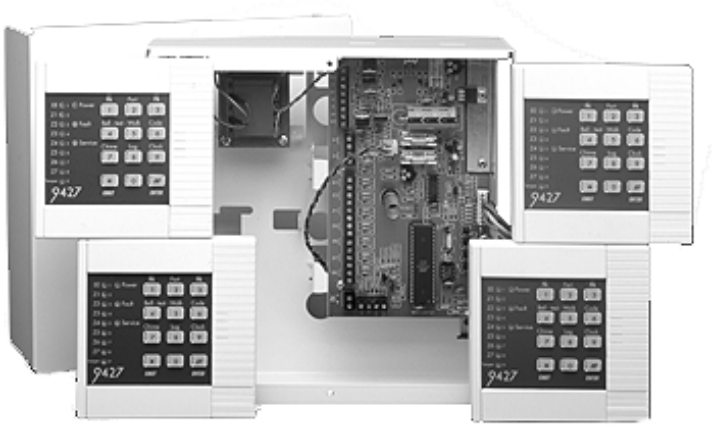
9449
Installation and User Guide



Compatible Equipment

9427	Remote Keypad
9040	Internal Sounder
660	Speech communicator
8440/8400	Communicator
9056	Redcare STU (Manufactured by others)

INTRODUCTION

The 9449 is a fully programmable 8 zone alarm system control unit with Full and Part Set, designed for domestic and small commercial installations.

The control unit comprises a single printed circuit board, with microprocessor electronics, mounted in a steel box with a slide off lid. Up to four 9427 remote keypads can be connected to the control unit.

Technical Description

Specification

Operating temperature	= -10º to +55ºC.
Humidity	= 96% RH.
Dimensions	= h x w x d 234 x 243 x 87 mm.
Weight	= Approx 3.0 kg (without stand-by battery).

Conforms to EN50131-1 Grade 1 and 2 and current BS4737 Part 1 for remote signalled systems, ACPO-IAS Policy, NACOSS NACP14, ABI log requirements.

Power Supply

System power supply	= 230VAC (Ambient Temp. 20 º. C) 1A total.
Control unit power	= 50mA nominal quiescent, 150mA active.
9427 Remote Keypad	= 20mA quiescent with keypad backlight on.
Standby Battery	= 12 Volt, 7AH rechargeable lead-acid, Gel Type battery (not supplied).

Conforms to EN50131-6 Type A power supply for Grade 1 and 2 systems.

Outputs

Bell, Strobe, O/P and AUX are open collector transistor outputs.

Bell	= 500mA, 12VDC. negative applied.
Strobe	= 500mA, 12VDC. negative applied.
O/P	= 100mA, 12VDC. negative applied.
LS	= can support two parallel connected externally mounted 16ý loudspeakers for internal sounder or EE tones. Controlled by Vol. potentiometer.
AUX (for detectors)	= 500mA, 12VDC.
Coms OP1-4	= 12V logic outputs, -ve applied in alarm (+ve removed).

Inputs

Tellback/RedCare reset = +12V applied to operate reset.
Line Fault input = +12V applied to indicate line failure.

Fuses

F1 - Battery = 2A Anti Surge.
F2 - 12V AUX = 1A Fast.
F3 - 21 VAC = 2A Anti Surge.

Caution: When replacing fuses use the ratings quoted above.

