Simplicity Micro

ANALOGUE ADDRESSABLE FIRE ALARM PANEL

INSTRUCTION MANUAL

Zeta® ALARM SYSTEMS

Approved Document No: GLT.MAN-129
Issue : 1.05 Author: NRPJ Date: 26/11/2013

INDEX

INDEX 1
INTRODUCTION 2
MAINS & BATTERY 3
CONNECTING THE MAINS. 3
CONNECTING THE BATTERIES 3
DETECTORS & SOUNDERS 4
WIRING THE DETECTORS, SOUNDERS & CALL POINTS. 4
PRE-COMMISSIONING CABLE CHECKS 4
SETTING THE DEVICE ADDRESS 5
ADDRESS DIP SWITCH SETTINGS & ZONE ALLOCATION 5
SPECIFIC DEVICE WIRING INSTRUCTIONS 6
DISPLAY & CONTROLS 6
DISPLAY & CONTROLS 7
DISPLAY 7
CONTROLS 8
ENABLING THE CONTROLS. 8
ENTERING CONFIGURATION MENU 1 (USER MENU) 8
ENTERING CONFIGURATION MENU 2 (ENGINEER MENU) 8
CONFIGURING THE SIMPLICITY FIRE ALARM PANEL 9
CONFIGURING THE LOOPS 9
SETTING TIME AND DATE 10
SETTING A CUSTOM BANNER 10
VIEWING DEVICE STATUS 11
LOCATE OR VERIFY A DEVICE 12
USING THE EVENT LOG 12
CHECKING SOFTWARE VERSION 13
DISABLEMENT 14
ZONE DISABLEMENT 14
TO PROGRAMME ZONE (OR SOUNDERS) AS DISABLED 14
POINT DISABLEMENT 15
VIEWING DISABLEMENTS 15
TO VIEW FROM THE DISABLEMENT SCREEN 15
TO VIEW FROM THE DEVICE STATUS SCREEN 15
TEST MODE 16
WHY USE TEST MODE 16
TO PROGRAMME ZONE IN TEST MODE 16
ALARM CONDITION & RESETTING AN ALARM 17
WHAT TO DO IN THE EVENT OF A FIRE. 17
RESETTING FROM AN ALARM CONDITION 17
FAULT DISPLAY & FAULT-FINDING 18
FAULT FINDING 18
POWER SUPPLY FAULTS 18
EARTH FAULTS 19
LOOP CABLING FAULTS 19
DEVICE FAULTS 20
MISSING DEVICE FAULTS 21
BATTERY CALCULATION 22
SAMPLE CALCULATION 22
SPECIFICATIONS 23
ELECTRICAL SPECIFICATIONS 23
ENCLOSURE SPECIFICATIONS 23
FUSE RATINGS 23
SIMPLICITY MICRO CONFIGURATION & TESTING 24
LOG BOOK 25
MAINTENANCE WORK 25
FALSE ALARMS 26
ALL OTHER EVENTS 27

Introduction

The Simplicity Micro has been designed as an ideal fire alarm panel for smaller premises. It is an analogue addressable system that is priced competitively with traditional conventional fire alarm systems.

Being an addressable system, the panel will locate the exact cause of an alarm, and each detector can be labelled with a 20 character description to further improve user friendliness. An exact location is much more useful for locating the cause of an alarm, rather than just a zone indication, which might contain 15 or more detectors.

As the name suggests, the panel is based on the highly popular Simplicity range of fire panels, and incorporates nearly all of their features.

Installation couldn`t be easier. Simply wire all the detectors, sounders and call points to a single loop of cable. Give each device a unique address. Enter the panels menu & select “configure the loop” option. Enter the detector location descriptions. And the system is now up & running.

Mains & Battery

Connecting the mains.

The Mains supply to the FACP is fixed wiring, using **Fire resisting** 3-core cable (Between 1 mm² and 2.5mm²) or a suitable 3-conductor system, fed from an isolating double pole switch fused spur, fused at 3A. **IT SHOULD NOT BE CONNECTED THROUGH AN RCD.** This should be secure from unauthorised operation and be marked 'FIRE ALARM: DO NOT SWITCH OFF'. The supply must be exclusive to the Fire Panel. **MAKE SURE ANY SPARE ENTRY HOLES ARE COVERED WITH THE GROMMETS PROVIDED**

Connecting the batteries

The Simplicity Micro requires 2 x 12 V sealed lead acid (SLA) batteries

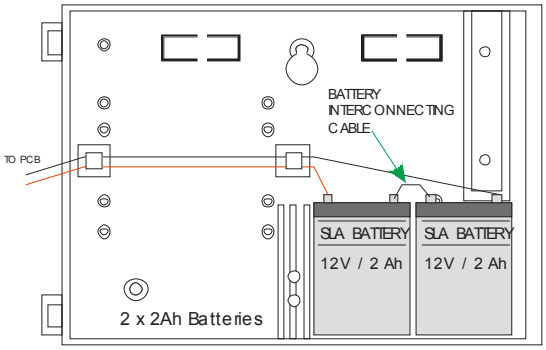
The two batteries are wired in **series**.

The **+ve** of one battery is connected to the **red** battery lead.

The **–ve** of the other battery is connected to the **black** battery lead.

The –ve of the first battery is connected to the +ve of the second battery using the link wire supplied.

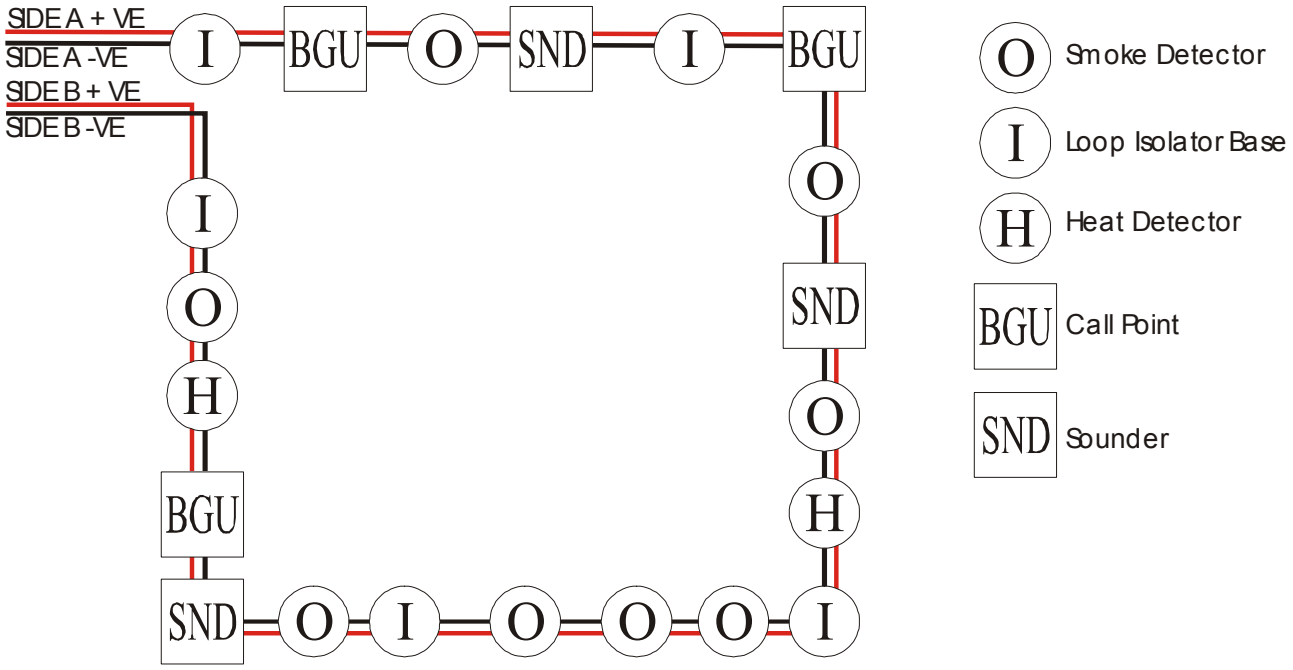
Although there are many sizes of suitable battery, the sizes the enclosure has been designed for 12V 2Ah.



