INSTALLATION AND PROGRAMMING GUIDE

9448+

END STATION

HARDWIRED CONTROL PANEL

Scantronic
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Contents

1. INTRODUCTION

The 9448UK-60 is a fully programmable 7 zone alarm system control unit with Full and Part Set, designed for domestic and small commercial installations.

Before installing the alarm system, make sure you are familiar with the functions, system plans, and detectors described in this manual.

1. Introduction	Describes the main features of the control unit.
2. System Planning	Gives typical installation plans and examples. Study these plans before attempting to install and program the control unit.
3. Installation	Describes how to fit the control unit and connect the power supply, detectors and alarm devices.
4. Programming	Describes how to program the alarm system for individual users.

Overview

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 (see Figure 1).
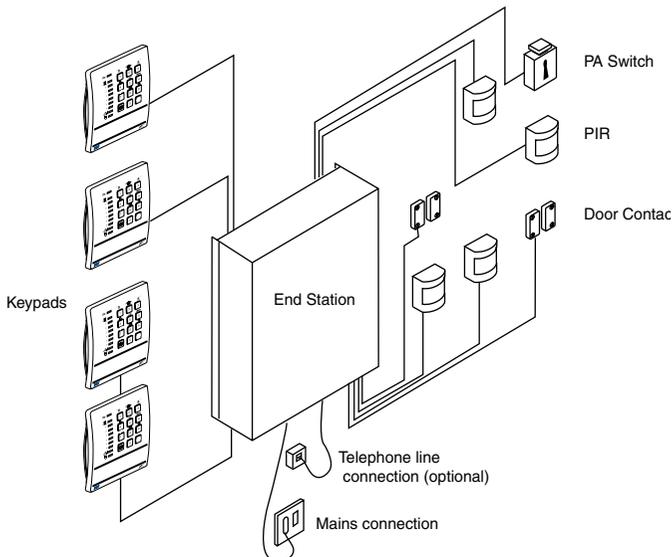
Figure 1. System Layout

Operator Controls and Displays

Figure 2 shows the 9427 remote keypad.
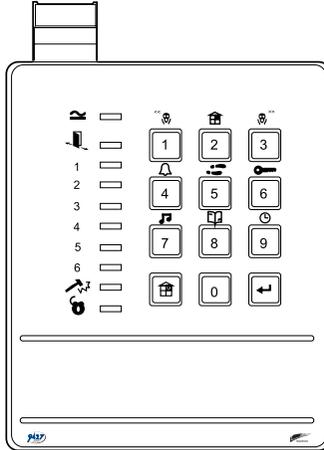
Figure 2. 9427 Remote Keypad.

On both control panel and remote keypad the LEDs display the following functions:

≃   Glows steadily when mains power is present.

⬛   Shows the state of the entry/exit zone.

1 - 6   Shows the state of detector zones 1 to 6.

↗   Glows steadily if the tamper loop is broken.

Note: The 9448UK-60 does not use the ⓘ LED.

The keypad on the control panel and 9427 provide the following keys:

⌂   Used to set the panel with individual zones temporarily omitted.

↵   Used to enter programming and setting/unsetting commands.

⊗   Pressing the two PA keys (1 and 3) at the same time starts a PA alarm (if this function is enabled in programming).

⌂   Used to set the system with a preprogrammed number of detectors omitted.

♤   Used to start a test of the sounders and strobe.

⊷   Used to start a test of the detectors.

⊶   Used to change the user access code.

♫   Used to enable or disable the Chime facility.

📖   Used to read the 10-event log. When reading the log, pressing << (1) displays earlier events, and >> (3) displays later events.

🕐   Not used on the 9448UK-60.

System Features

Detectors

The control unit provides connections for up to six separate detector **zones.** Each zone is a closed circuit loop that can be connected to door contacts or Passive Infra Red (PIR) detectors. Whe the system leaves the factory all zones are programmed as **Normal Alarm** zones. If no device is connected to a zone, the Installer must program it as **Not Used** (see "4. Programming"). Zone 5 can be programmed as a **Fire** zone. When this zone is triggered the system will give a distinctive two-tone fire alarm. Zone 6 can be programmed as a **Panic Alarm**. A Panic Alarm will start a full alarm whether the system is set or unset.

The control unit provides a separate **Entry/Exit Zone** for a door contact or PIR on the entrance door. Zone 3 can be programmed as an additional Entry/Exit zone if required.

All wiring, detectors, bell circuits and the control unit lid are protected by an **Anti Tamper** loop. If the anti-tamper loop is broken then the control unit gives an audible warning from the internal sounder and lights the Tamper LED if the system is unset, or a full alarm if the system is set.

To power detectors (and other devices) the control unit provides a 12 volt positive and negative **Auxiliary Power Output**.

Full Setting

To full set the system the user enters a four digit access code. When the code is complete the system gives an exit tone and starts the exit timer.

If any zone is open during the exit time then the control unit gives an interrupted tone. The system gives an alarm tone from the internal speakers if the zone remains open at the end of the exit time.

Exit Times

The control unit can be programmed with one of five exit delays to allow the user to leave during setting. The exit delay applies to both full set and part set.

Part Setting

The Installer can program the system so that certain zones are omitted if the user sets the system by keying "2 + ↵ + ACCESS CODE". (You cannot program the system to omit Entry/Exit zones.) This facility can be used, for example, to protect a downstairs floor while the family is sleeping upstairs.

The part set system may need a separate Entry/Exit Zone from the full set system. In the example, family members will enter the protected area by the stairs rather than by the front door.

The Installer can program zone 1 to be an Entry/Exit Zone while the system is part set. Once programmed, opening zone 1 when the system is part set starts the entry timer. Note that zone 1 behaves as an Entry Route when the system is full set.

The Installer can also program the system for Silent Part Set. Once programmed, the control unit does not give any tones during the exit time.

The Installer can program the alarm response during part set to be either Full (internal and external sounders, and trigger Intruder communications output pin) or Internal Sounder Only (no external sounders, do not trigger Intruder output pin). See "Communication Outputs" overleaf for a description of the communicator output pins.

Entry and Unsetting the System

Opening the Entry/Exit Zone when the system is set starts the entry timer, and the system gives an entry tone. The system can be programmed with one of five delays to allow the user to get in and unset the system.

If the entry time elapses before the end user enters the access code, the system starts a fixed 30 second **Dual Ply** timer and gives an internal alarm. The user must enter a valid access code before the Dual Ply timer runs out or the system starts a full alarm. The Installer can disable the Dual Ply timer in programming. The system then gives a full alarm at the end of the entry time.

Normally Zone 1 is an **Entry Route** zone; it is ignored during the entry/exit time. If necessary the Installer can program zone 2 as an additional Entry Route. If the user strays from the Entry Route then the system starts the Dual Ply timer and gives an internal alarm. If the user does not enter the access code before the Dual Ply timer ends then the system gives a full alarm. If the Installer disables the Dual Ply timer then the system starts a full alarm as soon as the user strays from the Entry Route.