Connecting a 9427 Remote Keypad

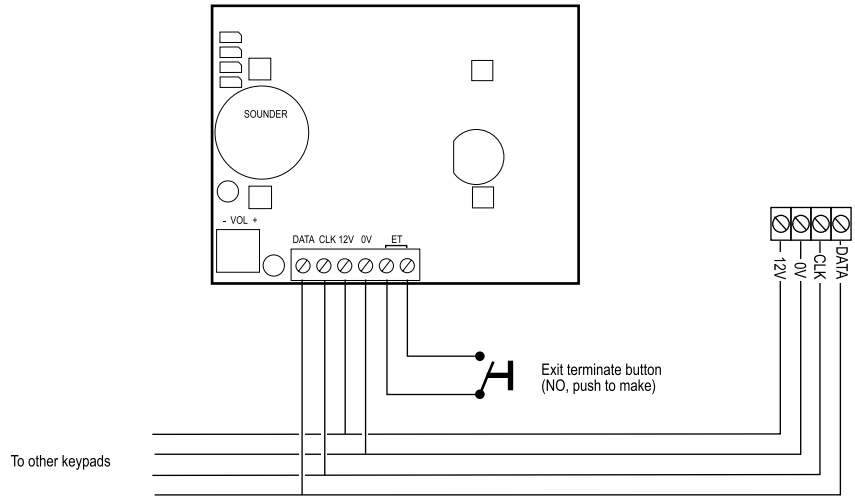


Figure 1. 9427 Keypad Connections

Keypad Addressing

The 9449 control unit is supplied with one remote keypad. If you have fitted more keypads then each one must be given a separate "address". Links LK1 to LK3 set the keypad address, as shown in Figure 2.

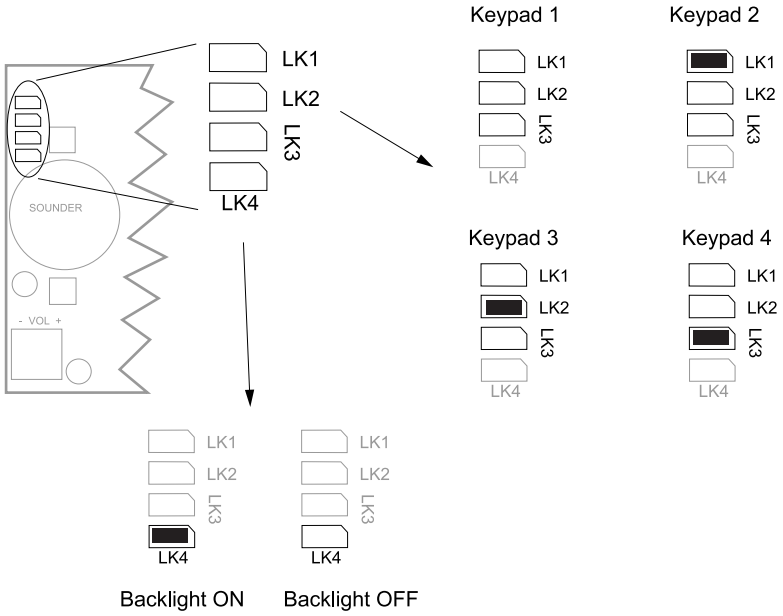


Figure 2. Keypad Addressing.

Keypad Backlight

When supplied from the factory the control unit is configured with the keypad backlight ON. To turn the keypad backlight OFF remove the jumper from link LK4, shown in Figure 2.

Wiring Example

Figure 3 shows an example system wired for two detectors. Note that mains and battery connections are not shown.

Notes:

1. Power for detectors is available from two terminals on the control unit PCB marked "+ - 12V AUX".

2. If you are not using an SAB, or wish to test the control unit with no SAB connected, you must link 0V and TR on the control unit PCB.