Detectors & sounders

Wiring the detectors, sounders & call points.

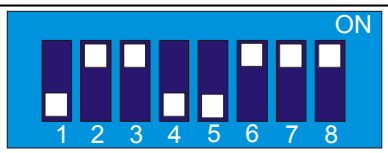
The Simplicity micro comes with one addressable loop. Addressable detectors, addressable call points, addressable loop powered sounders and several other interface units can be connected to these loops.
A MAXIMUM OF 32 DEVICES CAN BE CONNECTED TO THE LOOP.



Pre-Commissioning Cable Checks

1. +ve in to +ve out less than 24 ohms
2. -ve in to -ve out less than 24 ohms (may need to temporarily disable isolators to measure)
3. +ve to –ve greater than 500k ohm
4. +ve to Earth greater than 1M ohm.
5. -ve to Earth greater than 1M ohm.
6. +ve to –ve less than 50 mV pickup (on AC & DC scales)

Setting the Device Address



The address setting is binary, with the **ON** position being binary **0** , and the **OFF** position being binary **1.** Switch 8 is not used for setting the address, but sometimes has a device specific function. (check instructions that come with the device). **EG on sounder bases, switch 8 MUST BE ON**.

If you are not familiar with binary, use the table below, or use the following rule:

Switch 7 off = add 64,
Switch 6 off = add 32,
Switch 5 off = add 16,
Switch 4 off = add 8,
Switch 3 off = add 4,
Switch 2 off = add 2,
Switch 1 off = add 1.

The example shown would be:
switches 5, 4 & 1
=16 + 8 + 1 = Address 25

Address DIP Switch Settings & Zone Allocation

Each device on the loop is given a different binary address. See table below for switch settings.

ADDR		SWITCHES								ADDR		SWITCHES						
		1	2	3	4	5	6	7				1	2	3	4	5	6	7
0	=	n	o	t	u	s	e	d		17	=	OFF	ON	ON	ON	OFF	ON	ON
1	=	OFF	ON	ON	ON	ON	ON	ON		18	=	ON	OFF	ON	ON	OFF	ON	ON
2	=	ON	OFF	ON	ON	ON	ON	ON		19	=	OFF	OFF	ON	ON	OFF	ON	ON
3	=	OFF	OFF	ON	ON	ON	ON	ON		20	=	ON	ON	OFF	ON	OFF	ON	ON
4	=	ON	ON	OFF	ON	ON	ON	ON		21	=	OFF	ON	OFF	ON	OFF	ON	ON
5	=	OFF	ON	OFF	ON	ON	ON	ON		22	=	ON	OFF	OFF	ON	OFF	ON	ON
6	=	ON	OFF	OFF	ON	ON	ON	ON		23	=	OFF	OFF	OFF	ON	OFF	ON	ON
7	=	OFF	OFF	OFF	ON	ON	ON	ON		24	=	ON	ON	ON	OFF	OFF	ON	ON
8	=	ON	ON	ON	OFF	ON	ON	ON		25	=	OFF	ON	ON	OFF	OFF	ON	ON
9	=	OFF	ON	ON	OFF	ON	ON	ON		26	=	ON	OFF	ON	OFF	OFF	ON	ON
10	=	ON	OFF	ON	OFF	ON	ON	ON		27	=	OFF	OFF	ON	OFF	OFF	ON	ON
11	=	OFF	OFF	ON	OFF	ON	ON	ON		28	=	ON	ON	OFF	OFF	OFF	ON	ON
12	=	ON	ON	OFF	OFF	ON	ON	ON		29	=	OFF	ON	OFF	OFF	OFF	ON	ON
13	=	OFF	ON	OFF	OFF	ON	ON	ON		30	=	ON	OFF	OFF	OFF	OFF	ON	ON
14	=	ON	OFF	OFF	OFF	ON	ON	ON		31	=	OFF	OFF	OFF	OFF	OFF	ON	ON
15	=	OFF	OFF	OFF	OFF	ON	ON	ON		32	=	ON	ON	ON	ON	ON	OFF	ON
16	=	ON	ON	ON	ON	OFF	ON	ON		33-127	=	n	o	t	u	s	e	d

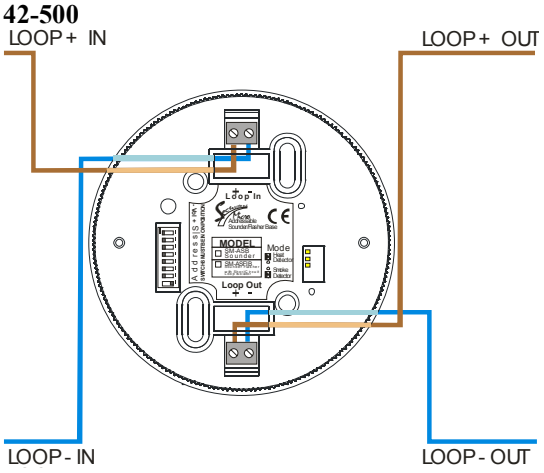
On the Simplicity Micro, the address given to a device will determine which zone it is allocated to.

DEVICE ADDRESS	ZONE
0	NOT USED
1 TO 8	ZONE 1
9 TO 16	ZONE 2
17 TO 24	ZONE 3
25 TO 32	ZONE 4
33 TO 127	NOT USED

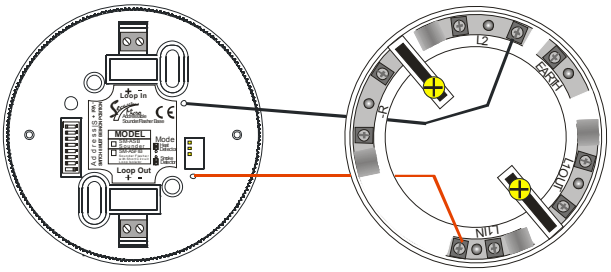
Traditionally a building would be zoned to divide it into smaller sections to indicate which section had the alarm. On an addressable system, the panel can give an exact location, so the zone information is less useful.