Alarm

External and Internal Sounders
The control unit provides two separate transistorised outputs to control an **External Sounder and Strobe**. The external sounder and strobe usually comprises a bell or siren fitted in a tamper proof housing with the strobe warning light fitted to the casing. A control module fitted within the casing contains a rechargeable battery which will continue to ring the bell/siren if the wiring is cut or the casing is tampered with. This type of module is used to power a sounder or bell which will typically draw no more than 450mA.

Opening the bell tamper switch or damaging the wiring will cause a Full Alarm to occur. The trigger provided by the control unit is negative applied in alarm condition (SAB).

The control unit uses an separate 16 Ohm loudspeaker (for example a Type 9040) to give Entry, Exit and Alarm tones. There is a volume adjuster within the control unit which allows you to change the volume of the Entry/Exit tones. An extra loudspeaker can also be connected to the control unit.

The Installer can program the control unit to sound the alarm for one of several set times and then fall silent.

Re-Arm
The Installer can program the system to rearm itself after an alarm. With this option selected, the control unit silences the alarm at the end of its pro-grammed time and rearms ready for another activation. If the option is not selected, the internal and external sounders will remain silent until the user enters their access code. The system can be programmed to rearm up to three times.

First to Alarm Indication and Shock Sensor Reset
The control unit provides a **Programmable Output** (O/P) which can be used for **PIR Set Latch** or **Shock Sensor Reset**.

If two or more PIR detectors are fitted to a zone then the control unit cannot identify which unit caused an alarm. Connecting O/P to the Latch input of the detectors on the zone overcomes this problem. When O/P is programmed as PIR Set Latch the control unit activates the output when the exit time expires, resetting the detectors. When an alarm occurs the control unit deactivates the output. This latches the indicator of the unit triggered and inhibits all other units. The first detector to alarm will then have its activity LED glowing, while the others will be dark. This output can also be used for break glass detectors. (Note that the control unit also deactivates the output when the system is unset.)

Stand-alone shock sensors normally latch when they are triggered. To reset the detectors automatically, connect the negative supply from the detectors to O/P and program O/P as Shock Sensor Reset. At the start of the exit time the control unit deactivates the output for six seconds to clear the latched devices. (Refer to the sensor manufacturer's instructions for more details on the reset methods available.)

Communicator Outputs
The control unit provides three output pins which can be used to trigger a Speech or Digital Communicator. The pins are fixed as PA, Alarm and Fire. The pins are 12V logic outputs, -ve applied in alarm (+ve removed). After an alarm the pins will return to their quiescent state when the user resets the system.

Keypad Panic Alarm

The Installer can program the system so that users can start a Panic Alarm by pressing keys 1 and 3 at the same time on any keypad. The Panic Alarm works whether the system is set or unset. When the control unit is supplied from the factory this feature is disabled.

Chime

The internal sounders can give a chime tone when selected detectors are activated while the system is unset. The Installer selects the zones during programming. The user can turn the facility on or off.

Power Supply

To comply with BS4737, the control unit's mains supply should come from an un-switched, fused spur unit fitted with a 1A fuse. All electrical connections should be carried out by a qualified electrician and must comply with the current IEEE Wiring Regulations: 16 Edition, Appendix 5 - Standard Circuit Arrangement. The control unit must be fitted with a rechargeable stand-by battery so that the system can continue to operate during a mains power failure.

User Control

The control unit provides two independent 4-digit user access codes (defaults 1234 and 0000). The user can change either of these codes at any time, but cannot program the system with these codes. Note that the default second user code (0000) is inactive.

The user can set the system in the following modes:

Full Set   All the zones function as programmed during installation.

Part Set   Selected zones are omitted. The Installer must program which zones will be omitted.

Set with Omit   One or more zones temporarily omitted. The user selects the zones to be omitted during setting. Note that the user cannot omit zone 6 if it is programmed as a Panic Alarm, zone 5 if it is programmed as a Fire zone, or any Entry/Exit zone.

Log

The control unit keeps a record of the last 10 alarm and tamper events. The Installer can read the log in programming mode by using command 90 (see "4. Programming"). The system displays events by lighting the appropriate LEDs on the keypads. To see earlier events press << (1), for later events press >> (3).

Engineer Access

The Installer gains access to system programming by keying in 0 followed by ENTER and a 4-digit Engineer Access Code (default 7890). The Installer can change the Engineer Access Code at any time while in programming mode. The Engineer Access Code cannot set or unset the system.

Technical Description

Specification

Operating temperature	= -10º to +55ºC
Humidity	= 96% RH
Dimensions	= 243mm W, 234mm H, 87mm D
Weight	= Approx 3.0 kg (without stand-by battery)

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)

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. potentiomenter.
AUX (for detectors)	= 500mA, 12VDC
Communicator Outputs	= PA , Alarm and Fire, 12V logic outputs, -ve applied in alarm (+ve removed)

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.

Control unit PCB and Case

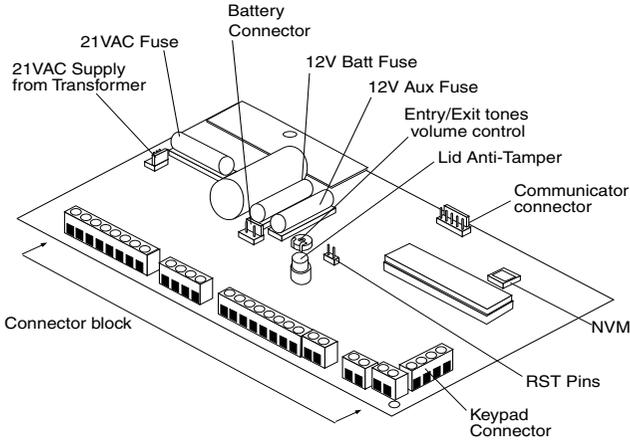Figure 3 shows the layout of the control unit PCB.