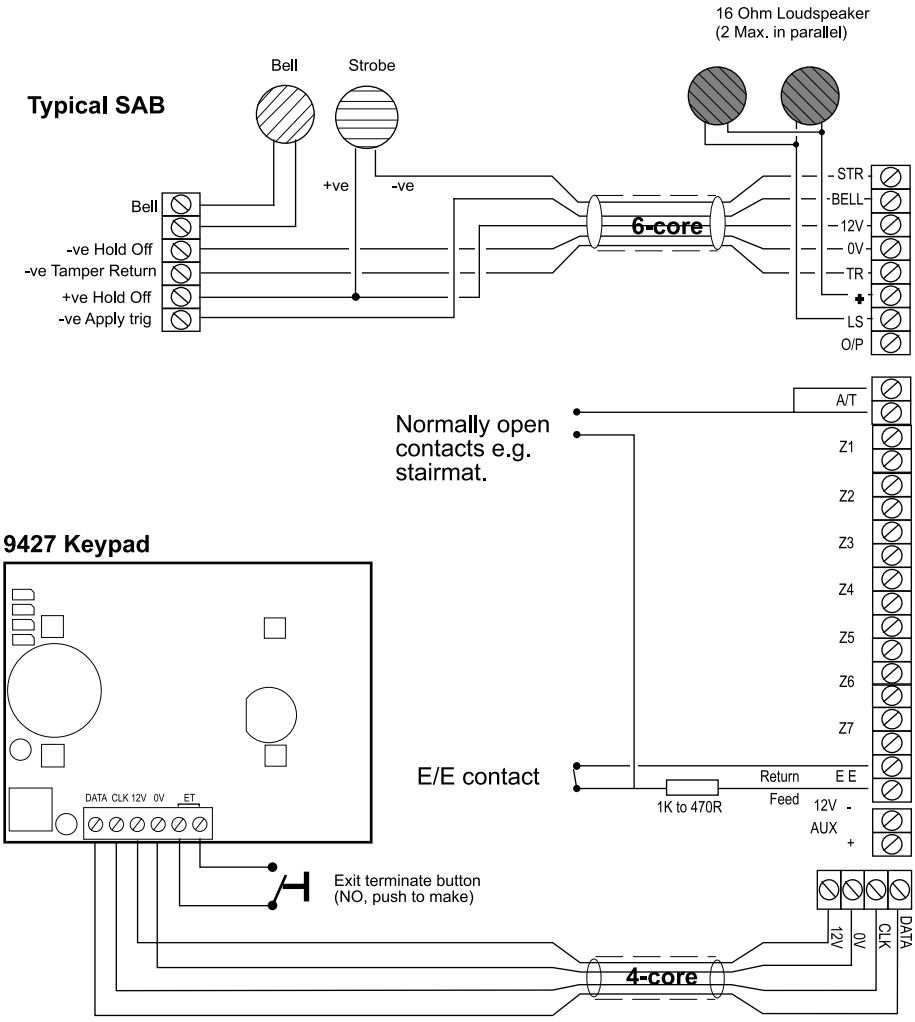


Figure 3. Wiring Example

Connecting a Communicator

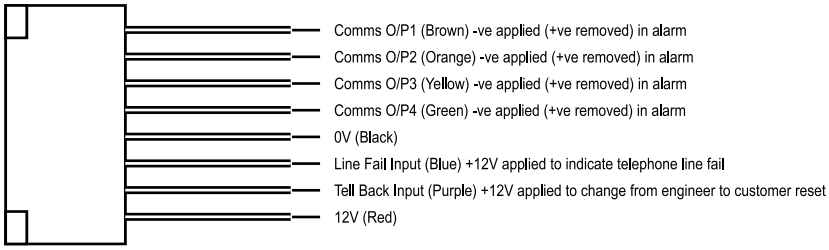


Figure 4. Communications Wiring Harness.

PROGRAMMING

Initial Start Up

Before applying power to the control unit, ensure that any remote keypad(s), all zone circuits and sounders are connected.

1. Connect the battery to the control unit PCB.
   The green power LED flashes and the internal sounder may sound. Ignore any other lights.
2. Key-in the factory default user access code: 1234.
   The internal sounder stops. Ignore any other lights.
3. Please fit the case lid before applying mains power (this also defeats the tamper switch). Make sure the green earth wire is connected to the upper left hand support pillar on the case back.
4. Apply mains power.
   The Power LED glows steadily.
5. Key-in 0 then # followed by the factory default engineer access code: 7890. (You do not have to remove the control unit lid.)
   All LEDs, except for Power, Fault and Service, flash.
   You are now in programming mode.

Programming

When supplied from the factory the control unit is already programmed with a set of default options, See "Engineer Program Command List".

To change the factory defaults, the system must be in programming mode (all LEDs flashing). Then:

1. Key in a two digit programming command followed by #. (See "Engineer Program Command List".)

   One or more LEDs glow to show you the current option used in the command. **While in programming mode use the blue numbers printed to the right of the LEDs**. If all LEDs are OFF the option is "0".