SPECIFIC DEVICE WIRING INSTRUCTIONS

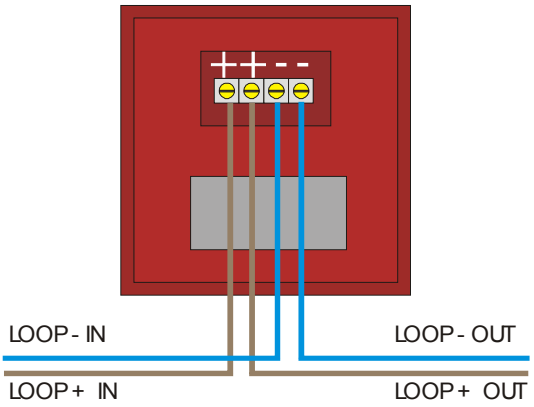
Securetone Micro Addressable Base Sounder
SM-ASB
42-500



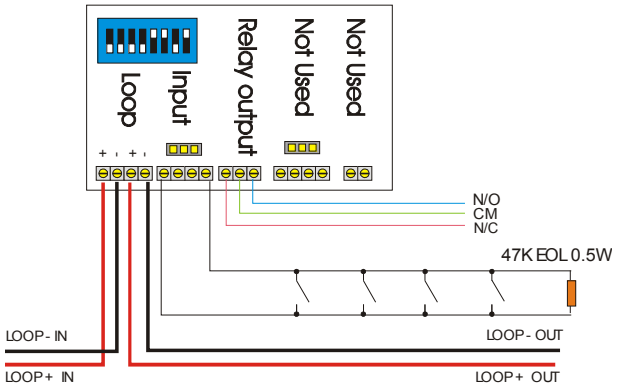
Fyreye Conventional Detector Base
FE-CB
80-050



Zeta Manual Call Point (Resetable)
ZT-CP2/AD
43-305

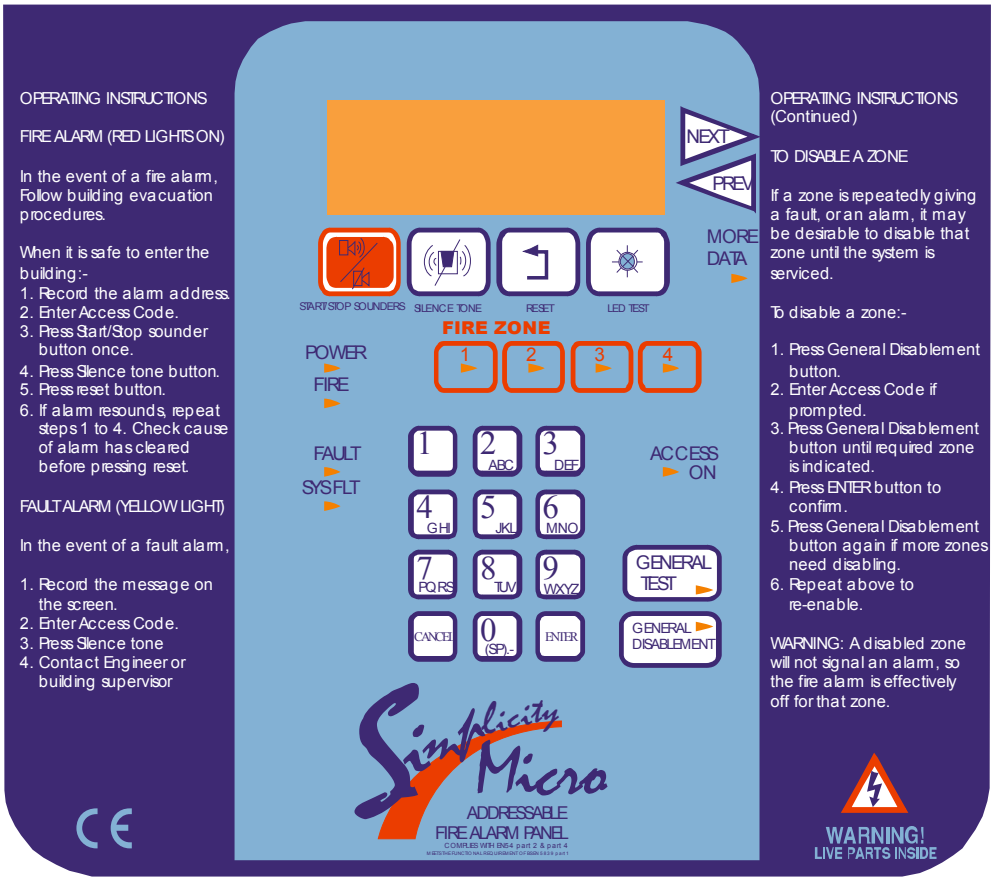


Zeta Input Output Unit
ZIOU
48-105



Display & Controls

Here is the fascia for the Simplicity Micro.



Display

The Simplicity Micro has the following LED indicators:-

LED	COLOUR	MEANING
POWER	GREEN	The system has mains and/or battery backup present. The panel showing this LED only is the normal condition
FIRE	RED	There is an alarm on the system.
FAULT	YELLOW	There is a fault on the system. See LCD for more detail
SYSTEM FAULT	YELLOW	The processor has stopped running. It may have restarted and be running correctly.
MORE DATA	YELLOW	There are further messages to be displayed on screen
ACCESS ON	YELLOW	The panel controls are active (IE first access code has been entered)
GENERAL TEST	YELLOW	The panel is in test mode. See LCD for more detail
GENERAL DISABLEMENT	YELLOW	Part of the system has been disabled. See LCD for more detail
FIRE 1	RED	There is a fire in zone 1. See LCD for more detail
FIRE 2	YELLOW	There is a fire in zone 2. See LCD for more detail
FIRE 3	RED	There is a fire in zone 3. See LCD for more detail
FIRE 4	YELLOW	There is a fire in zone 4. See LCD for more detail

Controls

The Simplicity Micro has the following controls:-

BUTTON LABEL	USE
START/STOP	Used to silence the sounders in an alarm, or to manually start the sounders to evacuate building
SILENCE FAULT TONE	Used to silence the panel`s internal buzzer in a fault or alarm condition.
RESET	Used to return the panel to its normal condition after an ALARM condition. All faults (except power faults) can also be reset, but they will return if the source of the fault remains. (Faults are non-latching so will clear by themselves when the fault has been cleared)
LED TEST	To check that all indicator LEDs are working. Use as part of the daily / weekly fire alarm inspection. *** NOTE: pressing LED Test also operates the Fault Relay ***
NEXT	Used to display the Next message (or next event in log) in LCD
PREV	Used to display the Previous message (or Previous event in log) in LCD
GENERAL TEST	Used to initiate test mode
GENERAL DISABLEMENT	Used to initiate zone disable mode
0 TO 9	Used to enter access code, and device description
ENTER	Used to confirm actions
CANCEL	Used to cancel actions (and delete in text entry)

Note that the controls can only be used after the first access code has been entered.

Enabling the controls.

Press enter.
The panel now prompts enter access code
Enter the code 123
The screen returns to its previous contents, but now access on LED is lit.

Entering Configuration Menu 1 (User menu)

If the system normal screen is showing, just press enter
If a fault or fire is showing, press enter (to display details), then cancel. This returns the user to the menu.

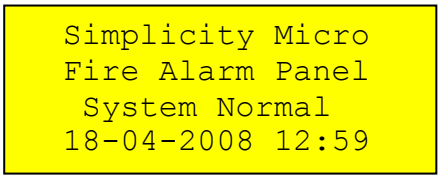
Entering Configuration Menu 2 (Engineer Menu)

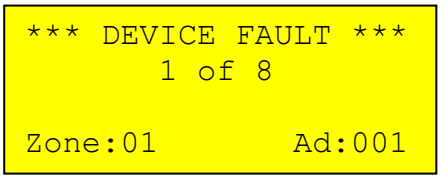
From Configuration Menu 1, press the NEXT button by the LCD Screen.
The panel now prompts enter access code
Enter the code 369
The panel will now display Configuration Menu 2

CONFIGURING THE SIMPLICITY PANEL

CONFIGURING THE LOOPS

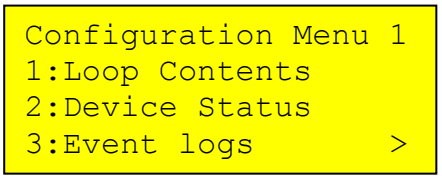
1 After the system has been installed, and the cabling checked and the addresses of each device set, connect the loop to the fire alarm panel and power up the system (mains & batteries). It should say "system normal, and only the green Power LED will be lit. After a few seconds, the panel will find all the new devices & report them as faults (ie unconfigured)





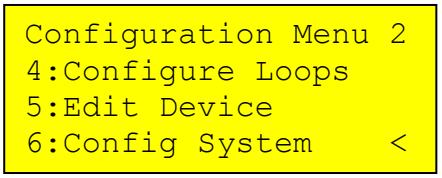
2. Press Enter. The panel will prompt for an access code. Enter 123 The controls Active LED will light.