Figure 3. Control Unit PCB Layout

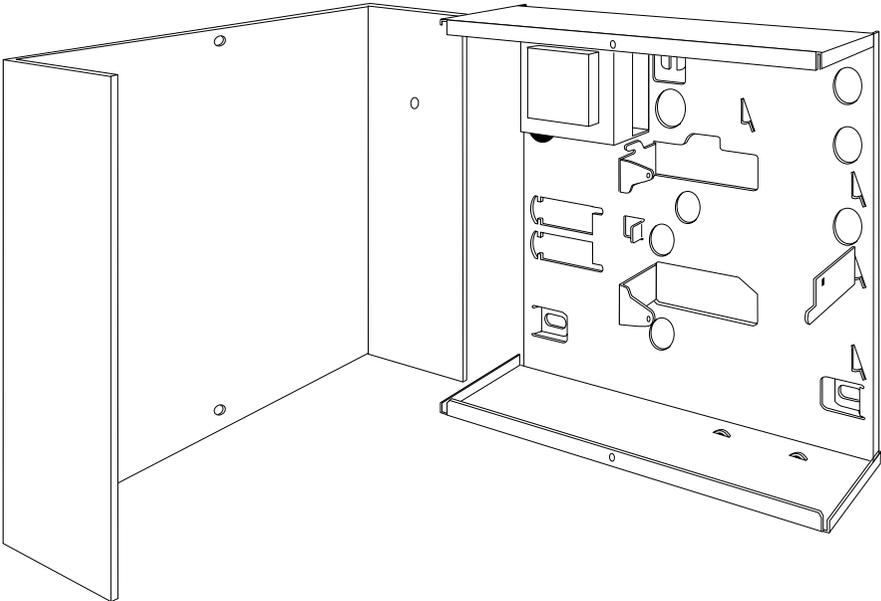Figure 4 shows the control unit case open.

Figure 4. Control Unit Case

2. SYSTEM PLANNING

Installation Precautions

Before installation ensure that all windows and doors are secure and do not need repair. False alarms can occur if doors and windows are insecure. Make sure there will be no pets or movement which will directly affect the performance of any movement detectors.

Where possible fit locks to the ground and upper floor windows. By delaying an intruder, the alarm system can be simpler, more effective and less likely to false alarm than a complex system covering all rooms and windows.

Locating The Control Unit

Install the control unit in a safe, unobtrusive position near a mains supply. Stair cupboards are suitable in most houses. Position the remote keypad so that the user can see the keypad easily, and set and unset the system without difficulty. Make sure the user can reach the final door promptly and hear the exit tone at the required distance. You must fit at least one internal sounder (for example a 16 Ohm loudspeaker such as the Type 9040) to give Entry, Exit and Alarm tones. A volume adjuster within the control unit allows you to change the volume of the Entry/Exit tones from the sounder. If necessary, two 16 Ohm speakers can be connected in parallel.

Locating The External Bell

Fit the unit as high as possible, to reduce the chance of interference by an intruder. Locate the unit in a position where it may easily be seen. Do not locate the bell facing heavy traffic or a railway as this can affect the ability of the bell to be heard at a relatively short distance. The wiring to the unit should enter the bell directly through the wall. Never run surface wiring to an external bell.

Locating The Deterrent Bell (Dummy)

For additional protection a 'Dummy' bell housing can be fitted to the other sides of the building. The housings are identical in appearance to the real unit but do not contain any equipment. These act as good deterrents from any elevation to show the house is protected.

Detectors

There are several types of detector available suitable for a simple domestic installation:

A Passive Infra Red (PIR) is a movement detector which detects an intruder by infra red body heat compared to the normal room level.

A Door contact is a magnetic reed switch used to detect the opening of windows or doors.

A Vibration detector is designed to detect a shock attack on a window or door frame.

A Panic button is a device used to operate the alarm sounders in the event of threat to the user and will operate irrespective of the system setting.

Installation Example

Figure 5 shows a security system fitted to a typical house with two floors.

Ground Floor

(a) Over two thirds of burglars gain entry through the front or back doors. Figure 4 shows magnetic door contacts fitted to the front and back doors to detect when the doors have been forced. In addition, the system will not set if a door contact is open, prompting the user to check and close doors or windows before setting. The front door is connected to the Entry/Exit Zone (EE), the back door to Zone 2.

(b) The downstairs rooms are protected by PIRs (zones 3, 4 and 5). One PIR is fitted in the hallway (zone 1) to start the entry timer and tone when the system is part set.
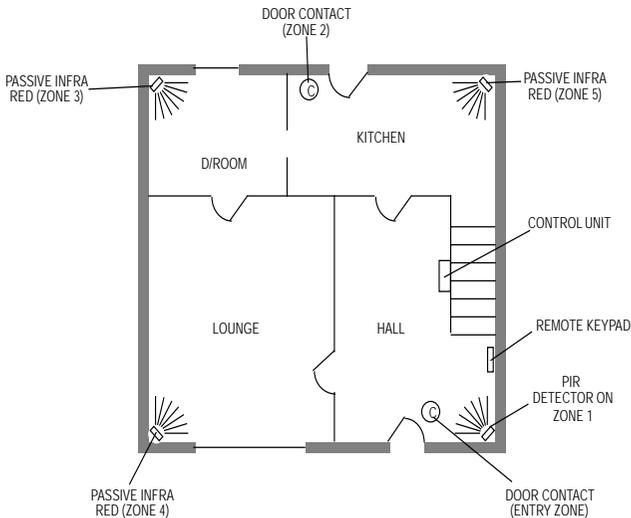
Figure 5. House Ground Floor Plan

First Floor

(a) The first floor in Figure 6 shows a single PIR (zone 6) fitted on the landing. This ensures that anyone entering the house through a bed-room triggers an alarm when moving onto the landing.

(b) The external bell and strobe is fitted high at the front of the house and a 'Dummy' bell is located to the rear of the house.
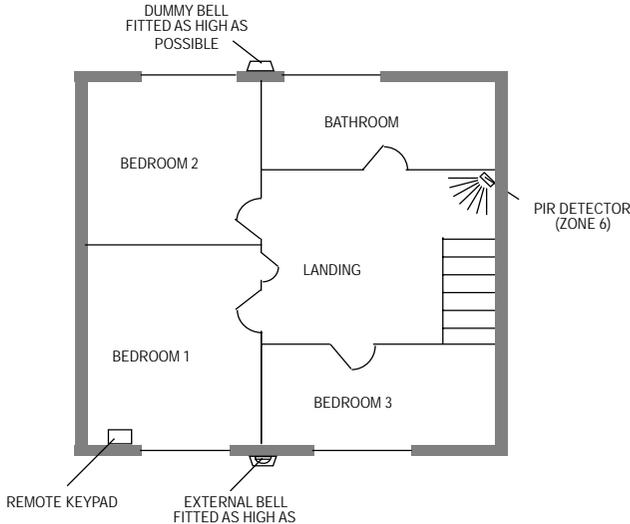

Figure 6. First Floor Plan

Setting Options

The occupants should Full Set the system when leaving the house empty, and Part Set the system when sleeping upstairs. Zone 1 should be pro-grammed to start the entry timer when the system is Part Set. This is useful if a child or guest inadvertently strays downstairs when the system is set.

See "4. Programming - Example" for details of how to program the system for this example.