2. Key in the correct digit for the option you want, and then press #.

   The system beeps twice to show that it has accepted the command. All the LEDs flash, and the system is ready for the next command.

   The system gives a single error tone if you enter an incorrect command. Re-enter the correct command.

3. Key in "99 #" to leave programming mode when you have finished. You will then be in user mode.

Engineer Program Command List

To change:	Key-in:	Then:	Notes	Default
Zone n (see "Zone Programming" on page 10)	**0n #**	x...x #	n = zone number (1 to 7) x = Zone type, one or more of: 0 = Not Used (see Note 8) 1 = Normal Alarm 2 = Entry Route 3 = Panic Alarm 4 = Fire 5 = Technical Alarm 6 = Omit Allowed 7 = Chime 8 = 24 Hr Monitored 9 = Double Knock	 ✔ (zone 1 default) ✔
Entry/Exit Chime	**08 #**	7 #	To toggle on/off	Off
Zones omitted in Part Set	**10** #	zone n..n #	LEDs ON for zones omitted (see note 1)	5 & 6
Engineer Code 7890	**20** #	new code #		4 digits
User Code 1 1234	**21** #	new code #		4 digits (see note 2)
User Code 2 0000	**22** #	new code #		4 digits (see notes 2 & 3)
Duress Code ****	**23** #	new code #		4 digits (see notes 2 & 4)
Part Set Exit Mode	**35** #	0 # 1 #	Low tone Silent	✔

To change:	Key-in :	Then:	Notes	Default
Auto Re-Arm	**40** #	0 #	Never rearm	✔
		1 #	Rearm once	
		2 #	Rearm twice	
		3 #	Rearm three times	
		4 #	Always	
Bell Delay	**41** #	0 #	No delay	✔
		1 #	90 seconds	
		2 #	3 minutes	
		3 #	5 minutes	
		4 #	10 minutes	
		5 #	15 minutes	
		6 #	20 minutes	
Bell Time	**42** #	1 #	90 seconds	
		2 #	3 minutes	
		3 #	5 minutes	
		4 #	10 minutes	
		5 #	15 minutes	
		6 #	20 minutes	✔
Entry time	**43** #	1 #	10 seconds	✔
		2 #	20 seconds	
		3 #	30 seconds	
		4 #	45 seconds	
		5 #	1 minute	
		6 #	2 minutes	
Exit time	**44** #	1 #	10 seconds	✔
		2 #	20 seconds	
		3 #	30 seconds	
		4 #	45 seconds	
		5 #	1 minute	
		6 #	2 minutes	
Exit Mode	**45** #	0 #	Timed or terminate	✔
		1 #	Terminate only	
Prog O/P	**51** #	0 #	PIR set latch	✔
		1 #	Shock reset	
Zone 1 in Part Set	**52** #	0 #	As command 01 (see Note 5)	✔
		1 #	Entry/Exit	
Part Set Alarm Response	**53** #	0 #	Full Alarm + comms	✔
		1 #	Local Alarm (bells only)	
		2 #	Internal sounders only	
Zone 3	**54 #**	0 #	As Command 03 (see Note 6)	✔
		1 #	Entry/Exit	
System Reset	**60** #	0 #	Engineer	
		1 #	Customer	✔
Anti Code Reset	**61** #	0 #	Disabled	✔
		1 #	Enabled	

To change:	Key-in:	Then:	Notes	Default
CSID Code	**62 #**	nnnn #	Default 0000	
Alarm Abort	**63** #	0 #	Disabled	✔
		1 #	Enabled	
Disable Dual Ply Entry	**64** #	0 #	Enabled	✔
		1 #	Disabled	
Alarm Confirmation	**65** #	0 #	Disabled	✔
		1 #	Enabled	
PA Response	**66** #	0 #	Audible	✔
		1 #	Silent	
PA Reset	**67 #**	0 #	Customer reset	✔
		1 #	Engineer reset	
Keys 1 & 3 PA	**68** #	0 #	Disabled	✔
		1 #	Enabled	
Comms O/P 1 Type	**71** #	0 #	Not used	
		1 #	Fire	✔
		2 #	PA	
		3 #	Alarm	
		4 #	Open/Close	
		5 #	Alarm Abort	
		6 #	Technical	
		7 #	Alarm Confirmation	
Comms O/P 2 Type	**72** #		See command 71	PA
Comms O/P 3 Type	**73** #		See command 71	Burg
Comms O/P 4 Type	**74** #		See command 71	Open/Close
Line Fault Response	**75** #	0 #	Audible	✔
		1 #	Silent	
Print Event Log	**90** #		See "5. Testing"	
Set Clock	**96** #	date/time		See "5. Testing"
Walk Test	**97** #	Detectors.		Press * (OMIT) to exit test.
Load Defaults	**98** #			
Leave Programming	**99** #		(See note 7.)	