3. From a device fault screen, press Enter button, followed by Cancel button. This will bring up Configuration Menu 1 (the user menu). In this Menu there are options to view loop contents, view the status of each device, or view the event log. The arrow in the bottom left hand corner shows that pressing NEXT will bring up a new screen

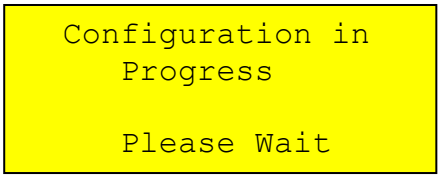


4. Press NEXT button. This will prompt for the access code to enter Configuration Menu 2 (the engineer menu). The access code for the Simplicity Micro is 369

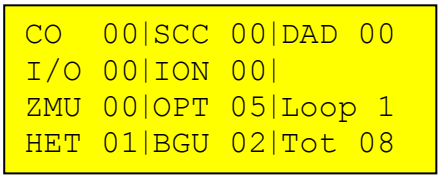
5. The panel now shows Configuration Menu 2. In this menu there are options to Configure the loops, to edit each device, and to configure the system options. The arrow in the bottom left hand corner shows that pressing PREVIOUS button will return to Configuration Menu 1



6. Press button 4 to configure the loop. The panel displays configuration in progress, Please wait. It will return to Configuration Menu 2 when completed.

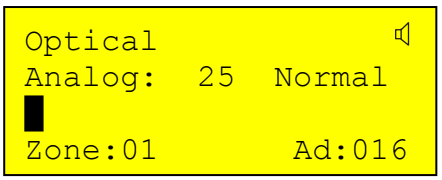


7. Press PREVIOUS button, followed by button 1 to view the loop contents. It lists the number of each type of device, the number of Double Addresses (DAD) on the system, the loop number (Loop 1 only), and the total number of devices on that loop.Check that the number of devices seen compares to the number expected. If it is different, refer to the fault finding guide.

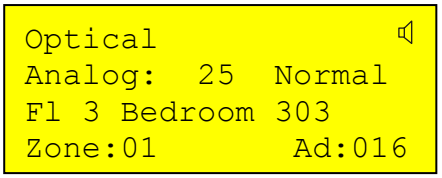


8. The panel is now configured, and will function as a basic system, (press Cancel until screen shows system normal to run the panel), but it is more useful to enter device labels, to give a more precise location of an alarm device. We recommend that the device labels be entered to allow the panel to be more user friendly during normal operation.

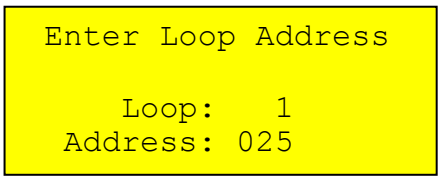
9. To add a label, go to configuration menu 2 as described above. Select option 5 to Edit Device. Use Next / Previous to select the first device to edit. Press Enter, and a cursor will appear at the start of the 3rd line. Type in the 20 character label for this device, using the "telephone" number keypad.



10. Press enter when the label has been typed in then press NEXT to move to the next device..



11. To skip many addresses, press 1 (for loop 1).
The Panel will then prompt for the address. Type the address and press enter. The panel will now jump to this address.



The sounder symbol in the top right hand corner shows that this detector is fitted to sounder base. The panel will send the "activate base sounder" command to this address in the event of an alarm.

12. When all devices have been entered, press Cancel to exit the message editing screen, and cancel again to exit the menu and to return to normal.

The panel is now configured and ready for operation.

SETTING TIME AND DATE

To set the time & date, enter Configuration Menu 2 and select Configure System (6). The System Menu is now displayed. Select option 1 to set time & date. Enter the Day, Month, Year, Hour & Minutes as prompted, and press enter to save, or Cancel at any time to exit.

SETTING A CUSTOM BANNER

On the Simplicity Micro, the default screen shows Simplicity Micro Fire alarm Panel . But this SYSTem name can be changed to any 2 lines of 20 Characters that are required.

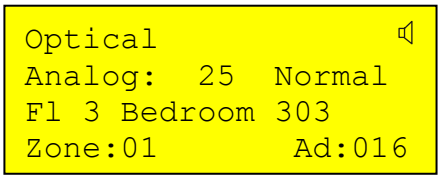
Navigate to the Misc menu (Configuration Menu 2 / Configure System / Misc)

In this Menu type **7978** (SYST). Then type the first line of text, followed by enter, then the second line of text, followed by enter. This message will now be the screen when the panel is running normally.

VIEWING DEVICE STATUS

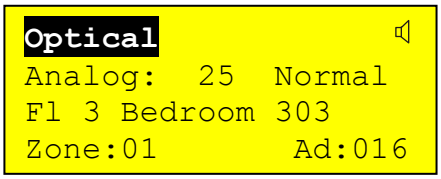
On the Simplicity, all loop devices can be viewed from Configuration Menu 1, or viewed & edited from Configuration Menu 2.

Enter configuration menu 2 as described above, and select option 5 (Edit Device)
The following screen is shown

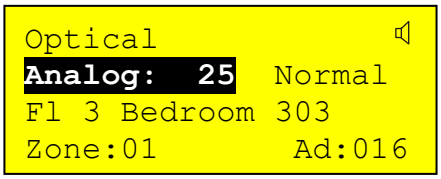


The screen is divided into the following sections:-

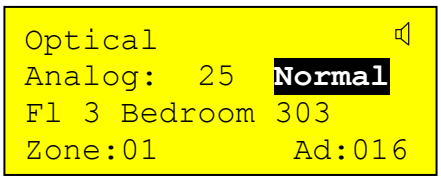
Configured Device Type
This shows the Device that was at this address during the last loop configuration.
There are 8 possibilities for this:-
Optical, Ion, Heat, Call-Pt, Sounder, I/O Unit, Zone Mon or CO



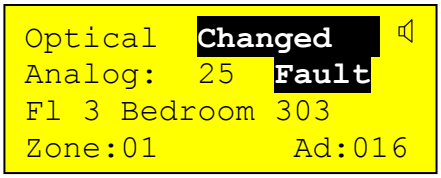
Analogue Value
This shows the analogue value that the device is sending To the panel. For detectors, this value is usually about 25 for clean air, and 55 during alarm. Non analogue devices such as call points and I/O units have a normal value of 16, and an alarm value of 64. They will return a value of less than 8 to report a fault condition.



Device Status
This is the current status of the device. It will show one of the following values:-
Normal, Fault, Alarm or Prealarm

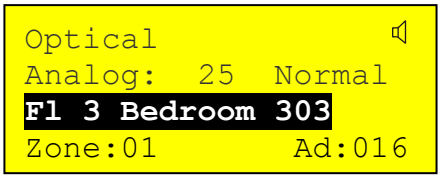


Fault Description
If the device is in a fault condition, a description of the fault will appear here. It will show one of the following messages:-

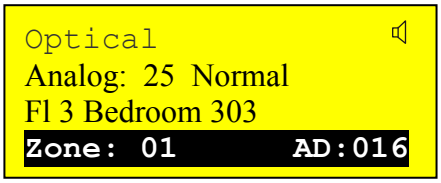


FAULT	MEANING
Changed	The device had been changed with one of a different type since last configuration. The message will flash between Changed, and the new type of device seen (eg. Heat).
Missing	The device is not communicating (ie removed , damaged or Address setting changed)
Side A Only	There is a break in the cable, and the device is only seen from Side A
Side B Only	There is a break in the cable, and the device is only seen from Side B
2-ADDR	Two devices have the same address setting
No message	This device is signalling an internal fault by returning a value of less than 8. (EG sounder control unit that has lost it`s power supply.)