3. INSTALLATION

Overview

Installing the alarm system comprises the following steps:

1. Run cables from the position of the detectors, keypad(s), internal and external sounders to the control unit position.
2. Fit the control unit case back.
3. Fit remote keypad(s), detectors, internal and external sounders in their chosen locations.
4. Connect the mains cable with power OFF.
5. Connect the keypad(s) and internal sounder.
6. Connect the detectors.
7. Connect the external sounder.
8. Fit the battery.
9. Apply battery power.
10. Close the case and apply mains power.
11. Program the system (see "4. Programming").
12. Hand over to the user.

Always remove mains power before opening the case lid. Do not work inside the control unit with mains power present.

The following instructions assume that you have already run the necessary cabling.

Fitting the System

Fitting the Control Unit Case

1. Remove the control unit case from the packing.
2. Remove the front screws and slide off the case lid.
3. The upper part of the case back provides a central keyway. Mark and drill a hole for the keyway. Temporarily fix the case back to the wall. Now mark the position of two more fixing holes, remove the case back and continue to drill the holes.
4. Refit the case back to the wall using not less than 30mm x No 8 Dome or Pan-head screws.
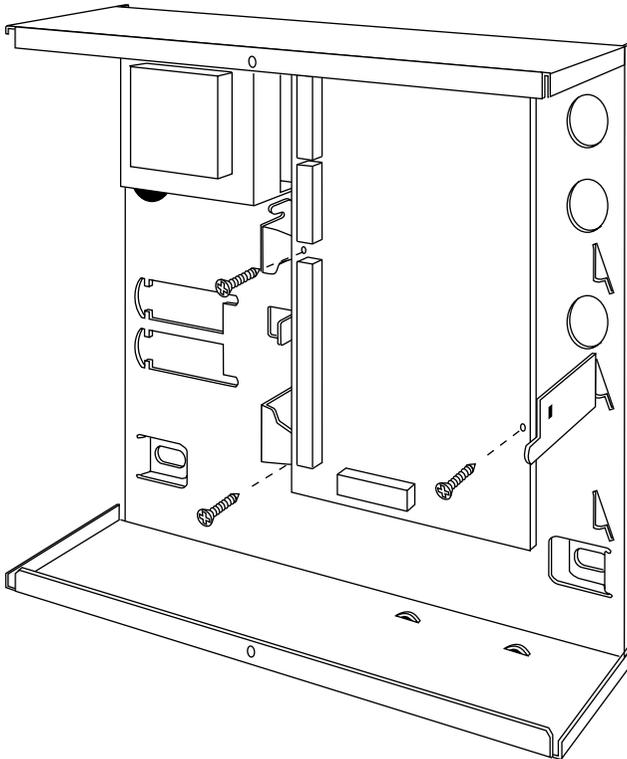
Fitting the Control Unit PCB.

Figure 7. Fitting Control Unit PCB

1.   Fit the removable support pillar into the case back.
2.   Secure the PCB to the support pillars with the screws provided (Figure 7). Make sure that the bottom left corner of the PCB is seated on its support pillar.

Fitting a Remote 9427 Keypad

Figure 8 shows the 9427 keypad.

1.   Unclip the keypad faceplate and remove it from the back of the case.
2.   Hold the keypad back in place and mark, drill and plug the position of one fixing hole.
3.   Mount the keypad back with a single screw through the fixing hole.
4.   Mark, drill and plug the position of two more fixing holes.

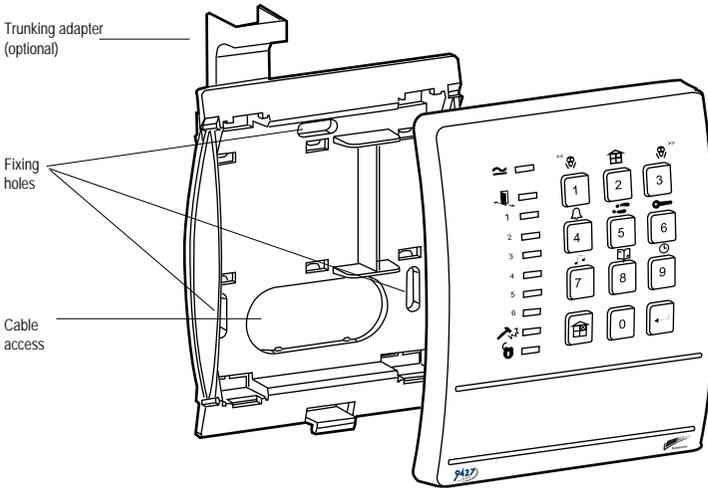5.   Fix the keypad back in place with two more screws.

Figure 8. 9427 Backplate

Fitting Door Contacts

A door contact comprises a magnetic reed switch housed in a plastic casing and a separate magnet. Two types of switches are suitable for a domestic installation (see Figures 9 and 10):

The 'Surface' contact is fitted on the facing of the door frame with the magnet fitted in-line on the door.

The 'Flush' contact is inserted in a pre-drilled hole in the frame. The magnet is similarly inserted in the door and aligned with the contact.
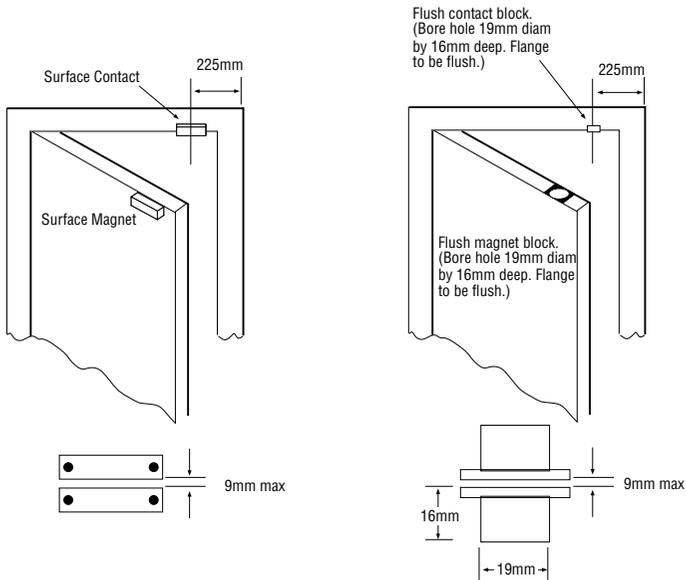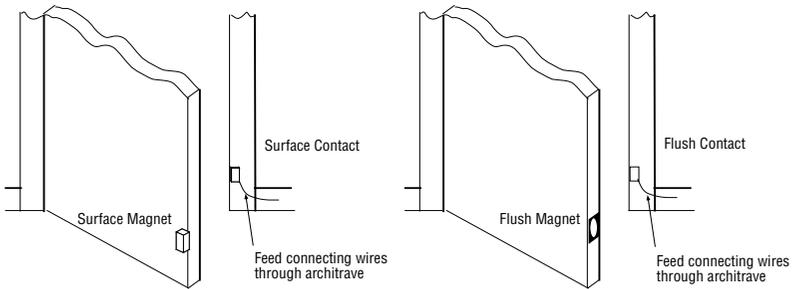
Figure 9. Top Fitting

Figure 10. Bottom Fitting

Fitting PIR Detectors

When fitting typical passive infrared detectors, consult installation instructions and technical data supplied with the unit.

