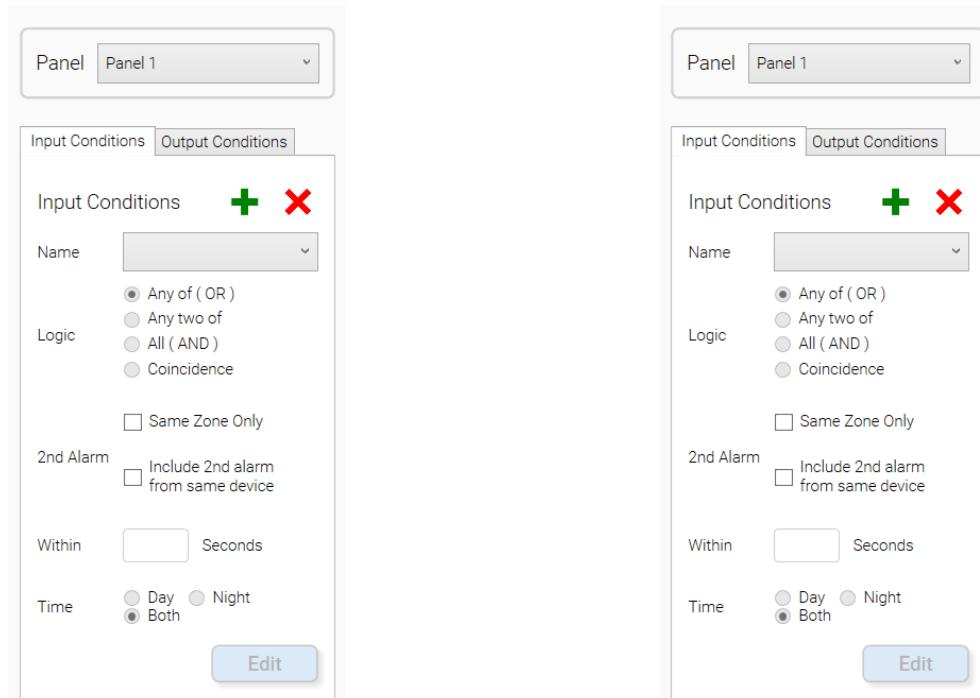


Figure 27: 11.1.3 Setting the Type A Input Conditions

Name the Rule something memorable, like Kitchen fire event.

Set the Logic to Coincidence, then set the ‘Same Zone Only’ tick box and the ‘Include 2nd alarm from the same device’ tick box.

On the right hand side of the Conditions section, select the devices you want the Type A rule to apply to. You can simply select the Zone, the devices or the detector inputs as shown below. Press Save on the Input Conditions page after you have finished with your selection.

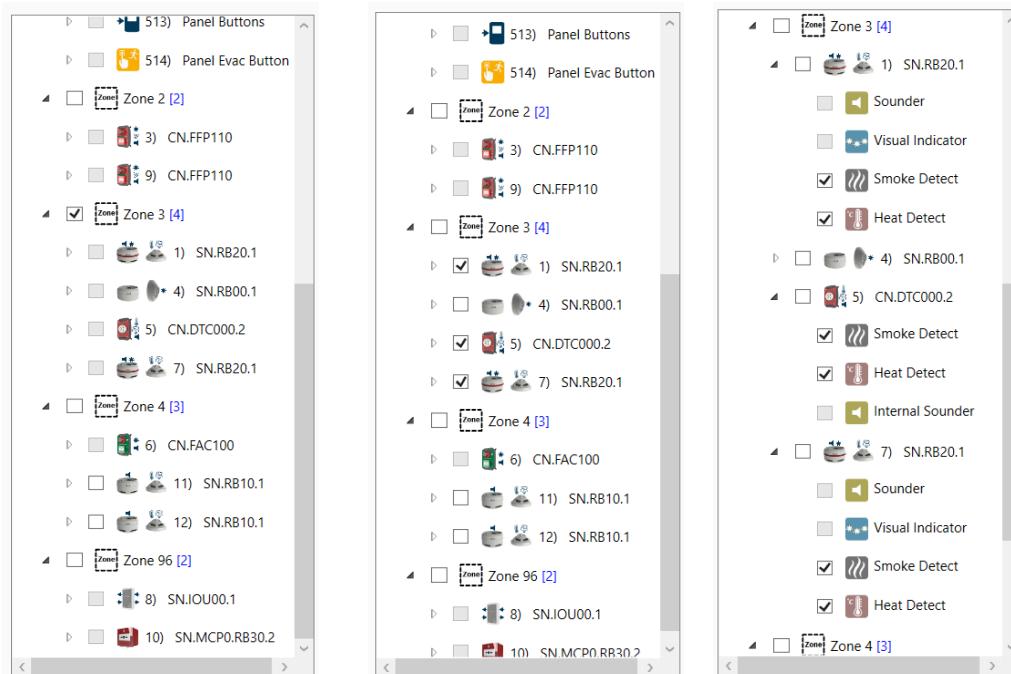
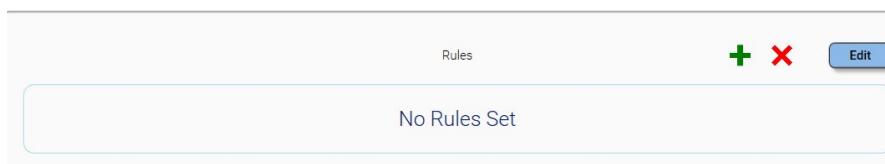


Figure 28: Select the devices you want the Type A rule to apply

### 11.1.5 Setting the Type A Rule

In the rules section there will currently be no rules set.



Press the **+** button to create a new rule



Change the name to something meaningful, leave the Input condition as ‘Kitchen fire event’, leave the Inversion as ‘When True’, tick the Latch option, and change the Action to Fire.



Press on the Save button when you are happy with the Rule you have created.

## 11.2 Sending the Site File to the CIE

Open the CIE front door. Connect a USB (A to B) lead from the PC to the ‘PC USB’ connector on the MCU.

### 11.2.1 Summary

On Cygnus Config, press the Summary button

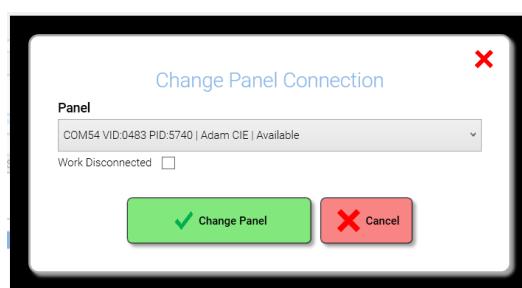


### 11.2.2 Change Panel USB Port Connection

Click on the Change Panel Connection button to change the USB port to be used

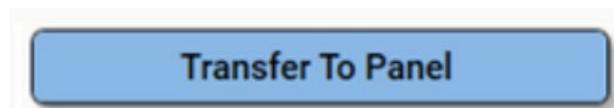
Change Panel Connection

This will show this panel:



The connected panel USB port details will then be shown, click on the Change Panel button to select this USB port.

Click on the ‘Transfer To Panel’ button to send the new site setting information to the panel.



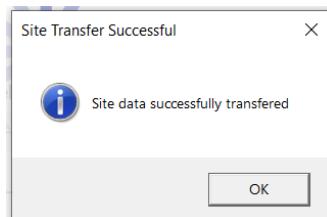
This will show this panel:



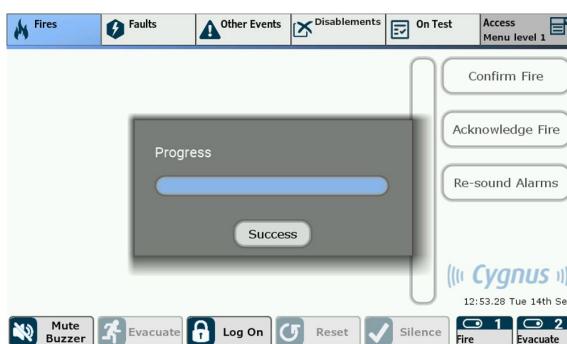
Make sure that the Configure NCU option is ticked on initial setup, then press on the '**Begin Transfer**' button

When modifying site or dependency settings you may want to untick "Configure NCU" so the mesh remains intact, then press on the '**Begin Transfer**' button.

A confirmation popup will appear on both Cygnus Config and the panel indicating the site transfer was successful.



*Figure 29: Transfer successful*



*Figure 30: Progress screen*

### 11.2.3 Testing the Dependency

In order to test this rule, spray smoke on the first device you applied the rule to.

The Panel will show the fire has been detected, show the device that has entered the fire condition and the panel internal buzzer will sound.

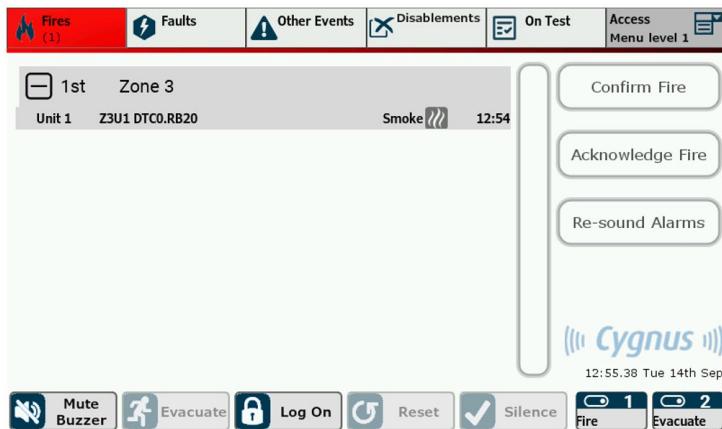


Figure 31: A Fire has been detected

Spray smoke on the second detector with the Type A rule applied to trigger a full alarm event.

Alternatively, the panel will trigger a full alarm state if you use heat on a combi smoke and heat detector on the same detector that initially detected smoke, this only applies if the “*Include 2<sup>nd</sup> alarm from the same device*” has been selected. Use care if performing this action to only hold heat on the device for up to eight seconds to prevent damage to the detector.

*Note: You will need to create the second trigger event within 10 minutes or this fire detection event will be automatically cancelled by the panel.*

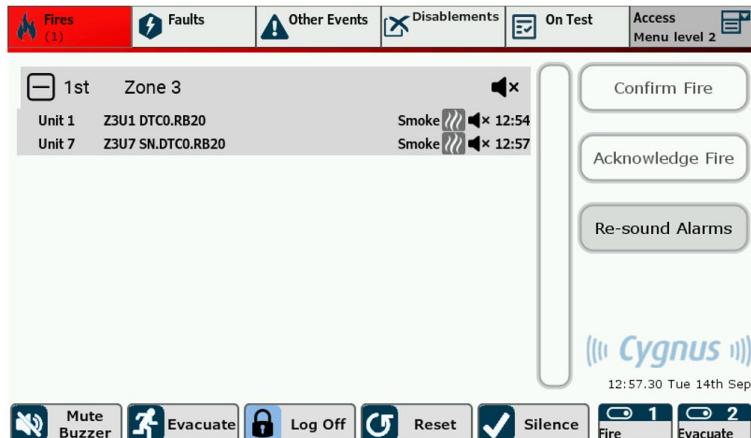


Figure 32: 2nd event

The panel will now enter full fire alarm mode, all wireless sounders will activate, and the Fire LED will be illuminated. You can silence the sounders using the Silence button (CIE Access level 2 and above).

You have successfully tested the Type A dependency.

### 11.3 EN 54-2, Clause 7.12.2 Type B dependency (option with requirement) Functionality

An example of a type B dependency could be in a stairwell where you may want a secondary confirmation alarm from another detector fitted in a corridor or an alarm on the next floor to activate before triggering the full fire alarm.

Following the receipt of a first alarm signal from a fire detector, the entry to the fire alarm condition is inhibited until the receipt of a confirmation alarm signal from the same fire detector and/or from another fire detector, which may be in the same or a different zone. In this case the following shall apply:

- a) the mode of operation is configurable at access level 3 for at least individual zones;
- c) it is possible to manually cancel the first alarm state at access level 2. This can be done by pressing the “reset” button;
- d) the CIE has provision to automatically cancel the first alarm state after a time interval which cannot be set to less than 5 minutes.

- e) if the mode of operation is configured to accept a confirmation alarm signal from the same fire detector, this cannot be inhibited for more than 4 min following the receipt of the first alarm signal.



*Note: when using Dependency Type A and B with the combi-detector smoke and heat detectors, note that the confirmation signal will only be coming from the same combi-detector device, therefore in the case of a low heat fire it will cause the heat sensor on a multi detector not to trigger a confirmation signal to Control Panel until the smoke sensor on the detector has also triggered.*

## 11.4 Setting up a Type B dependency

### 11.4.1 Setting the Detectors to Coincidence Only

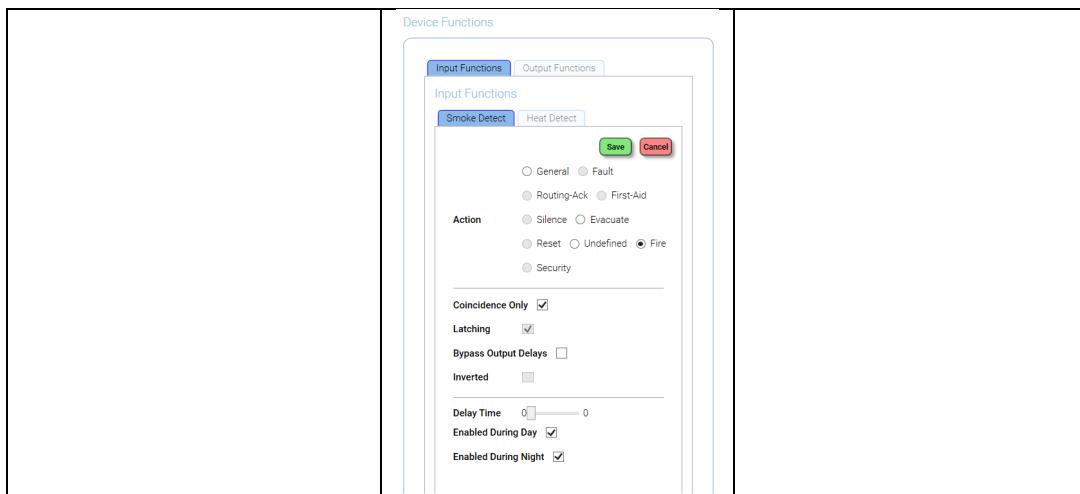
Open Cygnus Config, login and then select the site you want the Type B rule applied to.

### 11.4.2 Devices

Now select Devices using the Devices button to see the devices on the site.



Select the Device you want to apply the rule to and scroll down the Device Configuration section to the Device Functions area.



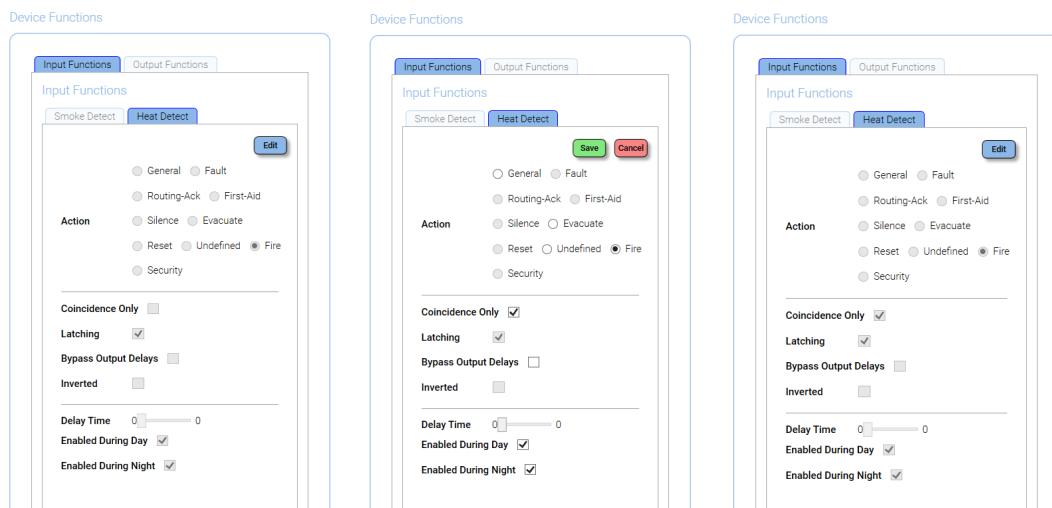
Press on the Edit button

Select the Coincidence Only Option

Press Save to save the settings.

Also change the Coincidence Only setting for the for the Heat Detect and press Save to save this setting.

Repeat this process for all the detector devices and Zones you would like the Type B rule applied to.



*Note: the only way a type B dependency can be triggered from the same device is by using a combi head detector triggering for either smoke then heat, or heat then smoke.*

### 11.4.3 Setting the Type B Input Conditions

Use the Cause & Effect button to view the Cause & Effect screen.



In the Input Conditions Screen, use the icon to create a new Input Condition

The screenshot shows two identical-looking input condition configuration pages side-by-side. Both pages have a header with 'Panel' dropdown set to 'Panel 1' and tabs for 'Input Conditions' and 'Output Conditions'. The 'Input Conditions' tab is active.

**Left Configuration:**

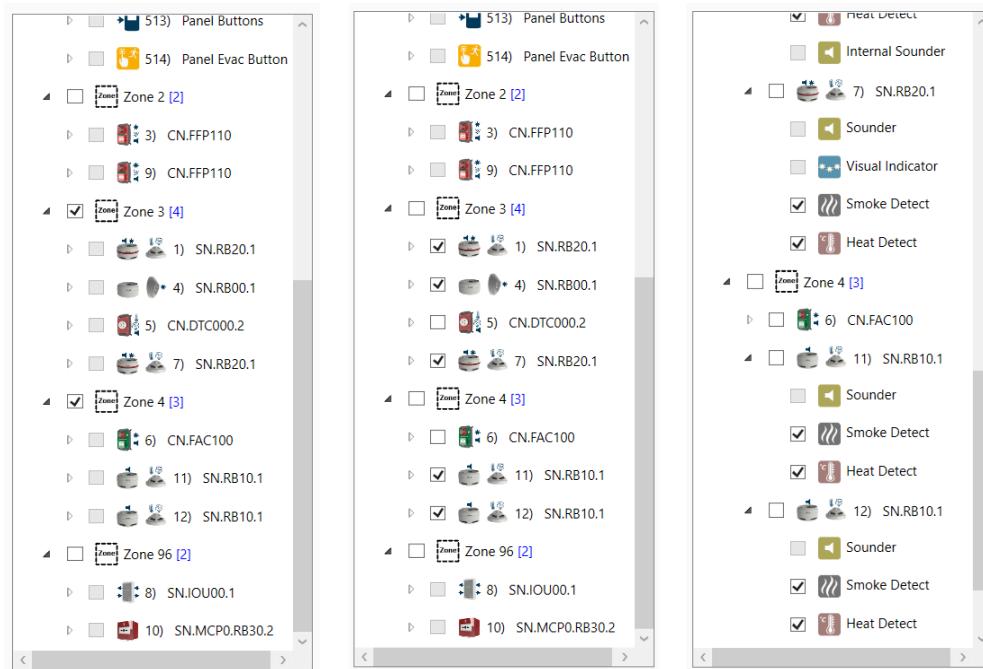
- Name:** A dropdown menu is open, showing options like 'Any of ( OR )', 'Any two of', 'All ( AND )', and 'Coincidence'. The 'Any of ( OR )' option is selected.
- Logic:** Radio buttons for 'Same Zone Only' and 'Include 2nd alarm from same device' are present. 'Same Zone Only' is unchecked, and 'Include 2nd alarm' is checked.
- Within:** A 'Seconds' input field with a value of 60.
- Time:** Radio buttons for 'Day', 'Night', and 'Both'. 'Both' is selected.
- Buttons:** A blue 'Edit' button at the bottom right.

**Right Configuration:**

- Name:** The dropdown is set to 'Stairwell fire event'.
- Logic:** Radio buttons for 'Any of ( OR )', 'Any two of', 'All ( AND )', and 'Coincidence'. 'Coincidence' is selected.
- Within:** A 'Seconds' input field with a value of 60.
- Time:** Radio buttons for 'Day', 'Night', and 'Both'. 'Both' is selected.
- Buttons:** A green 'Save' button and a red 'Cancel' button at the bottom right.

Name the Rule something memorable, like Stairwell fire event. Set the Logic to Coincidence, leave the 'Same Zone Only' unticked and tick the 'Include 2nd alarm from the same device' box.

On the right-hand side of the Conditions section, select the devices and Zones you want the Type B rule to apply to. You can simply select the Zone, the devices or the detector inputs as shown below. Press Save on the Input Conditions page after you have finished with your selection.



#### 11.4.4 Setting the Type B Rule

In the rules section

Press the **+** button to create a new rule

Set the name to something meaningful like 'Stairwell fire rule'.

Set the Input condition to 'Stairwell fire event'.

Set the Inversion as 'When True', tick the Latch option, and change the Action to Fire.

Rules					
Name	Input	Inversion	Latch	Action	Output
Stairwell fire event	Stairwell fire event	When True	<input checked="" type="checkbox"/>	Fire	X

Figure 33:

Press on the Save button when you are happy with the Rule you created.

Rules					
Name	Input	Inversion	Latch	Action	Output
Stairwell fire event	Stairwell fire event	When True	<input checked="" type="checkbox"/>	Fire	X

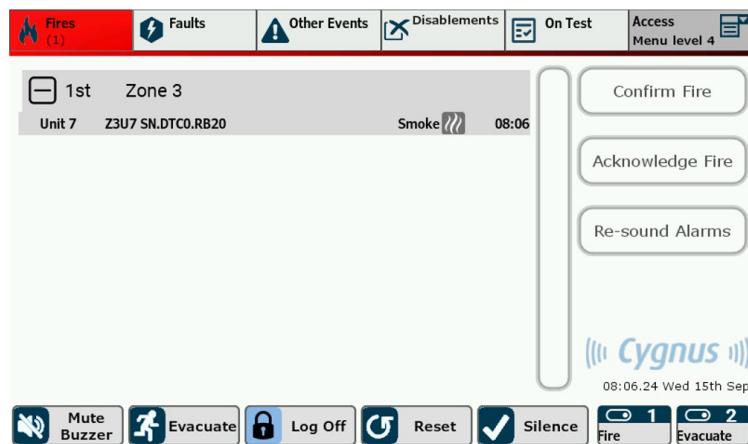
## 11.5 Submitting to the CIE

Refer to paragraph 11.2 because the submission to the panel is exactly the same.

## 11.6 Testing the Dependency

Simulate the first fire event being detected.

The Panel will show the fire has been detected and the device that has entered the fire condition and the internal buzzer will sound. The Zone 3 LED will be lit Red at this point too.



*Figure 34: Testing the Dependency*

*Note you will need to trigger the second confirmation device within 10 minutes or this alarm will be cancelled by the panel automatically.*

Spray smoke on a second detector in the second Zone with the Type B dependency applied to trigger a full alarm.

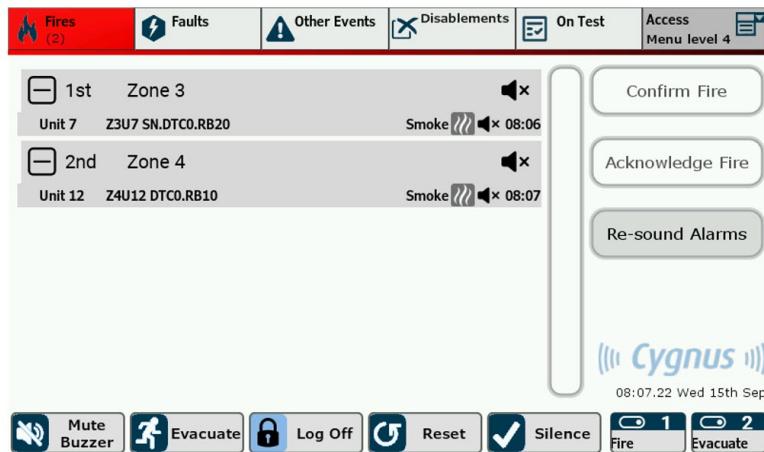


Figure 35: Alternative testing the Dependency

The panel will now enter full fire alarm mode, all wireless sounders will activate, and the Fire LED will be illuminated. The Zone 4 LED is lit at this point too.

You can silence the sounders using the Silence button (CIE Access level 2 and above).