Device Label
This is the 20 character description of the device location entered by the installer. To change this Press Enter button to activate the cursor.



Device Identification
This is the Zone and address of the device. This is how the device will probably be referred to on the system drawings.

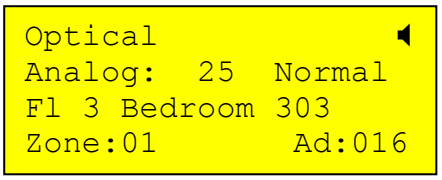


LOCATE OR VERIFY A DEVICE

From the edit device screen, it is possible to send commands to individual devices to start their sounder.

Select the loop and address for the device to be checked.

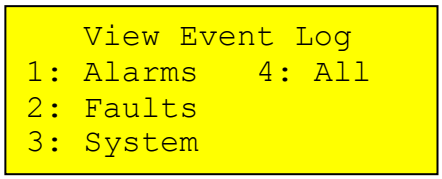
If the device is an addressable sounder, or a detector with a sounder base attached, the sounder can be started by pressing the **7** button. The Outline sounder Symbol turns solid to show that the Sounder is active. Press again to turn off.



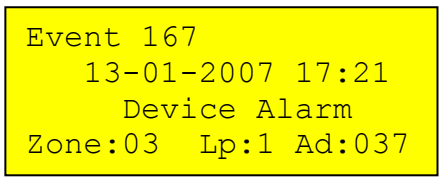
Scrolling to another device or exiting the menu will automatically turn the sounder off.

USING THE EVENT LOG

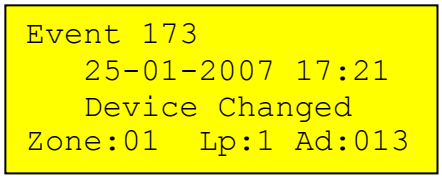
The Simplicity has a 2048 entry event log. In the event of the log being full, it will wrap around, and overwrite the earliest entries. The event log can be viewed through Configuration Menu 1 by selecting Option 3 - View Event Log. The screen prompts for which events to display: Alarms, Faults, System or All.



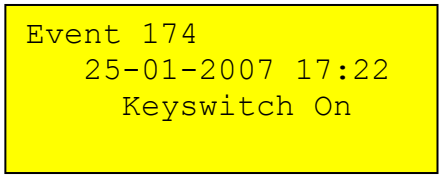
Alarms
If the alarm option is shown, only alarms will be displayed. The screen will show the event number, the date, the time, the type of event (in this case, a DEVICE ALARM), and the Zone, loop and address, if appropriate. Next & Previous buttons will cycle through the list.



Faults
Selecting this option will display all the faults recorded on the system, Both device faults and general faults. The screen will show the event number, the date, the time, the type of event (in this case, a DEVICE CHANGED fault), and the Zone, loop and address, if appropriate. Next & Previous buttons will cycle through the list.

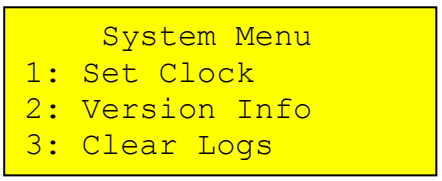


System.
The Simplicity also records other non critical items, such as keyswitch turned on etc. These can be used to help determine the chain of actions before or after an event.
The type of events recorded are:- Power On/Startup, Panel Reset, Evacuate, Keyswitch ON, Keyswitch OFF, Sounders Silenced, Configure Loops, Time & Date Set, Zone Disabled, Zone Enabled, Device Disabled, Device Enabled, Zone Test Start, and Zone Test Finish.

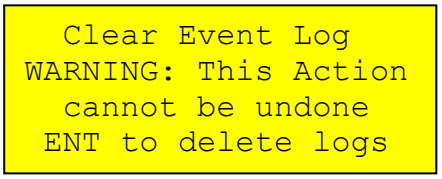


Note: during installation and commissioning, it is possible to create a large number of events, especially if a configured loop is disconnected. This is normal, and is not a case for concern. These events can be cleared, using Configuration Menu 2.

To clear the event log, go to Configuration Menu 2 and select option 6 (Configure System). Select Option 3 to clear the event log.



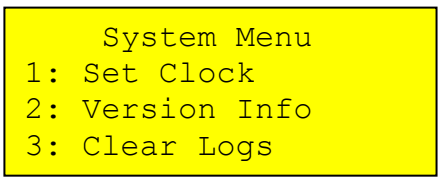
The screen warns that this can not be undone. Press ENTer to clear the event log, or any other button to cancel this screen. It then prompts for the internal WRITE button to be pressed.



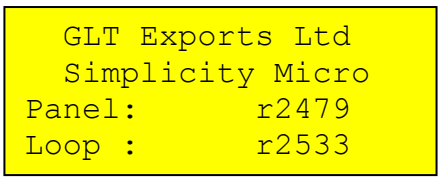
Note that when the event log is cleared, the EVENT NUMBER remains the same. This is so that a visiting engineer will have an idea of the activity on a panel, even if the event log has been cleared. The counter has a maximum value of 524287, and will return to 0 after this.

CHECKING SOFTWARE VERSION

The Simplicity Micro has the ability to view the software version from the LCD screen. From Configuration menu 2, select configure system. The System Menu Will Be displayed.



Press 2 (Version Info), and the panel will display the software in its two Microcontrollers. One for the main functions, one for the Loop Driver. This information may be useful for technical support in the Event of any problems occurring with the Control Panel.



DISABLEMENT

On the Simplicity, there are 2 disablement options. A whole zone of detectors can be disabled, or an individual point can be disabled. Both types of disablement can be used at the same time if required.

ZONE DISABLEMENT

To aid commissioning and assist routine maintenance checks, any of the zones or the loop sounders can be disabled.

When a zone is disabled, the panel will not respond to any fault or fire signals it receives from DETECTORS from that zone. Call points will remain operational.

This might be used if the system requires routine maintenance, and the customer needs the system to continue running, but doesn't want spurious false alarms.

The panel will respond in the usual manner to any events in any non-disabled zones.

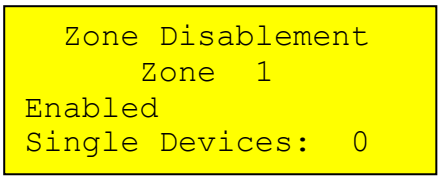
The Simplicity also allows the loop sounders to be disabled. If they are disabled, the panel will not start any sounders in an alarm condition.

TO PROGRAMME ZONE (OR SOUNDERS) AS DISABLED

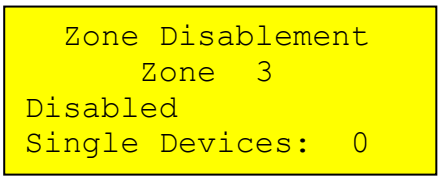
Any number of zones (or the sounders) can be disabled, but it is good practice to only disable one zone at a time.

1. Press ENTER button, then enter access code 123.

2. Press GENERAL DISABLEMENT button and the screen will show: ZONE DISABLEMENT ZONE 1. The panel is now in SELECT DISABLEMENT MODE.