Fitting The External Sounder

1. Run the 6 core cable to the agreed position of the bell. Run the cable directly through the wall into the back of the bell casing. Do not run surface wiring to the bell as this will compromise the security of the system.

2. Separate the back plate from the cover. Mount the required module and the bell to the back plate. Fix the strobe to the cover using suitable fixings. Fix back plate to the wall using not less than 40mm x 8 screws. If available fix using 10mm Rawl Bolts.

Wiring the Control Unit

Cable Entries

The control unit case back provides several cable entries. The back is designed to stand away from the wall to leave space for cables.

Mains Connection

The control unit must be permanently connected to an unswitched spur outlet fitted with a 1 Amp fuse. Connect the mains supply to the control unit using the 3-way terminal block located in the case back (see Figure 11). Secure the mains cable to the case anchor point using the cable tie provided (see Figure 11). All electrical connections should be carried out by a qualified electrician and must comply with the current IEEE Wiring Regulations: 16 Edition, Appendix 5 - Standard Circuit Arrangement.
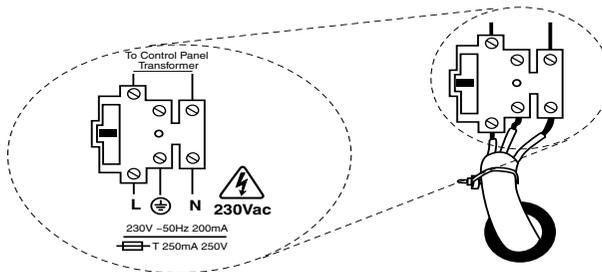

Figure 11. Mains Connection

Connect the 21VAC lead from the mains transformer to the main pcb. See Figure 3 for the location of the 21VAC connector.

Caution: Do not apply mains power at this point. Do not work inside the control unit case when mains power is present.

Connecting a 9427 Remote Keypad

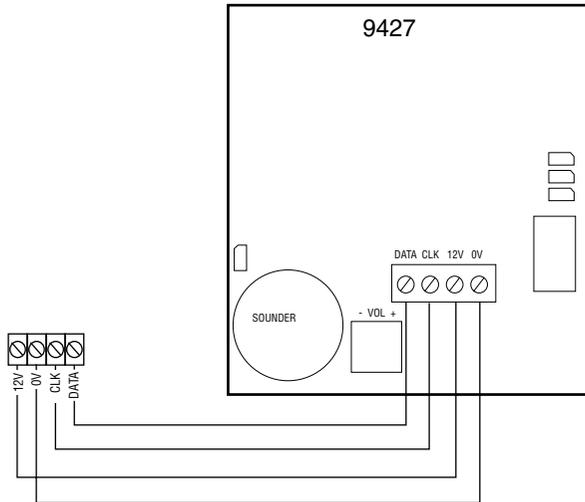Figure 12 shows the connections for a 9427 Keypad.

Figure 12. 9427 Keypad Connections

Keypad Addressing

The 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 13.
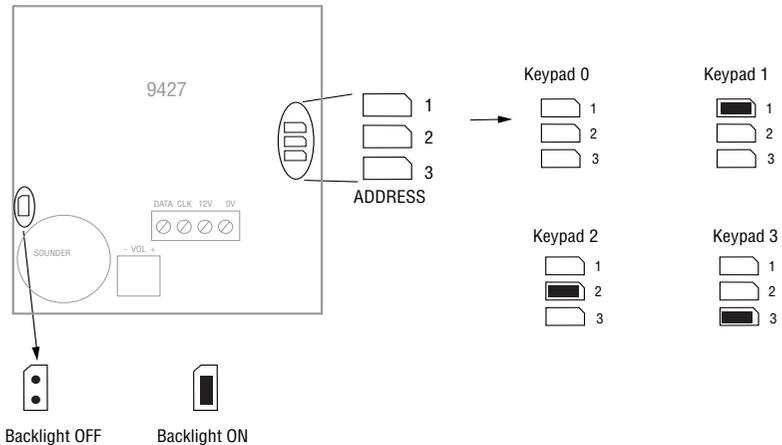

Figure 13. Keypad Addressing.

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 13.

Detector Circuit Connections

The left hand edge of the main PCB provides a connector for the eight zones (including the Entry/Exit Zone), see Figure 14. Each zone (circuit) should have an Anti-Tamper circuit associated with it. Link all the zone anti-tamper circuits in series and then connect them to the A/T terminals on the main PCB.
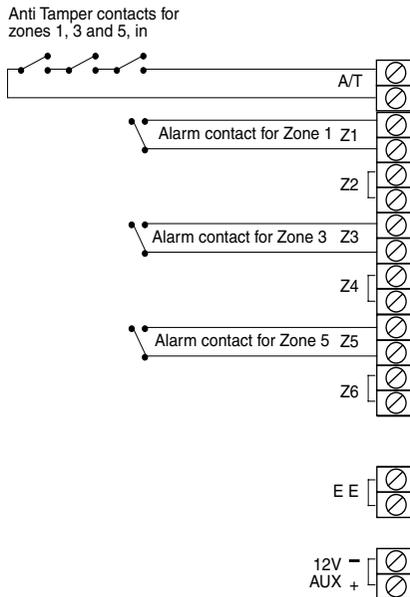

Figure 14. Detector Circuit Connections

Connecting Door Contacts

Figure 15 shows the connections for one door contact per zone loop. Use four core cable for the tamper and circuit connections. Note that the reed switch inside the door contact is connected to the plated screws (shown in black in Figures 15 and 16).