Notes:

1. n..n = the numbers of the zones. Key the zone number to toggle the zones on or off. Pressing # stores the zones selected.

2. The end user may change the user codes (see separate user guide).

3. Default user code 2 "0000" is inactive. Changing user code 2 back to "0000" at any time makes the code inactive again.

*4. Default Duress code "****" is inactive. Changing the Duress code back to "****" at any time makes the code inactive again.*

5. If zone 1 is set to PA, Fire, 24Hr or Technical Alarm then the system will give an error tone if you try to enable this Command.

6. If zone 3 is set to PA, Fire, 24Hr or Technical Alarm then the system will give an error tone if you try to enable this Command.

*7. If the internal sounder activates when you leave programming then either the lid tamper, bell tamper, global zone anti tamper, or a 24 hour zone are open. The zone LEDs glow to show which zone is open. Press *. to return to programming mode, clear the fault and then key in 99 # again to retun to user mode.*
8. Program any zones not connected as "Not used".

Zone Programming

In order to change zone types you must first set a zone to Not Used (type 0) and then set it to the type you require. For example, if you wish to re-program zone 07 from Fire to Normal Alarm with Omit Allow and Chime, proceed as follows:

1. Key in 07#.

The display shows:

The right hand column indicates a value of 4 = Fire zone type.

2. Key in 0.

The display shows:

The right hand column indicates a value of 0 = Not used

3. Key in 1, 6 and 7.

The display shows:

The right hand column indicates a value of 1 = Normal Alarm zone type.

4. Key in # to store the new zone type.

Zone 7 is now programmed as a Normal Alarm, Omit Allowed and Chime.

To Re-enter Programming Mode

You can re-enter programming mode at any time when the system is unset:

Key-in 0 then # followed by the engineer access code.

All LEDs, except for Power, Fault and Service, flash.

You are now in programming mode.

Engineer Reset

To perform an Engineer Reset:

Key in 0 + # followed by the Engineer’s code (default 7890), and then 99 + #.

Restoring Factory Defaults (1st stage reset)

The control unit can retain all programmed information and access codes if both mains and battery power fail. When power is restored the system will simply need resetting with either the user's or engineer's access code. However, if the end user or engineer forget their access codes, then:

1. Power down the control unit, mains and battery.
2. Locate the pair of Molex pins marked 'RESET' near the microcontroller.
3. Place a small screwdriver blade to short between the 'RESET' pins.
4. With the blade still across the pins, apply battery power. The keypads give a double "beep".
5. Remove the screwdriver blade, and then re-apply mains power.
6. Key in 1234.
7. Key in 0 then # followed by 7890.
8. Reprogram the access codes.

Restoring Factory Default Programming (2nd stage reset)

If you wish to restore factory default options, but **not** engineer and user codes, then:

1. Enter programming mode (if you are not already there).
2. Key in 98 # at the keypad.

   The system loads the factory default command values, erasing all previously programmed values.

Testing

You may test parts of the system by entering commands at the keypad. To carry out a test make sure the system is in programming mode and then key in one of the following commands. Press * (Omit) to end each test:

90 # To print the event log.

97 # To carry out a system walk test. This allows the engineer to test all alarm devices. While the test is taking place the internal sounder gives a continuous tone. When a circuit is opened, the sounder gives an interrupted tone and the appropriate circuit LED lights.