3. Press NEXT (or PREV) until the required zone or loop sounders is DISPLAYED. Press ENTER button to disable this section. The screen will now show that the zone is disabled, and the GENERAL DISABLEMENT LED will be on. This section is now disabled.
(NOTE: Call points in this zone will still be active. To disable the call points as well, disable them individually as points – see next section)



4. If more than one zone (or sounder) needs to be disabled, then press NEXT (or PREV) again until the required zone (or sounder) is selected.

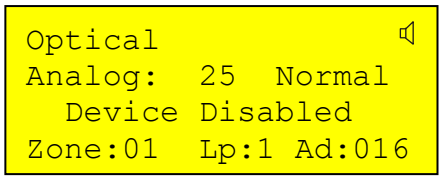
5. If the panel needs to be taken out of SELECT DISABLEMENT MODE (eg to silence a fault on another part of the system), either press GENERAL DISABLEMENT button, or press cancel.

6. Once all the maintenance work has been done, the zones need to be enabled again. If the panel is still in SELECT DISABLEMENT MODE, jump to paragraph 7, otherwise, press GENERAL DISABLEMENT button. (if access is not on, you will have to enter the code 123, then press General disablement again. The panel is now in SELECT DISABLEMENT MODE

7. Press the NEXT (or PREV) button until the disabled zone is displayed on the screen. Press ENTER button to de-select disablement. Scroll to any other disabled zone and enable in the same way. When all zones are enabled again, the GENERAL DISABLEMENT LED will turn off. Either press GENERAL DISABLEMENT button, or press cancel to return the system to normal. (NOTE: This will also enable any points individually disabled in that zone)

POINT DISABLEMENT

The Simplicity Plus panel can also disable individual devices (detector, call point, sounder or interface). To do this, enter CONFIGURATION MENU 2 and select EDIT DEVICE. Select the required device, then press GENERAL DISABLEMENT button. The Device label now flashes between the programmed label and Device Disabled. The general disablement LED will also be lit. This device is now disabled.



To re-enable the device, press the disable button again. Note that the Zone disablement LED for this address will not light because this would suggest that the whole zone is disabled, so would be misleading.

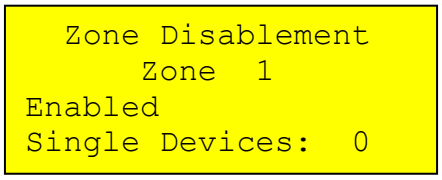
VIEWING DISABLEMENTS

There are two ways to check for disablements: from the Disablement screen, or from the device status screen.

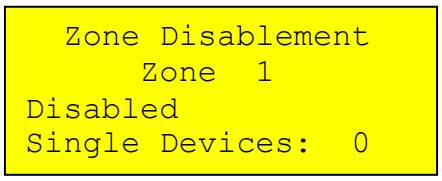
To view from the disablement screen

Press disable, then press NEXT to scroll through all the zones & sounders.

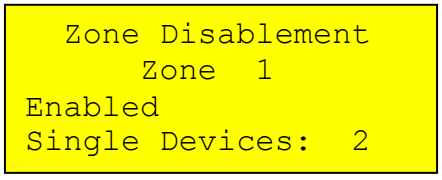
If there are no disablements, the screen will show



If the whole zone is disabled, the screen will show



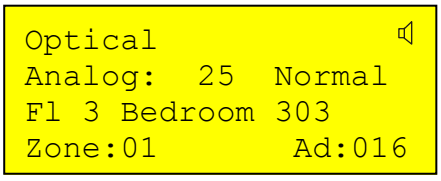
If there are one or more disabled points in this zone, the screen will show.
(TIP: a quick way to enable several disabled points is to disable the zone, then re-enable it)



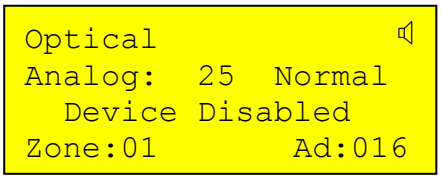
To view from the Device Status screen

Press enter then option 2 to select Device Status

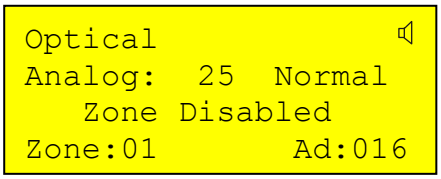
If a device is enabled, the screen will show



If a device is disabled, the screen will show
(Note that line 3 will flash between the device label and Device Disabled Message)



If a device is in a disabled zone, the screen will show
(Note that line 3 will flash between the device label and Zone Disabled Message)



TEST MODE

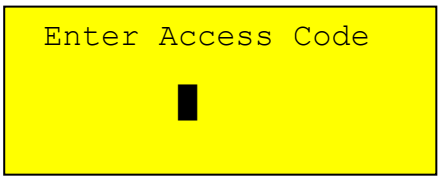
WHY USE TEST MODE

To aid commissioning and assist routine maintenance check, a non-latching 'one man test' facility is available.

When a detector or manual call point is triggered on any zone in Test, the Alarm sounders operate for approximately eight seconds on and four seconds off. This cycle continues until the cause of the Alarm is removed (either by the test smoke clearing from the detector or the manual call point being reset), sounders will then stop activating.

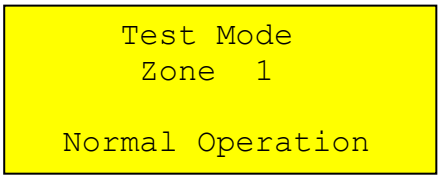
Should an Alarm occur on a zone that is not programmed to test, the Fire Alarm Panel will cancel the test mode. After the cause of the alarm has been checked, and the panel reset, test mode will have to be selected again to resume testing.

TO PROGRAMME ZONE IN TEST MODE

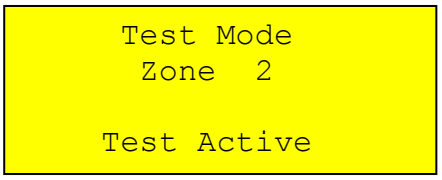


NOTE: Only **one zone** can be programmed in test at any one time.

1. Press ENTER button, then enter access code 123.
2. Press TEST Button. The screen will prompt for the test code
3. Enter the Test code **2 4 8.**
4. The screen will now show Test Mode.
5. Press NEXT (or PREV) button to select the zone to be tested.



6. Press ENTER to select test mode for this zone. The General Test LED will now be lit, and the screen will show Test Active.
7. Detectors in this zone can now be tested with smoke spray. The sounders will operate for about 4 seconds, then they will reset. This cycle will continue until all smoke spray has cleared from the detector.



8. Once testing of that zone is completed, press NEXT (or PREV) button to move to another Zone or press cancel to exit test mode.

Alarm Condition & Resetting an alarm

The Simplicity Micro signals an alarm by the following:-

Turn on the General Fire LED
Turn on the Zonal Fire Indicator
Display the address & description of the device in alarm
Turn on internal buzzer
Start any sounders connected to the loop
Activate the fire relay

What to do in the event of a fire.

1. Follow the building evacuation procedure, and check that everyone has left the building safely.
2. The building fire officer or responsible person should CAREFULLY enter the building, and locate the area of the alarm from the fire alarm panel.
3. Investigate to determine the cause of the alarm. The detector that signalled alarm will be displayed on the screen, and it will have its RED ALARM LED on.
4. If a small fire is found, a suitably trained person could tackle this with a suitable fire extinguisher.
5. If a larger fire is found, leave the building immediately, and contact the fire brigade.
6. If no fire is found, make a note of the detector that signalled fire, and look for anything nearby that could be the cause of the activation, eg cooking, or use of a hot air gun etc.
7. Record findings in the fire alarm log book.

Resetting from an alarm condition

After the relevant action has been taken, the Simplicity Micro fire alarm panel can be reset by the following:-

1 Press Stop/Start sounder button. (if the panel prompts for access code, type in 123, then press Start/Stop Sounder again)This will silence the external sounders.
2 Press Silence Fault Tone button. This will silence the panel`s internal buzzer.
3 Press the Reset button. This will return the panel to it`s normal condition.

If the panel goes straight back into alarm, then the cause of the alarm has not been cleared. This could be a detector still exposed to smoke, or a call point still in the active position. Press Buttons Stop/Start Sounder button & Silence tone button on the panel, then investigate for a call point, or detector that still has it`s RED ALARM LED on. Reset the call point, or clear the smoke. If the problem persists, contact an engineer.

Fault display & fault-finding

On the Simplicity panel, Faults are divided into 2 types, “Faults” and “Device Faults”. Device Faults are any fault associated with a particular address on the loop. Faults is everything else, EG sounder circuits, power supply etc. In the event of multiple faults, the Faults are grouped together first, followed by the device faults. Next button will scroll to next fault

The Simplicity Micro panel will signal a fault by turning on it`s General Fault LED, sounding it`s internal buzzer, and operating it`s fault relay (which is normally energised). It will also give further information about the fault on it`s LCD screen.

The Simplicity Micro panel monitors for the following faults:-

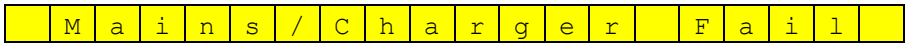
Low or failed mains (Including fuses)
Low or failed battery (Including fuse)
Earth wiring Fault
Loop open circuit wiring fault
Loop short circuit wiring fault
Detector removed.
Double address (installation) fault

Most of these faults will need to be checked by an engineer, but the system can be checked for a removed detector by the responsible person.

All faults in the Simplicity Micro are NON-LATCHING. IE they can not be cleared with the reset button, because the message will return if the fault is still present. They will clear automatically when the fault has been fixed.

Fault Finding

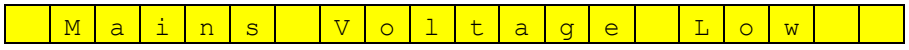
Power Supply faults



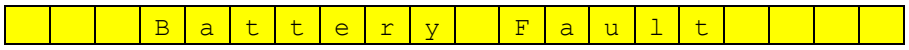
This is indicative of one or more of the following faults: -

Loss of Mains power

- Check if there is a power cut at the premises.
- Check that 230V AC is present at the mains inlet terminal block
- Check mains fuse
- Check that there is 30-34V coming from the transformer secondary
- Check charger fuse FS1.



The panel has detected that the mains voltage is lower than the expected minimum. (Brownout)
If the mains voltage is 195V or above, and the panel displays this message, check that no abnormal load has been fitted to the panel.
If mains is OK, and no abnormal load is present consult your wholesaler.



Loss of Battery power

- Check that 2 X 12V batteries are fitted in series to give 24V backup

- Check battery fuse FS2.
- Check that battery connections are secure.
- Check that the batteries are not over 5 years old

				B	a	t	t	e	r	y		L	o	w					

The panel has detected that the battery voltage is lower than the expected minimum (21V DC). This can occur if:-

- The mains supply had failed, and the batteries had discharged below their final Voltage. (Batteries discharged below this voltage are not guaranteed to hold their charge if they are recharged, so the panel turns off the charger, and won`t try to recharge them)
- The battery charger fuse has blown, and the battery has discharged over time.
- The batteries have come to the end of their working life, and need replacing.

Earth faults

E	a	r	t	h		F	a	u	l	t		P	o	s	i	t	i	v	e

The Panel has detected a POSITIVE cable shorting to earth. This will probably be the loop +ve connection shorting to the cable screen. (It could also be battery +ve terminal shorting to earth)

To track down this fault:-

- Disconnect the cable screens from earth termination strip.
- If fault clears, this verifies the fault.
- Break the earth screen aprox half way along the loop at a detector.
- Connect loop side A screen to earth. If no fault, this half of the cable is clear. Disconnect earth again.
- Connect loop side B screen to earth. If no fault, this half of the cable is clear
- If there are a large number of devices, try splitting bad section again to try to pinpoint the source.
- Check for nicks in the cable insulation which might be causing the short.
-

E	a	r	t	h		F	a	u	l	t		N	e	g	a	t	i	v	e

The Panel has detected a NEGATIVE cable shorting to earth. This will probably be the loop -ve connection shorting to the cable screen. (It could also be battery -ve terminal shorting to earth). To track down, use the same method as above.

Loop Cabling faults

L	o	o	p		1		S	h	o	r	t		S	i	d	e		A	

The Panel has detected a Short circuit between Loop +ve, and loop –ve, on side A, between the control panel and the first short circuit loop isolator.
To track down this fault:-

- go to the first device on side A.
- Disconnect the in +ve cable (remember that the cable may have 30V on it, so don`t touch it to anything.
- If the SHORT fault clears, the fault is in this first section of cable, otherwise reconnect the cable, move to the next device & repeat.
- The possible causes of a short circuit include:-
  - Actual cable fault where + & - are shorted
  - A short from loop + to earth, and a separate short from loop – to earth at the same time.

- A damaged device that has an internal short circuit, or is taking too much current.

L	o	o	p		1		S	h	o	r	t		S	i	d	e		B	

The Panel has detected a Short circuit between Loop +ve, and loop –ve, on side B, between the control panel and the first short circuit loop isolator. To track down, use the same method as above

L	o	o	p		1		C	a	b	l	e		B	r	e	a	k		

The Panel has detected a break in the circuit. It might be in the +VE or –VE line.

Enter Configuration menu 2, select Edit Device. Press 1 {enter} 1 {enter} to view address 1.

The panel will report this device as Side A only, or side B only. Press Next until the side changes. This will give the address of the device before & after the fault (Note that this only works if the devices are numbered sequentially)
Check all the connections on both these addresses.

The panel will also report a break if there are 2 loop short circuit isolators active. Look for isolators, or sounder flasher isolators with Yellow “isolating” LEDs on.

Device faults

If the panel is showing a device fault, pressing enter will bring up further details about the fault:-

M	i	s	s	i	n	g	

A configured device is no longer answering. Check :-

* That the device has not been removed
* That the device`s address has not been changed
* check that there are no short circuit faults on the loop.

A	-	O	n	l	y		

The device is only being seen on side A of the loop. IE there may be a break between side B of the loop and this device.

B	-	O	n	l	y		

The device is only being seen on side B of the loop. IE there may be a break between side A of the loop and this device.

2	-	A	d	d	r		

Two devices on the loop have been given the same address. The panel can only talk to a single device at an address, so the 2 devices must be given different addresses.
To locate the incorrect device, enter the device status menu. Go to address 1. Check that the device seen is correct. Press next to move to the next device. If the panel skips an address that SHOULD contain a device, then this will be the device with the wrong address.

3- Addr

3 or more devices on the loop have been given the same address. They must be given different addresses

Changed

The device answering at this address has changed since the panel was configured. This could be because:-

- The system has not been configured yet. The configured type in the top left hand corner will show NONE. Enter the menu & configure the loop.
- A device has been changed (EG a smoke detector has been changed for a heat detector). Make sure that the new detector still gives the required coverage, then reconfigure the loop
- The device`s address has been changed, and the panel sees it at a different address.

If the device is giving no further details of the fault, then the “device in fault” is communicating OK with the control Panel , but is reporting a fault that it has detected itself. EG a Securetone Micro detector base with the detector removed.

Missing Device faults

If the panel is showing less devices than expected on it`s loop contents screen, then to find the devices which aren`t answering the panel:-

Check Connections

- Check that they are actually connected to the loop
- Check that there is voltage at the device terminals
- Check that they are connected with the correct polarity
  - An Addressable Detector uses L2 = +ve, L1IN = -ve
  - Other addressable devices are usually marked + & -

Check Address

- Check that they have a unique address set
- Check that the address is set in the range 1 to 32 (because the Simplicity Micro only talks to the first 32 addresses
- For Securetone Micro sounder bases, check that dip switch 8 is ON
- Check that the address switches have been set the correct way (TIP: if unsure of the correct setting, take a device that is not being seen and reverse the settings for switches 1 to 7. If this does not help try changing switch 8)

Other Checks

- Check that the devices are compatible with the simplicity micro (EG, conventional detectors MUST be fitted to a Securetone Micro sounder base. They can`t connect directly to the loop)
- Check that Isolators are not isolating this device (usually accompanied with a loop break message)

Battery Calculation

Here are the current consumption of the Simplicity Micro panels in various conditions:-

Control Panel Model	Mains Fail, buzzer sounding	Mains Fail, buzzer silenced	Mains fail, panel in alarm
Simplicity Micro	39mA	37mA	65mA

Sample Calculation

A Simplicity Micro panel has the following items connected:-

Zone 1: 1 x MCP, 2 x Optical Detector, 2 x Sounder base
Zone 2: 1 x MCP, 1 x Optical Detector, 1 x Sounder base
Zone 3: 1 x Heat Detector, 1 x Sounder base
Zone 4: 2 x Optical Detector, 2 x Sounder Flasher base

ITEM	QUIESCENT	ALARM
SIMPLICITY MICRO	39mA (in fault)	65mA
MCP	1.0mA	3.5mA
OPTICAL	100uA	12mA
HEAT	50uA	12mA
SOUNDER BASE	1.2mA	5.5mA
SOUNDER FLASHER BASE	1.2mA	7mA

To calculate the required battery backup required, we use the equation:-

Battery Size (Standby time in Amp Hours) = 1.25 x [(T_{ALM} x I_{ALM}) + (T_{SBY} x I_{SBY})]

Where:

T_{ALM} = Maximum time in hours required for the alarm [½ hour is most common time]

I_{ALM} = Total Alarm Current in amps for all alarm devices connected to the alarm circuits

T_{SBY} = Standby time in hours for the system after mains failure [normally 24, 48 or 72 hr]

I_{SBY} = Quiescent current in amps of control panel in fault condition [because of mains failure] **PLUS** all loop devices.

I_{ALM} = (SIMPLICITY MICRO) ALM + (4 X SOUNDER BASE ALARM) + (2 X SOUNDER FLASHER BASE ALARM) + (1 X DETECTOR ALM) + (2 X MCP QU) + (4 X OPT QU) + (1 x HT QU)

=0.065 + 4x 0.0055 + 2x 0.007 + 1x0.012 + 2x0.001 + 4x0.0001 + 1x0.00005
=0.065 + 0.022 + 0.014 + 0.012 + 0.002 + 0.0004 + 0.00005
=0.11545 Amps

I_{SBY} = (SIMPLICITY MICRO QU) + (4 X SOUNDER BASE QU) + (2 X SOUNDER FLASHER BASE QU) + (2 X MCP QU) + (5 X OPT QU) + (1 x HT QU)
=0.039 + 4x0.0012 + 2x0.0012 + 2x0.001 + 5x0.0001 + 1x0.00005
=0.039 + 0.0048 +0.0024 + 0.002 + 0.0005 + 0.00005
=0.04875

Therefore:-

Battery size = 1.25 X ((0.5 x 0. 0.11545) + (24 x 0.04875))
= 1.25 X (0.057725 + 1.17)
= 1.25 x 1.227725
= 1.5346 Ah

So 2.0 Ah batteries will be suitable for this installation.

Specifications

Electrical Specifications

ELECTRICAL DESCRIPTION	VALUE
MAINS VOLTAGE	230V AC +/- 10% @ 50/60 Hz
BATTERY VOLTAGE	24V DC (2 X 12V,2AH SLA BATTERY)
CHARGER SIZE	1 AMP
LOOP VOLTAGE	27V DC NOMINAL (+9 volt data)
AUXILIARY FIRE OUTPUT	1 x RELAY SELV (1A MAX)
FAULT OUTPUT	1 x RELAY SELV (1A MAX)
NUMBER OF ZONES	4
MAXIMUM ZONE CAPACITY	8 DEVICES PER ZONE
SOUNDER ALARM OUTPUTS	LOOP POWERED SOUNDERS ONLY
MAINS FAILED CURRENT (BUZZER ON)	39mA
MAINS FAILED CURRENT (BUZZER OFF)	37mA
MAXIMUM LOOP RESISTANCE	25 ohms
MAXIMUM LOOP CAPACITANCE	0.3µF
MAXIMUM VOLTAGE PICKUP ALLOWED	50mV
LOOP SHORT CIRCUIT PROTECTION	540mA
CHARGER VOLTAGE	28.3V @ 22-24^{o}C (NO BATTERY)
CHARGER SHORT CIRCUIT PROTECTION	Batteries less than 20V

Enclosure Specifications

DESCRIPTION	VALUE
ENCLOSURE SIZE	355 x 275 x 70 mm
TOP CABLE ENTRIES	5 x 19mm KNOCKOUT ENTRIES
BOTTOM CABLE ENTRIES	NONE
REAR CABLE ENTRIES	NONE

Fuse Ratings

FUSE NO	DESCRIPTION	RATING
FS6	Charger Fuse	2.0A Fast Blow 5 x 20mm glass
FS5	Battery Fuse	800mA Fast Blow 5 x 20mm glass
INLET FUSE	Mains Protection Fuse	2A Quick Blow HBC 5 x 20mm ceramic

Simplicity Micro Configuration & Testing

Record the device label for each device in the chart below. If a detector has a base sounder fitted , mark the column with a tick or a "Y". Test each detector for Alarm operation (Eg With smoke Spray), and for fault reporting (by removing the detector). Check that each sounder operates in alarm. (Mark with P for Pass)

Site Name: _____
Site Address: _____
_____

Installation Date:_____
Installed by: _____Service Contract: (Y/N)_____
Tel: _____

Addr	Device Type	Sounder Base	Detector Name	Fire Test	Fault Test	Sounder Activate
Eg	Optical	Y	Hallway	P	P	P
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
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21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

Log Book

MAINTENANCE WORK

DATE	TIME	ZONE / LOCATION	REASON FOR WORK	WORK CARRIED OUT	ADDITIONAL WORK REQUIRED	SIGNED

FALSE ALARMS

DATE	TIME	ZONE / LOCATION	CAUSE (IF KNOWN) OR ACTIVITIES IN ALARM AREA	MAINTENANCE VISIT NEEDED (YES/NO)	MAINTENANCE FINDINGS	CATEGORY OF FALSE ALARM	FURTHER ACTION REQUIRED	SIGNED

ALL OTHER EVENTS

DATE	TIME	ZONE / LOCATION	DETAILS OF EVENT (INCLUDING CAUSE IF KNOWN)	ACTION REQUIRED	DATE COMPLETED	INITIALS

Installation Manual Modification History

Issue	Date	Changes
1.03	5/9/2008	Version before Modification History added
1.04	10/4/2012	Added modification history page Added more detail to Missing device fault finding section
1.05	26/11/2013	Corrected “edit system normal message”