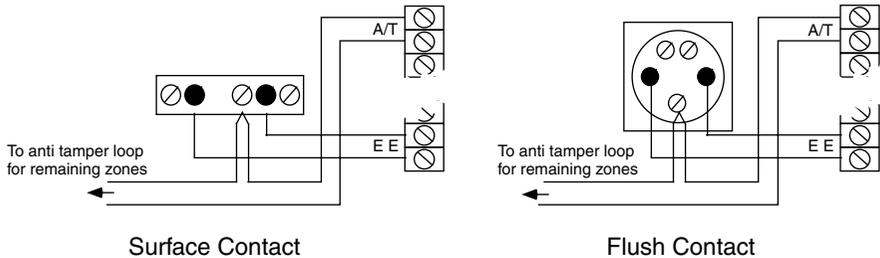Surface Contact   Flush Contact

Figure 15. Connecting One Door Contact per Zone

Figure 16 shows how to connect more than one door contact per zone.
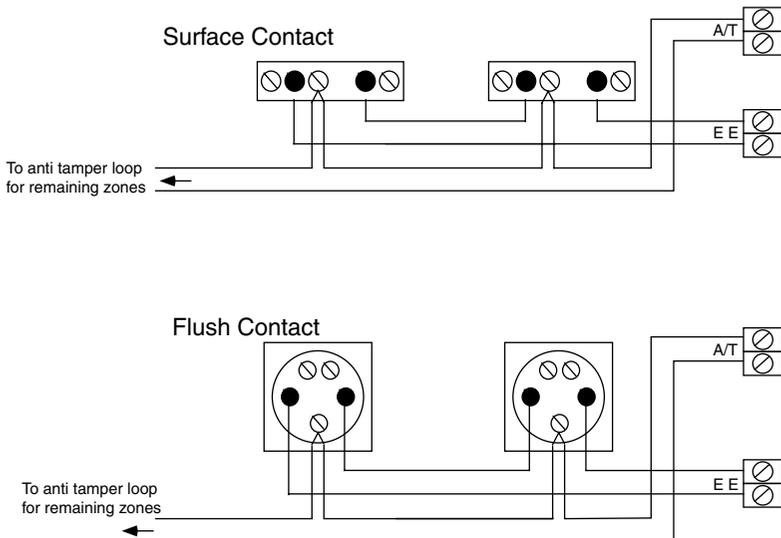
Figure 16. Connecting Two Door Contacts per Zone

Connecting PIRs

Figure 17 shows the connections for one PIR per zone loop. Use 6 core for the power, tamper, and circuit connections.

Figure 17. Connecting One PIR per Zone.

Figure 18 shows the connections for wiring more than one detector to a zone. Use 8 core alarm cable.

Note that the programmable output from the control unit should be wired to the latch input of the detectors.

The power for the detectors is available from the two terminals on the PCB marked "+ - 12V AUX" (max current 300mA).
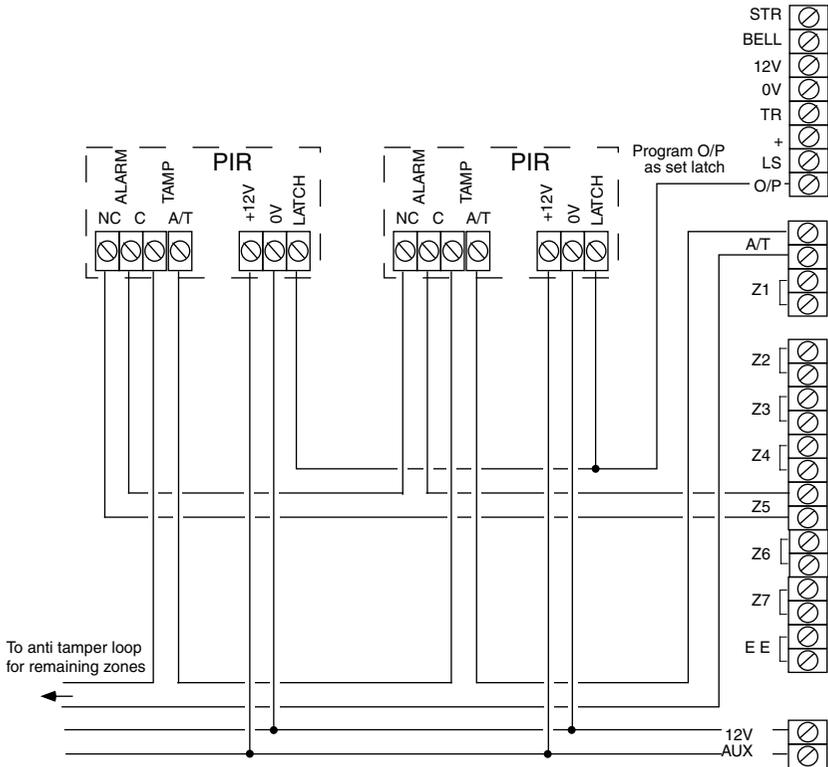
Figure 18. Connecting Several PIRs per Zone

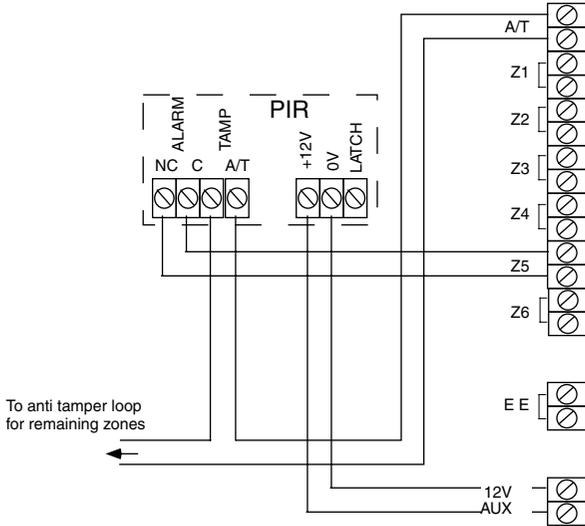## Connecting Sounders and Strobe

Figure 19 on the next page shows the connections for the external sounder, strobe and internal sounder.

Connections for the internal sounder(s) are marked LS. **Two** 16ohm 12W speakers (Part No. 9040) can be connected to the system in series.