Using the Log

The system keeps a 250 event log of recent events. In the printed log, each event is stamped with the date (day, month) and time.

Setting the Internal Clock (Command 96)

When delivered from the factory the system clock is set to zero. During installation and testing you must set the clock to the current day, month and time.

1. Put the system into programming mode.
2. Key in 96 #.

   The keypad displays the digits of the date and time one by one on the zone and tamper LEDs. The keypad sounder beeps each time the system shows a new digit. The EE zone LED represents "1" and the Tamper LED represents "9". If all LEDs are off when the keypad beeps then the digit "0" (zero). Figure 5 below shows an example when the date is 11 September 3:45pm.

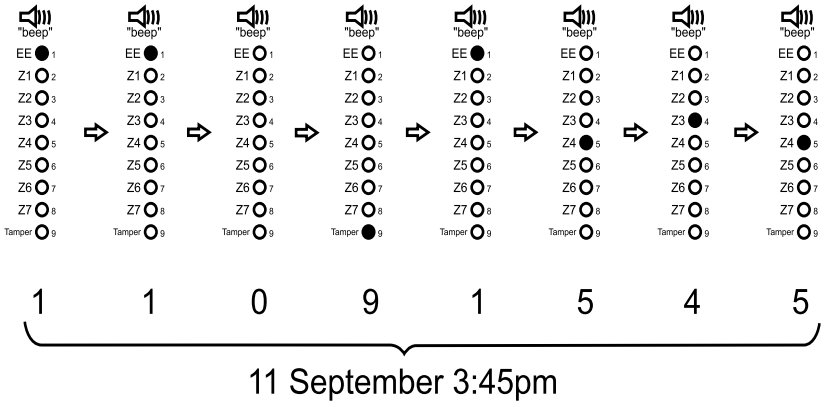


Figure 5. Example Date and Time Display on Keypad

   When the keypad has completed showing the date and time, the zone and tamper LEDs go out, and the system waits for you to enter the new date and time.

3. Key in the day, month, hours and minutes in numerical format, and then press #. (Note that the clock uses 24 hour format for time.)

   For example, to change the date and time to 8 August, 1:30 pm, key in "08 08 13 30 #".

   The keypad gives a double beep to show it has accepted the new date and time, and then returns to programming mode.

Printing the Log

To print the event log, make sure the system is in programming mode, then Key in 90 #.

Figure 6 below shows a sample of a printed log.

```
 - 9449 -
   02-Sep, 08:51, Installer Access
   02-Sep, 08:50, Access          User 1
   02-Sep, 08:50, Alarm           Zone 3
   02-Sep, 08:50, Full Set        User 1
<END OF LOG>
```

Figure 6. Sample Log Print

To stop printing press * (Omit).

Engineer Walk Test (Command 97)

Allows the engineer to test all devices on the system.

1. Enter programming mode.
2. Key in "97 #".

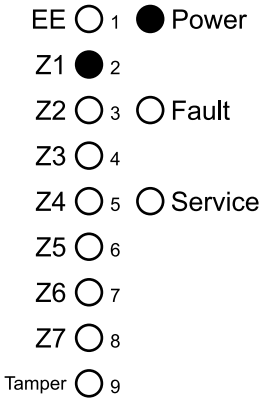
   The system gives a continuous tone.
3. Open and close each detector contact in turn.

   When a detector contact is open the system gives an interrupted tone and flashes the zone LED.
4. Press OMIT to stop the walk test.

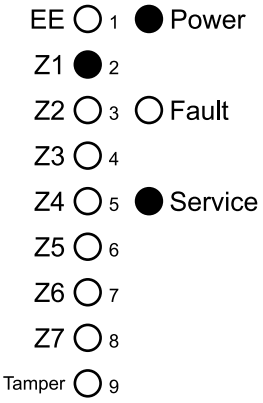
Note that the Engineer's walk test allows you to test all zones including PA zones, zone tampers, and control unit and bell tampers. The user's walk test does not allow you to test PA, Fire, 24Hr, Technical zones, or tampers.

Fault Finding

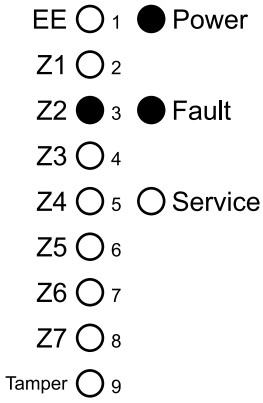
The diagrams on these two pages show typical displays during faults.



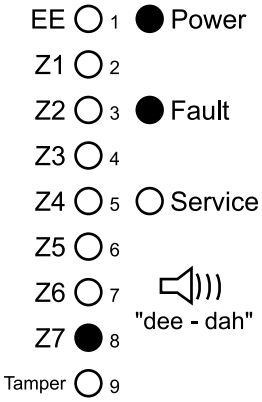
Alarm (zone 1). Customer reset required.



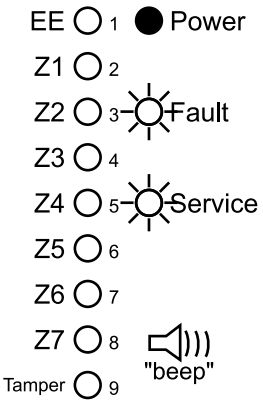
Alarm (zone 1). Engineer reset required.



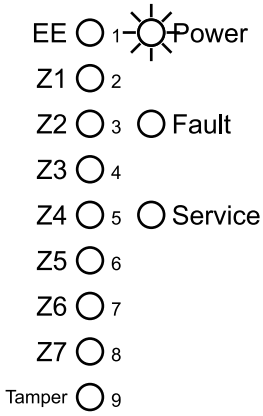
Fire, 24Hr, Technical or PA zone active.



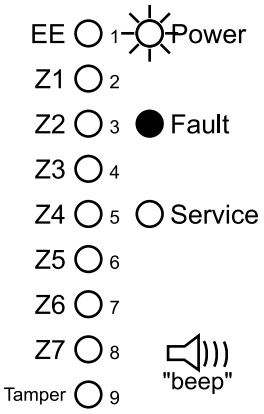
Fire (zone 7).



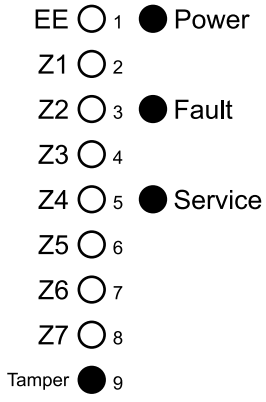
Line fault ("beep" every 5s if enabled).



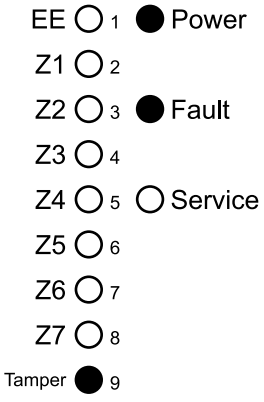
Mains fail.



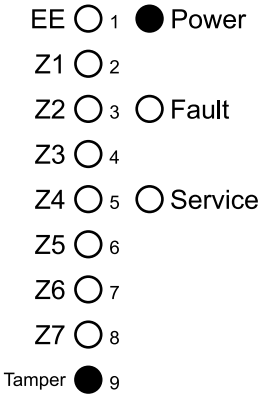
Battery low - no mains. "beep" every 5s.



Tamper (lid, remote keypad, sounder, global tamper). Needs engineer reset.



Clear tamper fault and reset.



A tamper has activated but is now clear.

User Commands

Set/Unset System	User code
Omit zone	Zone number + Omit (repeat for all zones to be omitted) + User code
Keypad PA	1 + 3
Part Set	2 + ENTER + User code
Test Bells	4 + ENTER + User code
Walk Test	5 + ENTER User code User code to end test
Change User code	6 + current user code code to be changed new user code.
Chime On/Off	7 + ENTER + User code
Read Log	8 + ENTER +User code << for earlier events >> for later events
Set Clock	9 + ENTER + User code + dd + mm + hh + mm + ENTER