*Note that triggering the full fire alarm state can also be performed by activating two detectors in the same zone. In our scenario this would indicate a fire moving up a corridor.*

You have successfully tested the Type B dependency.

## 11.7 EN 54-2, Clause 7.12.3 Type C dependency (option with requirement) Functionality

Following the receipt of a fire alarm signal from a fire detector or a manual call point, the control panel will enter the fire alarm condition, but may have provision to inhibit the activation of outputs until a second alarm signal is received from another fire detector or manual call point, which may be in the same or another zone. The control panel can be configured to apply individually to each of the outputs to fire alarm devices, outputs to fire alarm routing equipment (through the fire relay) and outputs to fire protection equipment.

## 11.8 Setting up the Type C dependency

The Fire Routing Relay settings must be modified so it only activates when the Type C dependency conditions are met.

The Type C dependency can be used to activate outputs if certain criteria are met. In a Type C dependency, the system will enter full alarm mode. The output we select to control can either be a Fire Alarm Device, Fire Alarm Routing Equipment or Fire Protection Equipment.

An example of this may be in a warehouse or laboratory where a fire door/curtain would be triggered to be closed if a fire is detected close to the entrance of an area needing protection.

To simulate this, the setup shown below will control the Fire Routing Relay output to simulate the control to close the Fire Door.

The detectors for Type C dependencies do not need to be set to coincidence only

### 11.8.1 Modifying the Fire Routing Relay Action

Press on the Devices button to view the site Devices.



Click on the Panel I/O device to show the Device Configuration



On the Device Functions section of the Device Configuration area select the Output Functions tab and then click on the Fire Routing Output

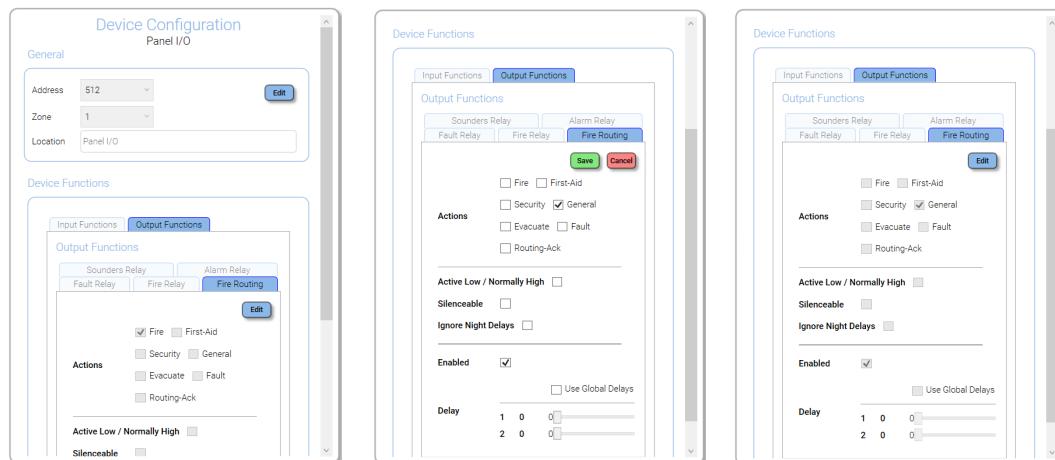


Figure 36:

Click on the Edit button, change the action to General instead of Fire, then click on the Save button to save these changes.

## 11.8.2 Setting the Type C Input Conditions

Use the Cause & Effect button to view the Cause & Effect screen.



In the Input Conditions Screen, use the icon to create a new Input Condition

The screenshot shows two identical-looking input condition configuration screens side-by-side. Both screens have a header with 'Panel' and 'Panel 1'. Below the header is a tab bar with 'Input Conditions' and 'Output Conditions', where 'Input Conditions' is selected. The main area is titled 'Input Conditions' with a green '+' icon and a red 'X' icon. It includes the following fields:

- Name:** A text input field containing 'New Condition'.
- Logic:** A radio button group with 'Any of ( OR )' selected, and other options like 'Any two of', 'All ( AND )', and 'Coincidence' available.
- 2nd Alarm:** A checkbox group with 'Same Zone Only' and 'Include 2nd alarm from same device' both unchecked.
- Within:** A text input field containing '60' followed by a dropdown menu set to 'Seconds'.
- Time:** A radio button group with 'Both' selected, and 'Day' and 'Night' options available.
- Buttons:** Two buttons at the bottom: a green 'Save' button and a red 'Cancel' button.

The right-hand screen is identical to the left, except its 'Name' field contains 'Fire Door Trigger'.

Figure 37:

Name the Rule something memorable, like Fire Door Trigger. Set the Logic to Coincidence, leave the 'Same Zone Only' unticked and 'Include 2nd alarm from the same device' unticked too.

On the right-hand side of the Conditions section, select the devices and Zones you want the Type C rule to apply to. You can simply select the Zone, the devices or the detector inputs as shown below. Press Save on the Input Conditions page after you have finished with your selection.

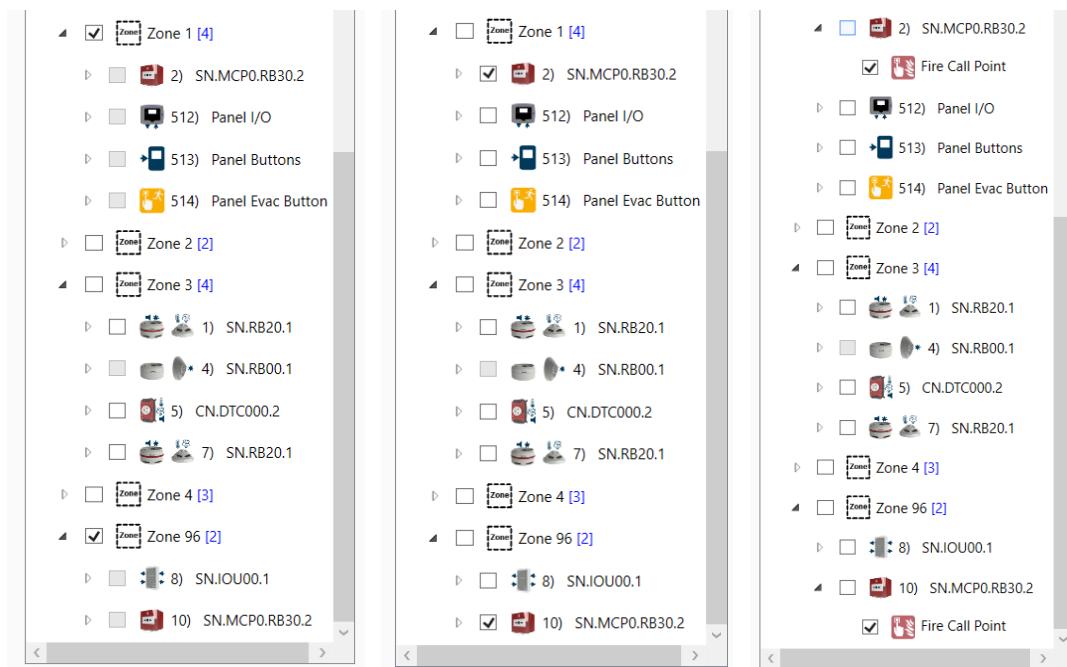


Figure 38:

### 11.8.3 Setting the Type C Output Conditions

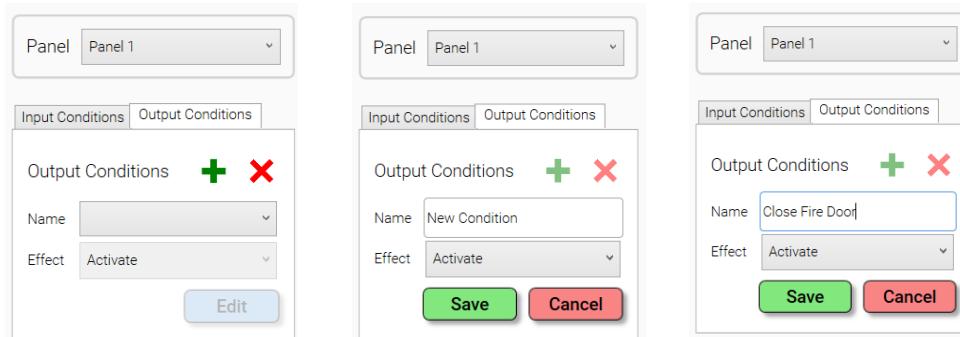
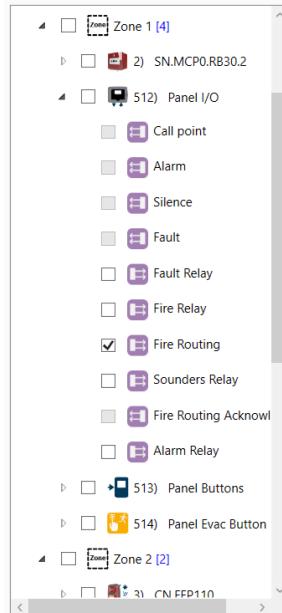


Figure 39:

Click on the **+** button to create a new Output Condition. Rename the Name to something meaningful like 'Close Fire Door'.

On the right-hand side of the Conditions selection expand the Panel I/O device and select the Fire Routing relay.



*Figure 40:*

Press on the Output Conditions to save this selection.

#### 11.8.4 Setting the Type C Rule

In the rules section

Press the button to create a new rule

Set the name to something meaningful like ‘Fire Door Close rule’, set the Input condition to ‘Fire Door Trigger’, set the Inversion as ‘When True’, tick the Latch option, set the Action as Output, set the Output to the ‘Close Fire Door’ and set the Profile to General to match the Fire Routing Relay output condition we set previously.

Rules							
Name	Input	Inversion	Latch	Action	Output	Profile	Delay (s)
Fire Door Close Rule	Fire Door Trigger	When True	<input checked="" type="checkbox"/>	Output	Close Fire Door	General	0

Press on the Save button when you are happy with the Rule you created.

Rules							
Name	Input	Inversion	Latch	Action	Output	Profile	Delay (s)
Fire Door Close Rule	Fire Door Trigger	When True	<input checked="" type="checkbox"/>	Output	Close Fire Door	General	0

Figure 41:

### 11.8.5 Submitting to the CIE

Refer to paragraph 11.2 because the submission to the panel is exactly the same.

### 11.8.6 Testing the Dependency

In order to test this rule, we will trigger two Manual Call Points. Trigger the first call point. The system will enter full alarm mode with the wireless sounders activating. The Zone LED will be illuminated as will the Fire LED.

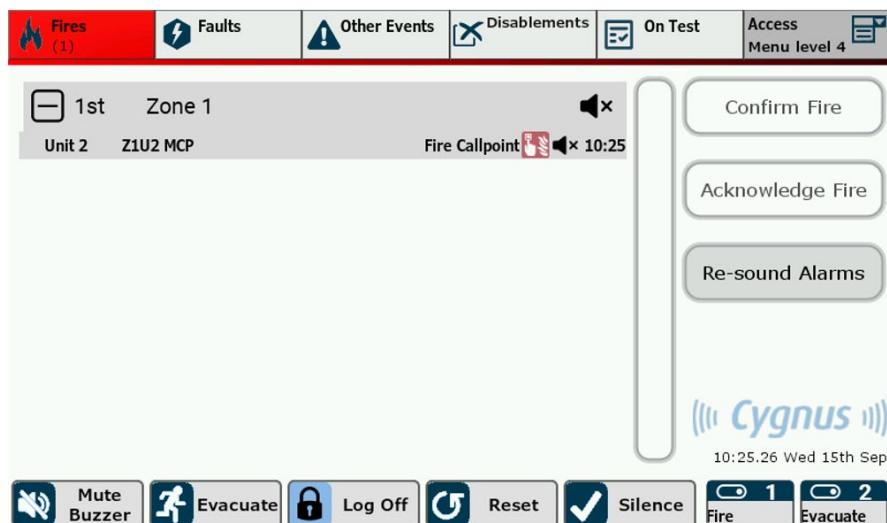
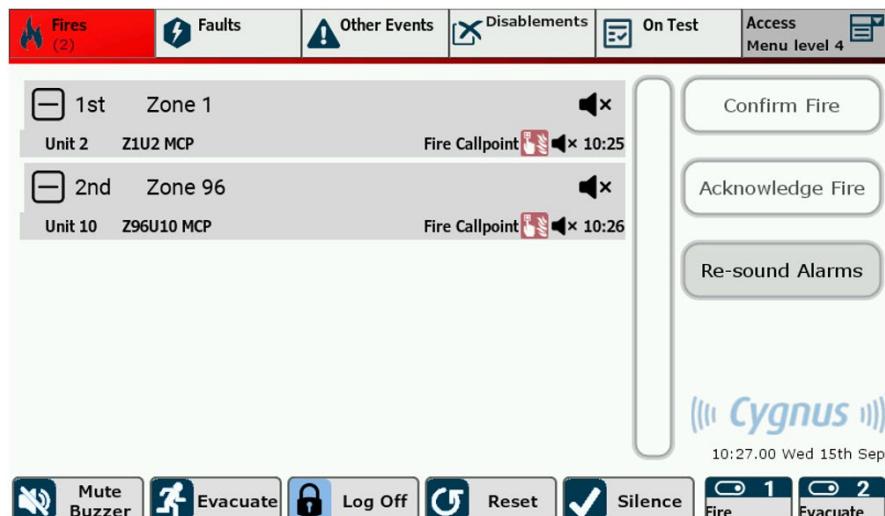


Figure 42:

Trigger the second call point to invoke the Type C dependency.



*Figure 43:*

The panel will now enter full fire alarm mode again, all wireless sounders will activate.

You can silence the sounders using the Silence button (CIE Access level 2 and above).

At this point the Fire Routing Relay has been activated, in our case activating the mechanism to close the fire door.

You have successfully tested the Type C dependency.

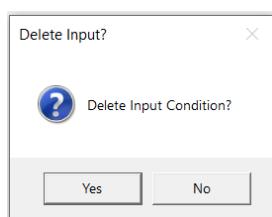
## 11.9 Removing Dependencies and Conditions from the CIE using CygnusConfig

In the CygnusConfig tool Use the Cause & Effect button to view the Cause & Effect

screen.



In the Input Conditions Screen, use the **X** icon to delete all of the Input Conditions



*Figure 44:*

Click on Yes to confirm the deletion of the Input Condition.

After you have deleted the three Input Conditions, no Input Conditions should be shown in the Input Conditions section

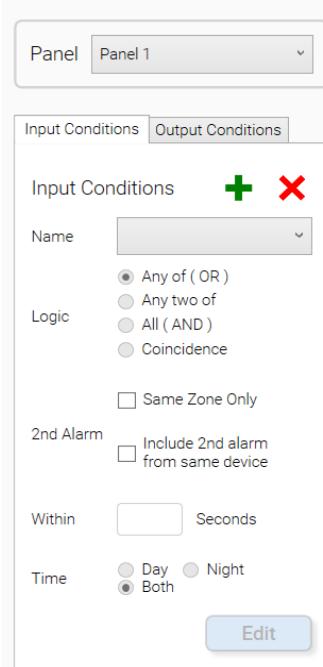


Figure 45:

Click on the Output Conditions section and use the **X** icon to delete the single Output Condition.

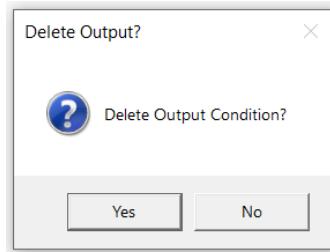
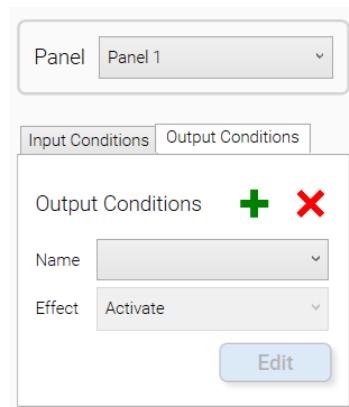


Figure 46:

After you have deleted this Output Condition, there should be no Output Conditions shown in the Output Conditions section



### 11.9.1 Removing the Rules

In the Rules section of the Cause & Effect screen, you will see the Input and Output conditions have disappeared from the Rule.

Rules					
Name	Input	Inversion	Latch	Action	Output
Fire Door Close Rule		When True	<input checked="" type="checkbox"/>	Output	

Figure 47:

Use the **X** icon to delete the Fire Door Close Rule



Figure 48:

Press on the Yes button to delete the rule.

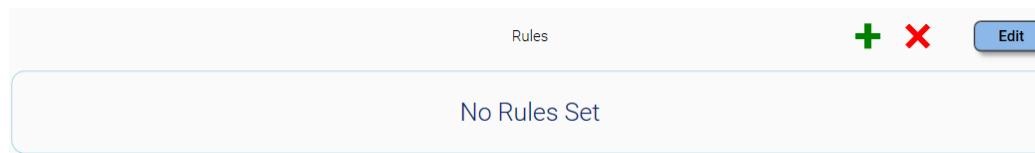


Figure 49:

This dependency and conditions are now removed within the config tool and the control panel must now be updated to reflect the change.

### 11.9.2 Submitting to the CIE

Transfer the site data to the panel using the instructions in paragraph 11.2.

## 12 Control panels

The SiteNet and SmartNet control panels are fully wireless and can be surface or recessed mounted. Each control panel has a full colour, seven-inch, touchscreen that is used to manage the fire alarm system.

The control panels are mains powered but contain two standby batteries that will extend the operating time for up to seventy-two hours (refer to Chapter 38).

Access to the inside of the panel requires a cabinet key. User organisations will not be expected to require access to the inside of the control panel.

Control panels provide the management, and functional control of the system using radio links to the wireless devices. Every SmartNet or SiteNet system requires a control panel at the heart of the system and can't operate without one.

### 12.1.1 SiteNet

Information that is specific to SiteNet control panels will be found here.

SiteNet CIE control panels are coloured red and designed for temporary installations. Each SiteNet control panel can manage 511 remote devices with 16 or 32 zone variations.

A comprehensive explanation of the SiteNet system can be found in the SiteNet User Manual 2007 MAN 0003.

All SiteNet networks can use a combination of some or all available SiteNet devices. Devices have sounders, and some variants provide visual warnings too.

A separate First Aid function is available on some models, with a separate alert for medical issues, without raising a fire alarm.

There are six different variants of SiteNet device available, covering fire, first aid, PIR, smoke and heat detection. See datasheets for detailed specifications. All users are advised to read datasheets before final purchase from your installer.

### 12.1.2 SmartNet

Information that is specific to SmartNet control panels will be found here.

SmartNet CIE control panels are a two-tone white/ grey colour and designed for permanent installations. Each SmartNet control panels can manage 511 devices and are available in 16, 32, 64 and 96 zone variations.

There are many variants of SmartNet devices available. See datasheets for detailed specifications. All users are advised to read datasheets before final purchase from your installer.

A comprehensive explanation of the SmartNet system is to be found in the SmartNet User Guide: 2000-MAN-0001.

## 12.2 CIE Control Panel Resistors

### 12.2.1 Introduction

The control panel is primarily a wireless device however there are also wired inputs and outputs which will allow connection to hard wired and/ or existing systems.

When **NONE** of the inputs or outputs are required they can be disabled. Therefore no end-of-line terminating resistors are necessary.

When **ONE OR MORE** inputs or outputs are required, all ports must be enabled. This means that terminating resistors must be installed to the unused circuits on the field wiring board (FWB). The required locations and values are shown in Figure 50: Resistor locations, and values.

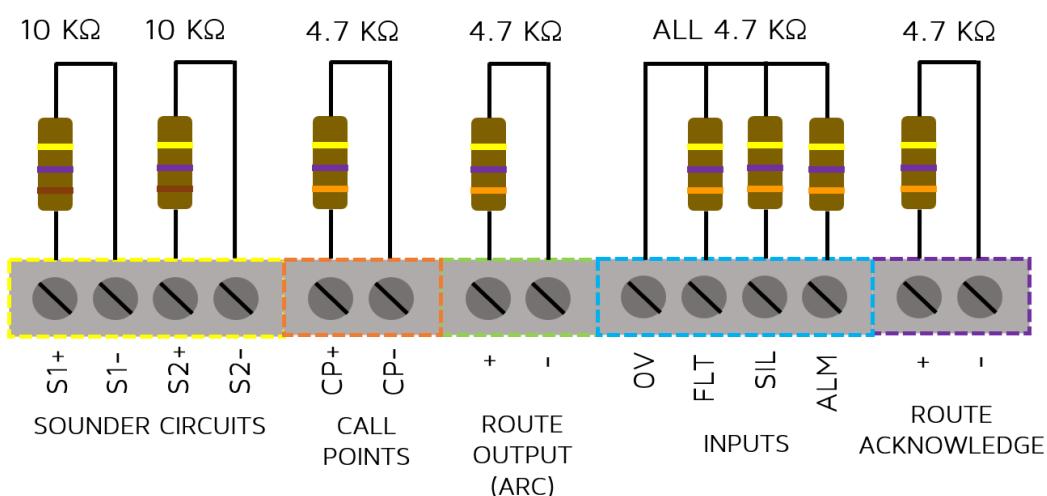
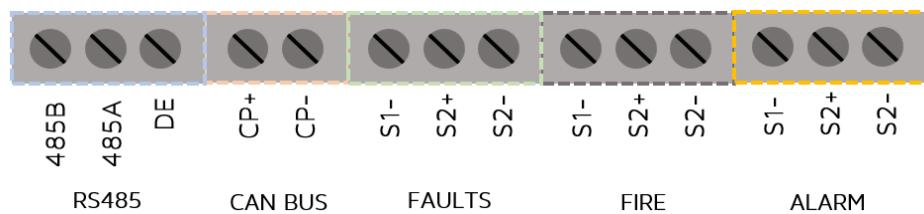


Figure 50: Resistor locations, and values

The remaining field wiring board terminals do not require termination. Refer to Figure 51: Locations which do not require resistors.



*Figure 51: Locations which do not require resistors*

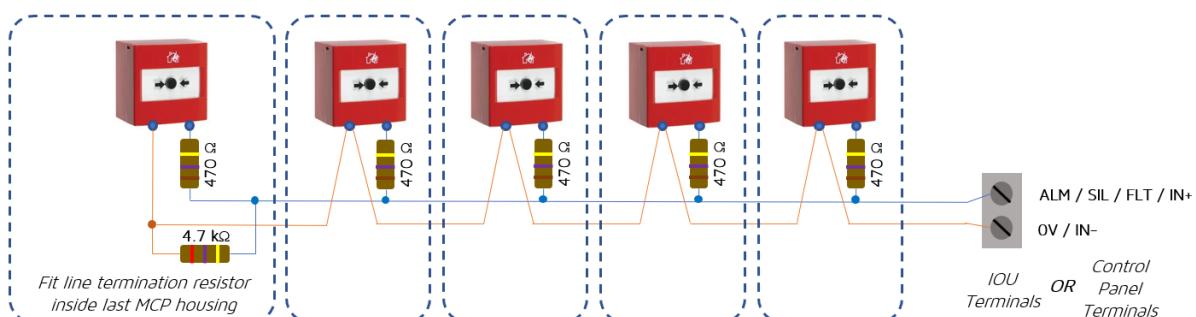
## 12.2.2 Input circuits

When the input circuits (call point, rout ack, fault, silence, alarm) are used, the resistor is fitted instead at the furthest point from the control panel. This guarantees that an open circuit will be detected wherever in the line it occurs. The line is continuously monitored, and if the resistance exceeds 10K ohms an open circuit fault is declared.

## 12.2.3 Short circuit monitoring

One or more call point switches form a circuit across the line pair. A 470 ohm resistor in series with each call point allows the control panel to monitor and differentiate between a valid call point activation and a short circuit on the line.

If a resistance of less than 100 ohms is measured, a short circuit fault is declared. Refer to Figure 52: Short circuit monitoring.



*Figure 52: Short circuit monitoring*

There is a potential short circuit issue if too many call points wired to the same circuit are pressed simultaneously, due to several 470 ohm resistors connecting in parallel. If there is a risk of more than two call points being pressed at the same time, then limit the input to two call points to prevent short-circuit faults on the panel.

## 12.2.4 Sounder outputs

The sounder outputs are also monitored in order to detect open or short circuit on the line.

The design of the sounders is such that their presence does not affect the measured value. The two sounder circuits are effectively in parallel which explains the higher 10K ohm resistor values used.

If the combined resistance of the two sounder circuits exceeds 10K ohms, an open circuit is declared. If the resistance is less than 100 ohms a short circuit is declared. As before, the 10K ohm line termination resistors are fitted at the furthest point from the control panel. Refer to Figure 53: Sounder outputs.

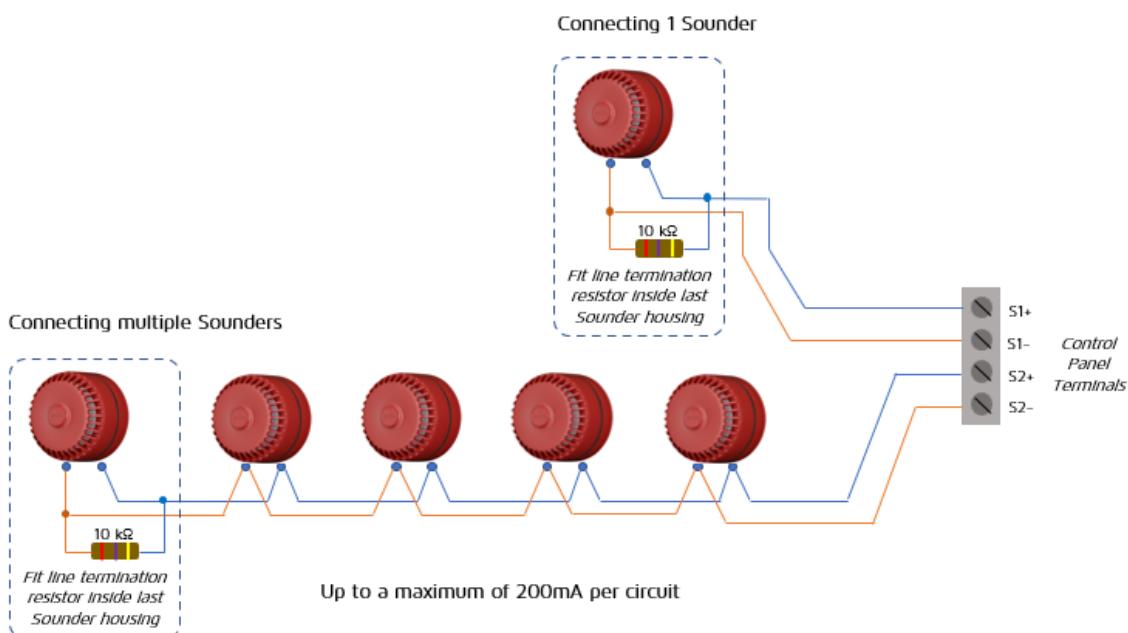


Figure 53: Sounder outputs

## 12.2.5 Routing output circuit

The Routing output circuit requires a 4.7K ohm terminating resistor which should be fitted at the furthest point from the control panel. The circuit is monitored for short and open circuits as before. Equipment attached to this circuit must be designed to avoid disruption of the line resistance tests. Refer to Figure 54: Routing output circuit.

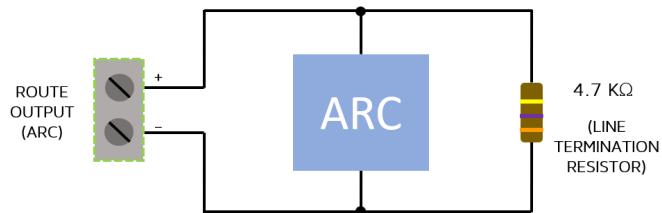


Figure 54: Routing output circuit

## 13 System flow diagram

The system flow diagram shows the paths of information that can be obtained from the touchscreen panel.

A larger image is at paragraph 29.5.

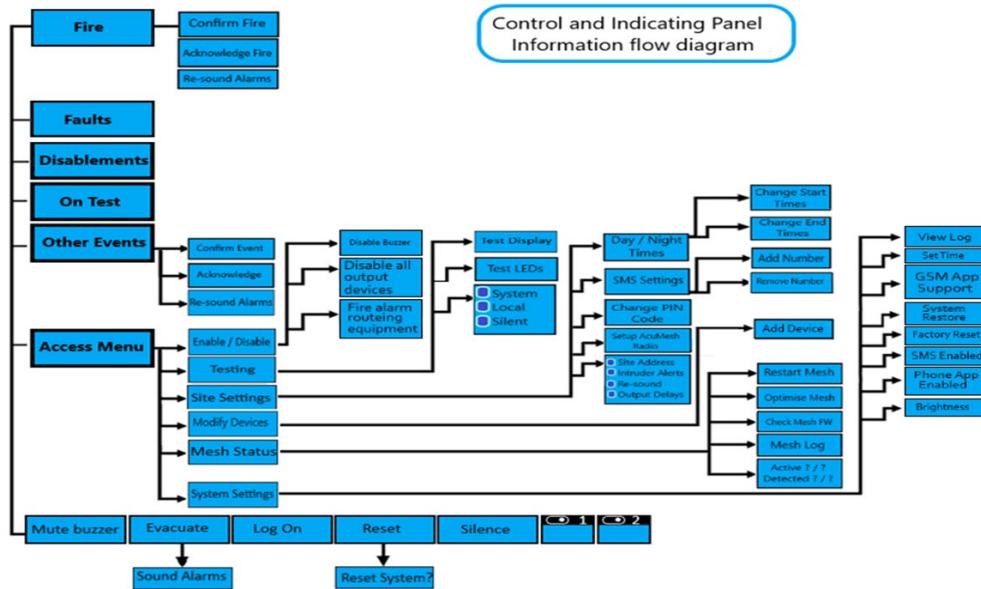


Figure 55: : Control and Indicating Panel Information flow diagram

## 14 CIE Front panel

The Control and Indicating and Equipment (CIE) SiteNet and SmartNet control panel look very similar and are available with different numbers of fire-zones.

All events, alarms, faults, settings, and history can be viewed on the touchscreen (Figure 4, [8]).

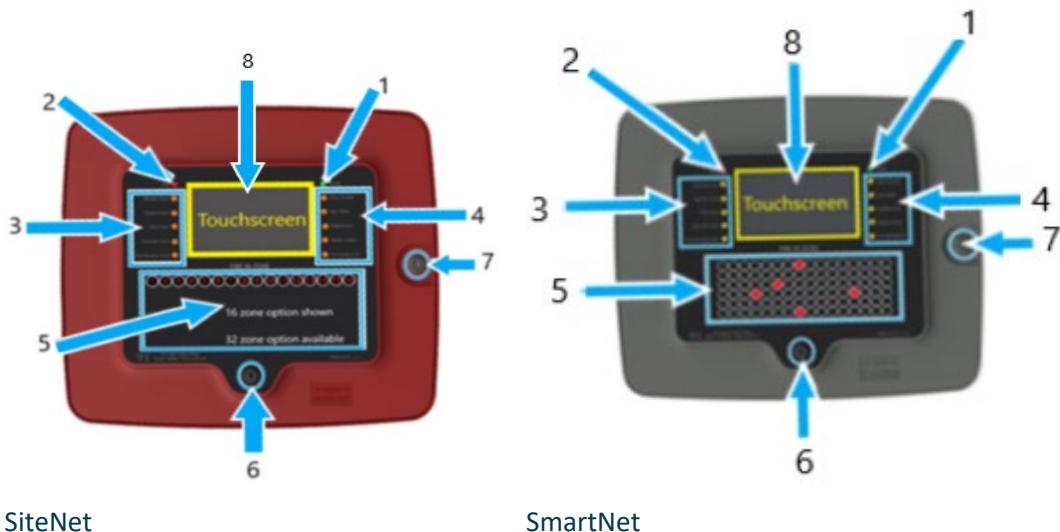


Figure 56: Control Panel indications (CIE)

The table below highlights the main areas of the front panel and explains the purpose of each LED.

Table 9: Front panel LEDs

Item	Description
1 Power LED – green	The <b>Power LED</b> is illuminated whenever the CIE is powered on.
2 Fire LED - red	The <b>Fire LED</b> indicates that a fire has been detected in the system.
3 Fault LEDs – amber	The <b>Fault LEDs</b> illuminate in the occurrence of the following faults: <ul style="list-style-type: none"> <li>• <b>General Fault</b> indicates that one or more faults are present. It will illuminate in addition to the LED corresponding to the type of each fault indicated.</li> <li>• <b>System Fault</b> indicates a critical fault in the CIE, for example a corruption in site-specific data or a processor failure.</li> </ul>

Item	Description
	<ul style="list-style-type: none"> <li>• <b>PSU Fault</b> indicates a fault in the power supply, for example: a low battery or power source disconnection.</li> <li>• <b>Sounder Fault</b> indicates an open or short circuit fault in one or more of the CIE's sounder circuits.</li> <li>• <b>Fire Routing Fault</b> indicates an open or short circuit fault in the CIE's output to fire routing equipment.</li> </ul>
4	<p><b>Status LEDs - amber</b></p> <p>The Status <b>LEDs</b> reflect global configuration options.</p> <ul style="list-style-type: none"> <li>• <b>Other Events</b> indicates current non-fire alarms/inputs (for example: first aid, fire routing acknowledgment).</li> <li>• <b>Test Mode</b> indicates when one or more devices/zones are being tested.</li> <li>• <b>Disablements</b> indicates when one or more devices/zones are disabled.</li> <li>• <b>Delays Active</b> indicates when delays are enabled in the system (solid) or currently active following the receiving of a fire signal (flashing).</li> <li>• <b>Fire Routing On</b> indicates when transmission to fire routing equipment is active (flashing) or acknowledged (solid).</li> </ul>
5	<p><b>Fire in Zone LEDs - red</b></p> <p>These <b>LEDs</b> illuminate to indicate the zone/ zones from which fire alarm originated.</p> <p>SiteNet can have a maximum of 32 fire zones</p> <p>SmartNet can have a maximum of 96 fire zones</p>
6	<p><b>Level 2 Access key</b></p> <p>This key can be used instead of entering a PIN to gain User Level 2 access.</p>
7	<p><b>Cabinet key</b></p> <p> The panel must be disconnected from mains power before opening the door.</p> <p>A cabinet key is required to open the control panel door access the batteries, and programming ports.</p> <p> This key should only be available to qualified installers and engineers.</p>
8	<p><b>Touchscreen</b></p> <p>Shows all information available to the user. Responsive to finger and a user wearing gloves.</p>

## 14.1 SiteNet control panel options

SiteNet is available with the 16 zone and 32 zone options. One Zone LED board is fitted. The 16 zone panel uses the top row of LEDs and the 32 zone uses both.



Figure 57: SiteNet CIE Fire-zones

## 14.2 SmartNet control panel options

SmartNet is available with the 16, 32, 64 and 96 zone options. One Zone LED board is fitted to 16 and 32 zone panels (the 16 zone panel uses the top row of LEDs and the 32 zone uses both).

The 64 zone panel has 2 LED boards and the 96 zone has 3 LED boards.

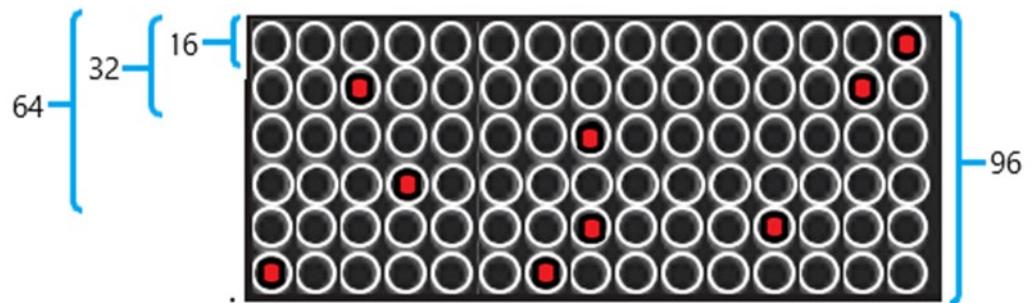
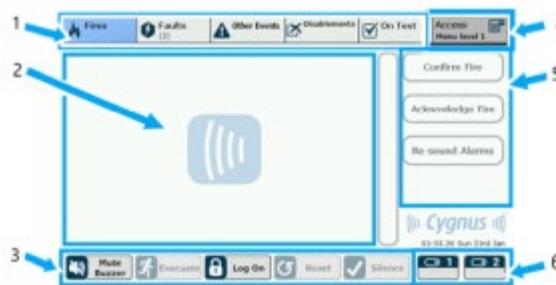


Figure 58: SmartNet CIE Fire-zones

## 15 Touchscreen

### 15.1 Touchscreen overview

This is the main information screen from which all other screens, pages and popups can be viewed.



*Figure 59: Touchscreen Overview Level 1*

All navigation of the fire detection system, the alarms and some configuration is done with the resistive touchscreen. The screen is responsive to touch from gloved or bare hands.

### 15.2 Touchscreen information

The touchscreen is where the user will see all the information available to them. The content available will always depend on the level of user access and the PIN that is assigned to them.

*Table 10: Touchscreen*

Item	Location	Description
1	Status bar	A fixed set of sensitive touch buttons which indicate current status of each option selected. More information on each of the Status bar touch buttons can be found through these links. Refer to paragraph 15.2.1.
	Fires	Refer to paragraph 15.3.1
	Faults	Refer to paragraph 15.3.2
	Other events	Refer to paragraph 15.3.3

Item	Location	Description
		Disablements      Refer to paragraph 15.4
		On test      Refer to paragraph 15.5
2	Touchscreen	This is the main part of the touchscreen, showing the relevant information and activity for the selected display. If more information is available than fits into the visible area, a scroll bar is shown.
3	Control bar	More information on each of the Control bar touch buttons can be found through these links. Refer to paragraph 15.6.
	Mute Buzzer	Refer to paragraph 15.6.1
	Evacuate	Refer to paragraph 15.6.2
	Log On / Log Off	Refer to paragraph 15.6.3
	Reset	Refer to paragraph 15.6.4
	Silence	Refer to paragraph 15.6.5
4	Access menu	A drop-down menu becomes available when a user has logged on with Level 2 access or higher. From this menu aspects of the system/ site configuration can be modified, tested, or disabled.  Access pages are described as follows:
	Enable / Disable	Refer to paragraph 17
	Testing	Refer to paragraph 18
	Site Settings	Refer to paragraph 19
	Modify Devices	Refer to paragraph 20
	Mesh Status	Refer to paragraph 21
	System Settings	Refer to paragraph 22
5	Option panel	Touch buttons which are only applicable to a particular page will be seen on the Option panel, on the far right of the touchscreen.
6	User configurable touch buttons	Example, functions could allow isolation of separate zone.

### 15.2.1 Touchscreen Icons

The symbols in Table 11: Touchscreen icons, are a guide to understanding its layout.

*Table 11: Touchscreen icons*

Icon	Description
	Select the + or - touch buttons [4] to expand or collapse the zone and/or device contents.
	
	Select the toggle switch [2] from left to right will disable the buzzer.
	A tick in a box [6] represents a <b>disabled</b> item.
	If the tick box has a grey fill, then this item cannot be selected.
	If the tick box has a clear fill, then this item can be selected.
	This will appear when a device or a fire-zone has been disabled. (Normally) The Disablement amber <b>LED</b> will also be lit. There are some exceptions.

### 15.3 Status Bar

A fixed set of touch buttons to select at the top of the touchscreen display (when selected), the current status of each event.

All Status bar touch buttons are available to all users.



*Figure 60 Status touchscreen pages*

### 15.3.1 Fires

Select the **Fires** touch button (Figure 61: Fires touchscreen, [1]) from the **Status Bar** [2].

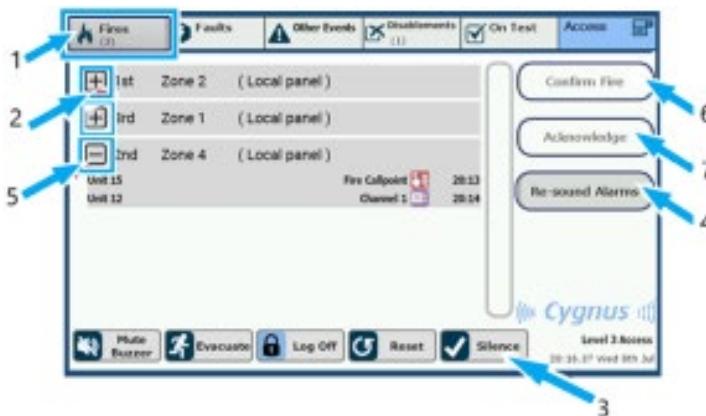


Figure 61: Fires touchscreen

Select the **Fires** touch button (Figure 61, [1]) to open a list of zones where a fire has been detected. The number shown in brackets beneath the touch button [1] heading indicates the total number of zones in the system in which Fires are being detected.

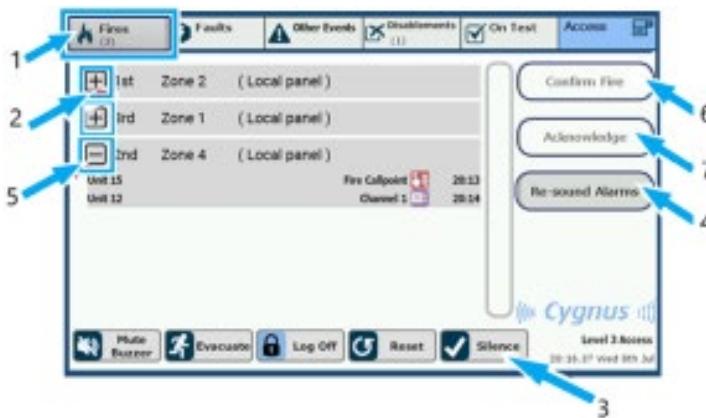


Figure 62: Fires touchscreen

Each row in the list can be expanded or collapsed by selecting the or icon.

This is the expand touch button in the collapsed condition. This is the collapse touch button in the expanded condition.

The order in which the CIE receives the fire alert signal from each of the zones is shown [2]. The first zone to indicate a fire is always displayed at the top of the list, followed by the most recent zone to alarm. All other zones with an active fire event are then listed in the order in which the alarm signals were received.

The **Silence** touch button [3] mutes all sounding alarm devices. The **Silence** touch button is not enabled for a general worker (User Level 1).

This is the icon that tells the user which alerts have been silenced:

The **Re-sound** touch button [4] resets all previously silenced alarms, assuming that the system is still in the fire alarm condition. The **Re-sound** touch button is not enabled for a general worker (User Level 1).

The **Confirm Fire** touch button [6] causes all active delays to be immediately overridden and the delayed outputs to activate. The **Confirm Fire** touch button is not enabled for a general worker (User Level 1).

Where an output is configured with two delays, selecting the **Acknowledge** touch button [7] when the first delay is active will bypass the remainder of the first delay and immediately progress to the second delay. This allows extra time for an alert source to be investigated. The **Acknowledge** touch button does not affect devices with only one delay configured. The **Acknowledge** touch button is enabled for a general worker (User Level 1).

### 15.3.2 Faults

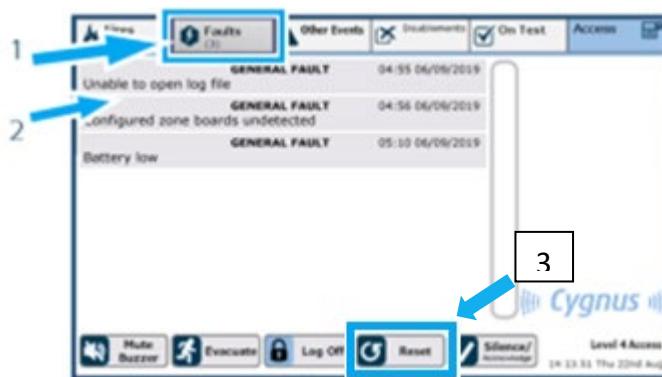


Figure 63: Faults touchscreen

Select the **Faults** touch button (Figure 63, [1]) to open a list [2] of current general faults and current system faults. The number shown in brackets beneath the touch button heading indicates the total number of faults currently indicated.

General faults are automatically cleared from the list when resolved. System faults require a two-stage action. System faults must be resolved, then the **Reset** touch button (Figure 63, [3]) on the Control Bar must be selected. Faults that remain on the touchscreen after the Reset touch button has been selected have not yet been resolved.

### 15.3.3 Other events

Select the **Other Events** touch button (Figure 64, [1]) from the Status Bar ([2]) at the top of the touchscreen.

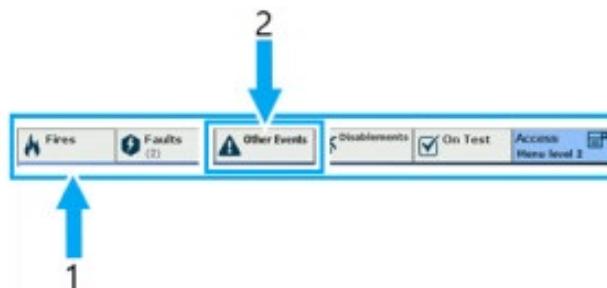


Figure 64: Other events touch button

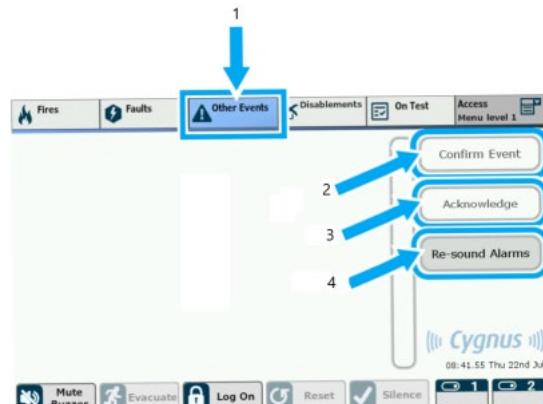


Figure 65: Other Events touchscreen

The **Confirm Event** touch button [2] causes all active delays to be immediately overridden and the delayed outputs to activate. The **Confirm Event** touch button is not enabled for a general worker (User Level 1).

Where an event is configured with two delays, selecting the **Acknowledge** touch button [3] when the first delay is active will bypass the remainder of the first delay and immediately progress to the second delay. This allows extra time for the source of the alert to be investigated. The **Acknowledge** touch button does not affect devices with only one delay configured. The **Acknowledge** touch button is enabled for a general worker (User Level 1).

The **Re-sound** touch button [4] resets all previously silenced alarms, assuming that the systems other event is still in alarm condition. The **Re-sound** touch button is not enabled for a general worker (User Level 1).

## 15.4 Disablesments

Select the **Disablesments** touch button (Figure 66. [1]) to show a list of zones, devices, or device features which are currently disabled. For each disabled feature (some devices have more than one feature), the zone/unit number and device type is displayed [2].

The number shown in brackets beneath the touch button heading indicates the total number of disablements currently set in the system.

This list is for information only. Disablements are set and removed on the **Enable/Disable** page, available from the **Access** menu at Level 2 (refer to Chapter 16). Disablements cannot be edited from the **Disablesments** screen.

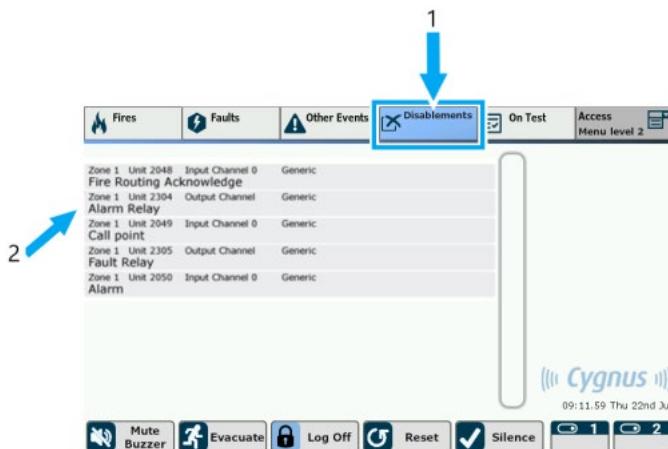


Figure 66: Disablesments touchscreen

## 15.5 On Test

Select the **On Test** navigation touch button (Figure 67, [1]) to open a list of zones or input features which are currently in test mode. For each feature on test, the zone/unit number and device type are displayed [2].

The number shown in brackets beneath the touch button heading indicates the total number of zones or inputs currently on test.

A device that is **On Test** will not generate an actual alarm event. The device's alarm can be tested independently to confirm their functionality is working.

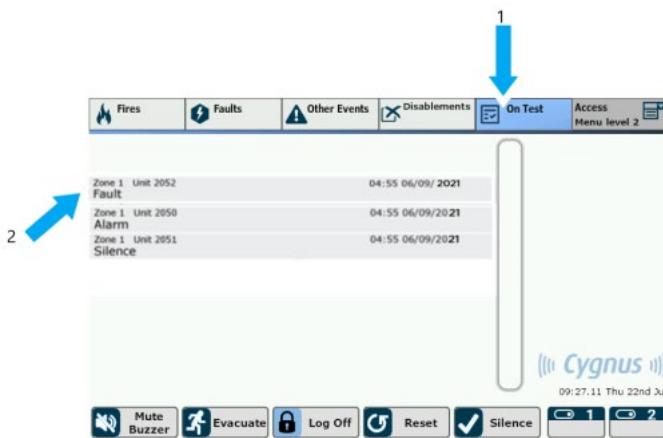


Figure 67: On test touchscreen

This page is for information only; the Testing page, available via the Access touch button (refer to Chapter 16, is used to select which zones, devices or features are to be tested. Test modes cannot be edited from the **On Test** screen.

## 15.6 Control Bar

The Controls bar (Figure 68, [1]) can be seen at the bottom of the touchscreen (refer to Figure 68: Control touch buttons).

The Mute Buzzer and Log On controls are the only touch buttons available to general users with User Level 1 access.

All Control bar touch buttons are available to users with User Levels 2, 3, and 4.

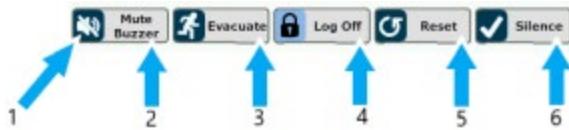


Figure 68: Control touch buttons

The paragraphs below explain the function of each touch button on the Control Bar.

### 15.6.1 Mute Buzzer

Select the **Mute** touch button (Figure 68, [2]) to silence the control panels internal buzzer, which sounds to indicate a fire or fault. The buzzer will re-sound when each new fire and fault message arrives at the control panel.

### 15.6.2 Evacuate

Select the **Evacuate** touch button (Figure 68, [3]) to start the **Evacuate** event. Sounders and visual indicators will be activated until the **Reset** touch button (Figure 68, [5]) is selected to end or cancel the evacuation.

### 15.6.3 Log On /Log Off

This touch button allows users to **Log On** (Figure 68, [4]) to a higher access level or **Log Off**. Four access levels are available and are assigned to specific users using 4-digit PINs in the site configuration.

### 15.6.4 Reset

The **Reset** (Figure 68, [5]) touch button clears all fire and fault warnings from the touch screen, before running a check for active fire and faults which will reappear if they still exist.

### 15.6.5 Silence

The **Silence** (Figure 68, [6]) touch button silences each active alarm that can be set to **Silent**. Select the **Re-sound** touch button on the right panel of the Fires screen (Figure 61) to re-activate all previously silenced alarms.

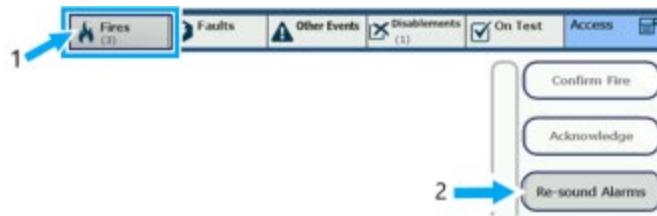


Figure 69: Re-sound touch button

## 16 Access menu

The **Access** navigation touch button [1] becomes available at access Level 2 and higher.

### 16.1 User Level 1 access

If access to this area is attempted with a User Level 1 profile, access will be denied. The user will see a popup window “**User Level 2 Logon required**” displayed (Figure 70).

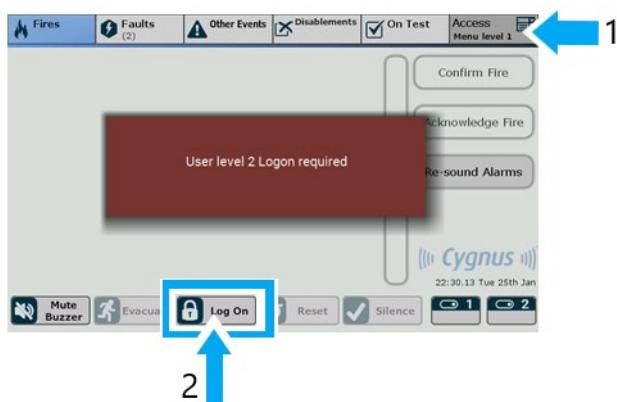


Figure 70: Level 2 access attempted from Level 1

### 16.2 User Level 2 and 3 access

Selecting the Access touch button (Figure 71, [1]) will show a dropdown menu [2].

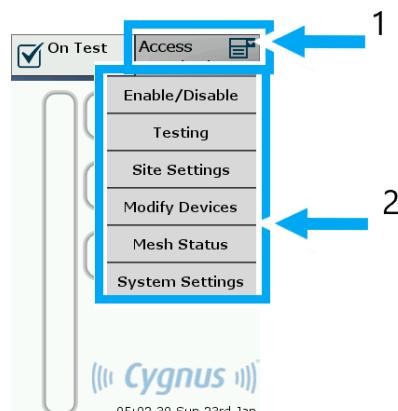


Figure 71: Access Menu



An identical version of this dropdown menu is seen at each user level, however the available functions to each user level will differ.

Access [1] dropdown menu gives access to [2]:

1. Enable/Disable. Refer to paragraph 17.
2. Testing. Refer to paragraph 18.
3. Site Settings. Refer to paragraph 19.
4. Modify Devices. Refer to paragraph 20.
5. Mesh Status. Refer to paragraph 21.
6. System Settings. Refer to paragraph 22.

### 16.3 Access Menu overlay

When you change between one menu and another, for example, System Settings, you will have to open the Access menu. Opening the Access menu will overlay the System Settings (in this case). The Access Menu has been introduced with a shadow to differentiate between the Access Menu and the lower window (Figure 72).

*Example: Access Menu overlay to System Settings.*

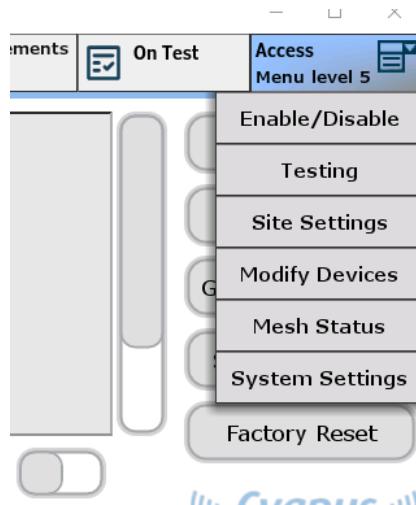


Figure 72: Access Menu overlay

## 17 Access Enable/Disable

Select the **Enable/Disable** touch button from the **Access** dropdown menu (Figure 73). This screen is identical for User Levels 2 and 3.

Information about the different touchscreen icons can be found in Table 11: Touchscreen icons.



Figure 73: Access Enable/Disable option

The selections available to the user are shown in dark text against a dark grey background. The options that are not available to the user are in a faint text against a light background.

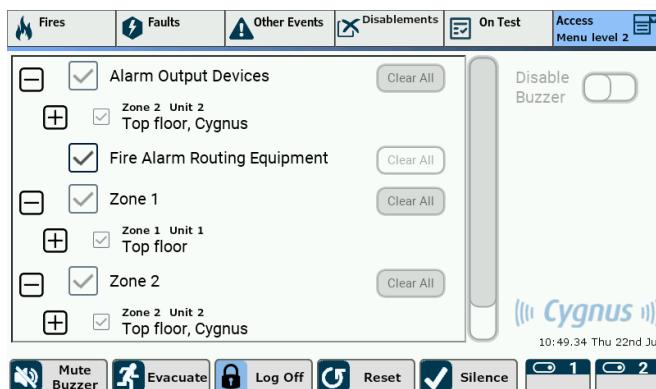


Figure 74: Enable/Disable User Levels 2 and 3

The **Enable/Disable** menu in the Access Menu (Figure 73) only allows the user to clear the disablement details of any device. **All other features are disabled.**

When a zone and/or device is disabled, this action overrides the current settings within the zone and/or device. The zone and/or device will then appear greyed-out on the touch screen panel.

When a device or action is disabled the amber disablement LED on the CIE front panel will be lit (Figure 56, [4]).

 Disablement

Figure 75: Disablement LED

A disabled device will remain on the mesh but will not send fire or fault messages to the control panel. Disabled alarm outputs will not activate in the event of a fire.



*All disablements can be viewed, but not altered, from the Disablement page (refer to Chapter 15.4).*



*If a device is not active on the mesh network it will not be possible to enable or disable that device.*

When a zone and/or device is re-enabled, settings are restored. All items previously disabled will remain disabled.

## 18 Access Testing

Level 2 access is required for Testing mode. The panel will not allow a user to log out of Level 2 access until all zones, devices, and functions have been removed from the test condition.

The zone or device is expanded and/or collapsed by selecting the and touch buttons.

A large tick-box will show that the fire-zone has been selected. A smaller grey tick-box will show each device that has been selected in that zone.

Information about the different icons shown on the touchscreen can be found in Table 11: Touchscreen icons.



All zones, devices, and functions under test can be viewed, but not altered, from the On Test control page.

To open the Testing page from the Touchscreen, first select Access (Figure 76, [1]), then select Testing (Figure 76, [2]).

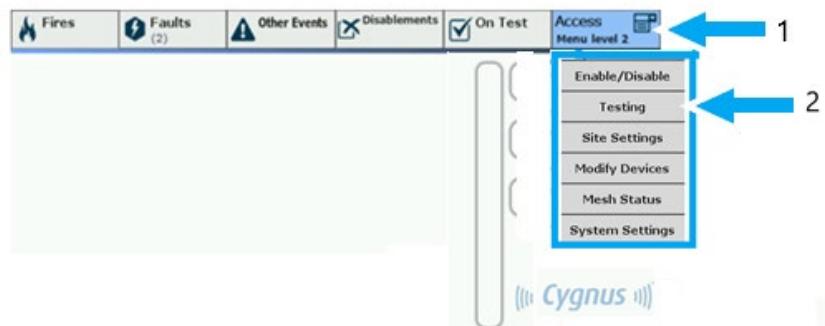


Figure 76: Access/Testing

This screen is identical for User Levels 2,3 and 4.

The selections available to the user are shown in dark text against a dark grey background. The options that are not available to the user are in a faint text against a light background.

The Access->Testing page gives the user the following options:

1. To test the ability to show all colours on the display screen. This is done from the **Test Display** option.
2. To test the LED displays of the front panel.
3. To test the Buzzer of the front panel.
4. Set testing parameters to system, local or silent
5. Select zone and device testing options

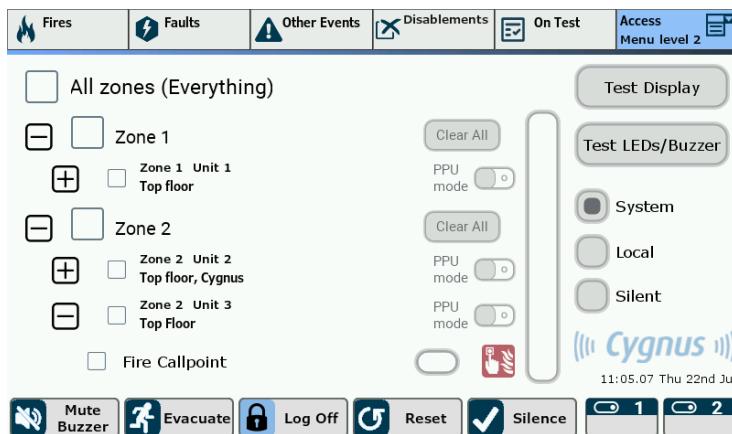


Figure 77: Access Testing touchscreen

Select the Test Display to test the colours on a test page, refer to paragraph 18.1.

Select the Test LEDs/Buzzer to test the operation of the Buzzer and the LEDs, refer to paragraph 18.2.

To do a System test of devices in their zones, refer to paragraph 18.2.3.

To do a Local test of independent devices in their zones, refer to paragraph 18.2.4.

To do a Silent test of all devices and zones, refer to paragraph 18.2.5.

## 18.1 Test Display

To test the display, select the **Test Display** touch button.

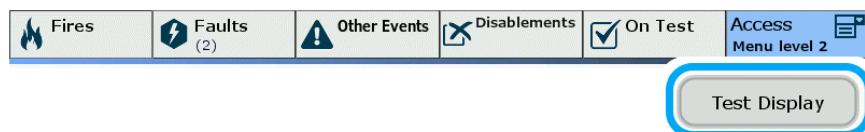


Figure 78: Access/Test Display touch button

The **Test Display** touch button opens a colour test card which indicates missing colour information. Make sure that all of the test display colours on the touchscreen are identical to those shown on Figure 79. This is a visual test only because LCD display faults cannot be detected by the CIE control panel.

This page (Figure 79) will appear:

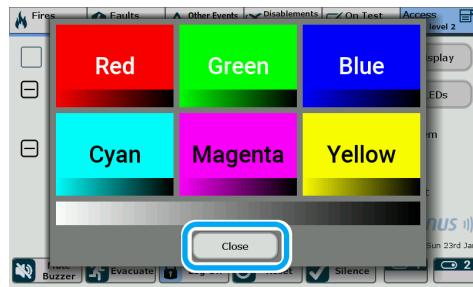


Figure 79: Touchscreen test colours

Select the **Close** touch button to return to the Access Testing window.

## 18.2 Test LEDs/Buzzer

Select the **Test LEDs** touch button.

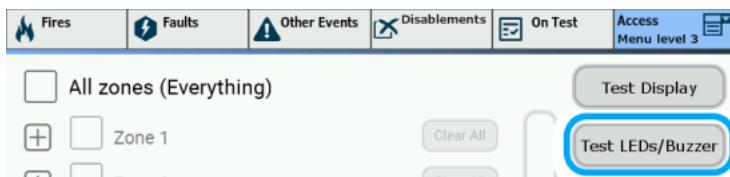


Figure 80: Test LEDs touch button



If this is a new panel make sure that jumper JP2 has been removed from the back of the display PCB, otherwise the buzzer will NOT sound.

The **Test LEDs** touch button (Figure 80) starts an LED sequence, identified by Figure 81, (**Running LED lamp test**) to confirm that the LED lamps and buzzer function correctly.



Figure 81: Test LEDs and Buzzer

### 18.2.1 Test sequencing

Groups of LED's will flash in turn. LEDs which do not illuminate with their group should be considered faulty. The test LEDs operation is exactly the same for the SmartNet and SiteNet control panels with the exception that SiteNet has a maximum of 32 zones and will sequence accordingly.

The first test of the LEDS will test the LEDs horizontally across each row: The zone LEDs are all numbered and will flash each row of 16 zones in order (1 to 16, 17 to 32, 33 to 48, 49 to 64, 65 to 80, and 81 to 96).

The second test of the LEDS will test the LEDs vertically across each row as shown in Figure 82, Column 1, the sequence running backwards.

In a display of 32 zones, it will test the individual zones in columns of two zones (one above the other) as shown in Figure 82, Column 2. The sequence runs backwards from 16 over 32, to 1 over 17 inclusive.

In a display of 64 zones, it will test the individual zones in a column of zones (one above the other) as shown in Figure 82, Column 3. The sequence running backwards from 16, 32, 48, over 64, to 1, 17, 33 and 49 over 63 inclusive.

In a display of 96 fire-zones it will test the individual zones in a column of four zones (one above the other) as shown in Figure 82, Column 4. The sequence running backwards from 16, 32, 48, 64, and 80 over 96, to 1, 17, 33, 49, and 65 over 81 inclusive.

Column 1	Column 2	Column 3	Column 4
16 fire-zones	32 fire-zones	64 fire-zones	96 fire-zones

Figure 82: Fire-zone test sequencing

The SiteNet CIE option of 32 zones is shown below (Figure 83: Numbered zones). The SiteNet CIE option of 16 zones would only show the top row.

The SmartNet CIE options of 16, 32, 64, and 96 zones would show, one row, two rows, four rows, and six rows respectively.



Figure 83: Numbered zones

To stop the tests, select the **Stop** touch button (Figure 84) on the popup window.



Figure 84: Test LEDs – Stop

## 18.2.2 Selecting zones and devices

Each time that a zone or device is selected the amber Test Mode LED will be lit on the front of the control panel.

Each time that all zones and all devices have been deselected in Test Mode, the amber Test Mode LED will be extinguished at the control panel.



Figure 85: CIE Front panel: Test Mode LED

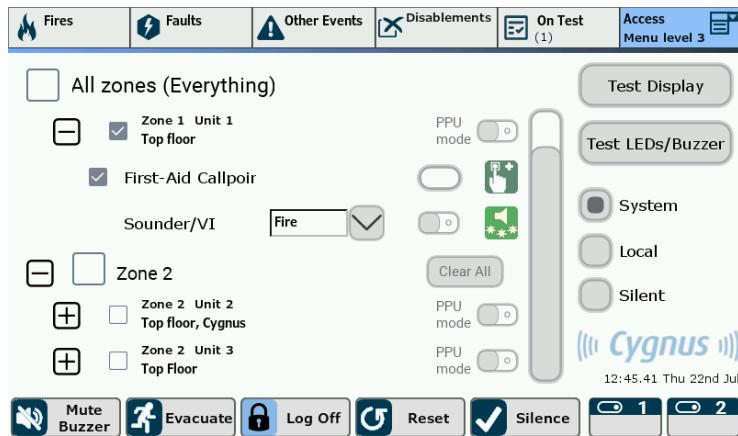


Figure 86: Testing touchscreen

Select **All zones (everything)** to select everything (all zones and all devices). This will be shown by a white tick in a black box to the left of the zone name. All zones and all devices will be shown as selected by a white tick in a black box to the left of the zone and devices names. Un-tick **All zones (everything)** to deselect all devices and zones together.

Select individual zones to select all devices in that zone. This will be shown by a white tick in a black box to the left of the zone name. All devices will be shown as selected by a white tick in a black box to the left of the zone name. Select the **Clear All** touch button to the right or the relevant zone to remove all the selected devices in that zone.

The zone or device is expanded and/or collapsed by selecting the **[+]** and **[−]** touch buttons.

A large tick-box **✓** will show that the fire-zone has been selected. A smaller grey tick-box **✓** will show each device that has been selected in that zone.

Inputs and outputs can be put into test mode at the **zone, device, or device function** level. When a zone and/or device is put into test mode, this action overrides the test mode settings of individual zones and/or devices. These items are then greyed-out on the screen.



Figure 87: Post-test Clear All

When a zone and/or device is taken out of test mode, settings are restored. An item that was previously in **Testing** will remain in **Testing** when settings return to normal. Select the **Clear All** touch button (Figure 87) to remove *all* functions within that zone and/or device from the **Testing** mode.

The **Testing** option allows each device to trigger conditions (e.g., sounder/ visual indicator) without activating the normal alarm mode(s).

When a trigger condition has been successful, the touchscreen acknowledges the event by colouring the blue circle to the right of the input name (Figure 88).

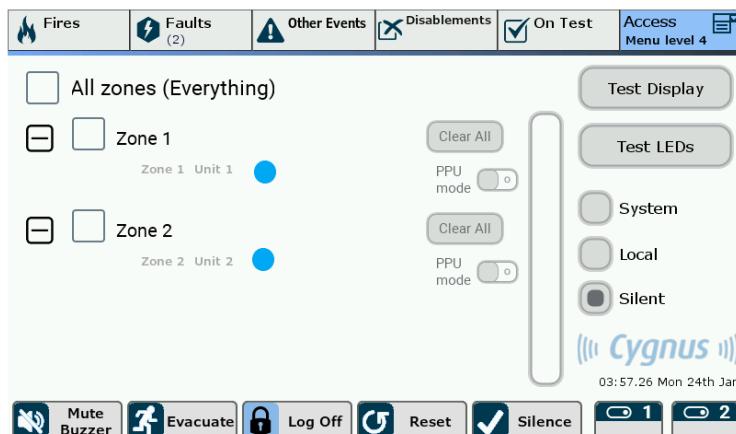


Figure 88: Trigger conditions

### 18.2.3 System test

To test all of the devices together select the Systems touch button (Figure 89). Activating a device will light the status LED on the activated device and trigger all sounders and VADs across the system momentarily.

*Note: the System test will test all devices on the system at the same time, so can be heard/seen throughout the whole building.*



Figure 89: Access System test

#### 18.2.4 Local test

To test individual devices, select the **Local** touch button, shown below (Figure 90). Activating a device will light its status LED and trigger only the sounder and/or VAD momentarily on the activated device.

*Note: the sound/light will only be heard locally and the rest of the building will remain silent during the test.*

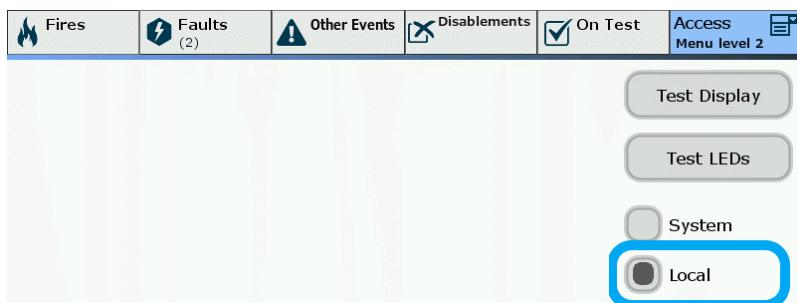


Figure 90: Access Local test

#### 18.2.5 Silent test

To test the **Silent** function, select **Silent** touch button, shown below (Figure 91) The red **LED** on the device under test will be lit for a short time. No other outputs will activate.

*Note: sounders and VAD will not activate during silent test. This mode of operation does not guarantee sounders and VADs are operating correctly.*

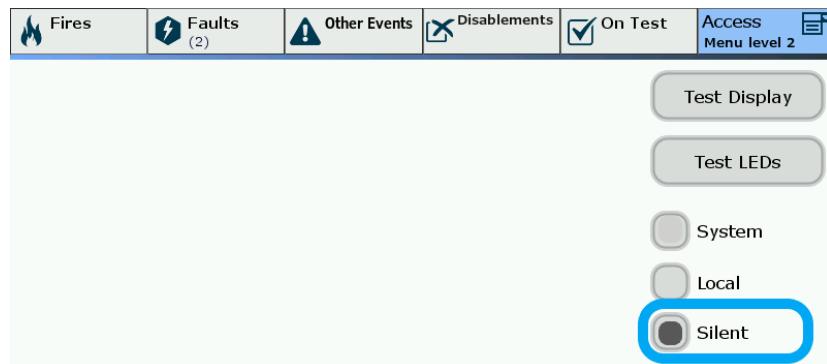


Figure 91: Access Silent testing

## 19 Site Settings

These paragraphs set out the actions that a user can do in the site settings screen. Screens will look similar for each user at different levels, but some touch buttons will be faint and unresponsive if the user does not have the correct PIN.

To get access to the **Site Settings** select the **Access** dropdown menu (Figure 92, [1]), then select the **Site Settings** touch button [2].

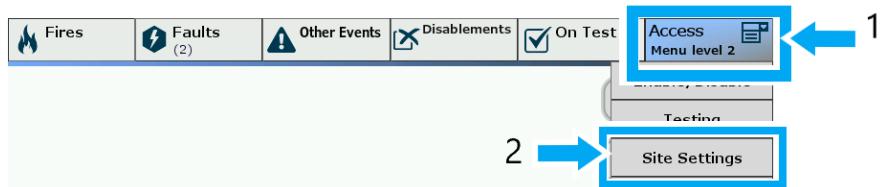


Figure 92: Level 2 Site Settings

### 19.1 Site Settings access

#### 19.1.1 Level 2 access

Users who access the **Site Settings** with Level 2 access can only view Day/Night settings, and SMS Settings. (Figure 93).

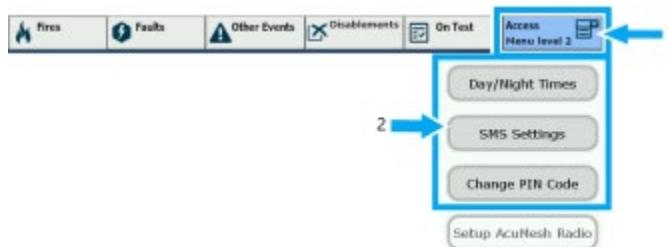


Figure 93: User Level 2 Site Settings access

#### 19.1.2 Level 3 and Level 4 access

Users with Level 3 and Level 4 access will be able to operate all the touch buttons and sliders. see the touchscreen below (Figure 94).

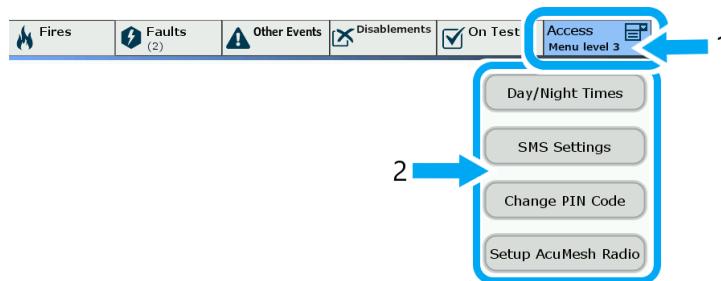


Figure 94: Level 3 and Level 4 access

**Site Settings** page gives the user the following options:

6. To make changes to the Day/Night time settings.
7. To make changes to the SMS settings.
8. To make changes to user PIN codes.
9. Add and configure AcuMesh Radio modules for panel networking.

## 19.2 Site Settings touchscreen

The touchscreen is displayed when the Site Settings option is accessed from the Access dropdown menu.

At User Level 2 (Figure 95, [1]) the touch buttons within the Information area [2] are unavailable.

At User Level 2 the three options [3] available are:

1. Day/Night Times
2. SMS Settings
3. Change PIN Code.

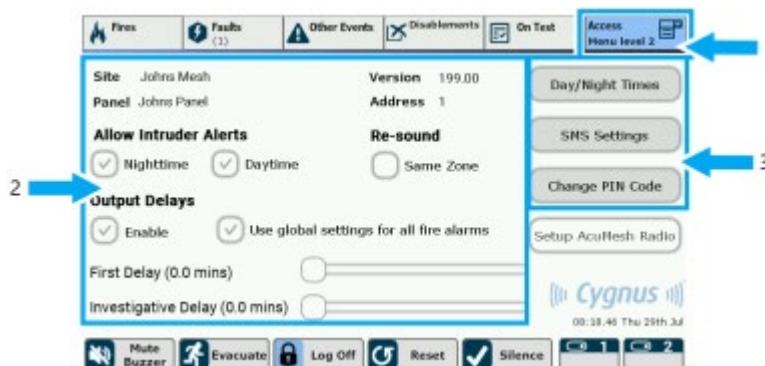


Figure 95: User Level 2 Site Settings touchscreen

At User Level 3 (Figure 96, [1]) the touch buttons are accessible in the information area.

At User Level 3 the following sections within the Information screen [2] are:

1. Intruder alarms
2. Resound alarms
3. Output delays.

At User Level 3 the following options are available [3] to the User Level 3 PIN are:

1. Day/Night Times
2. SMS Settings
3. Change PIN Code
4. Setup AcuMesh Radio.



Figure 96: User Level 3 Site Settings touchscreen

### 19.3 Day/Night settings Level 2 user

Level 2 users can view the Day/Night settings (Figure 107) but cannot make changes (Figure 108). If a Level 2 user attempts to make changes the User Level 3 Log On required popup will appear.

Check that the **Access** level dropdown touch button (Figure 92, [1]) shows **Level 2**.

From the **Site Settings** touch button (Figure 97) select the **Day/Night** touch button.



Figure 97: Select Day/Night option

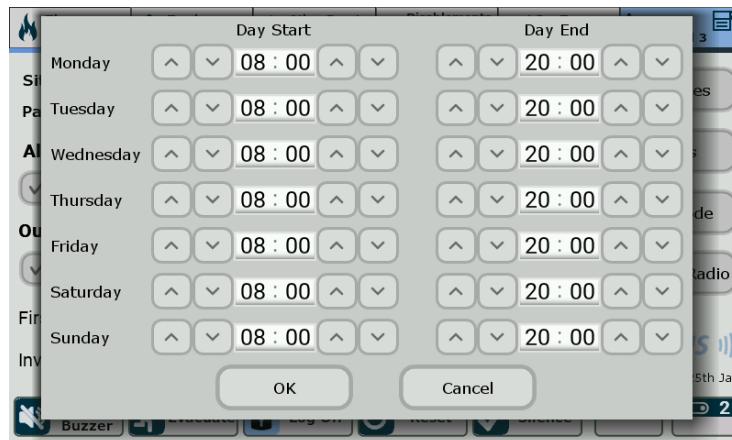


Figure 98: Level 2 Day/Night settings



Figure 99: Day/Night access denied

## 19.4 Day/Night Level 3 user.



Figure 100: Select Day/Night option

This will display the **Level 3 Day/Night settings** (Figure 101). All touch buttons are enabled for User Level 3 users.

To make changes to the **Day/Night** settings you must first identify the weekday (Figure 101, [1]), and the **Day Start** and **Day End** [2] times. Touch button [3] may identify a normal day, whereas [4] shows an extended day.

To change the hours at the start or end of the day use the **▼▲** touch buttons [5]. To change the minutes at the start or end of the day use the **▼▲** touch buttons [6].

To confirm the changes, select the **OK** touch button [7]. To cancel the changes, select the **Cancel** touch button [8].

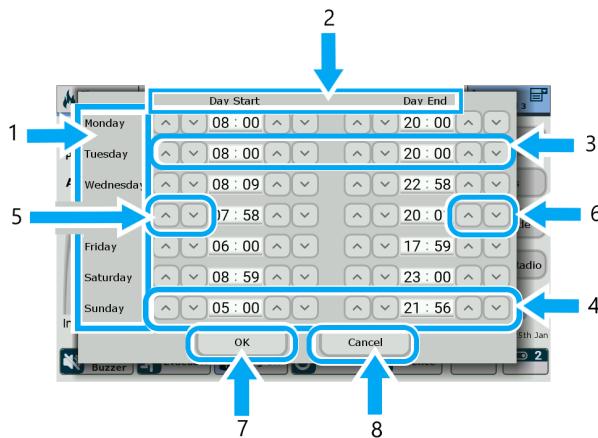


Figure 101: Level 3 Day/Night settings

## 19.5 SMS setting

### 19.5.1 SMS setting Level 2

For Level 2 users to view the **SMS Settings**, **Log On** at Level 2, and check that the **Access** level, shows **Menu Level 2** (Figure 102: Level 2 SMS Settings [1]).



Figure 102: Level 2 SMS Settings

A Level 2 user can see the information recorded on the **SMS settings screen** but cannot make changes.



Figure 103: Level 2 SMS settings

If a Level 2 user attempts to make changes to the SMS Settings, the **User Level 3 Log On required** popup will appear.



Figure 104: the **User Level 3 Log On required**

### 19.5.2 SMS Setting Level 3 and Level 4 user



*This information is only for User Level 3 Engineers and Level 4 System Maintainers. Users with Level 2 access cannot access this information from the CIE control panel.*

For Level 3 and Level 4 users to change the **SMS Settings, Log On**, then make sure that the **Access menu** dropdown touch button (Figure 105, [1]) shows **Menu Level 3** or **Menu Level 4**.

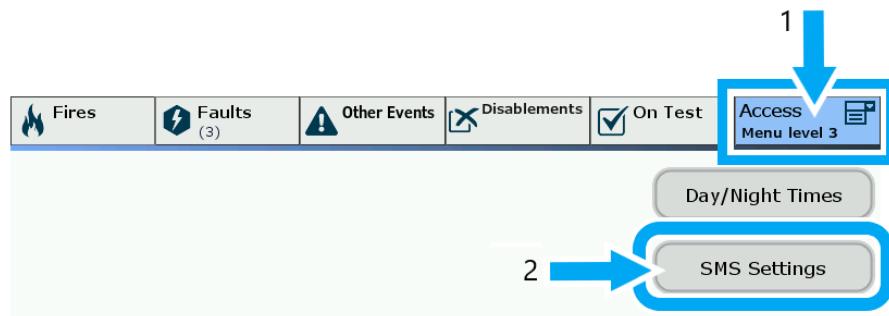


Figure 105: Level 3 and Level 4 SMS Setting

Select the **SMS Settings** touch button (Figure 105, [3]) to show the SMS information page (Figure 106). This page is identical to Level 2 SMS settings, but the touch buttons ([1], [2], [3]) are active.

This screen allows the user to **Add** [1] or **Remove** [2] a name, mobile telephone number details or SMS Identity (ID) that can be used to alert personnel such as management and fire marshals should an alarm sound at the site.

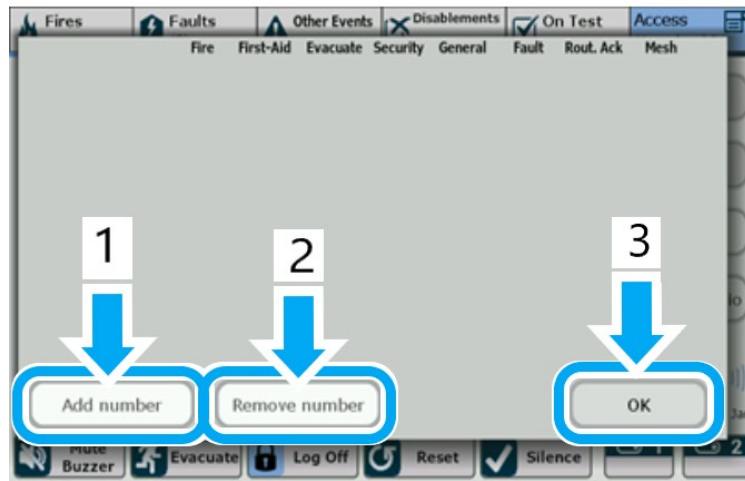


Figure 106: SMS edit page

Select the **Add Number** touch button to open the SMS qwerty keyboard (Figure 107). Use this keyboard to add the user information.

The **Num/Sym** key (Figure 107, [1]). enables the user to switch between the SMS alpha text and the numerical/symbol. The backspace key [3] The key [2] will change the font case from UPPERCASE to lowercase.

When all the required information has been added correctly, select the **OK** touch button to save your settings (Figure 107, [4]). Select the **Cancel** touch button [5] if you do not want to save your settings.

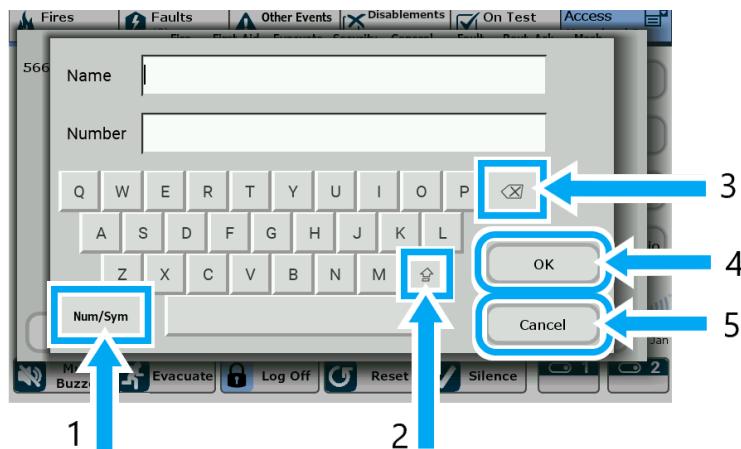


Figure 107: Level 3 SMS Qwerty keyboard

Figure 107 is a lightweight QWERTY keyboard. The touch button [1] will change the SMS alpha text display to an SMS Number/Symbol display (Figure 108).

Figure 108 contains two keyboards, [1] is a numerical keyboard, [2] is a symbol keyboard. The backspace key is present, see [3].

When all the required information has been added correctly, select the **OK** touch button to save your settings (Figure 108, [5]). Select the **Cancel** touch button [6] if you do not want to save your settings.

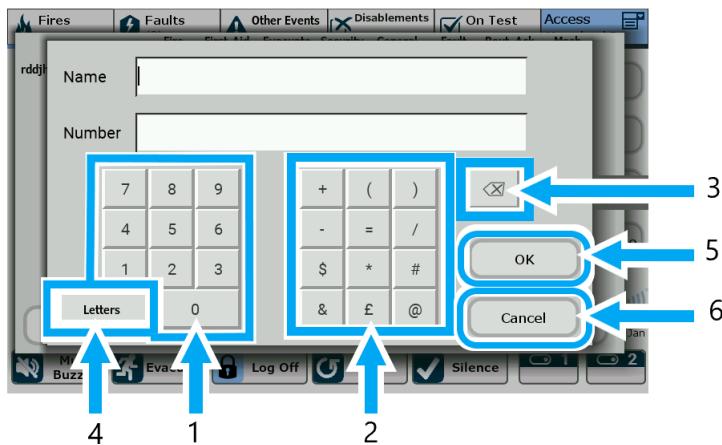


Figure 108: SMS Number/Symbol keyboard

## 19.6 Change PIN codes

Select **Change PIN Code** from the Access Menu on the main touchscreen.

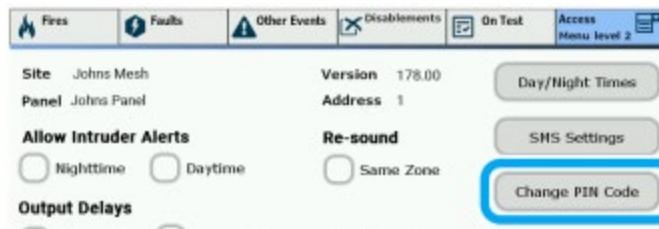


Figure 109: Select Change PIN codes

This will display this popup window (Figure 110).

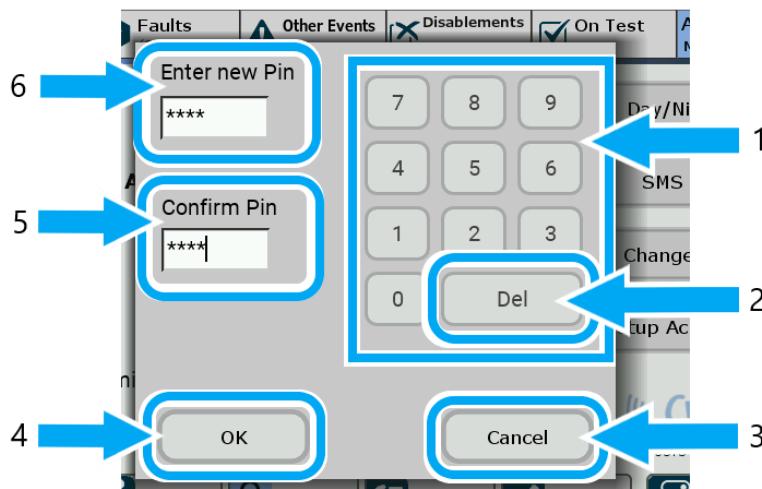


Figure 110: Change PIN

When the Change PIN screen opens, only the **Enter New PIN** (Figure 110, [6]) box will be seen, enter the new PIN where shown (Figure 110, [6]). Use the numerical keyboard [1] to enter the PIN.

When the new PIN has been entered, the **Confirm PIN** [5] panel will appear. re-enter the new PIN.

To confirm the new PIN, select the **OK** touch button [4]. If you do not want to save changes select the **Cancel** touch button [3].

## 19.7 Setup AcuMesh Radio

### 19.7.1 Setup AcuMesh Radio (User Level 2)

Users with User Level 2 access cannot open the Setup AcuMesh Radio option.

## 19.7.2 Setup AcuMesh Radio (User Level 3/4)

Select **Setup AcuMesh Radio** from the Access Menu (Figure 111) on the main touchscreen.

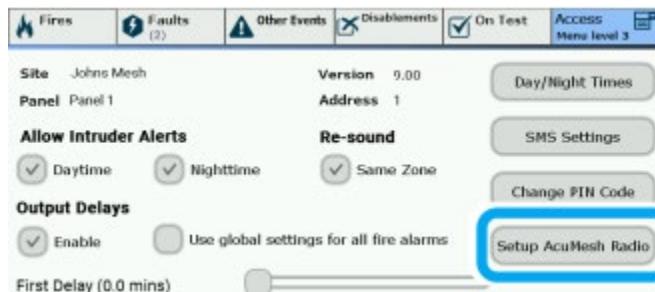


Figure 111: Select Setup AcuMesh Radio

This will display this image (Figure 112).



Figure 112: Set Setup AcuMesh Radio

## 19.7.3 AcuMesh Radios – Baud setting

Find **Baud** (Figure 113, [2]), then select the preferred Baud setting from the dropdown menu [1].

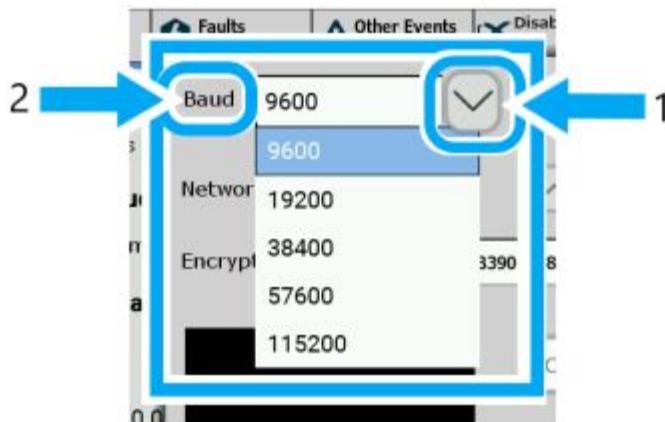


Figure 113: Baud Menu

#### 19.7.4 AcuMesh Radios – Network ID setting

Select **Network ID** (Figure 114), by using the up and down touch buttons to select the preferred Network ID setting.

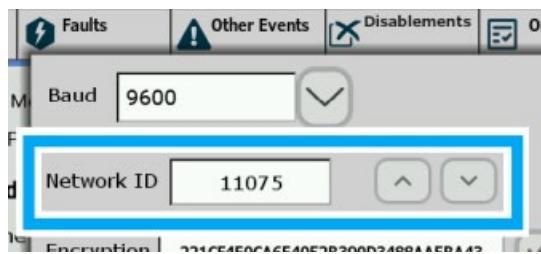


Figure 114: Network ID menu

#### 19.7.5 AcuMesh Radios – Encryption setting

Find **Encryption** (Figure 115), then write the **Encryption key**. Select the tick box to confirm the selection.

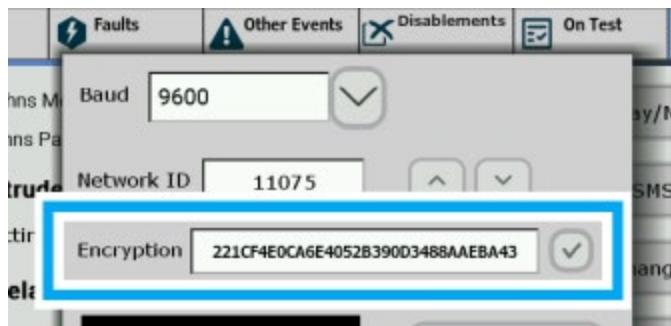


Figure 115: Encryption

The encryption key should be a randomly generated number of 32 digits long. Characters allowed are in HEX format, therefore numbers 0-9 and letters A-F shall be used (no other letters or characters are allowed). This key must be used for all panels on the network using AcuMesh radios.

### 19.7.6 AcuMesh Radios – Configure Radio setting

Select the **Configure Radio** touch button (Figure 116, [1]). This will run a sequence of tests to configure the AcuMesh radio. The progress of events can be seen on the small black screen (Figure 116, [2]). next to the **Configure Radio** touch button on the window.



Figure 116: Configure Radio

The information shown (Figure 116, [2]). identifies the name of the network, the latest version of the CygnusConfig Configuration tool that is installed, the identity of the control panel being read and its address within the fire alarm system.

## 19.8 Intruder Alarms

Some devices have PIR movement detectors fitted to give indication of movements when activated. Movement detection should only be enabled out of hours when the site is quiet.



*Note that the PIR can be used for indication only of movement and is not an approved intruder alarm system. It will detect local human activity, but could also be triggered by animals.*

*The PIR is not intended for outdoor use, due to the high infrared light output from the sun. Although it shares the same IP rating as the rest of the products, PIR sensors do not operate as efficiently in wet conditions, therefore it is recommended that the PIR function is disabled in these conditions.*

The **Allow Intruder Alarms** settings lets a user with Level 3 or Level 4 access to set the operation of the intruder alarms to ON or OFF, as required, during day or night activity.



Figure 117: Site Settings information

### 19.8.1 Intruder Alarms settings

The Site Settings information screen (Figure 117: Site Settings information) shows the address of the site [1] across the top of the page. Below the address are two dropdown touch buttons (**Daytime** and **Nighttime**) [2]. The touch buttons can be used to set the Intruder Alarms to ON or OFF, as required.

## 19.9 Re-sound

The **Re-sound** setting (Figure 117: Site Settings information) allows a Level 3 user to sound the alarms from the touchscreen. The **Re-sound** setting will only operate the sounders. No other part of the system is affected.

## 19.10 Output Delays

The **Output Delays** (Figure 96) allow delays to the operation of the alarms to be set. The **Output Delays** sliders are inhibited for User Levels 1 and 2. When the sliders are moved an amber **Delays Active LED** is lit on the CIE front panel.



*Figure 118: Delays Active*

## 20 Modify Devices Settings

### 20.1 Modify Devices User Levels



*The Modify Devices pages are only accessible to engineers who have access to user Level 3 and 4.*

#### 20.1.1 Modify Devices User Level 2

Users with User Level 2 access cannot open the Modify Devices option and will see the screen below (Figure 119).

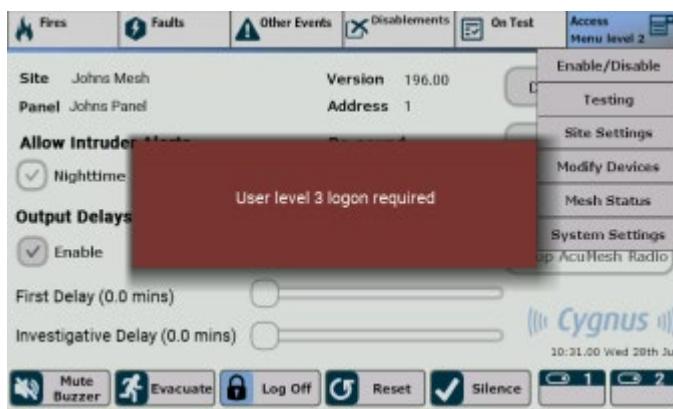


Figure 119: Modify Devices User Level 2

#### 20.1.2 Modify Devices User Level 3

The **Modify Devices** touchscreen will allow an engineer to add a new device to the network or edit existing details. An example might be that a device's location has been changed or you may want to add another unit onto the system without using a PC.



*Although this will add a device to the network, it is recommended to add a device using the CygnusConfig configuration tool (refer to Cygnus Configuration Manual 2000-MAN-0002). To ensure that your config site file is always upto date.*

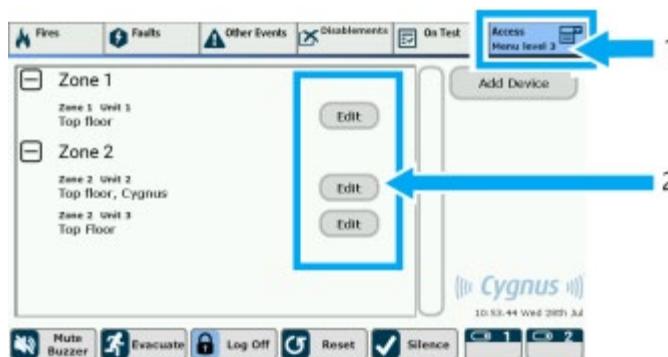


Figure 120: User Level 3 Modify Devices

### Edit details

Select the relevant Edit field on the touchscreen which will open a new QWERTY keyboard popup window (Figure 121). The QWERTY keyboard [1] includes a **Backspace** key and a **Num/Sym** key which will open the numeric keyboard (Figure 122).

Use the **QWERTY** keyboard to enter or change the text in the **Location** text box (Figure 121, [1]).



Figure 121: Modify Devices – Alpha text

Use the **Num/Sym** keyboard to enter or change the **QWERTY** keyboard to a numeric / symbol display (Figure 122).



Figure 122: Modify Devices – Numbers and Symbols

When all the information has been added correctly, select the Write To Device touch button (Figure 121, [4]). When the Write To Device is updating a progress bar will show on the screen (Figure 123). When “Success” is displayed, the task is complete. Select the Close touch button (Figure 121 [5]) to close the window.

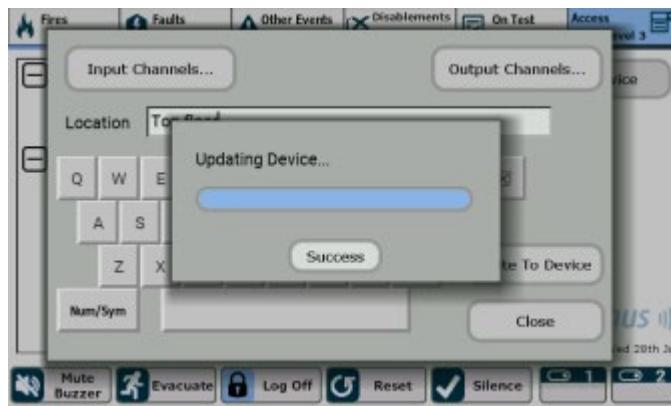


Figure 123: Updating Device

### Input Channels

Changes can also be made to the Inputs and Outputs of the devices, refer to (Figure 121, [2] and [3]). Select **Input Channels** (Figure 121, [2]) to view the Input settings for the device. The device selected from the main touchscreen will be identified in the **Input Channels** window (Figure 124, [1]).

Changes can be also made here to numerous settings on the main window [2]. The **Close** touch button (Figure 124, [4]) will close the window If no other changes are required and will return you to the main **Edit** window (Figure 121).



*Fire alarm systems are designed to comply with the EN 54 Fire standard. If you select a configuration setting that is*

outside of EN54, a red **NOTE** will appear onscreen [3]. Please ensure you have approval to overide any EN54 settings.

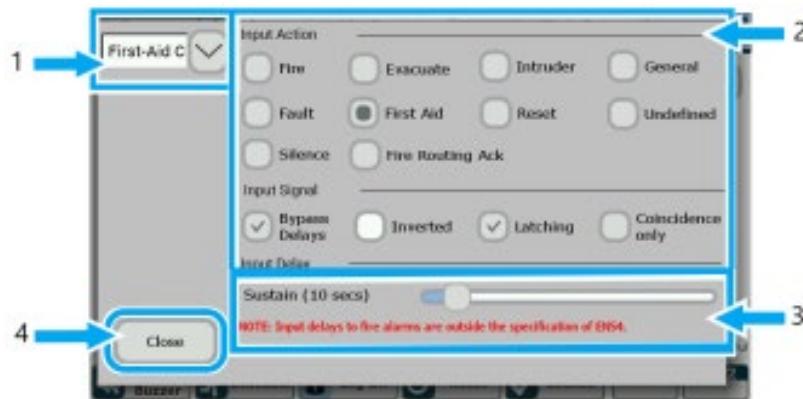


Figure 124: Modify Devices – Input Channels

To save changes made to Output Channels, select the **Write To Device** touch button (Figure 121, [4]). When the **Write To Device** is updating a progress bar will show on the screen (Figure 123). When “Success” is displayed, the task is complete. Select the Close touch button (Figure 121, [5]) to close the window.

### Output Channels

Select **Output Channels** (Figure 121, [5]) to view the **Output** settings for the device. If there is more information available than can be seen on a single window, then the Scroll slider bar will appear with a dark grey outline. Apply slight finger pressure to the slider to slide the bar up or down to access all the information.

The device type selected from the main touchscreen will be identified in the **Output Channels** window (Figure 125, [1]). Changes can be also made here to numerous settings on the main window [2] and the **Output Delays** [3].

The sliders on the **First Delay** and **Investigative Delay** are moved when the square touch button is selected. The touch button will change to blue and the slider can be moved.



Figure 125: Modify Devices – Output Channels

If no other changes are to be made to this page, then the **Close** touch button (Figure 124, [4]) to return to the main **Edit** window (Figure 121).

To save changes, select the **Write To Device** touch button (Figure 121, [4]). When the **Write To Device** is updating a progress bar will show on the screen (Figure 123). When “Success” is displayed, the task is complete. Select the Close touch button (Figure 121, [5]) to close the window.

## 20.2 Add a Device



*You can add a device to the control panel, modify its details, location, and zone but changes will not modify the configuration on the PC site file. Refer to Cygnus Configuration Manual 2000-MAN-0002)*

You must have logged at a **User Level 3** (Figure 127, [1]) to add a device to the network. This task will require a USB to Jack plug connector similar to the one shown below (Figure 126).



Figure 126: USB to Jack plug connector

To add a device at the Modify Devices touchscreen, select **Add Device** (Figure 127, [2])



Figure 127: Add Device

This will open a new popup window (Figure 128: Not connected to a device).

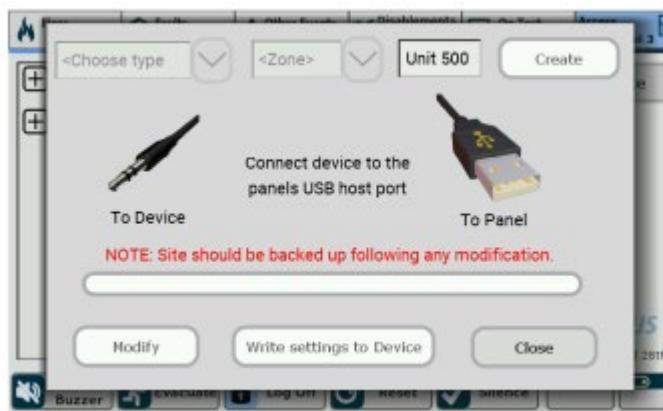


Figure 128: Not connected to a device

Follow the onscreen instructions. Connect the USB to jack plug cable to the new device and the USB connector on the display panel PCB (Figure 129: Display panel USB ports, [1]).

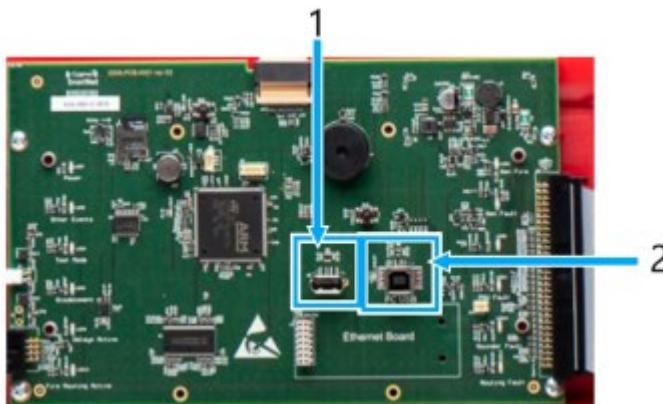
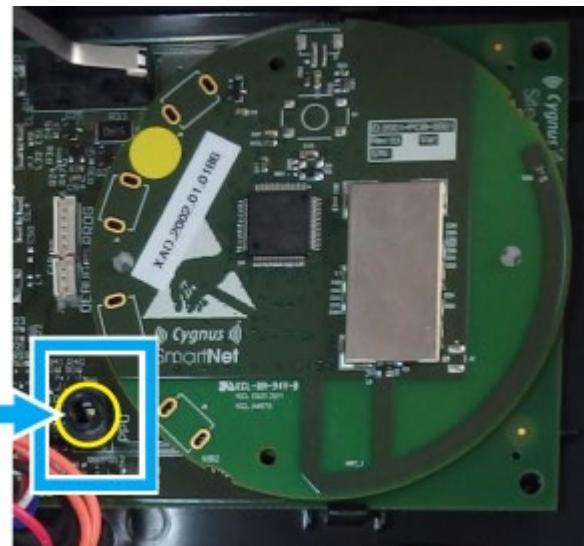


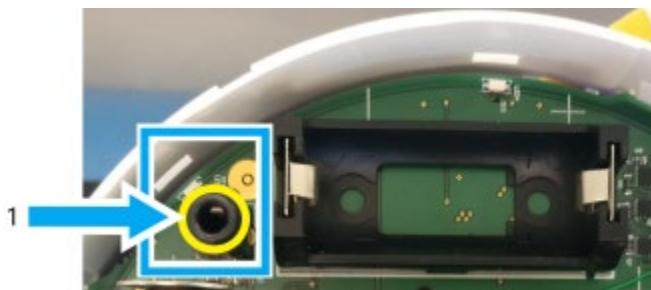
Figure 129: Display panel USB port

Attach the jack plug cable connector to the new device. On a SiteNet alarm device the jack plug connector is clearly located, see (Figure 130: SiteNet connection).



*Figure 130: SiteNet connection*

On a SmartNet radio base unit, the jack plug connector will be clearly located, see (Figure 131: SmartNet connection).



*Figure 131: SmartNet connection*

With the connections made select the **Create** touch button on the screen (Figure 132: Modify Create).



*Figure 132: Modify Create*

When the task is complete the text in the middle of the window will change to **Device unit X Added**. The new unit will also be shown in the window next to the Create touch button (Figure 133: Connected to a device, [1]).

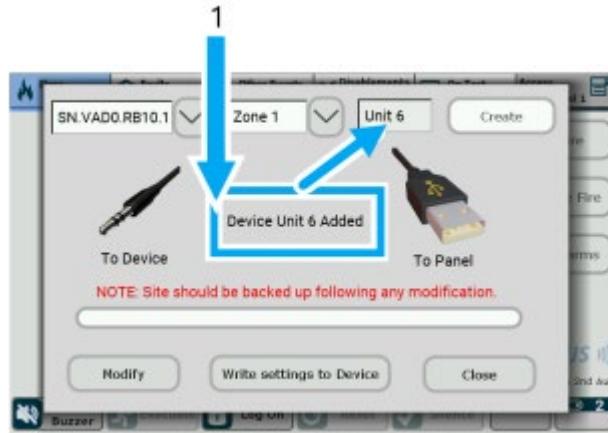


Figure 133: Connected to a device

## 20.3 Remove a Device



*You can remove a device from the control panel, modify its details, location, and zone. However, the changes will not modify the configuration on the PC site file. Refer to Cygnus Configuration Manual 2000-MAN-0002).*

You must have logged at a **User Level 3** (Figure 127, [1]) to remove a device from the network.

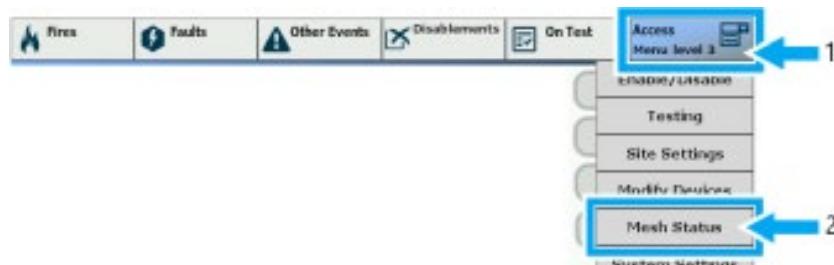


Figure 134: Access Menu- Mesh Status

Login to User Level 3 or 4 and go to Mesh Status from the Access Menu (Figure 134 [2]). Select the unit to be removed (Figure 135 Mesh Status- Remove, [2]). This will bring up a device information box (Figure 135) [3].

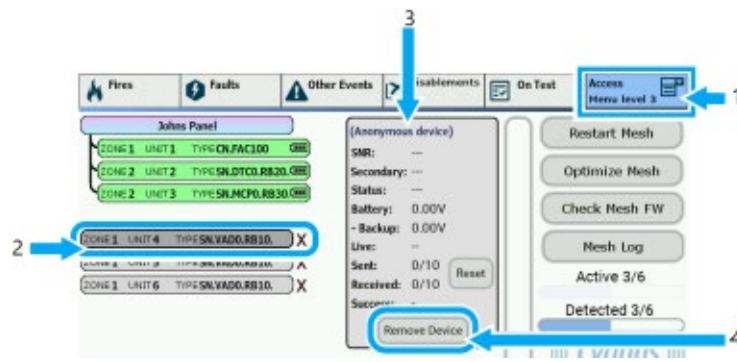


Figure 135 Mesh Status- Remove

When you are satisfied that the information is correct, and assuming you still want to remove the device, select **Remove Device** from the drop screen (Figure 135 Mesh Status- Remove, [4]). This will show a new popup window (Figure 136).



Figure 136: Delete A Device

Select the **OK** touch button (highlighted) to remove the device.

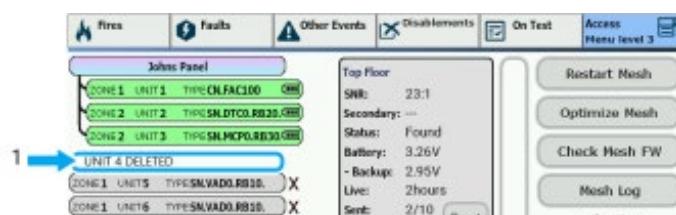


Figure 137: Device deleted

## 21 Access Mesh Status

The Mesh Status menu displays the live status of the mesh on the user's network If the panel devices are all green then devices are on the mesh and stable.

At the touchscreen, the details of each device can be interrogated, Reset, or the device can be removed from the network.

The number of detected and active devices are shown in the options pane, below the Access touch button.

### 21.1 Mesh Status access (User Level 2 and 3)

The User Level 2 (Figure 138) and User Level 3 (Figure 139) access screens are identical.

Each touchscreen has three areas:

1. Access Level [1]
2. Information area [2]
3. Options [3].

Below the options panel the two status slides tell the user how many of the devices are active, and how many have been detected on the system.

The following tasks can be done with a User Level 2 & 3 profile (Figure 138, [1]):

1. Restart Mesh. The control panel will force all devices to drop off the network and re-join.
2. Optimize Mesh. This will allow devices to select a different secondary communication path back to the panel. This is known as a secondary parent or secondary node but is essentially another radio device.
3. Check Mesh Firmware. This sends a command to all devices on the network to see if they are on the same firmware as the CIE. Any devices that are running a different firmware will report a fault which will be displayed in the faults screen.
4. Examine Mesh Log.
5. Check device status: Each device on the touchscreen can be interrogated for current status information i.e., radio signal strength, battery status and secondary parent details.

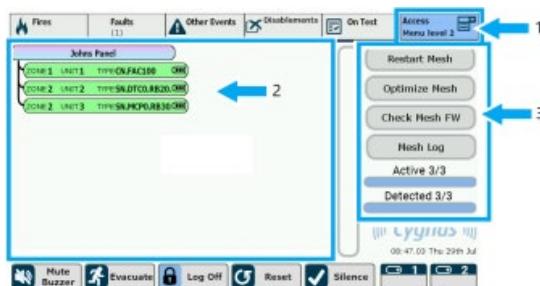


Figure 138: User level 2 Mesh Status access

The following tasks can be done with a User Level 3 profile (Figure 139, [1]):

1. Restart Mesh.
2. Optimize Mesh.
3. Check Mesh Firmware.
4. Examine Mesh Log.
5. Check device status.

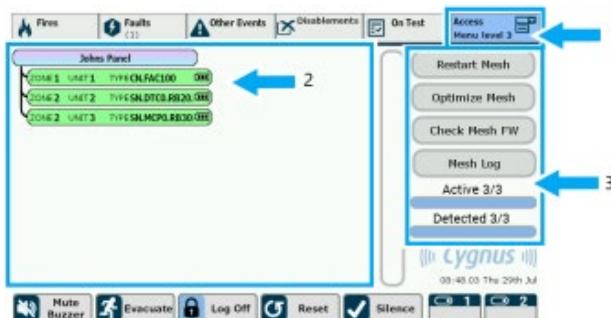


Figure 139: User level 3 Mesh Status access

## 21.2 Restart Mesh

Selecting the **Restart Mesh** option will give you the option to **Restart** or **Cancel**.

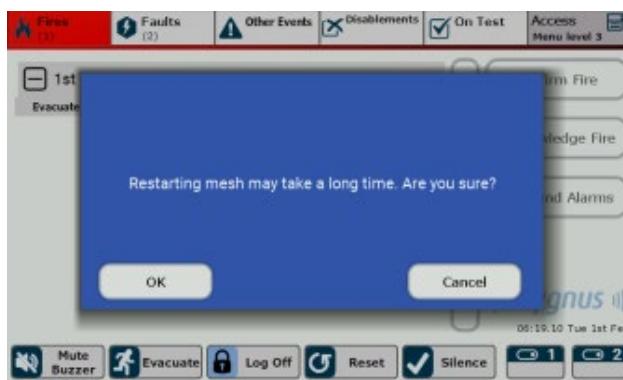


Figure 140: Restart Mesh

## 21.3 Check Mesh FW (Firmware)

Select **Check Mesh FW** from the touchscreen. This sends a command to all devices on the network to see if they are on the same firmware as the CIE. Any devices that are running a different firmware will report a fault which will be displayed in the faults screen.



## 21.4 Mesh Log

The Mesh Log contains a list of real time events that occur during the life of the Mesh. The events are notifications of changes in the health of the system. When the Mesh log is opened all mesh events can be seen. This is particularly useful when diagnosing faults.

The Mesh log receives information of events and separates them into eight different types. Each type has its own checkbox.

1. Link
2. Faults
3. Broadcast
4. Settings
5. Fire/Alarm
6. Drop
7. Status
8. Misc.

Deselecting any one or more of the checkboxes will isolate the others and help identify possible causes of relevant actions.

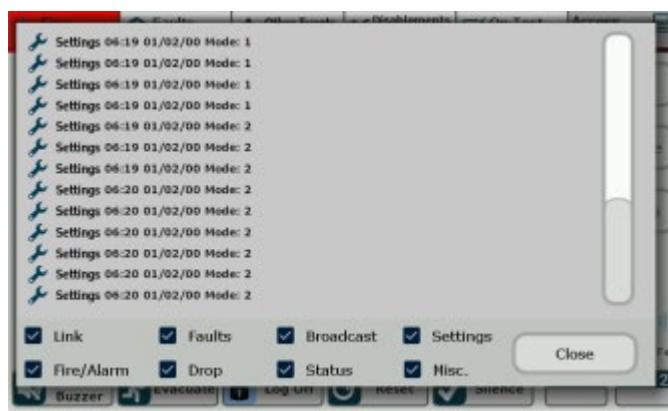


Figure 141: Mesh Log

## 21.5 Check device status

Each device that is shown within the **Information Area** (Figure 142) of the touchscreen [1] can be interrogated at the control panel. Select a device to view [2] its current status. An example is shown at Figure 142: [3]

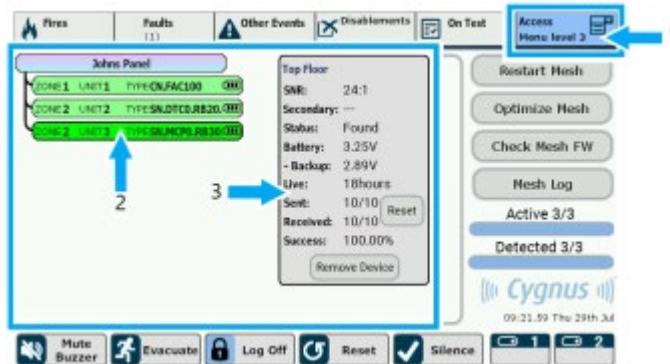


Figure 142: Device status

## 22 Access System Settings

The System Settings functions are not available to User Level 2 PINs

### 22.1 System Settings access

#### 22.1.1 User Level 2 access

User level 2 PINs attempting to get access to the System settings functions will see this image (Figure 143).



Figure 143: System Settings User Level 2 denied

## 22.1.2 User Level 3

The touchscreen has four areas:

9. Profile [1]
10. Information area [2].
11. Options [3].
12. Scroll bar [4].

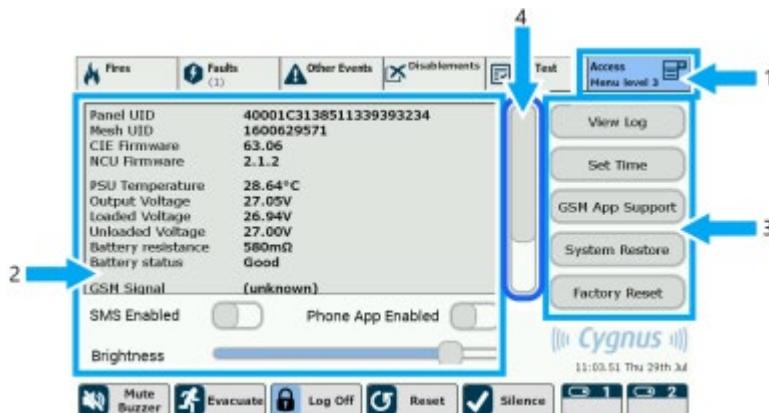


Figure 144: Access System Settings touchscreen

These tasks can be done with a User Level 3 profile (Figure 144, [1]):

13. View Log: Log displays all historic events (Figure 144, [3]).
14. Set Time: Changes can be made to the system time and date [3].
15. GSM App support: Changes can be made to the GSM details [3].
16. System Restore: System returns to default settings [3].
17. Factory Reset: System returns to factory settings [3].
18. SMS Enable: Enable /disable SMS [2].
19. Phone App Enabled: Enable/disable Phone App [2].
20. Brightness: The brightness slider adjust the contrast of the touchscreen [2].
21. Scroll bar: Can be moved to see all other information [4].

## 22.2 View Log

Select **View Log** from the touchscreen (Figure 145).



Figure 145: System Settings\_ Select View Log

The next page will look similar to the Mesh Log, but the differences are in the checkboxes at the bottom.

22. Events
23. Faults
24. System
25. Fires
26. Settings
27. Access
28. Testing.

Select all the checkboxes to see all of the logged items or individual checkboxes to narrow the selection.

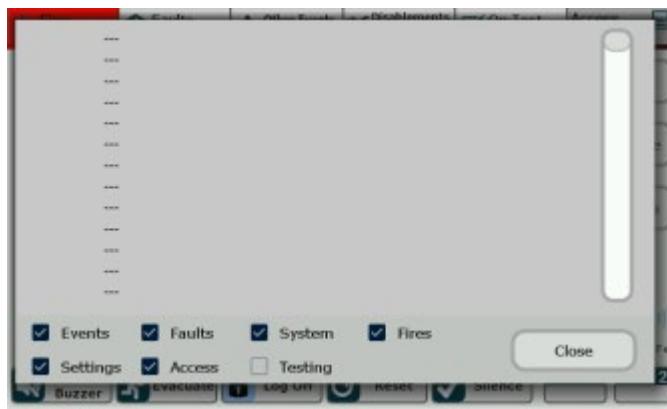


Figure 146: System Settings\_ Set View Log

## 22.3 Set Time

Select **Set Time** from the touchscreen (Figure 147).

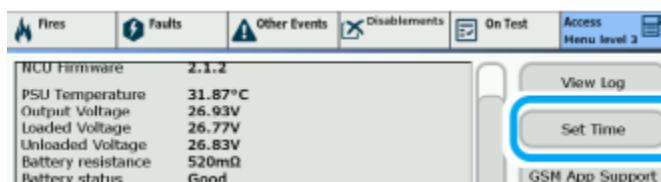


Figure 147: System Settings Select Time

### 22.3.1 Set Time

Select Set Time and Date from the touchscreen (Figure 147). Then scroll the time bars to set the time from the touchscreen (Figure 148, [1]).

### 22.3.2 Set Date

Select **Set Time and Date** from the touchscreen (Figure 147). Then scroll the date bars to set the date from the touchscreen (Figure 148, [2]).

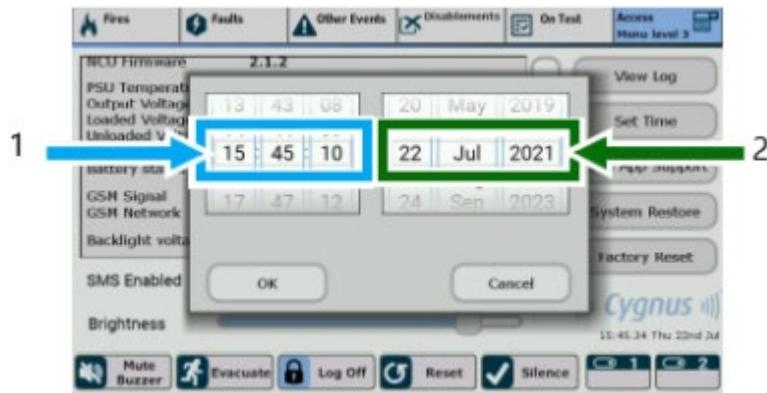


Figure 148: System Settings\_ Set Time and Date

Note that setting the time is important as soon as the panel is first powered and best performed before configuring the panel. This is due to the panel generating logs, ordered by date. If the time changes, the logs may be out of sync.

Daylight saving time (such as British Summer Time in the UK) is not automatic and must be changed manually on the panel, using the same procedure. The same applies to reverting back to standard time.

## 22.4 GSM Cellular Modem

### 22.4.1 No connection

A GSM Modem kit can be fitted to the panel for enabling SMS messaging and mobile data for us with the mobile phone App. This consists of a GSM Modem board and a cellular antenna. The board plugs in to the field wiring board with the antenna located on the door.

SMS messaging

### 22.4.2 GSM Modem Error Codes

GSM Modem users may see any one of these status messages should the modem not establish a connection with the control panel.

'Not searching' means the panel is not attempting to use the GSM which probably means there isn't a GSM module fitted

*Table 12: No connection errors*

Code	Error status	Cause	Response
Case ?	Unknown	Unknown	Replace SIM, and/or re-install app
Case 0	Not searching	Unknown	Replace SIM, and/or re-install app
Case 1	Registered (home network)	Unknown	Replace SIM, and/or re-install app
Case 2	Searching	Unknown	Replace SIM, and/or re-install app
Case 3	Registration denied	Unknown	Replace SIM, and/or re-install app
Case 4	No details	Unknown	Unknown
Case 5	Registered (Roaming)	Unknown	Replace SIM, and/or re-install app
Case 6	Registered (SMS only)	Unknown	Replace SIM, and/or re-install app
Case 7	Registered (Roaming/SMS only)	Unknown	Replace SIM, and/or re-install app
Case 8	No details	Unknown	Unknown
Case 9	CSFB not preferred	Unknown	Replace SIM, and/or re-install app
Case 10	CSFB not preferred (Roaming)	Unknown	Replace SIM, and/or re-install app
Case 11	SIM error	SIM corrupted	Replace SIM, and/or re-install app

## 22.5 Mobile Phone App

The Cygnus mobile phone App is for use on Android and Apple iOS platforms. To install the App, search for CygnusXXXXXX on Google Play or Apple Store.

Once installed on your phone, the App needs to be linked to an account.

## 22.5.1 Control panel settings

To change the GSM Modem settings, select **System Settings** from the **Access menu**, then select **GSM App Support** from the System Settings menu. The window that opens will display the QWERTY keyboard (Figure 149).



Figure 149: GSM App QWERTY board

Use the **Num/Sym** key to switch between the QWERTY text (Figure 149) and numeric (Figure 150) keyboards.



Figure 150: GSM App Numbers Keyboard

Use the **Set** key to save the details.

## 22.5.2 Setting up an account

NEEDS CONTENT

## 22.5.3 Linking your phone App to the Cloud

NEEDS CONTENT

## 22.6 System Restore

Select **System Restore** from the touchscreen (Figure 151).

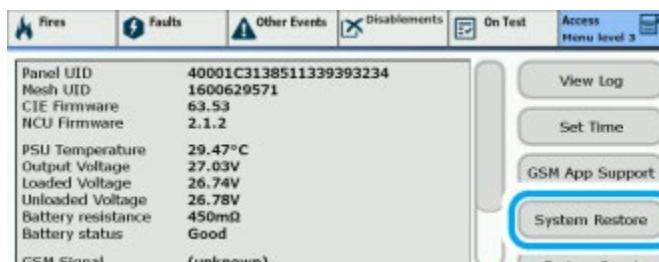


Figure 151: System Restore



*This selection will return the device to its system default settings. Users must be absolutely certain that this is the option that they want before proceeding.*



Figure 152: System Restore

## 22.7 Factory Reset

Select **Factory Reset** from the touchscreen (Figure 153) to reset the panel back to its original factory settings.

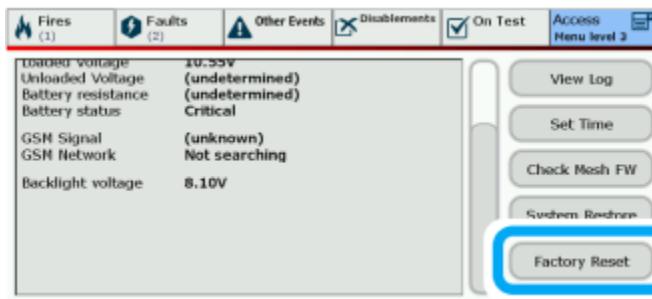


Figure 153: Factory Reset



*This selection will return the device to its factory settings. Users must be absolutely certain that this is the option that they want before proceeding.*



Figure 154: Factory Reset

## 22.8 SMS Enable

Select the **SMS Enabled** setting from the touchscreen (Figure 155).

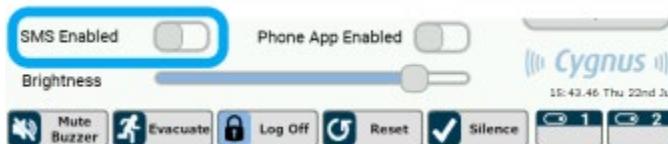


Figure 155: System Settings\_ Set SMS Enabled setting

## 22.8.1 Enable

To enable the **SMS Enabled** setting, slide the touch button to the right until it changes to blue. The **SMS Enabled** setting has now turned on.

## 22.8.2 Disable

To disable the **SMS Enabled** setting, select the enabled touch button until it changes to blue. The **SMS Enabled** setting is now disabled.



Figure 156: System Settings\_ SMS Enabled

## 22.9 Phone app

Select the **Phone App** setting from the touchscreen (Figure 157).

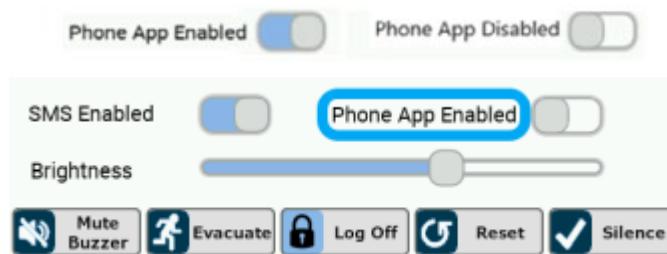


Figure 157: System Settings Phone App Enabled

## 22.9.1 Enable

To enable the **Phone App**, select the disabled touch button until it changes to blue. The Phone App is now enabled.

## 22.9.2 Disable

To disable the **Phone App**, select the enabled touch button until it changes to blue. The **Phone App** is now disabled.

## 22.10 Brightness slider

Select the Brightness slider from the touchscreen (Figure 158).



Figure 158: System Brightness slider

To adjust the **Brightness** of the touchscreen, touch the slider until it changes to blue, then move the slider to the desired position. The touchscreen becomes brighter when the slider is moved to the right and becomes darker when the slider is moved to the left.

## 22.11 Scroll bar

Scroll bars will appear whenever there is insufficient space to show all the information at one time.

To move the scroll bar, press firmly on the bar with a finger until the colour of the scroll bar changes to blue. Slowly slide the finger in the direction required.

## 23 Control Panel Networking

### 23.1 AcuMesh

AcuMesh radio units link all the control panels within a mesh together. This manual explains how the AcuMesh units are connected to the control units and gives procedures for the servicing procedures and support necessary to maintain and repair the AcuMesh devices.

AcuMesh units are connected to the control panel using the RS485 wired connection to the field wiring board (FWB). The AcuMesh radio uses a 24 VDC power supply taken from the CIE control panel. The AcuMesh radio may be mounted on a different surface, up to one metre away from the CIE control panel.

#### Daisy-chained control panels

Daisy changing is a term used with a fixed wiring system. The Cygnus fire alarm detection system is wireless and not daisy chained.



*An AcuMesh device cannot be reconfigured whilst there is a flow of communication to the device.*

Make sure that the AcuMesh radio is connected to a 24 VDC supply at the control panel.

Make sure that the AcuMesh radio is connected to a 24 VDC supply at the control panel.

Connect a USB/A to USB/B cable to the USB/A connector at the back of the Display panel PCB.

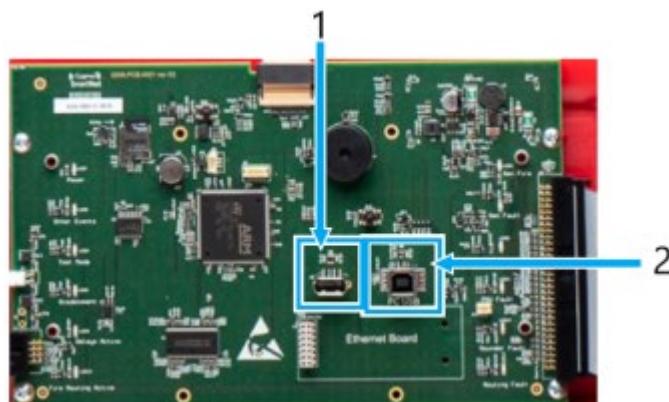


Figure 159: Display panel USB port

Refer to paragraph 20.2 but use the USB.B cable.

### 23.1.1 Configuration

The AcuMesh device must be removed from all lines of communication before it can be configured. This can be achieved by disconnecting the RS 485 connections from the base of the device or at the control panel.

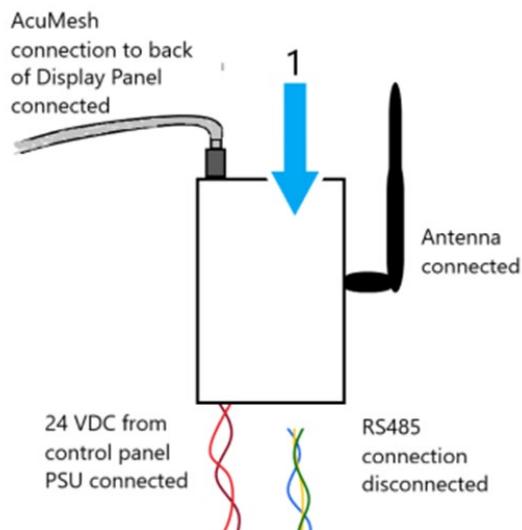


Figure 160: Disconnect RS485 connection

The AcuMesh radio is configured with a USB/B cable similar to the one shown in Figure 161: USB B connection.



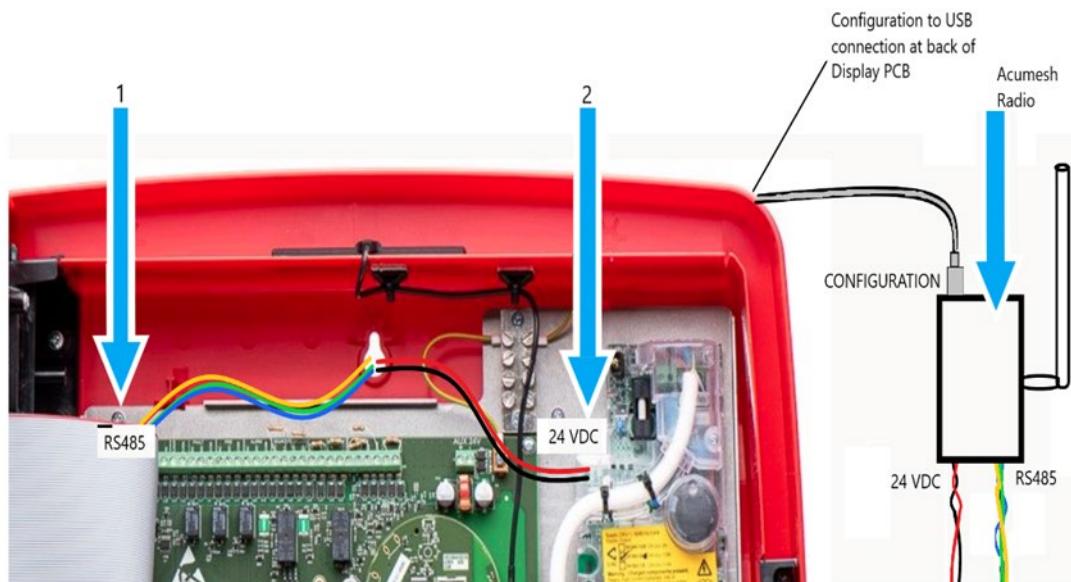
Figure 161: USB B connection

When the AcuMesh system has been fully configured all of the panels can communicate wirelessly with each other without the need for hard wiring.

***Important.*** Do not forget to reconnect the RS485 connection between the AcuMesh radio and the control panel.

## 23.2 AcuMesh connection

The image at Figure 162: AcuMesh connection is not typical of a control panel connected to the AcuMesh radio. Normally the AcuMesh would be sited up to one-metre from the control panel however to show connections they are shown here in close proximity to the CIE control panel.



*Figure 162: AcuMesh connection*

### 23.2.1 Licensing

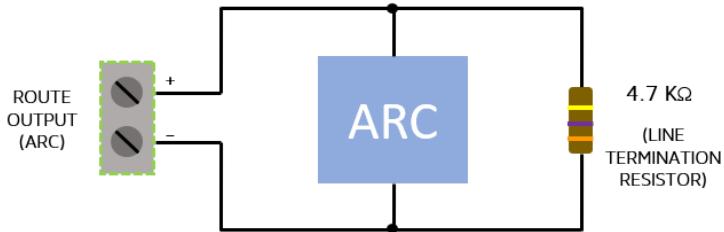
The CygnusConfig configuration tool needs a license key before it can be used. Please contact your installer, or OEM representative for more information. Details are also to be found in the 2000-MAN-0002 Cygnus Configuration Manuals.

## 24 Connecting to an ARC

Panels can be wired to Monitored Fire Alarm Signalling which send signals to an Alarm Receiving Centre (ARC) controller

- either use Routing Output connections
- or Fire & Fault relay contacts

### 24.1 Routing Output Connections

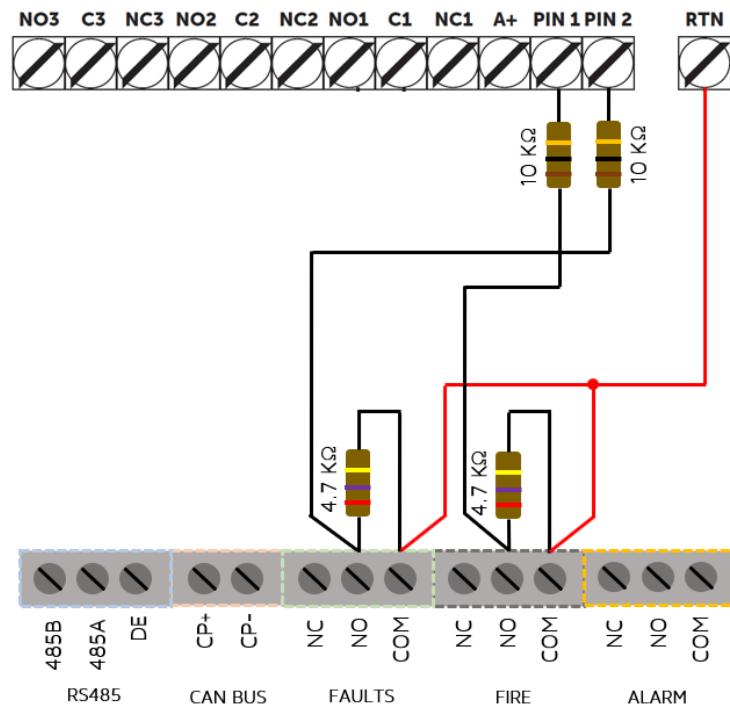


Example connection to an ARC controller with 24V input

### 24.2 Fire & Fault Relay Connection

An approved ARC controller can be connected to the panel as shown in the diagram below. If the ARC controller requires power from the panel, the AUX 24V terminals may be used (located on the top right-hand corner of the field wiring board). Before connecting, make sure the ARC controller requires less than 200mA supply current (AUX 24V can supply a maximum of 200mA).

The resistors must be connected as shown to prevent open circuit faults on the panel.



Example connection to a DualCom Pro 2, or similar

## 25 Cleaning

No formal cleaning procedure is required for Cygnus SmartNet components under normal use. The control panel should however be regularly checked and cleaned for dust and cobwebs, with a lint-free cloth used for dusting. If necessary, a damp, but not wet, soft cloth can also be used to wipe over the front of the control panel.

---

### Warning

---



Do not apply abrasive cleaning products to the surfaces of the SmartNet components.

Do not get the components wet when cleaning.

## 26 Troubleshooting

Refer to the Fault-Finding table below (26.1) offers fault finding diagnosis should it be required.

### 26.1 Fault Finding

*Table 13: Fault finding*

Fault	Device	Solution
Fault tab flashing on Status bar	CIE	Select faults to open [page. Identify faults and rectify. Fault tab flashes each time new logon is completed.
Rear tamper	All	Make sure base of unit is securely positioned against the surface. If fault cannot be reset, then report the fault to an installer or service engineer.
Installation tamper	All	If the unit lid to the device is open, close it. If the cover cannot be securely fastened, then immediately report the fault to an installer or service engineer.
Head not detected by control panel	All	Make sure detector head is firmly held into position. Otherwise report the fault to an installer or service engineer.
Configured Zone Board undetected	CIE	Check ribbon cable is seated correctly
Device Low battery	Radio Base Unit	Replace batteries with another unit to confirm or replace batteries. All four batteries must be replaced together. Do not use used batteries.
Integrity check fail	CIE	Reload site data.
Alarm Interface Fault	Fire Alarm Interface	Input/ output short circuit or input/ output open circuit
Mains power failure	CIE	Check supply to panel
Low Battery	CIE	Check standby batteries
Battery critical	CIE	Battery voltage too low, recharge batteries or replace batteries

Fault	Device	Solution
Battery Resistance too high	CIE	Faulty Battery, Replace
General fault Message		Contact Technical Support
Low number of parents	CIE	Add a repeater device
Link quality	Installation fault	
Device dropped	Installation fault	Device may have had a signal blocked and will attempt to reconnect to the mesh.
Class mismatched	Installation fault	Device type not same as site file, check settings on site file.
Serial mismatch	Installation fault	Device serial number not same as site file, check serial number against site file.
Detector fault	Installation fault	Replace detector
Dirty sensor	Device	Try clean sensor
Faulty/Dirty sensor	Device	Replace detector
Sounder Fault	Device	Replace sounder
Beacon LED Faulty	Device	Replace sounder beacon
Incorrect outputs	Device	Outputs must be reconfigured correctly.

## 26.2 Known Faults

### 26.2.1 User Level 1 Logon required

During normal use, the control panel will never display a “**User Level 1 Logon required**” screen (Figure 163: User Level 1 required. This is a sign of a battery or configuration fault..



Figure 163: User Level 1 required

## 26.2.2 New panel – buzzer does not sound during tests

A jumper is fitted after the factory checks and during transit. Jumper JP2 should be removed by the installer during commissioning of the system.

## 26.2.3 Watchdog



*All watchdog faults must be reported to your certified installer or the OEM representative immediately.*

Watchdog faults occur infrequently, often without obvious cause. Report all Watchdog faults immediately.

## 27 Records of work

### 27.1 Installer Details

A fully printable copy of the Installer Details is available at paragraph 14.4.

Site Name and Address	
Installation Company Name and Address	
Contact Details	
Testing Engineer	
Signature	
Date	

### 27.2 Maintainer Details

A fully printable copy of the Maintainer Details is available at paragraph 14.4.

Site Name and Address	
Maintenance Company Name and Address	
Contact Details	
Testing Engineer	
Signature	
Date	

### 27.3 Logbook

A fully printable copy of the logbook is available at paragraph 0.

Date	Items Checked/Tested	Remedial action required	Date Completed	Name of Tester



## 28 Installation

### 28.1 Permanent installation

The SmartNet panel is designed to be installed into a recessed cavity for permanent installations. At the back of the enclosure there are four separate fixing points [1] marked on the inside and outside of the panel for this. The four fixing points are shown in Figure 164.

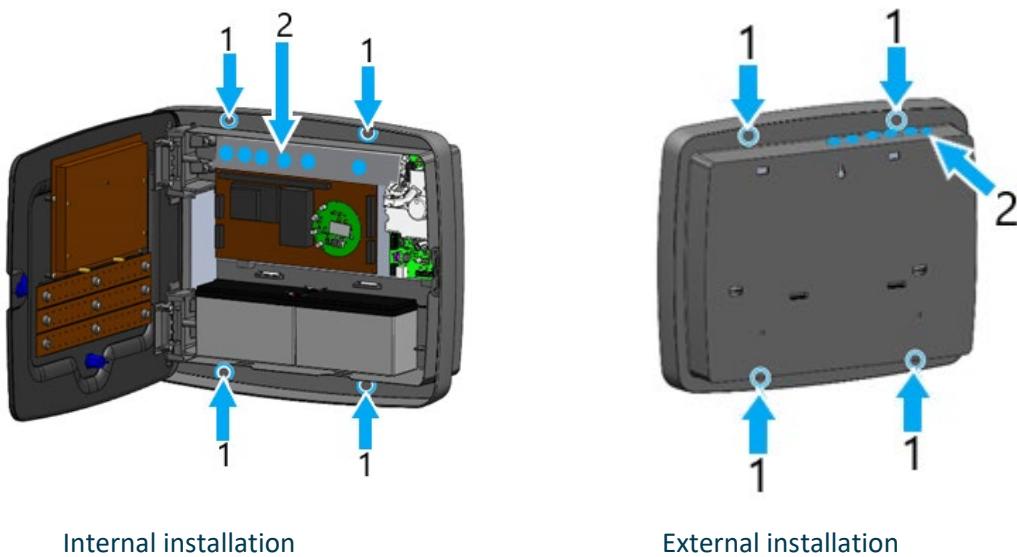


Figure 164: SmartNet installation

#### 28.1.1 Enclosures

The SmartNet and SiteNet enclosures are identical to each other, except for the colours. This means that all markings, predrilled holes, and fastenings are the same. Subsequently all images, unless labelled otherwise, may refer to both the SmartNet and SiteNet enclosures

The enclosures contain all the electrical hardware and circuitry for the fire alarm system. There is space available for two NP7-12FR rechargeable batteries to provide standby electrical power.

Enclosures are identified with embossed markings to enable installers to install the panels to permanent and temporary surfaces.

It is the responsibility of the installer to select suitable fixings for the panel as it depends on the material of the structure to which the panel will be attached.

### 28.1.2 External electrical connections

External electrical connections can be brought into the panel through pre identified holes in the enclosures (Figure 164, [2]). These holes must be predrilled before the enclosures are installed. It is the installer's responsibility to make sure that the holes are wide enough to accept the cables without damaging them.

### 28.1.3 Weight

The CIE control panel is supplied with or without batteries. It is the responsibility of the owner/installer to obtain batteries for their own system. Cygnus recommends Yuasa NP7-12FR standby batteries in the CIE panel. Should the owner/installer wish to use an alternative battery manufacturer then approval must first be obtained from Cygnus.

The weight of the panel is approximately 7.8 kg with two NP7-12FR Yuasa batteries installed.

## 28.2 Temporary installations

The SiteNet panel is designed for temporary installations. To mount a SiteNet panel, use the three fixing points, (Figure 165) [1].



*Figure 165: SiteNet installation*

### 28.2.1 External electrical connections

External electrical connections can be brought into the panel through pre identified holes in the enclosures (Figure 165, [2]). These holes must be predrilled before the enclosures are installed. It is the installer's responsibility to make sure that the holes are wide enough to accept the cables without damaging them.

A mains supply cable is pre-attached with a BS 1363 connection. The cable is routed through the underside of the control panel (Figure 165, [3]) and connects to the Power Supply Unit (PSU).

## 28.3 Electrical supply and connection

An all-pole mains isolation switch must be incorporated in the electrical installation of the building, in accordance with Annex L of EN 62368-1 Product Safety Standard (refer to Figure 166).

### 28.3.1 Fire alarm isolation key switch



Figure 166: Example isolation switch

### 28.3.2 Electrical supply

The CIE needs a fused electrical spur supply from a 230 VAC source through a key isolation switch, then wiring into the CIE.

The installer of the CIE control panel is responsible for the connection of the CIE control panel to the building electrical supply. It is the responsibility of the installation engineer that the protective earth terminal is properly identified and protected during installation of the CIE control panel and that the protective earth terminal be connected to the building protective earth system. All work must be done in accordance with the latest building regulations.

### 28.3.3 Approved Batteries

Installation of non-approved batteries is not permitted. Only fit approved batteries to the control panel from the approved list:

Manufacturer	Model Number	Capacity	Voltage
Yuasa	NP7-12FR	7Ah	12V
Enersys	NP7-12FR	7Ah	12V

### 28.3.4 Battery installation

Two NP7-12FR rechargeable batteries are provided to run the control panel during power outages. They can maintain the operation of the control panel for a maximum of seventy-two hours (a long weekend). The two batteries sit in the bottom of the back enclosure next to the lower hinge. They are connected to the power board by positive (+ ve) [1] and negative (- ve) [2] connections [1] and [2].

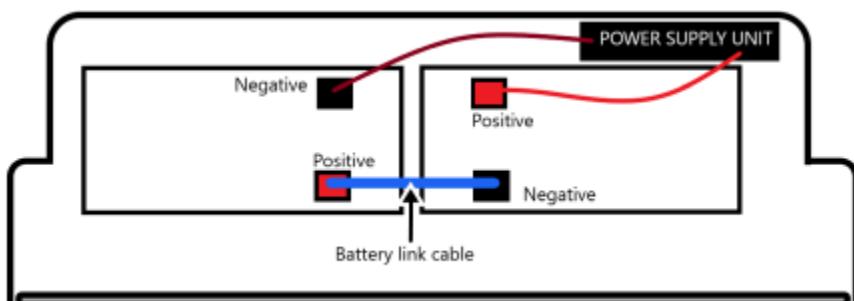


Figure 167: Battery schematic

A battery link cable is connected between the negative (- ve) and positive (+ ve) terminals at [3] and [4] to maintain a standby power supply.

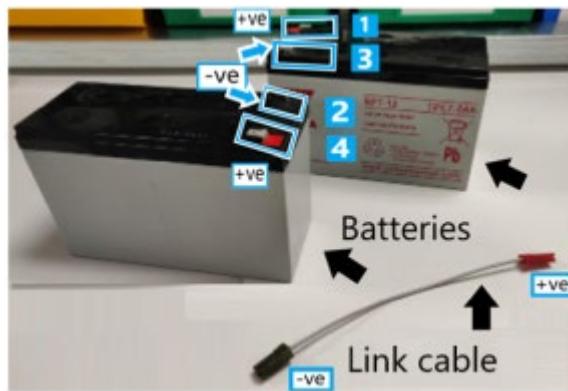


Figure 168: Battery link cable

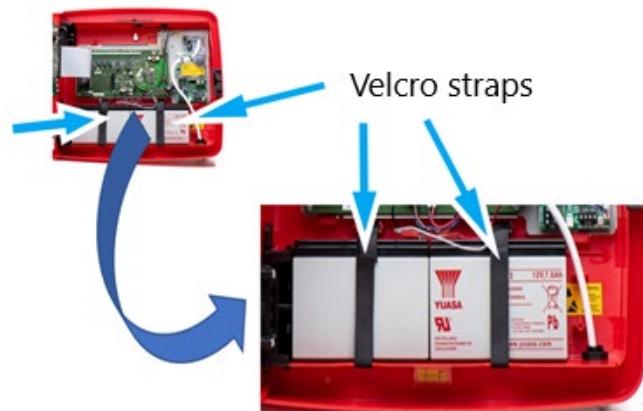


Figure 169: Battery straps

The batteries are held in position with two Velcro straps, one around each battery. Each Velcro strap is routed from a position behind the relevant standby battery, through a slot in the bottom of the enclosure before it is fastened back on itself to keep the battery firmly in position.

### 28.3.5 Fire-rated cable

The installer must use fire rated mains cable from a fused spur. If the requirement needs the screw terminal connections, then fire rated cable must be used through cable glands out of the box.

It is the responsibility of the installer to make sure they comply with the applicable installation regulations.

See section 32 for cable specifications.

## 29 Appendices

### 29.1 Glossary of terms, acronyms, and abbreviations.

This list explains provides definitions and explanations of the terms, acronyms and abbreviations used throughout this document.

*Table 14: Terms, Acronyms, and Abbreviations #1*

Term	Definition
CIE	Control and Indicating Equipment.
CPR	Construction Products Regulation
CSFB	Circuit Switched Fallback
Do work	Install, remove, operate, or do maintenance
EN 54	European standard applicable to Fire Detection and Fire Alarm Systems
FAI	Fire Alarm Interface
GSM	Global System for Mobile Communications
GUI	Graphical User Interface
MCP	Manual Call Point
NCU	Network Coordinator Unit
OEM	Original Equipment Manufacturer
PCB	Printed Circuit Board
PIN	Personal Identification Number
PIR	Passive InfraRed
PPU mode	Portable Programming Unit mode
PSU	Power Supply Unit
RBU	Radio Base Unit
RF	Radio Frequency
SIM	Subscriber Identity/Identification Module
SVI	Sounder Visual Indicator (one of the radio bases)
VAD	Visual Alarm Device
VID	Visual Indicator Device
VIR	Visual Indicator Ring

## 29.2 Glossary of icons and symbols.

This list explains provides definitions and explanations of specific icons and symbols used throughout this document.

*Table 15: Icons and Symbols*

Icon	Explanation
	Fire call point
	Smoke detector
	PIR (Movement sensor)
	CO Detector
	General IO input
	Heat A1R (Rate of rise) detector
	Cause and Effect rule
	Heat B detector
	First Aid call point
	This symbol shows the user that the paragraph or list can be expanded.
	This is the icon that tells the user which alerts have been silenced:
	This symbol warns the user of a potential hazard to the user or equipment. It is important to ensure that all relevant electrical supplies are isolated before work is started.
	This symbol warns the user of a potential electrostatic hazard to the equipment. For example, appropriate anti-static protection. Earthed wrist straps must be worn when handling PCBs.
	This symbol warns the user when special care is necessary to make sure that the control panel system operate effectively.
	These symbols identify the need to wear Personal Protective Equipment (PPE) when necessary

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## 29.5 System flow diagram

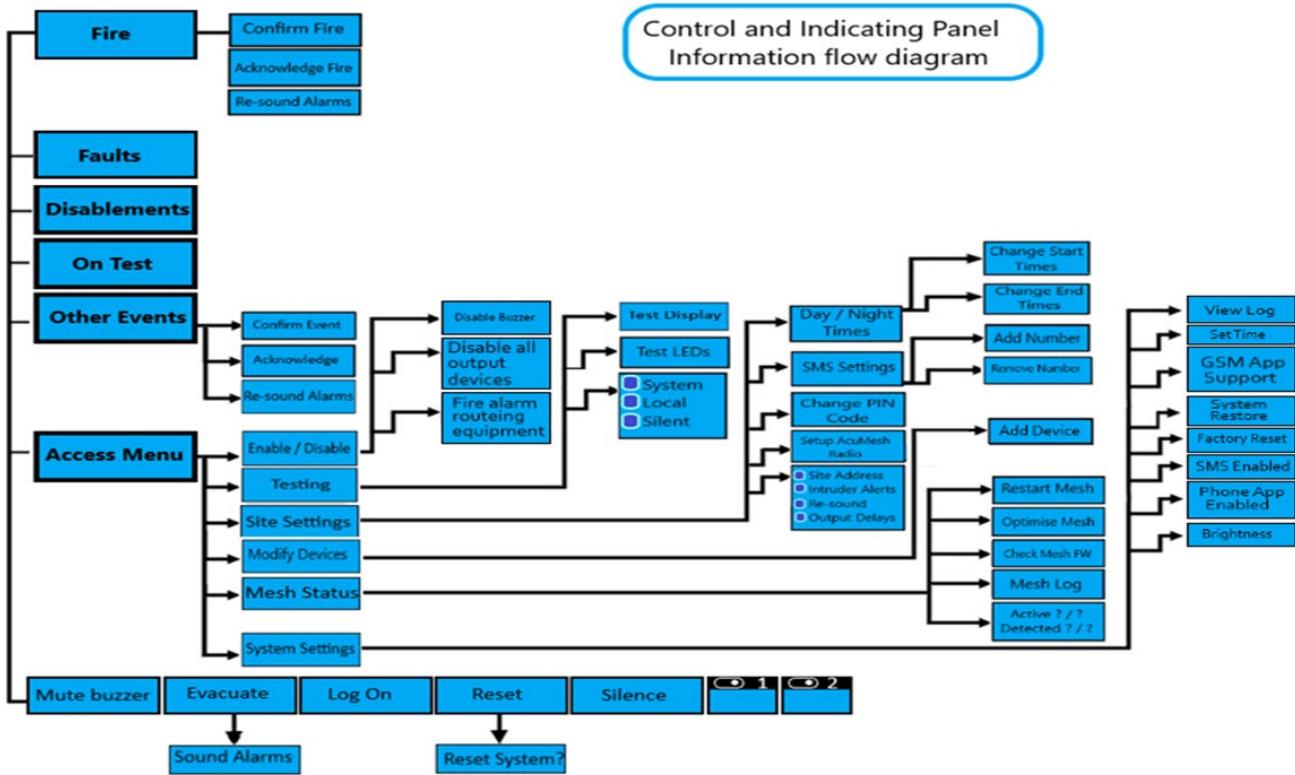


Figure 170: Control and Indicating Panel Information flow diagram

## 29.6 GSM Phone app support

These are the possible GSM status types in the System Settings screen.

Error code	Error status	Probable error	Probable cause	Response
Case 0	Not searching	Unknown	Unknown	Replace SIM, and/or re-install app
Case 1	Registered (home network)	Unknown	Unknown	Replace SIM, and/or re-install app
Case 2	Searching	Unknown	Unknown	Replace SIM, and/or re-install app
Case 3	Registration denied	Unknown	Unknown	Replace SIM, and/or re-install app
Case 4	Unknown	Unknown	Unknown	Unknown
Case 5	Registered (Roaming)	Unknown	Unknown	Replace SIM, and/or re-install app
Case 6	Registered (SMS only)	Unknown	Unknown	Replace SIM, and/or re-install app
Case 7	Registered (Roaming/SMS only)	Unknown	Unknown	Replace SIM, and/or re-install app
Case 8	Unknown	Unknown	Unknown	Unknown
Case 9	CSFB not preferred	Unknown	Unknown	Replace SIM, and/or re-install app
Case 10	CSFB not preferred (Roaming)	Unknown	Unknown	Replace SIM, and/or re-install app
Case 11	SIM error	No SIM installed or SIM is corrupted	No SIM installed or SIM is corrupted	Replace SIM, and/or re-install app
Case 12	Unknown	Unknown	Unknown	Unknown
	Not searching	Panel is not attempting to use the GSM	No GSM installed	Install GSM

Error code	Error status	Probable error	Probable cause	Response
	Circuit Switched Fallback (CSFB)	Connection drops off from 3G to 2G or 2G VOIP etc	Unable to establish connection at higher protocol.	Search for new connection

## 29.7 Records of work

## 29.7.2 Installer Details

This form is to record the details of the Installer, organisation, and engineers responsible for doing work to the Cygnus Fire alarm system installations.

A record of the installation must be completed whenever installation or upgrades are done to the system. Additional zones and devices would be classified as an upgrade. The minimum details are shown on the top row of the form below.

### 29.7.3 Maintainer Details

This form is to record the details of the Maintainer and organisation responsible for doing all remedial and preventative maintenance work, required as necessary, to maintain the Cygnus Fire alarm system in a full working condition.

A record of all maintenance work must be completed every time work has been done. The minimum details are shown on the top row of the form below.

Site Name and Address	Installation Company Name and Address	Contact Details	Testing Engineer	Signature	Date

## 30 Technical specifications

### 30.1 SmartNet CIE panel

See Datasheet 2000-DTS-0001

### 30.2 SiteNet CIE panel

See Datasheet 2000-DTS-0002

## 31 Electrical input & output specifications

*Table 16: Electrical specifications*

Power source	Voltage	Frequency	Rated Current
Mains PSU Input	230 VAC ± 10 %	50/60 Hz	0.4 A RMS.
Batteries	24V (2 x 12V)	DC	2A max.

*Table 17: Maximum rating of inputs*

Input	Rated Voltage	Active
RS485 (485A / 485B)	-9 to 14V	N/A (data comms)
RS485 output enable (OE)	3.3V	Pull to 0V to activate
CAN Bus (CANL / CANH)	3.3V	Do not connect
Call Point input (CP+ / CP-)	3.3V	Pull to 0V to activate
Fault input (FLT)	3.3V	Pull to 0V to activate
Silence input (SIL)	3.3V	Pull to 0V to activate
Alarm input (ALM)	3.3V	Pull to 0V to activate

*Table 18: Maximum loading of outputs*

Output	Rated Voltage	Rated Current
Sounder S1+ / S1-	24V ± 15%	200mA
Sounder S2+ / S2-	24V ± 15%	200mA
Auxiliary 24 VDC	24V ± 15%	200mA
Fire routing output (ROUT O/P + & -)	24V ± 15%	50mA
Fault NC / NO / COM	30V DC max.	2A
Fire NC / NO / COM	30V DC max.	2A
Alarm NC / NO / COM	30V DC max.	2A
Route Acknowledge (ROUT ACK)	3.3V ± 10%	0.5mA

## 32 Cable ratings

Fire rated cable must be used at all times.

*Table 19: Electrical specifications*

Type	Fire Rated Cable
Conductor Size	1.0mm or 1.5mm
Cores	2
Fire Rating	PH30 (30 mins) minimum (according to BS 5839)
Screened	Yes
Voltage rating	N/A (must be selected to support installation voltage requirements)

## 33 Fuses specifications

*Table 20: Fuse specifications*

	Size	Current Rating	Type
Fused Spur / Plug Fuse Rating	1-inch x 1/4-inch	13 Amp (230 VAC)	Standard
Mains PSU Input	20 mm x 5 mm	1 Amp (230 VAC)	Time Delay
Mains PSU Output	MINI-Automotive blade fuse	3 Amp (24 VDC)	Standard

## 34 Radio specifications

Characteristics of the RF link between each component and the CIE such as datasheet information and communication links between network, devices, and control panels.

Radio Operating Frequency                    865 MHz-868 MHz & 920 - 923 MHz

Radio Category                                Category 1

Channels                                      10

Bandwidth                                    250 kHz, 50 kHz guard band

Channel Spacing                            300 kHz

Transmit Power                              10 mW (max)

Duty Cycle                                    <0.1 %

Protocol                                      Cygnus MESH Protocol

Encryption                                    Triple DES (3DES)

Self-Forming MESH

Self-Healing MESH

*Table 21: Radio specifications*

	Type	Radio Frequency	Transmit power
Control panel	868MHz	865 MHz to 868 MHz	10 mW
Control panel	915MHz	920 MHz to 923 MHz	10 mW

## 35 Environmental specifications

*Table 22: Environmental specifications*

	Temperatures		Relative Humidity
	Working	Storage	
Control panel	-5 °C to 45 °C	-5 °C to 45 °C	95 %

## 36 Datasheets

A list of SmartNet devices and their associated datasheets is given below:

*Table 23: SmartNet devices*

Line	Title	Datasheet
1	SmartNet CIE Control Panel	2000-DTS-0001
2	SmartNet Fire Alarm Interface	2000-DTS-0003
3	SmartNet Combi-Detector with Sounder & Visual Indicator Radio Base	2000-DTS-0005
4	SmartNet Combi-Detector with Sounder Radio Base	2000-DTS-0010
5	SmartNet Combi-Detector with Radio Base	2000-DTS-0011
6	Manual Call Point	2000-DTS-0012
7	SmartNet Smoke Detector with Sounder Base	2000-DTS-0013
8	SmartNet Heat Detector with Sounder Base	2000-DTS-0014
9	SmartNet Sounder Radio Base with Blanking Plate	2000-DTS-0015
10	SmartNet Ceiling Beacon VAD with Sounder Base	2000-DTS-0016
11	Wall Mounting Beacon VAD with Sounder Radio Base (White/Red)	2000-DTS-0017
12	SmartNet Smoke Detector & PIR with Sounder & Visual Indicator Radio Base	2000-DTS-0018
13	SmartNet Wall Beacon VAD with Radio Base	2000-DTS-0019
14	SmartNet Smoke Detector	2000-DTS-0020
15	Ceiling Mounting Beacon VAD with Radio Base (White/Red)	2000-DTS-0021
16	SmartNet Heat Detector with Radio Base	2000-DTS-0022
17	SmartNet Heat Detector with Sounder & Visual Indicator Base	2000-DTS-0023
18	SmartNet Smoke Detector with Sounder & Visual Indicator Base	2000-DTS-0024
19	SmartNet Smoke & Heat Combi-Detector with Sounder & Visual Indicator Radio Base	2000-DTS-0025
20	SmartNet Smoke Detector & PIR with Sounder Radio Base	2000-DTS-0026
21	SmartNet Smoke Detector & PIR with Radio Base	2000-DTS-0027
22	SmartNet Sounder & VIR	2000-DTS-0028
23	SmartNet Repeater	2000-DTS-0029.



## 37 SiteNet devices

A list of SiteNet devices and their associated datasheet is given below:

*Table 24: SiteNet devices*

Line	Title	Datasheet
1	SiteNet CIE Control Panel	2000-DTS-0002
2	SiteNet Fire Alarm Interface	2000-DTS-0003
3	SiteNet Fire Call Point Alarm with First Aid	2000-DTS-0006
4	SiteNet Fire Call Point Alarm	2000-DTS-0007
5	SiteNet First Aid Point Alarm	2000-DTS-0008
6	SiteNet Combi-Detector Alarm	2000-DTS-0009

## 38 Battery specifications

The recommended battery specifications are shown below:

*Table 25: Battery specifications*

Use	Part No.	Qty	Manufacturer	Power Rating
Control panel	NP7-12FR	2	Yuasa	12 VDC, 7 Ah

*Table 26: Battery description*

Length mm (in.)	Height mm (in.)	Width mm (in.)	Weight kg (lb)
151 mm (5.94 in.)	97.5 mm (3.84 in.)	65 mm (2.56 in.)	2.2 kg (4.85 lbs)

## 39 Optional Functions with Requirements

### 39.1 Scope

This document specifies which option with requirements are supported by the SN.CIExx/CN.CIExx CIE. Where required it is explained how this is implemented.

### 39.2 Options within EN54-2

#### 39.2.1 Output to fire alarm devices 7.8.

The SN.CIExx/CN.CIExx CIE Is designed to meet the requirements of 7.8.

Section a): The fire alarm devices can only be silenced from the CIE at access level 2 and above.

Section b): Following silencing the fire alarm devices can be re-sounded at the CIE at access level 2 and above.

Section c): The fire alarm devices will not be silenced automatically.

Section d): The CIE will re-sound the fire alarm devices following an alarm in another zone. It can also be configured by the configuration tool or from the CIE at Level 3 to re-sound the fire alarm devices following an alarm in the same zone.

#### 39.2.2 Control of fire alarm routing equipment 7.9.

The SN.CIExx/CN.CIExx CIE is designed to meet the requirements of 7.9.

This function can be enabled by the configuration tool or from the CIE at Level 3.

7.9.1 The Fire Routing On LED shall flash when the alarm is transmitted to the alarm routing equipment.

7.9.2 Fire Routing On LED shall light steady when acknowledged by the alarm routing equipment.

#### 39.2.3 Outputs to fire protection equipment 7.10.

The SN.CIExx/CN.CIExx CIE has not been designed to meet the requirements of 7.10

#### 39.2.4 Delays to outputs 7.11.

The CIE has provision to delay outputs to fire alarm devices (Item C)

Section a): The delays to item C are programmable only from the configuration tool or from the CIE at Level 3 and apply to fire detectors and detectors within individual zones.

Section b) The delays to item E are programmable only from the configuration tool or from the CIE at Level 3.

Section c) The configuration tool or the CIE at Level 3 shall configure delays in steps of 30 seconds up to a maximum of 10 minutes.

Section d) The delays can be overridden by a manual operation (Confirm Fire) at the CIE at Level 1 or the operation of a signal from a manual call point.

Section e) The delays are configured using the configuration tool or at the CIE level 3 on a sounder group/zone and a delay to one of these groups/devices does not affect the output signals to other zones/groups.

7.11.2 The SN.CIExx/CN.CIExx CIE can be configured to switch the delays on and off.

Section a) The ability to switch on and off delays by manual operation at the CIE will be at access level 3. (Currently this can be done at access level 3/4). The rule will be changed to check for access level 2.

Section b) The configuration tool and the SN.CIExx/CN.CIExx at level 3 can be configured to switch on/off delays by means of a timer.

Section c) The SN.CIExx/CN.CIExx CIE has a delays active LED indicator to show when delays are enabled. The LED flashes whilst delays are active and turns on solid when the timers have elapsed, or the delays are over-ridden.

## 39.2.5 Dependencies on more than one alarm signal 7.12.

The SN.CIExx/CN.CIExx CIE is designed to meet the requirements of Type A, B and C dependencies.

### 7.12.1 Type Dependency A

Section a): The Mode of operation is only configurable with the configuration tool. By setting the 'Coincidence Only' option to Enabled on a device, Selecting the Cause & Effect button, then setting Input Conditions with Any Of, Any Two of or All logic, Setting the Output Conditions and creating a Rule as necessary.

Section b): The reception of the second fire alarm signal shall not be inhibited for more than 60 seconds. The maximum Cause and Effect timeout delay is set to 60 seconds for these scenarios.

Section c): The first alarm state is cancelled after 30 minutes of the receipt of the first alarm signal.

Section d): The set delay times can be viewed only at the Configuration tool.

### 7.12.2 Type B Dependency

Section a): The Mode of operation is only configurable with the Configuration tool. By setting the 'Coincidence Only' option to Enabled on a device, Selecting the Cause & Effect button, then setting Input Conditions with Coincidence logic and at least two devices from different Zones, Setting the Output Conditions and creating a Rule as necessary.

Section b): The first detector into alarm is indicated as per 12.10 and 7.3 with the exception that the general alarm indicator is not illuminated.

Section c): The first alarm state can be cancelled by pressing the reset button at access level 2 on the CIE.

Section d): The fire alarm timeout can only be cancelled by configuring the device coincidence timeout to a value between 300 and 1800 seconds (5 to 30 minutes)

Section e): The confirmation signal from the same device can be configured up to 60 seconds (1 minute) from the first event.

#### 7.12.3 Type C Dependency

The Mode of operation is only configurable with the Configuration tool. By setting the 'Coincidence Only' option to Enabled on a device, Selecting the Cause & Effect button, then setting Input Conditions with Coincidence logic and at least two devices from different Zones, Setting the Output Conditions and creating a Rule as necessary

- Output to Fire Alarm devices can be set using the Configuration tool Cause & Effect Rule
- Output to Fire Alarm Routing Equipment can be set using the Configuration tool Cause & Effect Rule
- Output to Fire Protection Equipment. The CIE has not been designed to support Fire Protection Equipment

### 39.2.6 Alarm Counter 7.13.

The SN.CIExx/CN.CIExx CIE does not support an alarm counter.

However, the Fire Alarm events are stored within the System Log file which is viewable at Level 3 and above. This log file can also be pulled from the CIE from the Configuration tool.

### 39.2.7 Fault signals from points 8.3.

The SN.CIExx/CN.CIExx CIE is designed to receive and process fault signals from points.

These faults are displayed by illuminating a General Fault LED and on the CIE touch screen Faults Tab each point in fault individually. Each fault per point is shown as an individual line item on the CIE touch screen display.

### 39.2.8 Total loss of the power supply 8.4.

The SN.CIExx/CN.CIExx CIE is designed to meet the requirements of 8.4.

The CIE indicates a mains power loss as a Fault on the CIE Touch Screen as well as illuminating the General Fault and PSU Fault LED. The Mains loss is shown as a 'Panel mains power loss.' Fault.

The standby power loss is also shown as a General Fault and PSU Fault and shown in the CIE Touch Screen Fault Tab as 'Panel battery low.' And 'Panel battery critical/absent.'

With fully charged batteries the CIE will sound the warning buzzer for 72 hours.

### 39.2.9 Output to fault warning routing equipment 8.9.

The SN.CIExx/CN.CIExx CIE can power approved external Fault Routing Equipment at up to 200mA.

### 39.2.10 Disablement of addressable points 9.5

The SN.CIExx/CN.CIExx CIE is designed to meet the requirements of 9.5.

Section a): It is possible to disable individual point by selecting the Individual device within the Enable/Disable menu.

Section b): It is possible to list all active disablements at access level 1 on the CIE touch screen Disablements tab.

Section c): Zones are only shown as disabled if all points within the Zone are disabled using the Enable/Disable menu.

Section d): If all points in a zone are disabled this is shown as a Zone disablement on the Disablements tab of the CIE touch screen.

### 39.2.11 Test Condition 10.

The SN.CIExx/CN.CIExx CIE is designed to meet the requirements of section 10.

- c) It is possible to test single or multiple zones using the Testing menu as a level 2 user.
- e) With a Zone under test the Fire Alarm/Fire Routing equipment/Fault warning routing equipment will not be energised.

### 39.2.12 Standardized input/output interface 11.

The SN.CIExx/CN.CIExx CIE does not provide a standardized input/output interface.



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