Wiring Example

Figure 19 shows an example system wired for two detectors. Note that mains and battery connections are not shown.
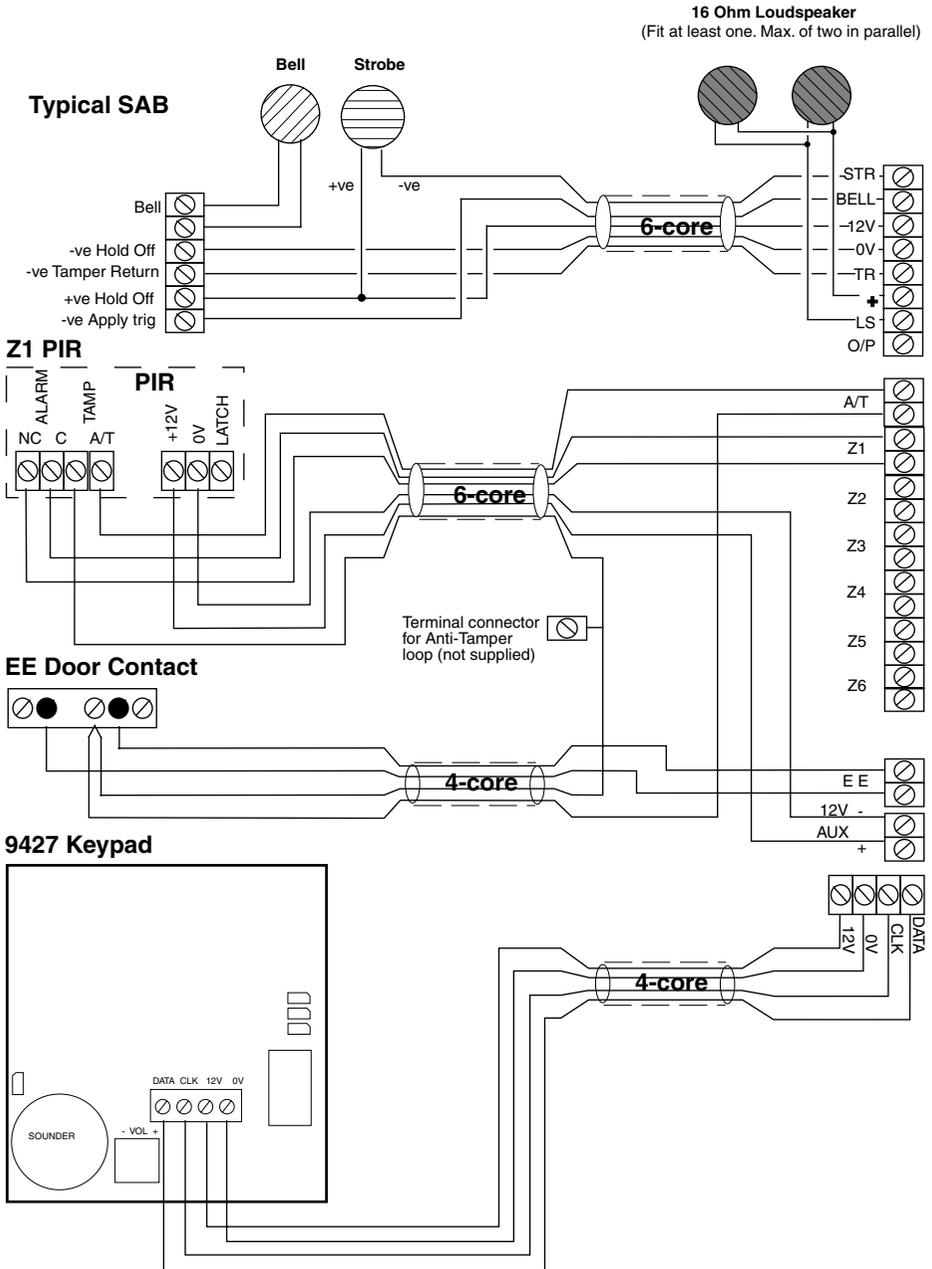
Figure 19. Wiring Example

Fitting a Communicator

The control unit can be fitted with a communicator or speech dialler (for example the Scantronic 8400, 8440, or 660). To fit a communicator, follow the instructions below.

Caution: Follow the instructions in the order shown, or you may damage the control unit and/or communicator.

1.   Disconnect mains and battery power from the control unit and remove the case lid, if the system has already been installed.

2.   Detach the main PCB from the support pillars in the control unit case, and lift the PCB carefully to the left.

3.   Fit the communicator between the PCB support pillars, making sure that the main PCB can fit back into position (see Figure 20).
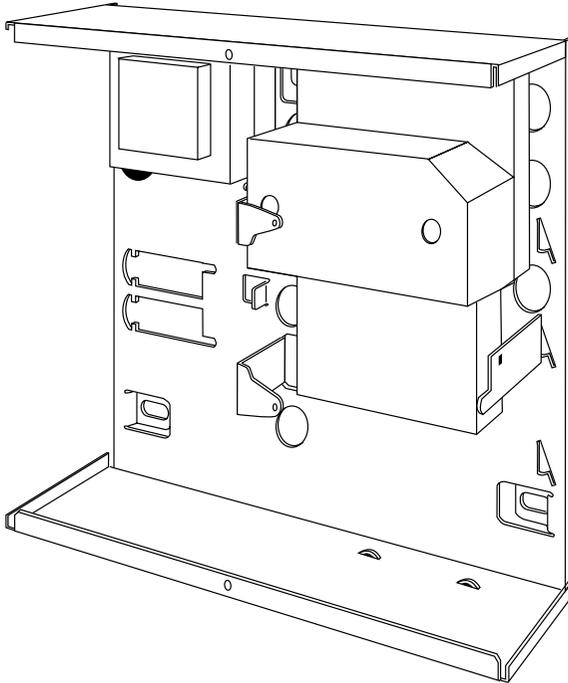
Figure 20. Fitting a Communicator

4.   Make any necessary connections from the communicator to the Comms Wiring Harness. Figure 21 shows the outputs available on the free ends of the Comms Wiring Harness.

1. PA (Brown) -ve applied (+ve removed) in alarm
2. Alarm (Orange) -ve applied (+ve removed) in alarm
3. Fire (Yellow) -ve applied (+ve removed) in alarm
4. 12V (Red)
5. 0V (Black)

Figure 21. Communications Wiring Harness.

5.   Plug the Comms Wiring Harness onto the communications connector on the main PCB (see Figure 3).

6.   Re-fit the PCB to the support pillars.

If the system has already been installed:

7.   Re-connect the battery.

8.   Fit the case lid.

9.   Apply mains power.

10.   Test communicator operation.

Fitting a Battery

Fit a rechargeable battery into the back of the case. The case provides space for 12V 7AH and 2.1AH battery sizes. Make sure the battery terminals are oriented in the position shown in Figure 20.

Note: When fitting a 2.1AH battery, use insulating covers on the terminals.

7AH

2.1AH
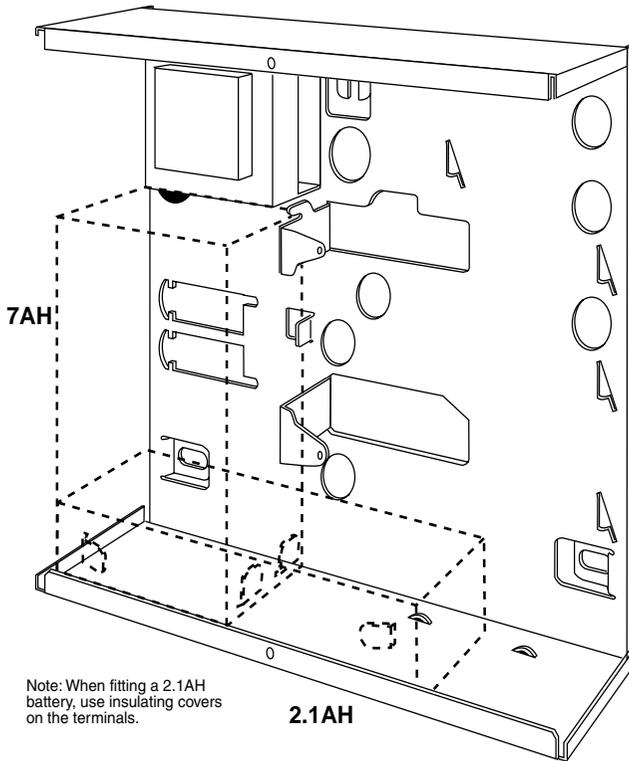
Figure 20. Fitting a Battery

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 stays dark 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. Fit the case lid.

4. Apply mains power.
    The Power LED glows steadily.

5. Key-in 0 then ↵ followed by the factory default engineer access code: 7890.

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

You are now in programming mode.

Proceed to program the system as described in "4. Programming".

4. PROGRAMMING

When supplied from the factory the control unit is already programmed with a set of default options. These are listed below.

Factory Default Programming

Feature	default	To change use command:
Zones omitted in part set	none	10
Chime	none	11
Zones Not Used	none	15
Engineer code	7890	20
User code 1	1234	21
User code 2	0000 (inactive until changed)	22
Silent Part Set	No	35
Zone 2	Normal Alarm	36
Auto Rearm	Never	40
Bell time	20 minutes	42
Entry time	20 seconds	43
Exit time	10 seconds	44
Zone 6	Normal Alarm	50
Prog O/P	PIR set latch	51
Zone 1 in Part Set	Normal Alarm	52
Part set alarm response	Full Alarm	53
Zone 3	Normal Alarm	54
Zone 5	Normal Alarm	55
Dual Ply	Enabled	64
Keypad 1 & 3 PA	Disabled	68

Changing Default Programming

To change the factory defaults, the system must be in programming mode. Then:

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

    On commands 35 to 68 a LED will glow to show you the current option used in the command. If the LED is 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:	followed by:	Notes
Zones omitted in Part Set*	10 ↵	zone n..n ↵	LEDs ON for zones omitted (see note 1)
Chime	11 ↵	zone n..n ↵	LEDs ON for chime (EE zone = zone 7)
Zones Not Used	15 ↵	zone n..n ↵	LEDs OFF for zone not used (see note 2)
Engineer Code	20 ↵	new code ↵	4 digits
User Code 1	21 ↵	new code ↵	4 digits (see note 3)
User Code 2	22 ↵	new code ↵	4 digits (see notes 3 & 4)
Silent Part set	35 ↵	0 ↵	Audible
		1 ↵	Silent
Zone 2 Entry Route	36 ↵	0 ↵	Normal Alarm
		1 ↵	Entry Route
Auto Re-Arm	40 ↵	1 ↵	Never rearm
		2 ↵	Rearm once
		3 ↵	Rearm twice
		4 ↵	Rearm three times
Bell Time	42 ↵	1 ↵	90 seconds
		2 ↵	3 minutes
		3 ↵	10 minutes
		4 ↵	20 minutes
Entry time	43 ↵	1 ↵	10 seconds
		2 ↵	20 seconds
		3 ↵	30 seconds
		4 ↵	45 seconds
		5 ↵	1 minute
Exit time	44 ↵	1 ↵	10 seconds
		2 ↵	20 seconds
		3 ↵	30 seconds
		4 ↵	45 seconds
		5 ↵	1 minute

Zone 6	**50 ↵**	0 ↵		Normal Alarm
		1 ↵		PA
Prog O/P	**51 ↵**	0 ↵		PIR set latch
		1 ↵		Shock reset
Zone 1 in Part Set	**52 ↵**	0 ↵		Normal Alarm
		1 ↵		Entry/Exit
Part Set Alarm Response	**53 ↵**	0 ↵		Full Alarm
		1 ↵		Internal sounder
Zone 3	**54 ↵**	0 ↵		Normal Alarm
		1 ↵		Entry/Exit
Zone 5	**55 ↵**	0 ↵		Normal Alarm
		1 ↵		Fire
30-second Dual Ply	**64 ↵**	0 ↵		Enabled
		1 ↵		Disabled
Keypad 1 & 3 PA	**68 ↵**	0 ↵		Disabled
		1 ↵		Enabled
View Log	**90 ↵**			Press << to see earlier events, >> for later events.
Walk Test	**97 ↵**		Trigger detectors.	Press OMIT to exit test.
Load Defaults	**98 ↵**			Does not change access codes
Leave Program	**99 ↵**			(See note 5.)

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. You cannot omit Entry/Exit zone(s) in Full or Part set.

2. Program any zones not connected as "Not used".

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

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

5. If the internal sounder activates when you use this command then check the lid tamper, bell tamper, and the global zone anti tamper.

To Re-enter Programming Mode

You can re-enter programming mode at any time when the system is not set or in alarm:

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

All LEDs, except for Power, flash.

You are now in programming mode.

Restoring Factory Defaults

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

If the end user forgets the user access code then:

1. Power down the control control unit, mains and battery.
2. Locate the pair of Molex pins marked 'RST' near the microcontroller (see Figure 3 on page 8).
3. Place a small screwdriver blade to short between the 'RST' pins.
4. With the blade still across the pins, apply battery power then mains.

   The system loads the factory default user and engineer's access codes (see page 27).

5 Remove the screwdriver blade.
6. Key in 1234.
7 Key in 0 then ↵ followed by 7890.
6 You must now reprogram the access codes.

If you want to return the control unit to the factory default settings without changing the access codes:

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 but does not changes the access codes (see "Factory Default Programming").

Engineer Walk Test

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 this.

Programming Example

To program the installation example given in Section 2 some changes need to be made to the factory default settings. For the example we will assume that the:

- Entry time must be 30 seconds.
- Exit time must be 45 seconds.
- Entry Exit zone and back door should chime.
- System should rearm three times.
- Part setting exit mode is silent.
- Part set alarm response is internal alarm.
- Keypad PA key 1 and 3 is enabled.

	Key in:	Result
1.	0 + ↵ + 7890	The system enters programming mode and all LEDs (except Power) flash in unison.
2.	10 + ↵ + 6 + ↵	Zone 6 is by passed during Part Set.
3.	11 + ↵ + 72 + ↵	Entry exit zone and zone 2 are chime zones.
4.	35 + ↵ + 1 + ↵	Silent part set
5.	40 + ↵ + 4 + ↵	Rearm three times.
6.	43 + ↵ + 3 + ↵	Entry time 30 seconds.
7.	44 + ↵ + 4 + ↵	Exit time 45 seconds.
8.	52 + ↵ + 1 + ↵	Zone 1 is Entry/Exit Zone in Part Set.
9.	53 + ↵ + 1 + ↵	Part set alarm response to Internal.
10.	68 + ↵ + 1 + ↵	Keypad 1 & 3 PA enabled.
8.	99 + ↵	Leave programming mode.

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Notes: