INSTALLATION AND PROGRAMMING GUIDE

9851

HARDWIRED CONTROL PANEL

COOPER Menvier

Scantronic

Contents

Contents

Contents

1. INTRODUCTION

The 9851 is designed to be fully programmable to suit individual site requirements and user needs.

The system comprises a control unit in a shielded case, up to four separate keypads and one keyswitch interface (see Figure 1 on the next page). You should always fit at least one keypad.

The control unit provides:

° A four-wire bus connection for keypads, keyswitches and hard-wired or wireless zone expanders.

° Connections for either Closed Circuit, Fully Supervised Loops, or End of Line resistor zones.

° Connections for four fully programmable outputs.

° Internal sounder loudspeaker output with electronically generated Chime, Alarm, Fire and Entry/Exit tones. (The volume of the Entry/Exit and Chime tones can be adjusted).

° Built in communicator for reporting to an Alarm Receiving Centre (ARC).

° Pins for fitting any plug-on communication device that complies with the Scantronic plug-on footprint.

° Pins for fitting a plug-by communication device.

° Local or remote downloading.

The control unit provides connectors for eight Closed Circuit (CC) zones or 16 Fully Supervised Loop (FSL) zones on its own printed circuit board. Separate expander units allow connection of further zones up to a total of 40. The **9954** expander provides eight wired zones. Alternatively, a **9955** expander allows connection of eight wire-free zones.

The control unit supports the **9930** sixteen character Liquid Crystal Display (LCD) keypad. In addition the control unit also supports the **9928** keyswitch interface.

As an Installer you can program the system either from the keypads, or using PC based Windows <Downloader>. When programming from the keypads the programming interface is arranged as a set of three-digit numbered commands similar to those used by the 9800 family of products.

The system can provide for up to 16 separate users. User facilities include:

° Four different security levels which can be programmed by the Installer as either full set and three part sets, or four independant partitions.

° User programmable Duress code.

- ° Keyswitch setting/unsetting.
- ° Dual key PA alarm from the keypads.
- ° Remote telecommand set/unset when using 9955 RF Expander.

To reduce the possibility of false alarms the system also provides Alarm Abort and Alarm Confirmation communications output.

Before attempting to program the system, make sure you are completely familiar with the functions of the system and its programmable options.
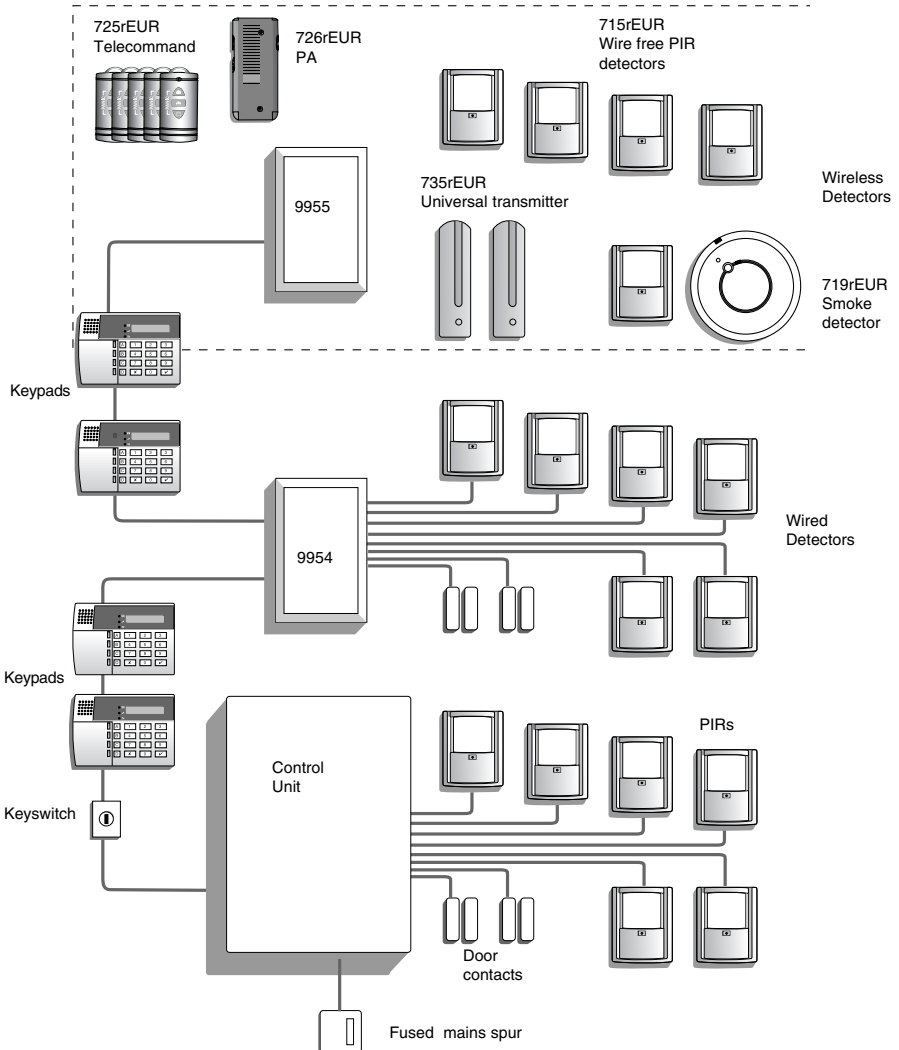
Figure 1. 9851 System Layout

Operator Controls and Displays - 9930
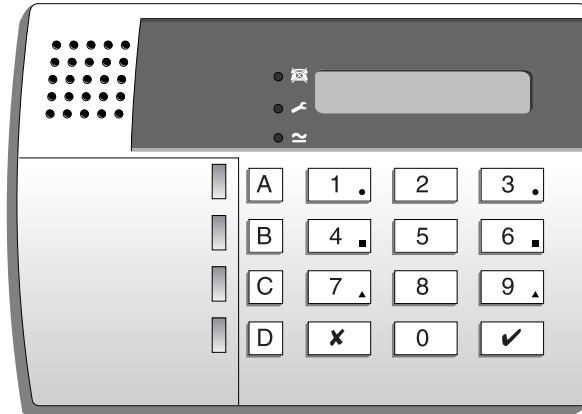
Figure 2. 9930 Remote Keypad.

The 9930 keypad has a single line 16 character LCD display that shows "first to alarm" information, level status, and programming commands. In addition there are three LEDs with the following functions:

≃   Glows steadily when mains power is present. Flashes when the system is working from battery backup.

⬛   Glows steadily if a telephone line fault is present.

🔧   Glows steadily if:
         a) A fault or tamper circuit is active while the system is unset.
         b) The system needs an engineer or remote reset.
         c) A telephone line fault is present.

The 9930 keypad provides the following keys:

9   Used to start a test of the detectors.
8   Used to start a test of the sounders and strobe.
7   Used to enable or disable the Chime facility.
6   Used to set the internal clock calendar, which provides a time stamp on printed log entries.
5   Used to display the log (500 events).
4   Used to change the user access codes.
0   Used to call an ARC to request a download.
✔   Used to enter programming and setting/unsetting commands.
✘   Used to set the system with individual zones (including 24 hour zones) temporarily omitted.
ABCD   Level setting keys.

System Features

Detectors

The control unit and expanders provide connections for up to 40 separate detector **zones.** There are three different methods of connecting wired detectors:

> Four-wire closed circuit loop (CCL). You can connect a maximum of eight CCL zones to the control unit and up to 32 extra zones using expanders.

> Two-wire Fully Supervised Loop (FSL). You may connect up to 16 FSL zones to the control unit and and extra 24 zones using expanders.

> Two-wire End of Line (EOL) resistor. You may connect a maximum of eight EOL zones to the control unit and a further 32 zones using expanders.

See "4. Programming - Programming Commands" for the factory default settings and instructions on how to change the zone types and attributes.

9955 Radio Expander

The 9955 Radio Expander allows you to connect radio detectors to the control unit. Each 9955 can handle eight radio detectors and telecommands or PA transmitters.

The 9955 unit can work with the following devices on 868.6625MHz:

a)   **719r.** A photoelectric smoke chamber type detector.

b)   **715r.** A Passive Infra Red (PIR) movement detector with 15m standard range . This detector has a three minute lockout time after detection, in order to lengthen battery life.

c)   **725r.** A Remote Setting Device (also known as a "telecommand") that can be used to full set, part set or unset the system. The 725r can also be used as a Panic Alarm.

d)   **726r.** A small radio transmitter that can be used to start a PA alarm.

e)   **735r.** A universal transmitter that can be used as a door contact or for connecting hardwired inputs.

f)   **747r.** A Go/No Go test meter that provides a simple method for survey- ing potential radio sites.

g)   **746r.** A test transmitter used with the 747r for surveying potential user sites.

Each radio detector and remote setting device contains a digital identity code that the RFX unit 'learns' during installation. The code is one of over 16 million possibilities. This ensures that the RFX unit will not respond to any

other detectors or remote setting switches apart from the ones it has learned. See the separate "RFX Installation and Programming" manual for more details.

Configurations

Since the control unit can use a variety of wiring types for detectors, and you can also attach either hard-wired or wire-free expanders, the table below shows the configurations possible:

Wiring Type	Control Unit Zones	Expansion Zones
CCL	8	32 wired OR 32 radio
FSL	8	32 wired OR 32 radio
FSL	16	24 wired OR 24 radio
EOL	8	32 wired OR 32 radio

Partioned or Single System

During installation the engineer can organise security Levels A to D as either a partitioned system or as a single system.

In a partitioned system the users can set or unset each Level independantly of, or at the same time as, any of the others. The Installer can allocate each Level its own set of zones and keypads, and an independant sounder output. User 01 can allocate any user to any of the Levels.

In a single system the users can set only one Level at a time. Level A sets the whole system. Levels B, C and D set parts of the system. The Installer allocates zones to Levels, but all keypads operate the entire system, and there is only one sounder output for the whole system. All users belong to the whole system.

User Control

The control unit provides 16 independent user access codes and a separate Duress code. The user can change these codes at any time, but cannot program the system with these codes. You can select either four-digit or six-digit access codes during installation.

1. Introduction

2. Technical Description

Specification

Environmental	Grade 2
Operating temperature	-10° to +55°C
Humidity	96% RH
Dimensions	310mm W, 385mm H, 95mm D
Weight	4.4 kg (without stand-by battery)
Internal Clock	±10 minutes over one year (depending on the accuracy of the mains supply frequency).
Radio detector differs	16,777,214 (2^{24} -2)

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

Power Supply

All currents accurate to ±5%.

Mains power supply	230VAC, 200mA max, +10%/-15%, 50Hz ±5%
System power supply	13.8VDC, 1.3A total

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

With the system quiescent, this supply is used as follows:

Control unit power	130mA nominal quiescent, 220mA active
9930 Remote Keypad	20mA quiescent, 35mA with keypad backlight on
9955 Expander	55mA
9954 Expander	20mA typical 30mA max.

The remaining current is available for recharging the battery, driving the internal loudspeaker, supplying devices through the 9954 expander, and supplying attached devices through the 12V Aux terminals on the main connector.

Standby Battery	12 Volt, 7AH or 17AH rechargeable lead-acid, Gel Type battery (not supplied). (For 17AH battery kit order part number 8136EUR-02.) Recommended manufacturers: Yuassa, Yucel or Fiamm. Low Battery voltage cutoff = 10V. Max recharge time for 17AH battery = 50 hrs

Outputs

O/Ps1 and 2 are relay outputs and O/Ps 3 and 4 are open collector transistor outputs.

O/P 1& 2	Voltage free, single pole relay contacts rated 24VDC @ 3A. Max current for external sounder 500mA.
O/P 3 & 4	500mA, 12VDC. negative applied
ST	Siren Test 14.4VDC (For use in France only)

LS	Can support two parallel connected externally mounted 16 Ohm loudspeakers for internal sounder or EE tones.
AUX	500mA, 12VDC min. 13.8VDC max, ripple ±2% max.
Coms OP1-8	12V logic outputs, -ve applied in alarm (+ve removed), 50mA max.

Inputs

TR	= Tamper return for bell.
Tellback/RedCare reset*	= +12V applied to operate reset.
Line Fault input*	= +12V applied to indicate line failure.

> ** These outputs and inputs appear as pins on the connector for the plug by communicator. See "3. Installation - Fitting a Plug by Communicator".*

Fuses

The control unit employs fast acting polyswitches for overcurrent protection on the battery and 12V Aux outputs.

Compatible Equipment

715rEUR-00	Radio PIR.
719rEUR-00	Radio Smoke Detector.
725rEUR-00	Radio Remote Setting Device.
726rEUR-00	Radio PA.
735rEUR-00	Universal Transmitter.
746rEUR-00	868MHz Test transmitter.
747rEUR-00	868MHz Go/No Go test receiver.
9928EUR-00	Keyswitch interface.
9930EUR-00	LCD Keypad.
9954EUR-50	Hardwired eight zone expander.
9955EUR-50	868MHz "Class VI" radio expander.
958EUR-00	Mk3 Downloader.

Control Unit PCB

Figure 3 shows the layout of the control unit PCB.
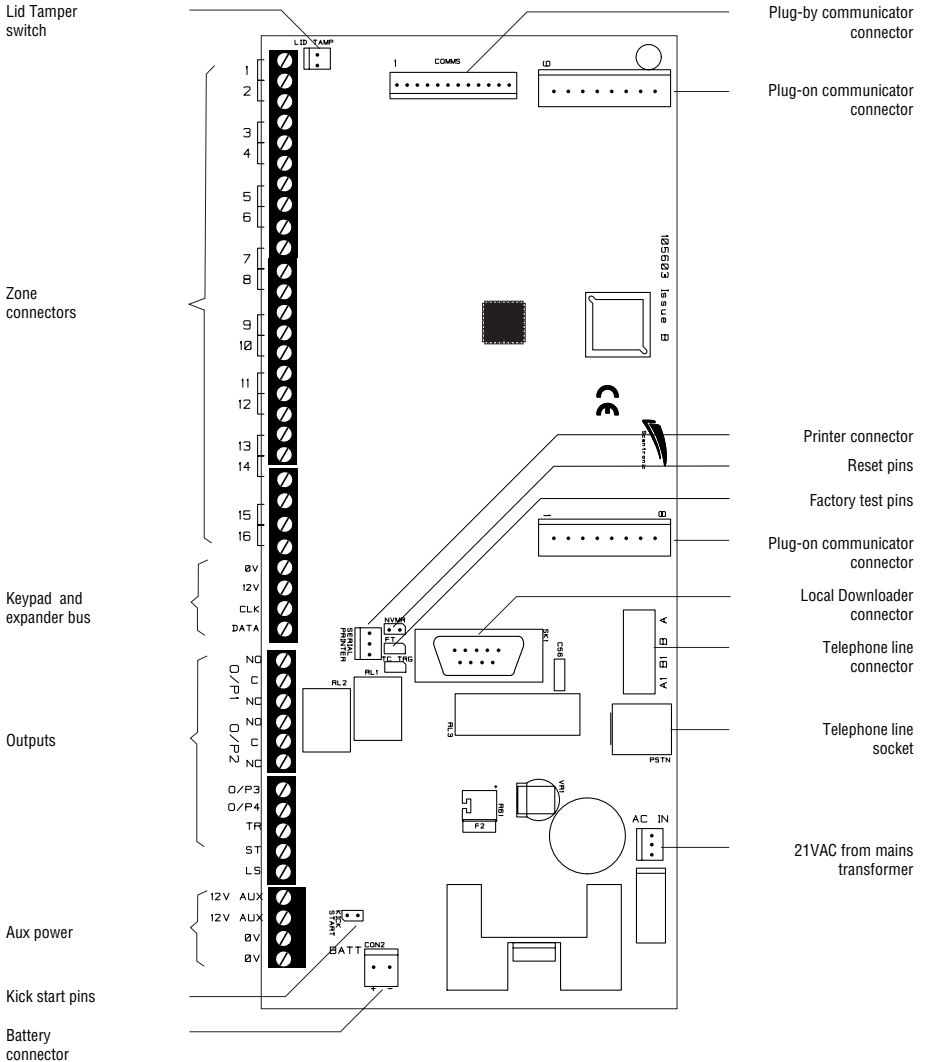
Figure 3. Control Unit PCB Layout

9954 Expander

The 9954 Expander provides connectors for either eight four-wire CC loop zones, FSL or EOL zones. Figure 4 shows the layout of the PCB.
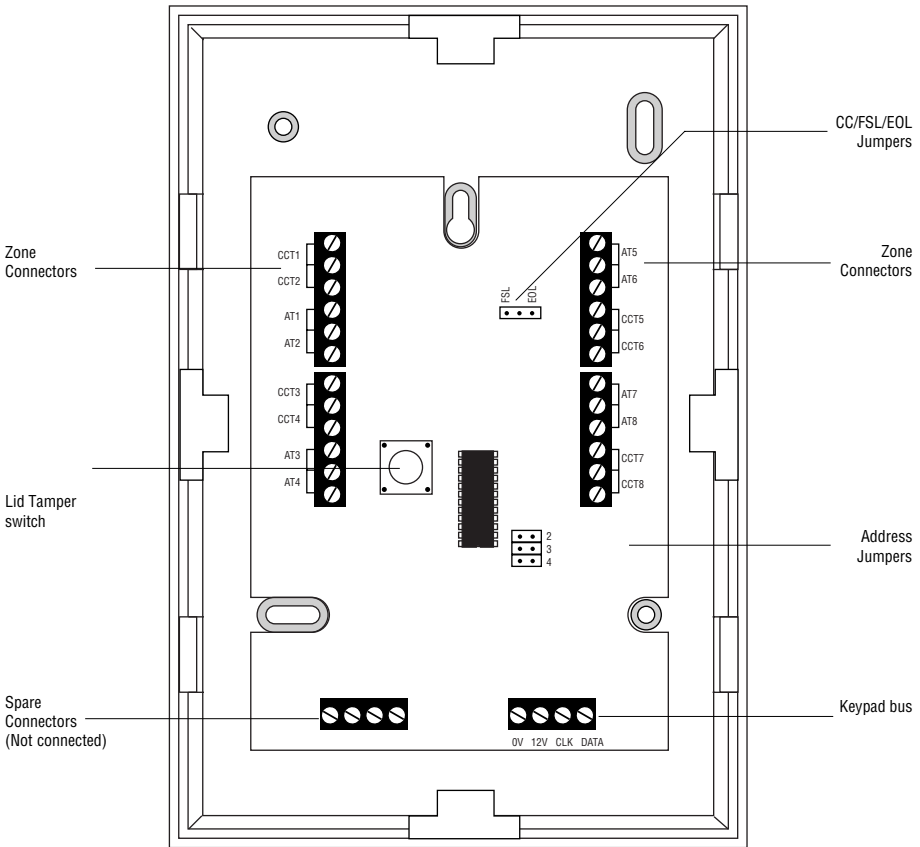
Figure 4. 9954HWX Expander

See the wiring diagram supplied with the 9954 Expander for more details.

3. INSTALLATION

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

Overview

A typical installation comprises the following main steps:

1. Survey the site and decide on positions for wired detectors, 9954 wired expanders, control unit, keypads, external and internal sounders. As part of the survey ask the user what facilities they need.
2. If you are going to use wireless detectors, carry out a radio site survey and decide on positions for the wireless detectors and the 9955 radio expander(s). For more information see "9955 Installation Guide".
3. Ensure that there is a suitable mains supply present at the site of the control unit.
4. If you are going to use a communicator arrange for a PTT (Public Telephone and Telegraph) connection point near to the control unit.
5. Install the wired detectors and run cables to the site of the control unit or 9954 wired expanders. Connect each detector to its cable.
6. Learn the wireless detectors to the 9955 expanders and install them at their selected sites.
7. Run cables from the sites of the keypads, expanders, external and internal sounders to the site of the control unit.
8. Install keypads and expanders and connect them to their cabling. Ensure that each one has the correct address setting.
9. Install internal and external sounders and connect them to their cabling.
10. Install the control unit and connect it to the mains supply cabling. Do not apply power at this point.
11. At the control unit, complete all connections to keypads, expanders, and sounders.
12. Apply power and program the control unit.
13. Test that the alarm system functions as required.
14. If required, install a communicator, connect it to the PTT network, and check that it functions correctly.
15. Hand the system over to the user and instruct them in its use.

Cabling Keypads and Expanders

Cooper Security recommend that you use 8-core 7/0.2 or 16/0.2 alarm cable for wiring keypads and expanders.

You can connect the keypads and expanders in either a star or bus configuration (see Figure 5). If you are intending to use long cable runs then Cooper Security recommend that you use star wiring with no more than 200m of cable per branch.
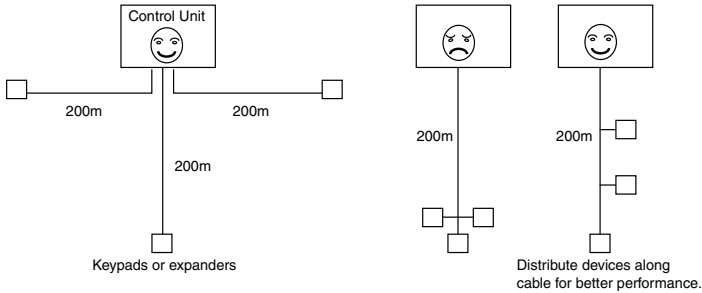
Figure 5. Star and Bus Wiring for Keypads and Expanders

The maximum length of any one run from control unit to the most remote keypad or expander depends on the number of items connected to the cable. You can double the maximum length by using two cores each for the 0V and 12V terminals or by using 16/0.2 cable. The table below shows the maximum recommended cable lengths in metres for 7/0.2 cable, assuming that you connect all items at the end of a single cable run. (An item is either a keypad or an expander.) In real life you may be able to improve on these figures by spreading items along the cable length (figure 5).

	7/0.2 8-core cable	
No items	1 core	2 cores on 0V and 12V.
One	200	—
Two	100	200
Three	65	130
Four	50	100
Five	40	80
Six	33	66
Seven	28	56
Eight	25	50

It is possible to extend the keypad cable run by using additional power supplies, but only up to a recommended maximum of 200m

When carrying out the cabling there are two important points to remember:

1. Do not connect anything other than keypads and expanders to the keypad bus. The keypad bus power supply is limited to a maximum of 400mA and can supply no more than a maximum of four keypads and four expanders.

2. Make sure that the voltage between 0V and 12V of the keypad bus at the furthest point from the control unit is at least 12.0VDC when all the keypad backlights are on.

Note: The following instructions assume that you have already run all 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 a 9930 Keypad

The backplate of the 9930 keypad contains an adjustable cam that you can use to make sure the tamper switch will operate correctly when the keypad is mounted on an uneven surface. Figure 6 shows the backplate and the position of mounting holes.

Adjustable Cam
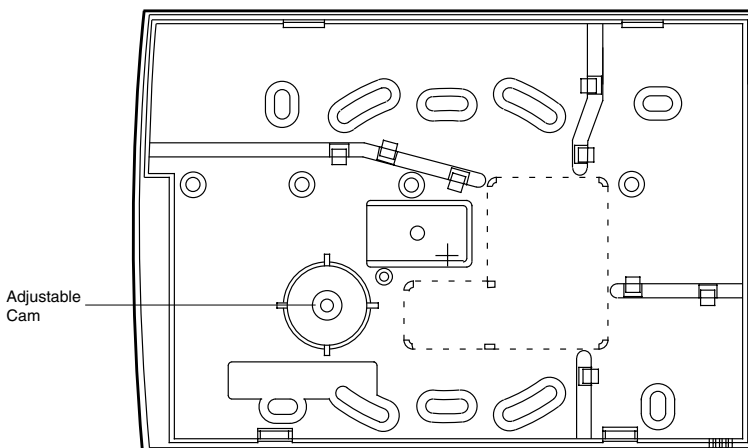
Figure 6. Backplate of the 9930 Keypad

Cooper Security recommend that you mount the keypad using No 8 or 6 screws (M4/M3.5) as follows:

1. Select which cable entry you are going to use and break out the appropriate plastic sections.

2. Hold the backplate in place against the wall and mark the position of the centre hole in the adjustable cam (see Figure 6).

3. Drill and plug the hole, and screw the backplate to the wall through the adjustable cam. Do **not** tighten the screw completely home.

4. Make sure the backplate is level and mark, drill and plug at least two other fixing holes. Screw the backplate to the wall through the fixing holes.

5. Cut the plastic webs connecting the cam to the remainder of the base plate.

Note: If you do not cut the webs then the tamper switch will not operate if the complete keypad is forced off the wall.

6. Mount the front of the keypad (containing the keypad pcb) onto the backplate and make sure that the tamper switch operates.

7. If the tamper switch does **not** operate then rotate the cam until the tamper switch operates correctly when the front of the keypad is mounted on the backplate.

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 a 3A fused spur outlet fitted with a readily accessible disconnect device. Connect the mains supply to the control unit using the 3-way terminal block located in the control unit back. Secure the mains cable to the case anchor point using the cable tie provided. Note that the control unit has a T-250mA internal mains 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.
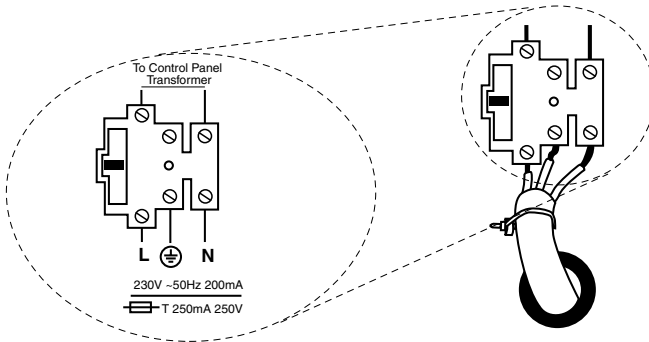
Figure 7. Mains Connection

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.

Remote Keypads

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 LK2 to LK4 set the keypad address, as shown in Figure 8.
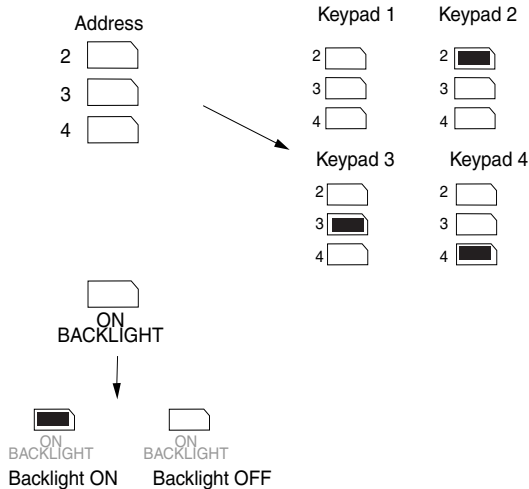
Figure 8. Keypad Addressing.

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 the "ON BACKLIGHT" link, shown in Figure 8.

Connecting Keypads, Exit Terminate Buttons, Lock Switches and Sounders

Figure 9 shows the connections for any of the remote keypads.

To connect an exit terminate button use the "ET" connector terminals on the keypad PCB.

Use the "ET" connector terminals to connect a Lock Switch. If using a lock switch do not connect any other device to the "ET" terminals.

Figure 9 shows the connections for the internal and external sounders.
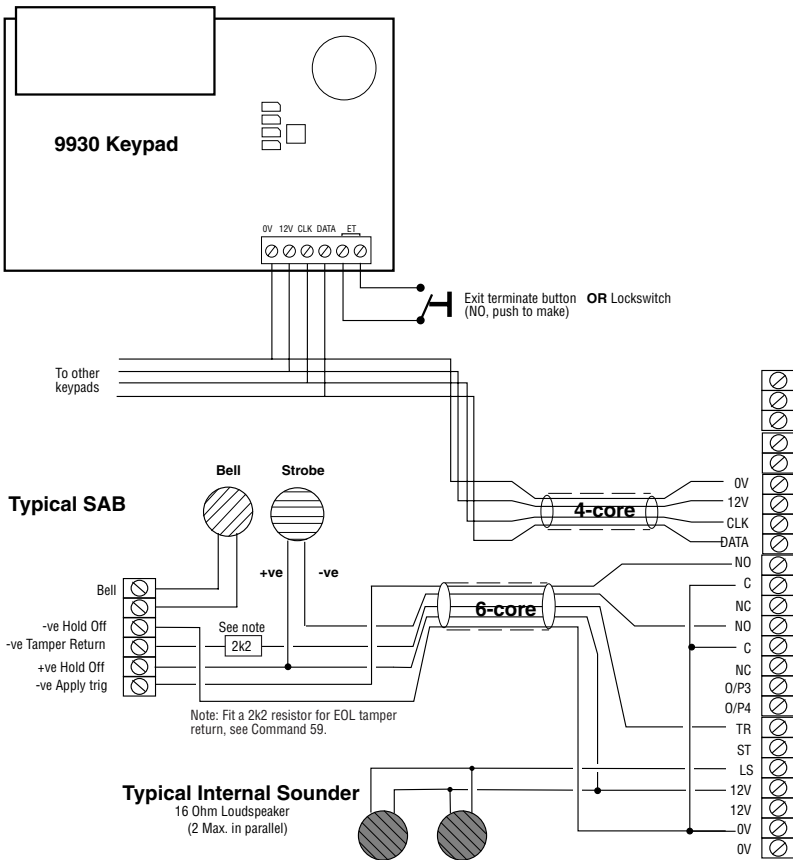
Figure 9. 9851 Keypad and Sounder Connections

Detector Circuit Connections

The left hand edge of the main PCB provides 24 connectors that can be used for up to 16 zones. During programming use command 21 to configure these connectors as either 4-wire CC zones, two wire FSL, two wire EOL, or two wire FSL plus expander.

Four Wire CC Connections

Figure 10 shows how to connect four wire CC zones. Note that pairs of alarm contacts alternate with pairs of anti-tamper contacts. The control panel provides enough connectors for eight four wire circuits. If you wish to connect more four wire circuits you must fit one or more 9954 expander cards (see "Connecting Expanders").
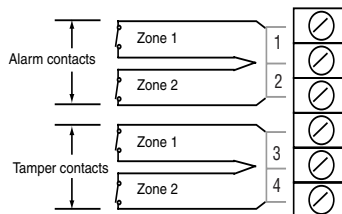
Figure 10. Four Wire Closed Circuit Connections

FSL Connections

The control unit zone connectors provide space for up to 16 FSL zones. If necessary you can connect more FSL zones by using 9954 expanders. If you choose to use expanders then you must decide how may zones to connect to the control unit: 8 or 16. See "4. Programming - Zone Configuration (Command 21)". You can have either 8 zones on the control unit and the rest on expanders, or 16 zones on the control unit and the rest on expanders.

Each FSL zone is a 'Fully Supervised Loop' using a two wire closed loop. The loop uses two resistors of different values to differentiate between 'Circuit' and 'Tamper' signals: a 2K2 resistor fitted in series at the end of the wired loop (EOL-End-Of-Line), and a 4K7 resistor fitted across the alarm contact, see Figure 11.

With the loop in a normal state and the alarm contacts closed (shorting out the 4K7 resistor), the total resistance of the loop is 2K2. When the alarm contacts open (removing the short from the 4K7 resistor) the resistance of the loop increases to 6K9 and the control unit detects an alarm condition. If a tamper device opens then the loop resistance will be open circuit and the control unit detects a tamper signal.

To connect a detector to an FSL loop you must wire suitable resistors to the detector. Always check resistor colour coding before wiring resistors into circuit, see Figure 12.

The wiring resistance of the cable to the detector (including joints) should be restricted to a maximum of 100 ohms. The recommended maximum cable distance per zone is 200 - 300 metres.
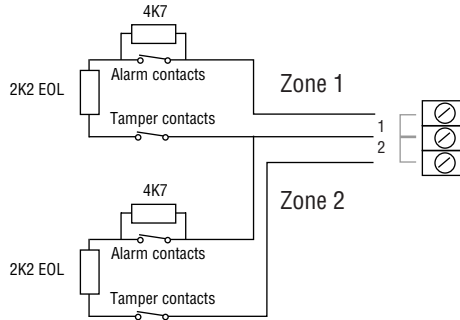
Figure 11. FSL Connections
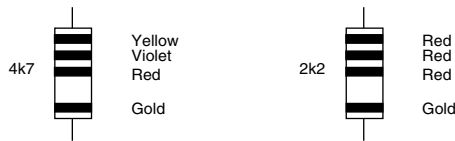
Figure 12. Resistor Colour Code for FSL Resistors

EOL Connections
Each EOL zone is a two-wire closed loop that uses a single 2K2 resistor fitted in series with the alarm contacts to differentiate between "Circuit" and short circuit "Tamper" signals. Figure 13 shows how to connect two EOL detectors to adjacent zones. Note that each detector is wired in series to a common anti tamper circuit connected to terminals marked "3". You must connect a single 2K2 resistor in series with the anti tamper circuit.
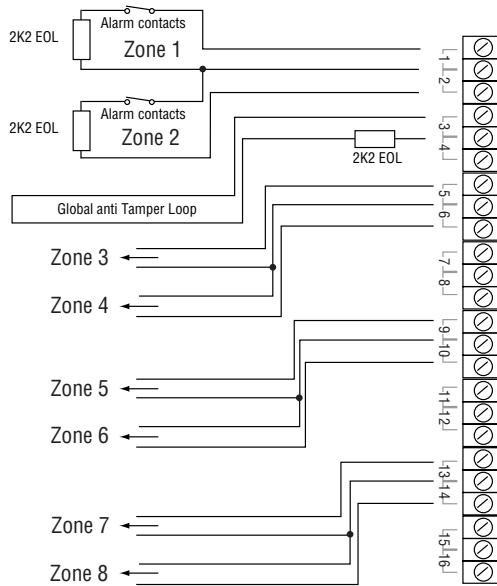
Figure 13. EOL Connections

Connecting Expanders

Figure 14. shows how to wire a 9954 Hard Wired Expander or 9955 Radio Expander to the control unit.
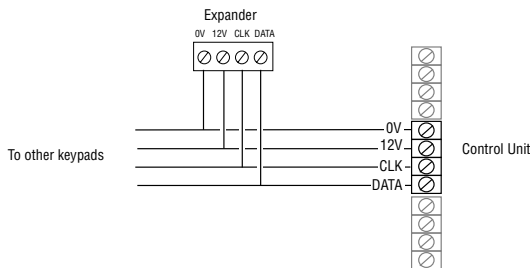
Figure 14. Connecting a 9954

When fitting a 9954 Expander make sure you place the jumper link on the expander in the correct position to select either four-wire CC, or two-wire FSL or EOL.

Note: Make sure that the control unit and the expander use the same wiring method for zones. If you select a different wiring method for zones on the expander then the control unit may not report tampers correctly.
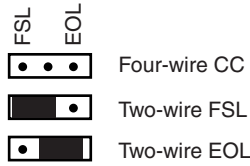
Figure 15. Jumper Positions to Select Connection Types

Once you have connected a 9954 expander refer to the instructions supplied in order to connect detectors.

Once you have connected a 9955 expander then refer to the instructions supplied in order to "learn" radio detectors to the expander.

Expander Addressing

If you fit 9955 or 9954 expanders then you must allocate each expander to a specific range of zone numbers. Select the zone numbers by fitting a jumper link to one pair of the set of pins marked "Address", as shown in Figure 16.

 Zones 9 to 16

 Zones 17 to 24

 Zones 25 to 32

 Zones 33 to 40.
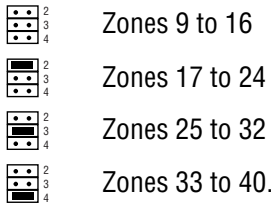
Figure 16. Link Positions to set Expander Addresses

Notes:
1. Fit a jumper in either position 2, 3 or 4 if the control panel is providing zones 1 to 16.
2. Do not allocate two expanders to the same zone number range.

Using Programmable Outputs

OP1 and 2 are voltage free relay contacts. Use programming command 81 for OP1 and command 82 for OP2.

OP3 and OP4 are "pull down type" outputs that provides negative applied control signals. Use command 83 for OP3 and 84 for OP4 (see "4. Programming"). The system adjusts the output polarity when you select the output type. Figure 17 shows some example applications for OP3 and OP4.

Shock Sensor Reset

Use Command 83 4

Bell Follow Buzzer/Relay

Use Command 83 0
Relay energises/buzzer sounds
when bell activates.

French Siren Test

Use Command 83 X1
(for use in France only)

PIR Set Latch/Walk Test

For:
Set Latch use Command 83 3
Walk Test use Command 83 5
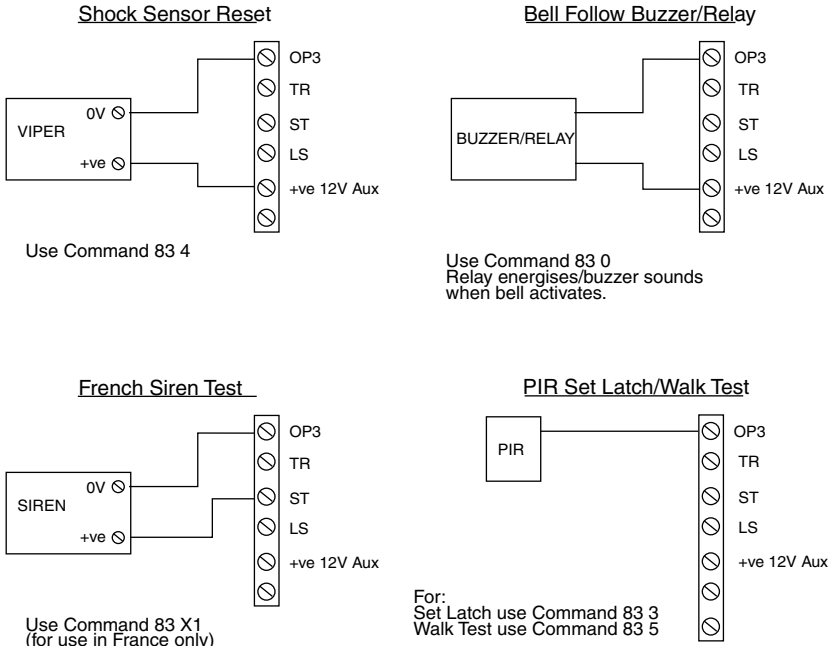
Figure 17. Wiring Examples for Programmable Output OP3

Wiring Keyswitches

Figure 18 shows the connections for a 9928 Keyswitch Interface.

Note: You can fit only one keyswitch interface per system
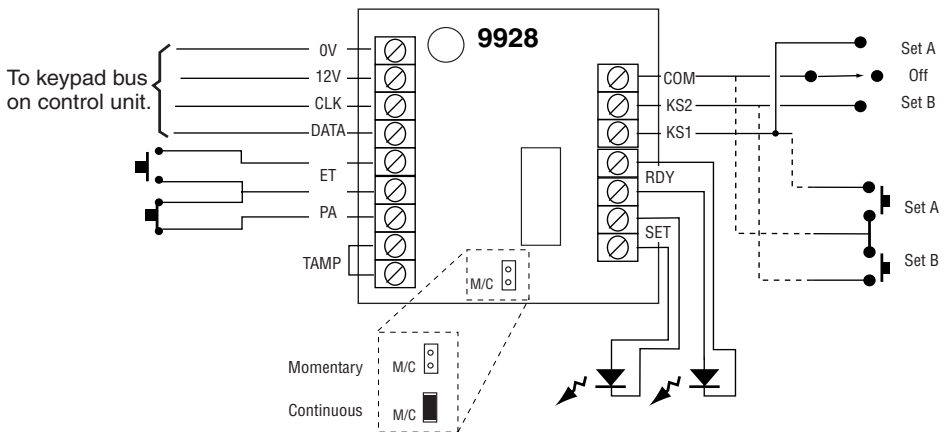
Figure 18. Connecting a 9928 Keyswitch Interface

Momentary or Continuous Keyswitches

The 9928 can be connected to either momentary or continuous keyswitches, see Figure 18. When using a momentary keyswitch remove the jumper from link M/C. When using continuous keyswitches fit a jumper to link M/C.

Using a Communicator

The 9851 has an internal communicator. If necessary the control unit can also be fitted with either a communicator plugged on to the main PCB, or connected to a separate communication device using a wiring harness connecting to interface pins on the main PCB. Use programming commands 101 to 158 to set up the communicator.

Internal Communicator

The internal communicator is a 2400 Baud Auto Dialling Modem. The communicator can be used for:

- Transmitting alarm signals to alarm receiving equipment at a central monitoring station using either Scancom Fast Format, Scancom SIA (Security Industry Association), or Contact ID.

- Connecting to a PC based at a remote engineering centre. By using Scantronic <Downloader> software, the remote PC can up- or download system parameters (including the event log and diagnostics), set and unset the alarm system, and carry out other special functions.

Telephone Line

The internal communicator can be connected directly to an ex-directory line used exclusively for alarm communications.

Where an exclusive line is not available and other apparatus is connected to the line, for example an answer machine, the internal communicator provides a series connection with line divert for the other apparatus. When triggered, the communicator seizes the line and disconnects the other apparatus while the communicator is operational. When the communicator has shut down, it reconnects the other apparatus.

Note: Ideally, no other equipment should be connected to an exclusive line.

Three Way Calling

The 9851 also provides a Three Way Calling facility to make sure the internal communicator can always use a shared telephone line.

To use this facility, the local exchange must provide the Three Way Calling service on the customer's line.

Line Monitoring

The 9851 provides a Line Monitor function programmed by command 106 to ensure that the telephone line is connected and working, and to indicate a

line failure. While enabled Line Monitor continually checks the line voltage to ensure that the line is connected.

If this function detects a failure the system gives a programmable Line Fault Response (programming command 106).

Test Calls

The 9851 can be programmed to make test report calls to an Alarm Receiving Centre. "Static" test calls can be programmed to occur at a set time every day. "Dynamic" test calls occur 24 hours after the last call made by the 9851. See "4. Programming" for details on how to program these functions.

Statutory Information

Application

The built in communicator is suitable for connection to the following type of networks:

    (a)   Direct exchange lines (PSTN) supporting DTMF (tone) dialling.

    (b)   PABX exchanges (with or without secondary proceed indication).

Note: The built in communicator is not suitable for connection as an extension to a pay-phone or to 1 + 1 carrier systems.

Compatible PABXs

The built in communicator is only approved for use with compatible PABXs. Correct operation in all circumstances is not guaranteed.

Approval

This product is manufactured to meet all European Economic Area telecommunication networks requirements.

The equipment has been approved in accordance with Council Decision 98/482/EC for pan-European single terminal connection to the public switched telephone network (PSTN). However due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems you should contact your equipment supplier in the first instance.

The built in communicator has been approved for the following usage:

    (a)   Automatic call initialisation.

    (b)   Operation in absence of proceed indication.

    (c)   Automatic Dialling.

    (d)   Modem.

    (e)   Serial Connection.

(f)   Multiple Repeat Attempts.

(g)   Line Status Monitoring.

Usage other than approved usage or failure to comply with the installation and programming instructions may invalidate any approval given to the apparatus, if, as a result, the apparatus ceases to comply with the standards against which approval was granted. Note the approval label on the main PCB.

REN

The Ringer Equivalence Number (REN) of the built in communicator is 1. As a guide to the number of items of apparatus which can be simultaneously connected to an exclusive line, the sum of the REN values should not exceed 4. A BT provided telephone is assumed to have a REN value of 1.

Safety Notice
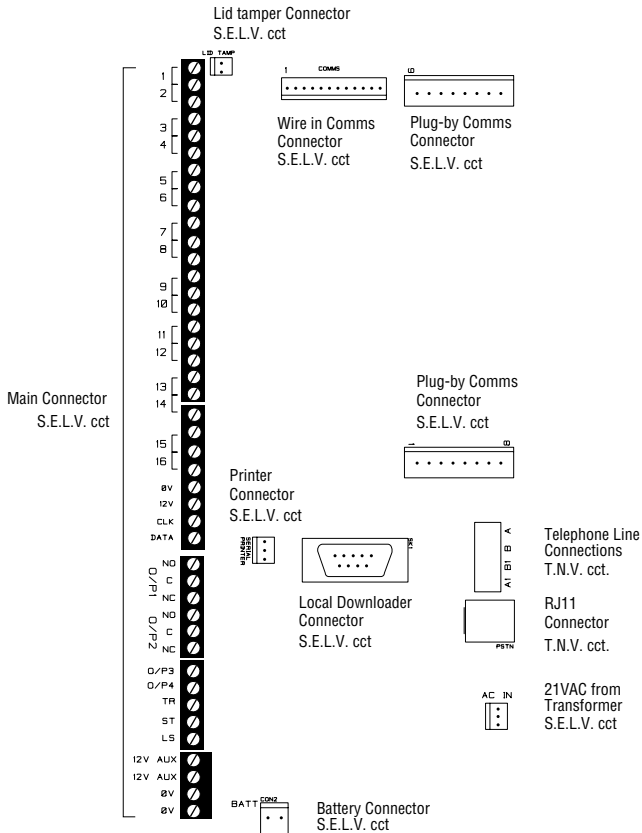
Figure 19. SELV and TNV Connectors on the 9851

The terminals on the 9851 control unit main pcbs are described as Safety Extra-Low Voltage circuits (SELV), according to the definitions in Safety Standard EN60 950.

The terminals on the built in communicator are described as SELV or Telecommunications Network Voltage (TNV) according to the definitions in Safety Standard EN60 950.

Note: The labels "SELV" and "TNV" which are shown in Figure 19 are for reference only and do not appear on the 9851 main pcb.

It is important that the installer ensures that TNV terminals are connected ONLY to the PSTN or other circuits designated as TNV circuits. SELV terminals must be connected ONLY to other circuits designated as SELV circuits. Strict adherence to the installation instructions will ensure that the equipment continues to comply with safety regulations to which it was approved.

Connecting the Telephone Line

Direct connection, or interconnection via other apparatus, to the terminals on the internal communicator can produce hazardous conditions on the telephone network. Always seek advice from a competent telephone engineer if in any doubt regarding connection to these terminals.

The person responsible for connection of the internal communicator to a PABX system must be as follows:

a)　If the wiring is owned by British Telecom PLC, British Telecom must connect the wiring to the communicator.

b)　If the wiring is not owned by British Telecom, either:

　　(i)　British Telecom

　　(ii)　The authorised maintainer

　　(iii)　A professional Installer after 14 days written notice to the authorised maintainer.

Connect the telephone line as follows:

If the telephone line is already terminated with a suitable lead and plug then insert the plug into the RJ11 connector (see Figure 19).

Otherwise (see Figure 20):

1.　Using a three core cable (type 1/05mm CW1308), strip back 5mm of two cores and feed through one of the cable entries in the rear of the 9851 casing. Connect the two cores to the terminals, A and B on the 9851 PCB.

2.　Connect the cable from the A and B terminals on the 9851 PCB to the corresponding terminals on the BT master box.

3. If other apparatus is required to share the telephone line with the internal communicator (series apparatus), connect the main apparatus to the series switched line connections marked A1, B1.

Caution: The connection of only one such series apparatus is allowed to be connected between a main apparatus (e.g., telephone) and the PSTN.

Take care to ensure that the A and B line are connected correctly (i.e. correct polarity). The internal communicator continuously monitors the line for Ringing tones.
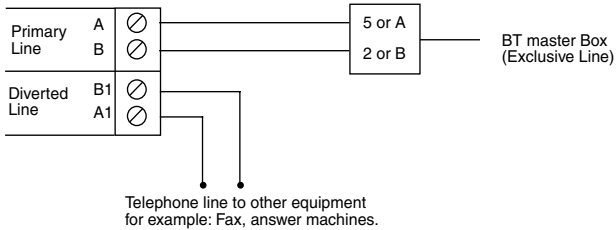
Figure 20. Connecting the Internal Communicator

Fitting a Plug-On Communicator

Caution: **Before fitting a plug on communicator, the control unit must be completely powered down, mains and battery. When reapplying power, the battery must be connected first. Failure to do so may result in damage to the control unit.**

Remember to short the "Kick Start" pins when powering from a battery only.

Plug-On Communicator Signals:

The 9851 plug on communicator pins are variants of the standard Scantronic footprint. In the 9851 the function of the plug-on pins are fixed and cannot be modified.

All outputs are +ve (5V) applied in alarm.

All inputs are +ve (12V or 5V) applied to indicate line fail, comms fail and tell back.

Channel Sent to ARC	Pin	Input / Output	Signal
CH 1	1	O	Fire
CH 2	2	O	PA
CH 3	3	O	Burg
CH 4	4	O	Close = +ve, Open = -ve
CH 5	5	O	Omit
	6	I	Tel Back
	7	I	Comms Fail
-	8	O	Low Batt
	9	Power supply	12V
	10	Power supply	0V
	11	-	Not Used
	12	Power supply	5V
CH 6	13	O	Abort
CH 7 Note 1	14	O	Confirm
	15	I	Line Fail
CH 8	16	O	Technical

Note 1: Channel 6 will be sent by some Redcare STUs on pin 14.

For operation of the RedCare transmitter see the manufacturer's instructions.

Fitting a Plug-by Communicator

The 9851 can be fitted with a communicator or speech dialler (for example the Scantronic 8400, 8440, 660 or RedCare STU). 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. 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.

Com Connector Cable, Part No. 485210

Comms O/P1 (Brown) -ve applied (+ve removed) in alarm
Comms O/P2 (Orange) -ve applied (+ve removed) in alarm
Comms O/P3 (Yellow) -ve applied (+ve removed) in alarm
Comms O/P4 (Green) -ve applied (+ve removed) in alarm
Comms O/P5 (Blue) -ve applied (+ve removed) in alarm
Comms O/P6 (Purple) -ve applied (+ve removed) in alarm
Comms O/P7 (White) -ve applied (+ve removed) in alarm
Comms O/P8 (Grey) -ve applied (+ve removed) in alarm
Line Fail input (White/Brown) +12V applied to indicate telephone line fail.
Tell Back input (White/Orange) +12V appied to change from engineer to customer reset.
0V (Black)
12V (Red)

Figure 21. Communications Wiring Harness.

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

If the system has already been installed:

4. Re-connect the battery.

5. Fit the case lid.

6. Apply mains power.

7. Test communicator operation (see programming commands 151 to 158).

Fitting a Battery

Fit a rechargeable battery into the back of the case. The case provides space for a 12V 7AH battery, or 17AH battery with kit 8136EUR-02.

Initial Start Up

Before applying power to the control unit, ensure that:

- All remote keypads and expanders have been addressed and connected.
- All external and internal sounder are connected.
- All wired zone circuits are connected.
- All wireless zones have been learned to their expanders.

Then:

1. Connect the battery to the control unit PCB.
2. Briefly short the kick start pins together (they are located above battery connector, see Figure 3).
   The green power LED on the keypad flashes and the internal sounder may sound. Ignore any display at this stage.
3. Key-in the factory default user access code: 1234.
   The internal sounder stops. Ignore any display at this stage.
4. Fit the case lid before applying mains power (this also defeats the tamper switch).
5. Apply mains power.
   The power LED on the keypad glows steadily.
6. Key-in 0 followed by the factory default engineer access code: 7890. (You do not have to remove the control unit lid.)
   The display shows: `Mult Syst?`
7. Either: Press 1 ✔ to create a partitioned system
   Or 0 ✔ to create a single system (see below).
   The display shows: `Installer Mode`

   You are now in programming mode.

Carry on to Chapter 4 in order to program the system.

Partitioned System Or Single System?

The 9851 can work as either a single system or partitioned system. When working as a single system the 9851 has one full set and three part set levels of security. All keypads, zones and output devices operate for the whole system.

If you chose a partitioned system you can divide the 9851 into, effectively, four smaller alarm systems.

- Each partition can be set, unset or in alarm independently of the other partitions.
- You can assign individual keypads to one or more partitions. The keypads cannot set or unset partitions to which they are not assigned.
- Each partition can have its own bell and strobe set output.
- Every zone belongs to one and only one partition.

When you apply power to a new control unit for the first time and then key in the default engineer access code, the control unit asks if you wish to set up as a single system or partitioned system (see step 6 on the previous page). If you want to convert between single system and partitioned system at a later date you must use command 98. This will also restore the control unit to factory defaults.

For an overview of the programming steps required to set up a partitioned system see "4. Programming - Partition Programming".

4. Programming

Entering Programming Mode

"3. Installation - Initial Power Up" describes how to enter programming mode for the first time in a new installation. If you wish to enter programming mode at any other time:

1.	Make sure the system is unset.

Note: If you have selected defaults for Norway, Sweden or Denmark then you must enter a valid user code at this point.

2.	Press 0, then key in the Engineer's code (default 7890).

	The display shows: `Installer Mode`
	You are now in programming mode.

While the system is in programming mode all keypads except the one you are using will be locked, displaying "Busy".

Programming Commands

When delivered from the factory the control unit already has default program settings. To change the default programming you must be in programming mode. Then:

1.	Key in the appropriate Command number and press ✔.

	The display shows the current value of the Command.

2.	Key in digits to select the value you require.

	The display shows the new value.

3.	Press ✔ to store the new value of the Command.

If at any time you change your mind, repeat step 1 to 3. The table on the following pages shows the Commands and their options. (A "Y" next to a Command value shows that it is the factory default.)

The factory default access codes are:

Engineer Code   7890

Access Code User 1   1234

Access Code Users 2 to 16 ✘ 002 .... ✘ 016 (inactive)

Duress Code   ✘017 (inactive)

Note:

1. The factory default Access Codes 02 to 16 and the Duress Code must be changed by USER 1 to a four digit number to activate them. See "9851 User Guide" for a more detailed explanation of changing user access codes.

To change:	Key-in:	Notes	Default
Country PTT Defaults	**0✔n✔**		

n = country, one of:

0 = UK (Y)	5 = France	✘1 = Ireland	✘6 = Denmark
1 = Italy	6 = Belgium	✘2 = OEM 1	✘7 = Sweden
2 = Spain	7 = Germany	✘3 = OEM 2	
3 = Portugal	8 = Switzerland	✘4 = OEM 3	
4 = Netherlands	9 = Austria	✘5 = Norway	

Note: If you carry out this Command then the system will load all defaults for the selected country.

Zone nn   **nn✔✔ab**   nn = zone number 01 to 40 (see Note)

a = Zone type, one of:
00 = NU (not used)
01 = PA (panic alarm)
02 = FR (fire zone)
03 = NA (normal alarm)
04 = 24 (24 hour zone)
05 = FE (final exit)
06 = ER (entry route)
07 = SA (Shock Analyser)
08 = TC (Technical)
09 = KB (Keybox)
10 = SD (Smoke detector)
11 = KM (Key switch momentary)
12 = KF (Key switch latched)
13 = AM (Anti mask)
14 = FB (forbikobler zone)

(default full/part set)	(default partitioned)
Z01=FEbcd	Z01=FEa
Z02=ERbcd	Z02=ERa
Z03-Z07=NAbcd	Z03=NAa
	Z04=NAa
	Z05=NAa
	Z06=NAa
	Z07=NAa
Z08=PA	Z08=PAa
Z09-Z40=**NU**	

Note: For zones 1 to 9 key in "01" to "09".
For zones 17 to 40 key in "✘17" to "✘40".

b = Zone attributes, any of:
✘1 = C (chime)
✘2 = S (soak test)
✘3 = D (double knock)
✘4 = O(Omit allowed)
✘5 = b (armed in Level B)
✘6 = c (armed in Level C)
✘7 = Shock Analyser sensitivity (enter a number in the range 1 (lowest) to 6 (maximum)
✘8 = d (armed in Level D)

Example: Zone 17 is a Normal Alarm, active in part set B, that is Omit Allowed.

Type in:	✘17✔✔	Zone Number
	03	Normal Alarm
	✘5	Active in Part Set B
	✘4	Omit Allow
	✔	to store the value of the Command.

Engineer Code	**20✔nnnn✔** nnnn = New engineer code	**7890**

To change:	Key-in:		Notes	Default
Zone Configuration	21✔	**0**	**Close Circuit 4 wire**	**Y**
		1	End Of Line resistor	
		2	Fully Supervised Loop	
		3	8 FSL plus 4 expanders	
LS Chime Output	22✔	n	Loudspeaker chime volume	
(Single system only.)			0 = Off (Keypad only)	
			1=low, 9=max	**5**
RedCare Reset	23✔	**0**	**Off**	**Y**
		1	On	
Show Panel Account Name	24✔		(keypad displays name)	
		✘	Return to programming mode	
Internal Sounder	25✔	**0**	**LS Timed (Follows external bell)**	**Y**
		1	Continuous	
Sounder Delay on Entry	26✔	0	Bell Delay off	
		1	**Bell Delay on**	**Y**
Exit Fault External Sounder	27✔	**0**	**Internal**	**Y**
		1	Local	
Status Display	28✔	**0**	**Panel status visible all the time**	**Y**
		1	Panel status hidden 180s after setting	
		2	Display for 30 s on valid access code entry	
Entry Alarm Delay Time	29✔	**0**	**Delay off**	**Y**
		1	Delay on	
PA Response	30✔	**0**	**Audible**	**Y**
		1	Silent	
Zone Tamper Reset	31✔	**0**	**Engineer reset off**	
		1	Engineer reset on	
Keypads and Partitions	32		**(See "Keypads and Partitions (Command 32)")**	
System Reset	33✔	**0**	**Eng reset off**	**Y**
		1	Eng reset on	
PA Reset	34✔	**0**	**PA cust reset**	**Y**
		1	PA eng reset	
First Circuit Lockout	35✔	**0**	**Lock out on**	**Y**
		1	Re-arm	
Alarm Abort	36✔	**0**	**Abort off**	**Y**
		1	Abort on	
Day Tamper Comms	37✔	**0**	**Day Tamper off**	**Y**
		1	Day Tamper on	
System Tamper Reset	38✔	0	Customer Reset	
		1	**Engineer Reset**	**Y**

To change:	Key-in:	Notes	Default
Level A Exit Mode	39✔ **0**	**Timed**	**Y**
	1	Terminated	
	2	Final door	
		<u>For a single system n is:</u>	
	3	Lock Set	
		<u>For a partitioned system n is one of:</u>	
	3	Instant set	
	4	Silent (kpd beeps at end of setting period)	
	5	Lock Set	
System Auto Re-Arm	40✔ **0**	**Rearm Never**	**Y**
	1	Rearm 1	
	2	Rearm 2	
	3	Rearm 3	
	4	Rearm Always	
Bell Delay	41✔ **0**	**No delay**	**Y**
	1	1.5 minutes	
	2	3 minutes	
	3	5 minutes	
	4	10 minutes	
	5	15 minutes	
	6	20 minutes	
Bell Duration	42✔ 1	1.5 minutes	
	2	3 minutes	
	3	5 minutes	
	4	10 minutes	
	5	15 minutes	
	6	**20 minutes**	**Y**
Level A Entry Time	43✔ 1	10 Seconds	
	2	**20 seconds**	**Y**
	3	30 seconds	
	4	45 seconds	
	5	60 seconds	
	6	120 seconds	
Level A Exit Time	44✔ 1	10 Seconds	
	2	**20 seconds**	**Y**
	3	30 seconds	
	4	45 seconds	
	5	60 seconds	
	6	120 seconds	
Entry/Exit Volume	45✔ **0**	**No Entry/Exit tones from Loudspeaker**	
(Single system only.)	n	EE tone volume from LS (1=low, 9=max)	**5**

To change:	Key-in:	Notes		Default
Tamper Alarm Response	46✔	0	Internal sounders	
(Single system only.)		1	Keypad sounders	
		2	**Internal and keypad sounders**	**Y**
Part'n A Alarm Response	47✔	0	Keypad sounders	
(Partitioned system only.)		1	Local Alarm	
		2	**Full Alarm**	**Y**
Lockout Kpds During Entry	48✔	**0**	**No**	
		1	Yes	
CSID Code	50✔	n....n	Seed code for remote reset	**none**
Set Time and Date	51✔	.....	see "Setting Time and Date"	
Omit Tamper Allowed	52✔	**0**	**Alarm contacts only**	**Y**
		1	Alarm plus tamper contacts	
Abort reset	53✔	**0**	**Abort System**	**Y**
		1	Abort User	
BVVO Superv'n Response	54✔	**0**	**Disabled**	**Y**
		1	Enabled	
4/6 Digit Access Codes	56✔	**0**	**Four digit codes**	**Y**
		1	Six digit codes	
Battery Load Test	57✔	**0**	**Disabled**	**Y**
		1	Enabled	
Day Tamper Indication	58✔	**0**	**User Reset**	**Y**
		1	Installer Reset	
Sounder Tamper	59✔	**0**	**Negative voltage tamper return**	**Y**
		1	End of line 2k2 resistor.	
Level B final exit operation	60✔	**0**	**B=FE = FE (Final exit)**	**Y**
		1	B=FE = NA (Normal alarm)	
Level B Entry route	61✔	**0**	**B=ER = ER (Entry route)**	**Y**
		1	B=ER = FE (Start entry timer)	
Level B Exit Mode	62✔	n		

For a single system n is one of the following:

0	**Timed plus low tone**	**Y**
1	Instant set	
2	Silent set (kpd beeps at end of setting period)	
3	Exit mode same as Level A	

For a partitioned system n is one of:

0	**Timed full tone Set (default)**	3	Instant set
1	Terminated	4	Silent (kpd beeps at end of setting period)
2	Final door	5	Lock Set

To change:	Key-in:	Notes	Default
Level B Alarm response	**63✔**	**n**	
		For a single system n is one of the following:	
	0	Keypad sounder Only	
	1	**Internal sounder and keypad sounders**	**Y**
	2	Local (all sounders, no comms)	
	3	Full alarm (all sounders and comms)	
		For a partitioned system n is one of:	
	0	Keypad sounder Only	
	1	Local alarm	
	2	**Full alarm**	**Y**
Level B Entry Time	**64✔**	1 10 seconds	
		2 20 seconds	**Y**
		3 30 seconds	
		4 45 seconds	
		5 60 seconds	
		6 120 seconds	
Level B Exit Time	**65✔**	1 10 Seconds	
		2 20 seconds	**Y**
		3 30 seconds	
		4 45 seconds	
		5 60 seconds	
		6 120 seconds	
Level C Final Exit Operation	**70✔**	**0 C=FE = FE (Final exit)**	**Y**
(Single system only.)	1	C=FE = NA (Normal alarm)	
Level C Entry Route	**71✔**	**0 C=ER = ER (Entry route)**	**Y**
(Single system only.)	1	C=ER = FE (Start entry timer)	
Level C Exit Mode	**72✔**	**n**	
		For a single system n is one of the following:	
	0	**Timed plus low tone (default)**	
	1	Instant set	
	2	Silent set (kpd beeps at end of setting period)	
	3	Exit mode same as Level A	
		For a partitioned system n is one of:	
	0	**Timed full tone Set (default)**	3 Instant set
	1	Terminated	4 Silent (kpd beeps at end of setting period)
	2	Final door	5 Lock Set

To change:	Key-in:	Notes	Default
Level C Alarm Response	**73✔ n**		

For a single system n is one of the following:
- 0 Keypad sounder only
- **1 Internal sounder and keypad sounders**   **Y**
- 2 Local (all sounders, no comms)
- 3 Full alarm (all sounders and comms)

For a partitioned system n is one of:
- 0 Keypad sounder only
- 1 Local alarm
- **2 Full alarm**   **Y**

To change:	Key-in:	Notes	Default
Level C Entry Time	**74✔**	1 10 seconds	
		2 20 seconds	**Y**
		3 30 seconds	
		4 45 seconds	
		5 60 seconds	
		6 120 seconds	

To change:	Key-in:	Notes	Default
Level C Exit Time	**75✔**	1 10 Seconds	
		2 20 seconds	**Y**
		3 30 seconds	
		4 45 seconds	
		5 60 seconds	
		6 120 seconds	

Level D Exit Mode   **76✔ n**

For a single system n is one of the following:
- **0 Timed plus low tone (default)**
- 1 Instant set
- 2 Silent set (kpd beeps at end of setting period)
- 3 Exit mode same as Level A

For a partitioned system n is one of:
- **0 Timed full tone Set (default)**   3 Instant set
- 1 Terminated   4 Silent (kpd beeps at end of setting period)
- 2 Final door   5 Lock Set

Level D Alarm Response   **77✔ n**

For a single system n is one of the following:
- 0 Keypad sounder only
- **1 Internal sounder and keypad sounders**   **Y**
- 2 Local (all sounders, no comms)
- 3 Full alarm (all sounders and comms)

For a partitioned system n is one of:
- 0 Keypad sounder only
- 1 Local alarm
- **2 Full alarm**   **Y**

To change:	Key-in:		Notes	Default
Level D Entry Time	78✔	1	10 seconds	
		2	**20 seconds**	**Y**
		3	30 seconds	
		4	45 seconds	
		5	60 seconds	
		6	120 seconds	
Level D Exit Time	79✔	1	10 Seconds	
		2	**20 seconds**	**Y**
		3	30 seconds	
		4	45 seconds	
		5	60 seconds	
		6	120 seconds	

Output 1 Type, one of   81✔ n

Where n is one of the following:

00	**Bell (default full/part set sys.)**	13	Pulse Unset
01	EE follow	14	Alarm Confirmation
02	Armed lamp	15	Set Complete
03	Set latch	16	Unset Complete
04	Shock sensor reset		**Partitioned System**
05	Walk test	17	Bell Partition A
06	Ready lamp	18	Bell Partition B
07	24 hour alarm	19	Bell Partition C
08	Strobe	20	Bell Partition D
09	Smoke sensor reset	21	Strobe Set Partition A
10	French Siren Test	22	Strobe Set Partition B
11	Strobe Set (any Partition)	23	Strobe Set Partition C
12	Pulse Set	24	Strobe Set Partition D

Output 2 Type, one of   82✔ 0   Bell

See Command 81 for a list of options. Default for Command 82 in full/part set sytem is 08 Strobe. Default in partitioned system is 14 Bell for Partition B.

Output 3 Type, one of   83✔ 0   Bell

See Command 81 for a list of options. Default for Command 83 in full/part set system is 03 Set latch. Default in partitioned system is 15 Bell for Partition C.

Output 4 Type, one of   84✔ 0   Bell

See Command 81 for a list of options. Default for Command 84 in full/part set system is 03 Set latch. Default in partitioned system is 16 Bell for Partition D.

To change:	Key-in:		Notes	Default
Burg Comms Rearm	85	0	**Latch**	**Y**
		1	Rearm	
Dual Ply Entry	86✔	0	**Off**	**Y**
		1	On (not recommended in U.K.)	
Dual Key Alarm	87✔	0	**Off**	**Y**
(Incl. keyswitch PA)		1	On	

To change:	Key-in:	Notes	Default
Alarm Confirmation	**89✔** 0	**Confirm off (default for rest of World)**	**Y**
	1	Confirm on (default UK only)	
Event Log*	**90✔** 0	Print log	
	1	View earlier events	
	3	View later events	
	7	Toggle printer on/off	
	8	Print configuration	
	✘	Cancel viewing	
	✔	Toggles time/date display	
Test Output 1*	**91✔**	**Output 1 operates, press ✘ or ✔ to end test.**	
Test Output 2*	**92✔**	**Output 2 operates, press ✘ or ✔ to end test.**	
Test Output 3*	**93✔**	**Output 3 operates, press ✘ or ✔ to end test.**	
Test Internal Sounder (Single system only.)	**94✔**	**Internal sounders operate, press ✘ or ✔ to end test.**	
Test Keypad Sounder	**95✔**	**Keypad sounders operate, press ✘ or ✔ to end test.**	
Test Output 4*	**96✔**	**Output 4 operates, press ✘ or ✔ to end test.**	
Engineer Walk Test* ** See "5. Testing"*	**97✔**	**Zn indication and chime operate when cct open**	
	✔	(Clear) End walk test	
Load Defaults	**98✔1✔**	**Load defaults**	
Leave Programming	**99✔✔**		

Communications Programming

To change:	Key-in:	Notes Default
Call Mode	**101✔** 0	**Disabled** **Y**
	1	Single
	2	Alternate
	3	Dual
Reporting Type	**103✔** 0	**Fast format** **Y**
	1	Contact ID
	2	SIA I
	3	SIA II
	4	SIA 3
	5	Extended SIA 3

To change:	Key-in:	Notes	Default
Static Test Call	**105✔ A (or B) nn ✔**		
		00 Static off	**Y**
nn is the time in hours		A nn Static call at nn hours, 01 to 24 max.	
nn is the day of the month		B nn Static on day nn, 01 to 24 max.	
Line Fail Response	**106✔** 0	Disabled	
	1	**Audible**	**Y**
	2	Silent	
Dynamic Testing	**108✔ 0**	**Dynamic off**	**Y**
	1	Dynamic on	
Three Way Calling (UK)	**109✔ 0**	**Three way off**	**Y**
	1	Three way on	
Download Mode	**110✔n✔**		
Where n is one of:	**0**	**Local PC**	**Y**
	1	Remote PC	
Rings To Answer	**112✔** 0	3 rings	
Downloading option	**1**	**5 rings**	**Y**
	2	7 rings	
	3	10 rings	
	4	15 rings	
	5	255 rings	
Answer On One Ring	**113✔ 0**	**One ring off**	**Y**
Downloading option	1	One ring on	
Access Mode	**114✔ 0**	**Callback off (Attended)**	**Y**
	1	Callback on	
	2	Callback any (Unattended)	
Communicator Tel No 1	**115✔✔**	**Maximum 31 digits**	
Communicator Tel No 2	**116✔✔**	**Maximum 31 digits**	
Account No	**117✔✔**	**Maximum 6 digits**	
Downloader Tel No 1	**118✔✔**	**Maximum 31 digits**	
Downloader Tel No 2	**119✔✔**	**Maximum 31 digits**	
Enable Downldr Tel No 3	**120✔0**	**Downloader Tel No 3 Off**	**Y**
	1	Downloader Tel No 3 enabled.	

To change:	Key-in:	Notes	Default
Fast Format Channels	**121✔ a ✔b ✔**		

For built in Communicator   <u>a is the channel number 1 to 8</u>

<u>b is one of the following:</u>

00	Not Used	11	AC Fail
01	**Fire (default Ch 1)**	12	Tamper Alarm
02	**PA (default Ch 2)**	13	Open
03	**Burglar (default Ch 3)**	14	Close
04	**Open/Close (default Ch 4)**	**15**	**Zone Omitted (default Ch 5)**
05	**Alarm Abort (default Ch 6)**	16	Medical
06	**Technical Alarm (default Ch 8)**	17	Key-Box
07	**Alarm Confirmation (dlt Ch 7)**	18	Anti-Mask
08	RF Low Battery	19	Smoke Detector
09	RF Supervision Loss		
10	Jamming		

To change:	Key-in:	Notes	Default
Comms Acknowledge	**122✔0**	**Off**	**Y**
	1	On	

Note: Options are only available if Command 0 is set to option ✗1 (Ireland).

Restoral Reporting	**123✔** 0	**Restore off**	**Y**
	1	Restore on	
Reverse Open/Closed	**124✔0**	**Disabled**	
	1	Reverse codes	
No Close if CCT Omitted	**125✔0**	**Disabled**	
	1	No close sent if more than one cct omitted.	
Language	**126✔nn**		

<u>nn = Language, one of:</u>

0 = English(Y)	3 = Portuguese	6 = German	9 = Danish
1 = Italian	4 = Dutch	7 = Norwegian	
2 = Spanish	5 = French	8 = Swedish	

Radio Zone Supervision	**128✔0**	**Full alarm (all sounders plus comms)**	**Y**
Fail Response	1	Internal, external and keypad sounder	
	2	Keypad sounders	
	3	Comms only	
	4	Inhibit set	
Telecommand requires	**129✔0**	**Yes**	**Y**
Entry Door to Unset	1	No	
Extended Report Mode	**131✔0**	**Basic**	**Y**
	1	Summary	
	2	Intermediate	
	3	Full	
Send Tamper as Burglary	**132✔0**	**Off**	**Y**
	1	On	

To change:	Key-in:	Notes	Default
CID Report Restorals	143✔ 0	Mode Basic	
	1	**Mode Basic + Restore**	**Y**

Plug by Comms Output 1	151✔nn		

Where nn is one of the following:

00	Not Used	13	Open
01	**Fire (default)**	14	Close
02	PA	15	Zone Omitted
03	Burglar	16	Medical
04	Open/Close	17	Key-Box
05	Alarm Abort	18	Anti-Mask
06	Technical Alarm	19	Smoke Detector
07	Alarm Confirmation	20	Comms Acknowledge
08	RF Low Battery	21	Battery Fault
09	RF Supervision Loss	22	Alarm Partition A
10	RF Jamming	23	Alarm Partition B
11	AC Fail	24	Alarm Partition C
12	Tamper Alarm	25	Alarm Partition D

Plug by Comms Output 2	152✔	**Default 02 PA**	**See Command 151**
Plug by Comms Output 3	153✔	**Default 03 Burglar**	**See Command 151**
Plug by Comms Output 4	154✔	**Default 04 Open/Close**	**See Command 151**
Plug by Comms Output 5	155✔	**Default 15 Zone Omitted**	**See Command 151**
Plug by Comms Output 6	156✔	**Default 05 Alarm Abort**	**See Command 151**
Plug by Comms Output 7	157✔	**Default 07 Confirm**	**See Command 151**
Plug by Comms Output 8	158✔	**Default 06 Technical**	**See Command 151**

Note: The following Commands are available if you select option 1 for Command 89.

Confirm Timer	160✔nnn		

nnn is a time in the range 001 to 999 minutes. **Default 030 minutes.**

Internal Sounder	161✔0	**Sounder on Unconfirmed Alarm**	**Y**
	1	Sounder on Confirmed Alarm	
External Sounder	162✔0	**Sounder on Unconfirmed Alarm**	**Y**
	1	Sounder on Confirmed Alarm	
Confirmation After Entry	163✔0	**Never**	**Y**
	1	One Zone	
	2	Two zones	
User Reset After Confirmed Alarm	164✔0	**Disabled**	**Y**
	1	Enabled	

Leaving Programming Mode

When all programming has been completed:

1. Key-in '99 ✔' at the keypad
   The display shows: `99:Exit Eng ?`

2. Press ✔.
   The display shows: `99:Checking Sys`
   followed by the time and date.

The system is now in user mode.

Note: If there is a fault, for example an open tamper circuit, the display shows this and will not return to Day mode. Press ✗ and rectify the faults.

Engineer Reset

To perform an Engineer Reset:

1. Check that the display is showing the alarm condition.
2. Key in 0 followed by the Engineer's code (default 7890), followed by 99 ✔✔.
   The display shows the time and date.

Re-entering Programming Mode

You can go back into programming mode whenever the system is unset and not in alarm:

1. Key in 0 followed by the Engineer's code (default 7890).
   The display shows: `Installer Mode`
   You are now in programming mode.

Restoring the Access Codes (1st stage reset)

If the user and/or engineer codes are lost, then:

1. First remove mains power and then open the case and disconnect the battery.
2. Identify the NVM Reset pins and Kick Start pins on the main pcb (see Figure 3).
3. Short the NVM Reset pins together using a small wire link. Short the Kick Start pins together with another small wire link.
4. Reconnect the battery.
5. Remove the shorts from the NVM Reset pins and Kick Start pins.
   The control unit loads the factory default access codes:
   User 1: 1234, Engineer: 7890.
6. Close the control unit and apply mains power.
7. Carry out an engineer reset.

Restoring All Factory Default Programming

If you wish to restore all factory default options then:

1. Enter programming mode (if you are not already there).

2. Key in 98 ✔ at the keypad.
   The display shows: `Load default`

3. Press 1 ✔ at the keypad.
   The display shows (for example): `Mult Sys?    OFF`

4. Either: Press 1 to create a partitioned system
   Or 0 to create a single system.
   The display shows (for example): `Mult Sys?     ON`

5. Press ✔.
   The keypad gives a double confirmation tone and the system loads the factory default Command values, erasing all previously programmed values.

Notes:The log is protected and cannot be erased by the Installer.

Programming Reference

Country Defaults (Command 0)

Use this Command to select the country and PTT defaults (to select language see Command 126). Note that the system will ask for confirmation and you must press 1 ✔ to end the Command. Note that this Command loads default access codes and programming options. See "Programming Commands" for details of the options available.

Note: If you select options ✗5, ✗6 or ✗7 (Norway, Sweden or Denmark) then the control unit also changes the method of entering programming mode. See "Entering Programming Mode" at the beginning of this chapter.

Zone Programming (Commands 01 to 16, X17 to X40)

The zone programming Commands 01 to 40 take three or more digits. The first two digits describe the zone type, subsequent digits describe the zone attributes.

The format for a zone Command number changes, depending on whether the zone is connected to the control unit or to an expander. For the first 16 zones key "01" to "16" and press ✔. For zones 17 to 40, which are connected to expanders, key in "✗17" to "✗40") and then press ✔.

 When you key in the zone number and press ✔ the display shows the zone number and any text caption for the zone. At this point you can edit the zone text (see below). Press ✔ again to start entering the zone types and at-

tributes. When you have entered the zone type and attributes press ✔ once more to store the changes.

Zone Names

When you key in the zone number and press ✔ the display shows the current zone name with a flashing cursor under the first letter. Enter letters from the keypad one at a time by pressing a number key repeatedly until the display shows the letter you want. You may already be familiar with typing out short messages on a mobile phone using the same sort of system. Figure 22 shows which letters are assigned to each key. Press C to move the cursor to the next space for a new letter.

If you make a mistake press C or D to move the cursor over the letter you want to change, and key in the new letter. If you want to delete a name completely press D to move the cursor under the extreme left hand character of the name. Press D again. The display clears the old name.

The system can store a maximum of 12 characters per name, including spaces and punctuation marks.
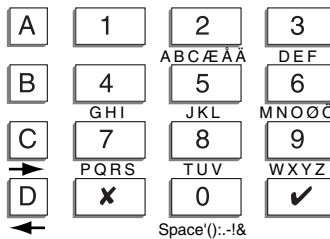
When you have finished entering the user name press ✔.

A	1	2	3
		A B C Æ Å Ä	D E F
B	4	5	6
		G H I	J K L	M N O Ø Ö
C	7	8	9
→		P Q R S	T U V	W X Y Z
D	✗	0	✔
←		Space'():.-!&	

Figure 22. Letters Generated by Each Number Key

Zone Types

The following types are available:

Not Used (NU)   The system ignores Zones with this type. Key in 00 for a zone that will not be used.

Note: If a zone is programmed as 'Not Used', it is not necessary to link the circuit or anti-tamper connections.

Panic Alarm (PA) (Key in 01) Operating a device programmed as 'Panic Alarm' will start either a silent alarm transmission to the ARC, or an audible alarm, depending on how you have programmed PA Response, (see Command 30). PA alarms operate whether the system is set or unset.

Fire (FR)   (Key in 02) Smoke or heat detectors connected to FR type zones cause the speakers to give a distinctive fire

signal (internal sounders pulsing "Dee Dah Dee Dah..."). Fire alarms operate whether the system is set or unset, and will always trigger communications if fitted.

Normal Alarm (NA) (Key in 03) A zone programmed as 'Normal Alarm' will start an alarm when the system is set.

24 Hr Zone (24)   (Key in 04) This zone causes an internal alarm if violated when the system is unset, and a full alarm if the system is set. Providing the Installer programs 24hr zones with 'Omit Allow', the user can omit 24 hour zones in Day mode. Note that the control unit re-instates all 24Hr zones if anyone sets the system.

Final Exit (FE)   (Key in 05) Zones of this type must be the last detector to be activated on exit, or the first to be activated on entry. You can use zones of this type to finally set the system, or to start the entry procedure. Use Command 39 to set the exit mode type.

Entry Route (ER)   (Key in 06) Use this zone type for detectors sited between the Final Exit door/detector and a keypad. If an 'Entry Route' zone is violated when the system is set, an alarm will occur. If the entry/exit timer is running when an Entry Route zone is violated then no alarm occurs until the entry/exit timer expires.

Shock
Analyser (SA)   (Key in 07) You can apply this zone type to zones 1 to 4. The system will not accept the attribute for zones 5 to 40. (See also "Zone Attributes - Sensitivity".)

Technical (TC)   (Key in 08). Use this zone type when you want to monitor equipment, for example a freezer, without raising a full alarm. If a technical alarm zone is activated while the system is set, the system makes no audible alarm. However, when a user unsets the system the keypad indicates a fault.If a technical alarm zone is activated while the system is unset then the system starts a pulsed tone from the keypad. If programmed, the control unit also starts communication. When a user enters a valid code the keypad stops the tone and displays the zone.

Key Box (KB)   (Key in 09). This zone type is for use in Scandinavia only. When a zone of this type is required, the Installer con-nects the alarm wires of the zone to a special external key box and the tamper wires to the box enclosure switch. When someone opens the box the control unit logs the

event and communicates it to the ARC. The control unit also provides a Key Box output type that you can program to trigger one of the plug by communicator output pins, see Command 151.

Smoke Detector (SD)   (Key in 10). This zone type is for use in Scandinavia only. Use this type for zones connected to 12V smoke detectors. This type is active whether the system is set or unset and the control unit will transmit a specific alarm to the ARC if triggered. The control unit also provides a Smoke Detector output type that you can program to trigger one of the plug by communicator output pins, see Command 151.

If a zone of this type causes an alarm then the user will need to enter an access code to disarm and reset the system.

Key Switch   There are two Key Switch zone types: Momentary and Fixed. These two zone types are intended for use on zones that connect to an access control keypad, electronic key or other type of hardwired device used to set or unset the system.

When the user operates the Keyswitch while the system is unset then the control unit starts the programmed exit mode.

When the user operates the Keyswitch while the system is set then the control unit unsets the system immediately. The user cannot reset the sytem from a Keyswitch zone. To set Level A in a single system do **not** assign a Keyswitch zone to levels B, C or D. To set any other level assign the Keyswitch zone to a single level.

In a partitioned system do not assign more than one Fixed Keyswitch zone to one partition.

Momentary - KM (Key in 11). Use this zone type to connect a momentary keyswitch to a single zone.
Fixed - KF (Key in 12). Use this zone type to connect a fixed position keyswitch to a single zone.

Anti-Mask Zone (AM)   (Key in 13). This zone type is for use in Scandinavia only. Use this zone type for the outputs of detectors that have an anti mask output facility. Connect the alarm and contact wiring of the detector to an adjacent zone (the detector will therefore use two zone's wiring). This zone type is active when the system is unset, and during

setting and unsetting. If the zone is violated the control unit starts a tamper alarm, shows the message "AM Tamper" on the keypad display, and logs the event as a zone number with Anti Mask.

Forbikobler (FB)   (Key in 14). This zone type is a Scandinavian entry/exit zone. Use this type on zones connected to stand alone external keypads or access controllers. The zone operates as a normal entry/exit zone but when triggered by the external keypad during the exit time the control unit stops the exit time and sets the system. If the zone is triggered while the system is set then the control unit starts the entry time.

Zone Attributes

Specific zone types can have one or more attributes programmed by the digit after the zone Command and type. (To remove an attribute, key in the attribute digit again.)

Chime (C)   (Key in ✗1) When enabled by the user, the system gives a non-alarm warning tone when any zones programmed as 'Chime' are opened. This facility operates only while the system is unset.

Notes:
1. 'Chime' is available only for Normal Alarm, Final Exit, Entry Route and Shock Analyser zone types.
2. To make chime available from the keypad sounders but not the internal sounder then program Command 22 with option 0.

Soak Test (S)   (Key in ✗2) Use this zone attribute if you want to place under long term test a detector that you suspect is giving false alarms. Zones with this attribute are disabled for 14 days after you return the control unit to user mode. If the zone is opened while the system is set then the Service LED glows and the control unit logs the event as a "Soak Test Fail Zn" (n is the zone number) without sounding any bells or starting signalling. The Service LED stays alight until the Engineer resets the system. After midnight on the 14th day the control unit returns the zone to normal use.

Note: Soak test is available only for Normal Alarm, Entry Route, Technical and Shock Analyser zone types.

Double
Knock (2)   (Key in ✗3) Zones with this attribute will cause an alarm condition only if one or more sensors generate two alarms events within a five minute time window, or if one zone

remains open for more than 10 seconds. Programming a zone as 'Double Knock' is a way of reducing false alarms caused by environmental changes, but is not normally recommended.

Notes:

1.'Double Knock' is available only for Normal Alarm and Entry Route zone types.
2. Do not apply 'Double Knock' to radio zones with a PIR detector. The radio PIR uses a lockout timer and the detector will not send a second activation within the Double Knock time window.

Omit Allow (O)	(Key in ✗4) When applied to a zone, this attribute allows the user to omit the zone.
Level B (b)	(Key in ✗5) When applied, the zone will be armed when the user selects Level/Partition B.
Level C (c)	(Key in ✗6) When applied, the zone will be armed when the user selects Level/Partition C.
Sensitivity	(Key in ✗7) When you use this Command you must also enter an extra digit in the range 1 to 6 in order to set the sensitivity of the shock sensor. 1 is least sensitive, 6 is most sensitive. Note that to use this attribute you must make one of zones 1 to 4 a shock analyser type. To adjust the sensitivity you must enter the complete Command, for example to change the sensitivity to 3 you must key in: ✗7 + 3.
Level D (d)	(Key in ✗8). When applied, the zone will be armed when the user selects Level/Partition D.

Change Engineer Code (Command 20)

To change the Engineer access code:

1. Make sure you are in programming mode.
2. Key in 20 and press ✔.
   The display shows: `20:Code`
3. Key in a new four digit Engineer access code.
   The display shows: `20:Code ****`
4. Press ✔.

Zone Configuration (Command 21)

This Command allows you to select the wiring type of the zone connectors on the main PCB. The options available are:

Option 0   Eight Closed Circuit four wire zones with global anti tamper on control unit, plus up to 32 zones on expanders.

Option 1   Eight End of Line resistor (EOL) zones on control unit, plus up to 32 zones on expanders.

Option 2   16 Fully Supervised Loop (FSL) zones on control unit, plus up to 24 on expanders.

Option 3   Eight FSL zones on control unit plus up to 32 zones on expanders.

See Chapter 3 for wiring details.

Loudspeaker Chime (Command 22)

In a single system a user may find that the chime tone from the keypads is not loud enough. If so, then use Command 22 option 1 to make the internal sounder also give the chime tone. To alter the volume of the tone from the internal sounder enter a digit in the range 1 to 9. 1 is quietest, 9 is loudest. The internal sounder demonstrates the volume of the tone when you enter the digit. Note that this Command is not available in a partitioned system.

RedCare Reset (Command 23)

Option 1 enables RedCare Reset, which is designed to operate with the plug-by communicator, or remote PC reset.

Note: You must set System Reset to Engineer (Command 33 option 1) to ensure RedCare Reset works correctly.

After an alarm the user keys in their access code to silence the alarm, but cannot reset the system. The first to alarm display and Service LEDs remain visible. The user contacts the ARC, who verifies the user's identity. The ARC sends a signal back to the control unit. The Service LED goes dark and the end user can now reset the system with any valid access code, providing that there are no faults.

Use option 0 (the default) to disable the function.

Show Control Unit Account Name (Command 24)

An ARC can use Downloader to program an account name into the control unit. While the control unit is in programming mode you can display the account name from the keypad. To do this key in 24✔. Press ✗ to return to programming mode.

Continuous Sounder (Command 25)

Option 0 of this Command makes the internal sounder follow the external bell delay and duration times. Option 1 makes the internal sounder continue after the external bell times out.

4. Programming

Local Sounder Delay on Entry (Command 26)

This Command controls the time at which local sounders operate in response to an entry alarm.

Option 1 (default) introduces a delay to allow silent communications when an entry alarm is triggered (required by some police forces). The option is only valid under the following conditions:

> Alarm abort off (Command 36).
>
> Bell delay not zero (Command 41).
>
> Dual Ply off (Command 86).
>
> Alarm Confirm (Command 89) disabled.

If you enable option 1 the control unit starts the local sounders at the same time as the external sounders if an intruder strays from the entry route, or the entry time expires, and after any bell delay.

Option 0 causes the control unit to start the internal sounders immediately an intruder strays from the entry route or the entry time expires.

Exit Fault External Sounders (Command 27)

When programmed with option 0 the system operates the internal sounders if the user tries to exit while a zone is still violated (for example a door is not shut). When programmed with option 1 the system operates the external sounders as well as the internal sounders.

Status Display (Command 28)

Use option 1 of this Command if you do not wish to show keypad displays permanently. The keypad displays "Level Set" for 180 seconds after the user sets the system and then reverts back to the time and date display. Use this option when installing a system in the U.K.

When set to option 0 the keypad displays "Level Set" the whole time that the alarm system is set.

Use option 2 to make the keypad display revert to time and date 30 seconds after any event. Note that if you use this option the ✎ and ✉ LEDs also operate for only 30 seconds.

Entry Alarm Delay Time (Command 29)

Note: Disable Alarm Confirmation (Command 89) to gain access to this Command.

This Command determines what the system will do if a user strays from an entry route zone during entry. (This Command is available to provide compliance with EN 50131-1.)

Use option 0 to make the system give an alarm immediately if the user strays from an entry route zone during entry.

If you use option 1 and the user strays from an entry route zone during entry then the system waits 30 seconds before raising a full alarm. The system also gives an internal alarm during the 30 second wait.

If the user enters an access code before the end of the 30 seconds internal alarm then the user can reset the system.

Silent or Audible PA (Command 30)

This Command selects how the system responds when a PA zone operates.

Option 0 (Audible PA) The system operates the sounders and, if a communicator is fitted, sends a PA message to the ARC.The keypad displays the PA zone when a user disarms the system.

Option 1 (Silent PA) The sounders stay silent. If a communicator is fitted the system sends a PA message to the ARC.The keypad displays the PA zone when a user disarms the system.

Zone Tamper Reset (Command 31)

Use this Command to ensure that the system complies with Scandinavian requirements for resetting zone tamper alarms while the system is unset.

Use option 0 to allow user reset after a zone tamper.

Use option 1 to enforce engineer reset. The user can silence the alarm, but the engineer must reset the system by entering the engineering access code, or by using anti-code or remote reset.

Keypads and Partitions (Command 32)

If you created a partitioned system during initial power up then this Command allows you to assign entry/exit tones, alarm tones and status displays for one or more partitions to individual keypads.

To assign each keypad:

1. Make sure you are in programming mode.
2. Key in 32 and press ✔.
   The display shows: 32:Kypd 1 abcd
3. Press A, B, C or D to assign keypad 1 to the desired partition.
   The display shows (for example):   32:Kypd 1 a
4. Press ✔.
   The display shows   32:Kypd 2 abcd
5. Repeat steps 3 and 4 for the rest of the keypads.

Notes:
   1. By default all keypads belong to all partitions.
   2. You cannot assign keyswitches to individual partitions in a partitioned system.
   3. Telecommands belong to the whole system in a partitioned system.

System Reset (Command 33)

If you wish to make the system engineer reset, then use option 1. For user reset use option 0.

Certain types of event will always need an Engineer reset, no matter what option you choose for Command 33. These events are:

Auxilliary 12V supply fuse blown.

Keypad missing or failed.

Remote expander missing or failed.

A low battery at the control unit.

Note: To comply with DD243: 2002 use Engineer Reset (option 1). In addition, you can use various other forms of reset, such as RedCare (see Command 23) or Anti-code (see Command 50).

PA Reset (Command 34)

If you wish to make the system engineer reset after a PA alarm then use option 1. For user reset use option 0.

First Circuit Response (Command 35)

If you select option 0 (Lock out) then the complete system rearms at the end of the programmed bell run time, but excludes the first zone to activate during the set cycle.

If you select option 1 (Re-arm) then, when an alarm occurs, the complete system (including the first zone to activate) rearms at the end of the pro-grammed bell run time (providing the zone is closed). While the zone is open, the system locks it out. If the zone closes after the system rearms, the system reinstates it.

Alarm Abort (Command 36)

Users occasionally trigger false alarms by accident. The control unit can be programmed to allow users to abort an alarm by enabling option 1.

If a user accidentally triggers an alarm while the system is set, then the control unit activates Channel 3, starts the bell delay timer and alarm abort timer. To abort the alarm the user must enter a valid access code during the abort period. When the user successfully enters the code during the abort period the system deactivates Channel 3 and triggers the programmed abort channel simultaneously in order to signal a separate code abort, as required by some ARCs.

Note: *The alarm abort period is controlled by the ARC.*

Daytime Tamper Communication (Command 37)

This Command controls how the control unit reports tampers while the alarm system is unset.

With option 1 selected the system communicates tamper events to the ARC and starts the internal sounder. When unset, the system also communicates "RF Low Battery" for any radio detectors that have low batteries and either causes an alarm or sends supervision signals.

Note: Do not select option 1 if you have two or more 24 hour zones.

With option 0 selected the system starts the internal sounder only.

System Tamper Reset (Command 38)

This Command allows you to choose whether the customer can reset the system after a tamper alarm. This facility is independent of that offered by Commands 31 and 33. If you select option 0 (customer) then the user can reset the system after a system tamper alarm providing no fault exists. If you select option 1 (engineer) then you must enter the engineer access code at a keypad to reset the system after a system tamper alarm.

Level A Exit Mode (Command 39)

Use this Command to select the exit mode for Full Set or Partition A.

Option 0   Timed. Use this option EITHER if the user completes setting the system by pushing an exit terminate button connected to a keypad OR if no exit terminate button is connected, and the system sets after a delay selected using Command 44.

Option 1   Terminate. Use this option if the user completes setting the system by pushing an exit terminate button connected to a keypad. Note that the exit time is infinite in this option.

Option 2   Final door set. Use this option to complete setting the system by closing a door fitted with a Final Exit zone detector. Note that the exit time is infinite in this option.

Option 3   Single system: Lock Set (see below).
            Partitioned System: Instant Set. Use this option to make the system set without delay or exit tone.

Option 4   Silent Set (This option is not available on a single system.) The system gives the exit time programmed in Command 44 but without exit tones. When the system sets the keypad gives a double beep.

Option 5   Lock Set. (Partitioned system.) To use this method you must install a lock switch with the contacts connected to the ET terminals of a keypad. This facility is available on keypad software version 1.4.2 onwards.
            Note: Do not assign the keypad to more than one Partition. Do not connect more than one lockswitch (or any other device) to the

keypad ET terminals. In a single system, do not attempt to fit two lockswitches.

To set the system the user first enters their access code at a keypad or operates a keyswitch. The control unit starts the exit tone. Note that the exit time is infinite in this option. The user then operates the final exit zone and turns the key in the lock switch to "locked". The system sets seven seconds after the lock switch contacts open.

To unset the system the user turns the lock switch to "unlocked" (closing the lock switch contacts). The keypads start a continuous tone. At this point the user can lock the lockswitch again without causing any alarm. When the user opens the final exit zone the control unit starts the entry timer. The user completes entry by unsetting the system in the normal way. Note that when the user unlocks the lockswitch the control unit disables Alarm Confirmation. The control unit enables Alarm Confirmation again if the user locks the lockswitch without starting the entry timer.

If an intruder opens the final exit door without first unlocking the lockswitch then the control unit immediately starts an unconfirmed alarm. If the intruder goes on to violate another zone and you have enabled Alarm Confirmation then the control unit sends a confirmed alarm.

Note that the keypads give a double beep confirmation tone at the end of all setting modes.

If you select Timed (options 0), Terminate (option 1), or Final Door (option 2) exit modes the system allows a seven second settling time after pressing an exit terminate button or closing a final door.

System Auto Re-Arm (Command 40)

This Command lets you program the number of times that the system will re-arm when the bell delay expires. The system re-arms all closed zones. Select option 0 to make the system never re-arm (the system will go into alarm once only). Select options 1 to 4 to make the system re-arm once, twice, three times or always.

Use this Command in conjunction with Command 35 - First Circuit Response.

If the system has rearmed, then when a user enters the system through the entry route the control unit will give an audible internal alarm in place of the normal entry tone.

Bell Delay (Command 41)

When the system is set and (for example) an intruder violates a zone, then the system waits for the programmed Bell Delay before operating the exter-

nal sounder. The system then operates the external sounder for the pro-grammed Bell Duration. See "Programming Commands" for the Command options.

Note: Command 41 has no effect if Alarm Confirmation (Command 89) is enabled and either:
External Sounder (Command 162) is set to option 0, or
Internal Sounder (Command 161) is set to option 0. or
Alarm Response Mode (Commands 47, 63, 73 and 77) does not require communications.

Bell Duration (Command 42)

This Command lets you set the length of time the system will operate the external sounder during an alarm. See "Programming Commands" for the Command options.

Level A Entry Time (Command 43)

This Command lets you set the Entry Time for Full Set or Partition A. See "Programming Commands" for the Command options. The time starts when a user opens any Final Exit zone.

Level A Exit Time (Command 44)

This Command lets you set the Exit Time for Full Set or Partition A. See "Programming Commands" for the Command options.

Entry/Exit Tone Volume (Command 45)

In a single system use this Command to set the volume of entry/exit tones from the internal sounder. If you select option 0 then the internal sounder gives no entry/exit tones. If you select option 1 then the internal sounder gives quiet entry/exit tones, while option 9 gives the loudest entry/exit tones. The internal sounder demonstrates the volume of the tone when you enter the digit. Note that this Command is not available in a partitioned system.

Tamper Alarm Annunciation (Command 46)

In a single system use this Command to chose which sounders the control unit will activate for a tamper alarm while the system is unset.

Option 0 selects internal sounders only.

Option 1 selects keypad sounders only.

Option 2 selects internal sounders and keypad sounders.

This Command is not available in a partitioned system.

Partition A Alarm Response (Command 47)

If you have programmed the system for partitions then the following options are available:

Option 0   Keypad sounders only.

Option 1   Local alarm (internal and external sounder only).

Option 3   Full alarm (communication and internal/external sounders).

Note that this Command is not available for single systems.

Lockout Keypads During Entry (Command 48)

This Command is intended to make the system comply with DD243: 2002 6.4.5. If you want the user to unset the system by means of a portable ACE (for example the 725r telecommand) then the keypads must be locked out during entry.

Option 0 enables all users at all keypads during entry, option 1 locks out users from keypads during entry.

On a partitioned system individual user access codes are locked out depending on which partition they are assigned to.

When you lockout keypads during entry, various functions are still available:

• Keypad PA, Fire and Medical alarms.

• Duress codes remains active at all times.

• During an alarm the user is not locked out, they can cancel false alarms or disarm the system.

CSID Code (Command 50)

To allow the customer to use the 'Remote Reset' facility, you must program the control unit as 'Engineer Reset' (Command 33 option 1) and then install a four digit Central Station Identification (CSID) code.

First make contact with the ARC and obtain the CSID code. Then ensure that the system is in programming mode. Next, key in:

50 ✔ nnnn ✔

Where nnnn is the "CSID Code".

The control unit now contains the same CSID code as the ARC. After an alarm the control unit can generate a 'Reset Code' which will be recognised by the ARC 7300 Remote Reset decode programmer.

After an alarm the user keys in their access code to silence the alarm, but cannot reset the system. The system generates a four digit code number and displays it on the keypad. The user calls the ARC and tells them the number shown on the keypad display. The ARC verifies the user's identity, then enters the code number into a special programmer. The programmer generates an 'Anti Code', which the ARC gives back to the user. The user then enters the 'Anti Code' at the keypad to reset the system.

Note: To delete a CSID code key in "0000" over the existing code.

Setting Time and Date (Command 51)

The system has an internal clock/calendar which it uses to date stamp the log print-out. To set the system's clock/calendar to the correct time and date:

1. Enter programming mode (if you are not already there).
2. Key in 51✔ at the keypad.
   The display shows the current date, for example: `D11 M09 Y01`
3. Key in two digits for the day number and press ✔. Use a leading zero for the first nine days of the month.
4. Key in the two digits for the month number and press ✔. Use a leading zero for January to September.
5. Key in the two digits of the year and press ✔.
   The display shows the current time, for example: `H09 M15`
6. Key in two digits for the hours of the day and press ✔. Use the 24-hour clock.
7. Key in two digits for the minutes and press ✔.
   The keypad sounder gives a double "bleep" and the display shows "Installer Mode". The system sets its internal clock/calendar to the time you have given it.

Omit Tamper Allowed (Command 52)

This Command ensures that the control unit omits the tamper contacts as well as the alarm contacts when a user omits a zone. Note that you must give the zone the omit attribute to allow the user to omit a zone.

Option 0   The control unit omits alarm contacts only

Option 1   The control unit omits both alarm and tamper contacts when the user omits a zone.

Abort Reset (Command 53)

Option 0   Ensures that reset after abort is the same as system reset (see Command 33).

Option 1   Enables customer reset after an abort.

BVVO Supervision (Command 54)

If the alarm system must meet BVVO radio supervision requirements then select option 1. Once selected, the control unit will give a warning on the keypad display when a user tries to set the system if a detector has lost contact with the control unit for more than 15 minutes. If a detector loses contact for more than two hours the control unit raises an alarm (see Command 128).

If you select option 0 the control unit will report supervision failure as described for Command 128.

Number of Digits in Access Codes (Command 56)

The control unit can use either four-digit or six-digit access codes. To select four digit access codes choose option 0. Select option 1 for six digit access codes.

Note: Changing from four- to six-digit access codes (or from six- to four-digit access codes) causes the system to revert to factory defaults for all access codes. Six digit user code default is 123456 and Engineer code default is 567890.

Battery Load Test (Command 57)

Use this Command to make the control unit regularly test its backup battery.

Option 0   The control unit does not load test the battery at all.

Option 1   The control unit tests the battery when the system is unset or 23 hours after the last battery test (whichever comes first).

If the battery fails a test then the control unit reports to the central station. The control unit also gives a regular short tone from the keypad sounders, and the keypad shows the message "Batt Load Fail".

Day Tamper Indication (Command 58)

Use this Command if you want the Engineer to reset tamper indications that occur while the system is unset.

Option 0   The user can reset a displayed tamper while the system is unset. Note: Use Command 38 to allow the user to reset the system after a tamper alarm.

Option 1   The Engineer must reset a displayed tamper while the system is unset. Note that the user can continue to set and unset the system while a tamper is being displayed.

Sounder Tamper (Command 59)

The control unit can connect to external sounders with one of two tamper arrangements:

Option 0   The external sounder uses negative voltage tamper return.

Option 1   The tamper return to the external sounder is terminated with a 2k2 resistance.

Select the appropriate option for the sounder fitted to the system.

Level B Final Exit Operation (Command 60)

Command 60 controls how the system will treat Final Exit zones in part set Level B. (This Command does not affect Partition B in a Partitioned system.) When the Command option is set to 0 any Final Exit zones included in part

set B will continue to act as Final Exit zones during part set B. When the option is set to 1 any Final Exit zones included in part set B will act as Normal Alarm zones during part set B.

Level B Entry Route Response (Command 61)

Command 61 controls how the system treats Entry Route zones during part set B. (This Command does not affect Partition B in a Partitioned system.) When the option is set to 0 all Entry Route zones included in part set B will continue to act as Entry Routes during part set B. When the option is set to 1 any Entry Route zones included in part set B will act as Final Exit zones during part set B.

Level B Exit Mode (Command 62)

Command 62 specifies the exit mode for part set B or Partition B. For a single system the options are:

Option 0   The keypad sounders and any internal sounders give a low tone when entering part set Level B. Use Command 65 to select the exit time.

Option 1   Instant Set (no exit tone)

Option 2   Silent Set. Use Command 65 to program the Exit time. At the end of the exit time the keypad gives a double beep confirmation tone.

Option 3   Makes the Level B exit mode the same as Level A.

For a partitioned system the options are:

Option 0   (UK default) The keypad sounders and any internal sounders give a full tone when setting Partition B. Use Command 65 to select the exit time.

Option 1   Terminate. Use this option if the user completes setting the Partition by pushing an exit terminate button connected to a keypad. Note that the exit time is infinite in this option.

Option 2   Final door set. Use this option to complete setting the Partition by closing a door fitted with a Final Exit zone detector. Note that the exit time is infinite in this option.

Option 3   Instant Set (no exit tone)

Option 4   Silent Set. Use Command 65 to program the Exit time. At the end of the exit time the keypad gives a double beep confirmation tone.

Option 5   Lock Set. See "Level A Exit Mode (Command 39) for an explanation of Lock Set.

Note that the keypads give a double beep confirmation tone at the end of all setting modes.

Level B Alarm Response (Command 63)

Command 63 specifies the alarm response for part set B or Partition B. In a single system:

Option 0   Internal sounders and keypad sounders.

Option 1   Internal sounders and keypad sounders

Option 2   Local alarm (internal and external sounder only).

Option 3   Full alarm (communication and internal/external sounders).

For a partitioned system:

Option 0   Keypad sounders only.

Option 1   Local alarm (internal and external sounder only).

Option 2   Full alarm (communication and internal/external sounders).

Level B Entry Time (Command 64)

This Command sets the entry time for part set B or Partition B. See "Programming Commands" for options.

Level B Exit Time (Command 65)

This Command sets the exit time for Level B. See "Programming Commands" for options.

Level C Final Exit Operation (Command 70)

Command 70 controls how the system will treat Final Exit zones in part set Level C. (This Command does not affect Partition C in a Partitioned system.) When the Command option is set to 0 any Final Exit zones included in part set Level C will continue to act as Final Exit zones during part set Level C. When the option is set to 1 any Final Exit zones included in part set Level C will act as Normal Alarm zones during part set C.

Level C Entry Route Operation (Command 71)

Command 71 controls how the system treats Entry Route zones during part set Level C. (This Command does not affect Partition C in a Partitioned system.) When the option is set to 0 all Entry Route zones included in part set Level C will continue to act as Entry Routes during part set Level C. When the option is set to 1 any Entry Route zones included in part set Level C will act as Final Exit zones during part set C.

Level C Exit Mode (Command 72)

Command 72 specifies the exit mode for part set C or Partition C. For a single system the options are:

Option 0   The keypad sounders and any internal sounders give a low tone when entering part set Level C. Use Command 75 to select the exit time.

Option 1   Instant Set (no exit tone)

Option 2   Silent Set. Use Command 75 to program the Exit time. At the end of the exit time the keypad gives a double beep confirmation tone.

Option 3   Makes the Level C exit mode the same as Level A.

For a partitioned system the options are:

Option 0   The keypad sounders and any internal sounders give a full tone when setting Partition C. Use Command 75 to select the exit time.

Option 1   Terminate. Use this option if the user completes setting the Partition by pushing an exit terminate button connected to a keypad. Note that the exit time is infinite in this option.

Option 2   Final door set. Use this option to complete setting the Partition by closing a door fitted with a Final Exit zone detector. Note that the exit time is infinite in this option.

Option 3   Instant Set (no exit tone)

Option 4   Silent Set. Use Command 75 to program the Exit time. At the end of the exit time the keypad gives a double beep confirmation tone.

Option 5   Lock Set. See "Level A Exit Mode (Command 39) for an explanation of Lock Set.

Note that the keypads give a double beep confirmation tone at the end of all setting modes.

Level C Alarm Response (Command 73)

Command 73 specifies the alarm response for part set C or Partition C. In a single system:

Option 0   Keypad sounders only.

Option 1   Internal sounders and keypad sounders.

Option 2   Local alarm (internal and external sounder only).

Option 3   Full alarm (communication and internal/external sounders).

For a partitioned system:

Option 0   Keypad sounders only.

Option 1   Local alarm (internal and external sounder only).

Option 2   Full alarm (communication and internal/external sounders).

Level C Entry Time (Command 74)

This Command sets the entry time for part set C or Partition C. See "Programming Commands" for options.

Level C Exit Time (Command 75)

This Command sets the exit time for part set C or Partition C. See "Programming Commands" for options.

Level D Exit Mode (Command 76)

Command 76 specifies the exit mode for part set D or Partition D. For a single system the options are:

Option 0   The keypad sounders and any internal sounders give a low tone when entering part set Level D. Use Command 79 to select the exit time.

Option 1   Instant Set (no exit tone)

Option 2   Silent Set. Use Command 79 to program the Exit time. At the end of the exit time the keypad gives a double beep confirmation tone.

Option 3   Makes the Level D exit mode the same as Level A.

For a partitioned system the options are:

Option 0   The keypad sounders and any internal sounders give a full tone when setting Partition D. Use Command 79 to select the exit time.

Option 1   Terminate. Use this option if the user completes setting the Partition by pushing an exit terminate button connected to a keypad. Note that the exit time is infinite in this option.

Option 2   Final door set. Use this option to complete setting the Partition by closing a door fitted with a Final Exit zone detector. Note that the exit time is infinite in this option.

Option 3   Instant Set (no exit tone)

Option 4   Silent Set. Use Command 79 to program the Exit time. At the end of the exit time the keypad gives a double beep confirmation tone.

Option 5   Lock Set. See "Level A Exit Mode (Command 39) for an explanation of Lock Set.

Note that the keypads give a double beep confirmation tone at the end of all setting modes.

Level D Alarm Response (Command 77)

Command 77 specifies the alarm response for part set D or Partition D. In a single system:

Option 0   Keypad sounders only.

Option 1   Internal sounders and keypad sounders.

Option 2   Local alarm (internal and external sounder only).

Option 3   Full alarm (communication and internal/external sounders).

For a partitioned system:

Option 0   Keypad sounders only.

Option 1   Local alarm (internal and external sounder only).

Option 2   Full alarm (communication and internal/external sounders).

Level D Entry Time (Command 78)

This Command sets the entry time for part set D or Partition D. See "Programming Commands" for options.

Level D Exit Time (Command 79)

This Command sets the exit time for part set D or Partition D. See "Programming Commands" for options.

Note: In a single system, you cannot program entry/exit and entry route zones assigned to part set D to change functions when the user sets part set D. Cooper Security recommend that you use part set D for simple applications only.

Output Programming (Commands 81, 82, 83 and 84)

The system has four programmable outputs. OPs 1 and 2 are zero voltage relay outputs, while OPs 3 and 4 are transistorised, high current outputs. Command 81 programs output 1, Command 82 programs output 2, Command 83 programs output 3 and comand 84 programs output 4. All three Commands take a single following digit that selects the function.

Note: OPs 3 and 4 are a "pull down" type that provide negative applied control signals. The outputs are +12V when inactive, and 0V when active.

Output Type

Bell	(Key in 00) The control unit operates this output during an alarm. Use Command 41 to control bell delay and 42 to control bell duration.
	In a partitioned system the control unit operates this output when any any partition is in alarm.
	If you enable Alarm Confirmation (Command 89) then use Command 162 to select whether the control unit activates the bell on a first or a confirmed alarm.
EE Follow	(Key in 01) This output is active when the entry or exit time starts and deactivates at the end of the entry/exit time, or if the entry/exit time is terminated. The output can be used for a separate entry/exit buzzer. Note that the output does not give a tone during part set if the exit mode is silent set or instant set.
Armed lamp	(Key in 02) The output is active continuously while the system is full or part set.

PIR Set Latch   (Key in 03) This output is active when the system is set and deactivates when the system is unset or an alarm condition occurs. The output will also activate for one second when a reset is performed or the control unit leaves programming mode. In addition, the output is active during a walk test.

Shock Reset   (Key in 04) This output is used to reset shock sensors, (for example the 'Viper'). The control unit triggers the output at the start of the exit period. The output remains active for a fixed time of five seconds.

Walk Test   (Key in 05) This output is active during both engineer and user walk test and in the period between silencing the system and resetting the system. This output type is used on movement detectors which have the facility to switch off the walk test LED in any state other than a walk test.

Ready Lamp   (Key in 06) This output is active when the system is unset, and if there are no faults. The output is inactive when the system is full or part set, during any alarm, or if a circuit fault prevents setting. Note that the output will also be active when the control unit is in programming mode.

24 Hour alarm   (Key in 07) This output will become active if a zone designated as '24 Hours' is violated. The output deactivates when the system is disarmed.

Strobe   (Key in 08) In an alarm the system operates the output. The output remains active until the user disarms the system.

Smoke Reset   (Key in 09) This output is designed to be connected to low voltage smoke detector reset terminals. The control unit operates the output for 3 seconds when the system is reset after any alarm has occurred.

Siren Test   (Key in 10) This output becomes active when the Installer performs a sounder test using Command 91.

Strobe Set   (Key in 11) This output is active for 10 seconds after the system (or any Partition) has set. The output can be used to operate the strobe to give a visual indication that the system has completed setting.

Pulse Set   (Key in 12) This output becomes active for 1 second when the system is fully set, or during a fire or PA alarm.

Pulse Unset	(Key in 13) This output becomes active for 1 second when someone unsets the system, or during a fire or PA alarm.
Alarm Confirm	(Key in 14) This output is active during a confirmed alarm.
Set Complete	(Key in 15) This output is active for 10 seconds when someone successfully sets the system.
Unset Complete	(Key in 16) This output is active for 10 seconds when someone unsets the system, or disarms it after an alarm.

In a partitioned system the following options are available:

Bell Partition A	(Key in 17) This output is active when an alarm occurs in partition A.
Bell Partition B	(Key in 18) This output is active when an alarm occurs in partition B.
Bell Partition C	(Key in 19) This output is active when an alarm occurs in partition C.
Bell Partition D	(Key in 20) This output is active when an alarm occurs in partition D.
Strobe Set A	(Key in 21) This output is active for 10 seconds after the Partition A has set.
Strobe Set B	(Key in 22 This output is active for 10 seconds after the Partition B has set.
Strobe Set C	(Key in 23) This output is active for 10 seconds after the Partition C has set.
Strobe Set D	(Key in 24) This output is active for 10 seconds after the Partition D has set.

Burglar Communications Re-arm (Command 85)

This Command determines what happens to the "Burg" communications output at the end of the bell run time.

Option 0 Latched. The output stays active until an engineer or user resets the system.

Option 1 Rearm. The system rearms Channel 3 once the bell timer has expired. Once the Channel is rearmed, the system is ready to report any new alarm. The system bypasses any detectors that are still violated.

Notes:

> 1. If a **Final Exit Zone** is triggered, Channel 3 becomes active at the end of the Programmed Entry time, or,
> 2. If **Dual Ply Entry** is enabled (Command 86 1) and the Final Exit zone is triggered then Channel 3 becomes active at the end of the 30 second Dual ply grace period, or,
> 3. If **Alarm Abort** is enabled (Command 36 1) Channel 3 restores if the user unsets the system.

Dual Ply Entry Warning (Command 86)

Note: Disable Alarm Confirmation (Command 89) to gain access to this Command.

If users habitually exceed the entry time use option 1 to add a 30 second extension during which the internal sounders give a warning tone. The extension applies to both Full and Part setting.

If users exceed the dual ply entry warning during full set then the system gives a full alarm. If users exceed the dual ply entry warning during part set then the system gives an alarm that is determined by Commands 63 for part set B, 73 for part set C, or 77 for part set D.

Use Option 0 (default) to disable Dual Ply Entry.

Keypad Dual Key Alarms (Command 87)

This Command allows users to raise a alarms by pressing two keys on the keypad at the same time. When this facility is enabled (option 1) the alarms available are:

PA alarm	keys 1 and 3
Medical alarm	keys 4 and 6
Fire alarm	keys 7 and 9

Use option 0 to disable this Command.

Note that this Command also enables PA from keyswitches (See "9928 Installation Guide".)

Alarm Confirmation (Command 89)

Option 1 allows you to program the control unit for Alarm Confirmation (verified alarm), if required by your local Police Intruder Alarms Policy. (Use this option to comply with DD243: 2002.)

When a detector causes an alarm the control unit activates Channel 3 (Burg). If the intruder triggers the second detector within the alarm confirm time then the control unit activates the programmed alarm confirmation channel.

Option 0 disables Alarm Confirmation.

Commands 90 - 97, See "5.Testing"

Load Full Defaults (Command 98)

Use this Command to load default values for all Commands.

1. Enter programming mode (if you are not already there).

2. Key in 98 ✔ at the keypad.

    The display shows: `Load default`

3. Press 1 ✔ at the keypad.

    The display shows (for example):   `Mult Sys?   OFF`

4. Either: Press 1 to create a partitioned system
    Or 0 to create a single system.

    The display shows (for example):   `Mult Sys?    ON`

5. Press ✔.

    The keypad gives a double confirmation tone and the system loads the factory default Command values, erasing all previously programmed values.

Notes:The log is protected and cannot be erased by the Installer.

Leave Programming Mode (Command 99)

To leave programming mode:

1. Key in 99 ✔ at the keypad.

    The display shows: `Exit Eng?`

2. Press ✔.

    The display shows: `Checking System`
    and after a few seconds the contol unit
    resets itself and returns to user mode.

If any 24 hour, Fire, PA or Technical zones are active when you try to leave programming mode then the keypad gives an error tone and displays all the faults.

Clear the faults shown on the display and press ✔. Repeat steps 1 and 2 and the control unit should leave programming mode.

Call Mode (Command 101)

You may select one of the following call modes:

Disabled (**0**)   The control unit does not use any communications.

Single (**1**)   Reports to a single telephone number (see Command 115) with a single account number (see Command 117). Operation: The system dials the number and attempts to connect with the ARC. If it fails, it closes down and then re-attempts to connect up to a maximum of 15 times.

Alternate (**2**)   Reports to one of two programmed telephone numbers (see Commands 115 and 116).
Operation: The system dials the first telephone number and attempts to connect to the ARC. If it fails, it will then close down and dial the second telephone number and attempt to connect to the ARC. If received and acknowledged on this attempt, the system will close down and the alarm transmission will be complete. If the system fails to connect to the second telephone number, it will close down again and re-attempt to connect to the first telephone number. The system will continue to shuttle between the two numbers up to 15 times.

Dual (3)   Reports to two different receiver numbers (see Commands 115 and 116).
Operation: The communicator dials the first telephone number and attempts to connect to the first ARC. If received and acknowledged, the communicator dials the second number and attempts to transmit to the second ARC. If received and acknowledged by the second number, the communicator will close down and the alarm transmission will be complete. If calls to the first number fail, then the communicator attempts to call the second number. If the communicator fails to connect to the second telephone number, it will close down again and re-attempt to connect to the first telephone number. The communicator will continue to shuttle between the two numbers, calling each number up to 15 times, until it has successfully called both numbers.

Note: Dual reporting does not work with SIA or CID reporting formats.

Reporting Type (Command 103)

The system offers four message formats:

Option 0   Scancom Fast

Option 1   Contact ID

Option 2   Scancom SIA Level I

Option 3   Scancom SIA Level II (does not send time and date).

Option 4   Scancom SIA Level 3

Option 5   Extended Scancom SIA Level 3

Static Test Call (Command 105)

In static testing the system makes a test call either at one particular time of day or on one day every month.

To make calls at a set time every day press A and then key in a number between 01 and 24 to select the time of day for the call. For example, key 18 to program the control unit to make a static test call at 6:00pm every day.

To make calls one day every month press B and then key in the day number of of the call. The day number should be between 1 and 24. The control unit will make a test call at 1am on the selected day.

Note that the control unit will add or subtract up to 16 minutes at random to the time you specified. This is to make sure that the ARC is not overwhelmed with a flood of test calls from systems that have all been given the same time.

Key in 00 to disable static test calls.

Line Fail Response (Command 106)

This Command lets you program the system to respond with either audible or silent alarms when the system detects a fault on an attached telephone line. The exact response depends on whether the system is set or unset, as follows:

Disabled (**0**)   The control unit does not monitor the telephone line.

Audible (**1**)   If the system is unset then the system logs the event. The keypad produces a short audible tone every minute. Entering a valid access code silences the sounders and the keypads indicate a telephone line fault. The system can be set again with the line fault present.

Note: Audible response is the NACOSS recommendation for line fault.

If the system is set then the control unit logs the event but the keypads do not give any tone or display. The control unit cancels any programmed bell delay if the line is out of order when an alarm occurs.

Silent (**2**)   If the system is unset then the keypads indicate a tel-ephone line fault and the control unit logs the event. The system may be set again with the line fault present.

If the system is set then the keypad does not give any indication or tone but the control unit does log the event. The system cancels any programmed bell delay if the line is out of order when an alarm occurs.

Dynamic Test (Command 108)

In dynamic testing the system makes a test call 24 hours after the last communication. Select option 0 to disable dynamic test calls. Select option 1 to enable dynamic test calls.

Note: Cooper Security Ltd recommend that you chose either Static Test Call (105) or Dynamic Test Call, but not both at the same time.

Three Way Call - UK only (Command 109)

To use Three Way Call you must make sure that the BT Network Services Option of 'Three Way Calling' is available on the telephone line to which the communicator is connected.

Three way off (0)   Disabled

Three way on (1)   Three Way Call.
Operation: If the control unit triggers the communicator and the communicator detects Off Hook or Incoming Ringing, the communicator then sends a 80 ms trigger (which represents the "R" or Recall button on a telephone) which is detected by the exchange as a request for a new clean line. With the new line available, the communicator then attempts to connect to the pre programmed receiver number.

Engineer Download (Command 110)

The control unit can be programmed from a PC using <Downloader> software. You can connect the PC to the control unit either over the telephone network, or locally using a cable.

Use Command 110 to manually connect the control unit to the PC.

Local (0)   To connect the control unit to a PC (for example a laptop) using a local cable key in 110 ✔ 0 ✔.

Remote (1)   To automatically answer calls coming from a remote PC over the telephone network key in 110 ✔ 1 ✔. You will also need to use Commands 112, 113. (Note that Secure callback does not work with this option.)

Note: The control unit will leave Command 110 if <Downloader> does not make a call within 30 minutes.

While the control unit is connected to the PC you can upload its programming configuration into <Downloader> in order to inspect it. Using <Downloader> you can change the configuration and then transmit the new configuration back to the control unit. If you do not wish to change the configuration you can simply monitor the state of the control unit and zones from the PC.

Use Command 114 if you want the control unit to answer incoming calls from <Downloader> without an engineer being present.

Rings to Answer (Command 112)

Use this option to set the number of rings that the system waits before answering an incoming call from the remote PC. See "Programming Commands" for the available options.

Answer on One Ring (Command 113)

(Answer phone defeat) Use this feature if the alarm system shares a line with other equipment.

One ring off (0)   Disabled

One ring on (1)   <Downloader> "warns" the alarm system that a call is coming by ringing the alarm system number, waiting for between one and two rings and then hanging up. The alarm system now knows to expect a call within the next 10 to 90 seconds. <Downloader> then rings the alarm system again, within 10 to 90 seconds. The alarm system answers after the first ring.

Note: When using "Answer on 1 Ring" set the number of rings in "Rings to Answer" (C112) to a higher number than that used by the equipment sharing the telephone line with the alarm system. If you do not, then the other equipment will never answer any incoming calls.

Access Mode (Command 114)

This function allows you to provide extra security when a remote PC is dialling into the system. Once the PC is connected to the system then the <Downloader> has access to all system programming Commands. If you wish to provide secure access then either use Option 0 or Option 1 below. Alternatively you can use Command 110 if you want an engineer present to provide access for a remote PC connection to the panel. Please note that you cannot use secure callback with Command 110.

Option 0   Call Out Only. Operation: Someone must start a call to the remote PC manually using Command 0 in User Mode. User Command 0 calls the first <Downloader> telephone number (see Command 118).

Option 1   Secure Callback. Operation: When the remote PC calls, the system waits for the set number of rings (see Command 112) and then answers. The remote PC sends a panel ID, the <DOWNLOADER> software version, and indicates which of the two Downloader Telephone Numbers to use (see Commands 118/119). The system checks that the remote PC is sending the

correct panel ID, and is using the correct <DOWNLOADER> software version. If these items don't match then the system hangs up. If the items do match then the system hangs up and, after a short delay, the system seizes the telephone line and calls the PC using the indicated Downloader Telephone Number.

Note: Secure Call Back must be Disabled (Default) until the first "attended" upload has been performed. This first upload can be carried out either using Command 110 option 1, or using Command 114 option 0.

Option 2   Unattended Mode.
            Operation: The control unit answers as soon as the number of rings set in Commands 112 or 113 have elapsed.

Note: The <Downloader> operator can choose to use Secure Callback, even though the alarm system is programmed for Unattended Mode.

Communicator Telephone Numbers (Command 115/116)

Use this Command to store the telephone numbers that the communicator will use to report alarms. The system will accept one telephone number if you choose Single call mode in Command 101, or two telephone numbers if you select Alternate or Dual call mode.

The system can store telephone numbers up to 31 digits long.

You can use the A key to insert a pause (four seconds).

To enter a number:

1. Enter programming mode (if you are not already there).

2. Key in 115 (or 116) ✔ at the keypad.
   The display shows (for example):   `115:Tel No 1_`

3. Press ✔.

4. Key in the digits of the number. If necessary press D to move the cursor to the left to edit or delete the number. Press C to move the cursor to the right.
   The display shows (for example):   `115:  1234_`

5. Press ✔.
   The keypad gives a double beep and the system stores the number.

Account Number (Command 117)

With SIA Format the system can report alarms using a six digit account code. Use leading zeros to pad the account code to the correct length if necessary, for example account 1234 would be 001234.

If the control unit is set up as a partitioned system then you can enter up to four account codes as follows:

1. Enter programming mode (if you are not already there).
2. Key in 117 ✔ at the keypad.

   The display shows: 117: Account No
3. Press ✔.

   The display shows (for example):   117: 123456 PA
4. Key in the digits of the account code for partition A . (If the account code is correct simply press ✔.) Press C between each digit to move the cursor to the right. Press D to move the cursor to the left to correct any mistakes. Press ✔ when the account code is correct.

   The control unit stores the account code you
   entered and displays the account code for
   the next partition (for example):   117: 123456 PB
5. Repeat step 4 for the account codes for partitions B, C and D.

Note: Some European countries use letters in the account code. The control unit can accept any of the letters B, C, D, E and F as part of the account code. To enter a letter at step 4 press 2 or 3 repeatedly until the letter you require appears on the display (see "Zone Programming - Zone Names").

Downloader Telephone Numbers (Commands 118/119)

Use this option to program up to two separate, 31-digit telephone numbers that the system will use during downloading. When a connection has been made, the remote PC operator selects the telephone number which the control unit will call back to (for example home or office).

You can use the A key to insert a pause (four seconds).

To enter a number:
1. Enter programming mode (if you are not already there).
2. Key in 118 (or 119) ✔ at the keypad.

   The display shows (for example):   118: DL Tel No 1_
3. Press ✔.
4. Key in the digits of the number. If necessary press D to move the cursor to the left to edit or delete the number. Press C to move the cursor to the right.

   The display shows (for example):   118:   1234_
5. Press ✔.

   The system stores the number.

Third Downloader Telephone Number (Commands 120)

Use this option to enable Downloader to use a third callback number (independent of Commands 118 and 119). Before the Downloader has made a connection, the remote PC operator keys in the third callback number and <Downloader> transmits it to the control unit. The control unit then uses that number to call back to the remote PC.

Key in Option 0 to disable the third callback number, or option 1 to enable it.

Fast Format Channels (Command 121)

If you selected Fast Format reporting type in Command 103 then you can use Command 121 to allocate one of the following events to each of the 8 channels:

00	Not used	11	AC Fail
01	Fire	12	Tamper Alarm (Day tamper)
02	PA	13	Open (see note 1)
03	Burglar	14	Close (see note 1)
04	Open/Close	15	Zone Omitted (see note 2)
05	Alarm Abort	16	Medical Assistance
06	Technical Alarm	17	Key Box
07	Alarm Confirmation	18	Anti Mask
08	RF Low Battery	19	Smoke Detector
09	Supervision Loss	20	Comms Acknowledge
10	RF Jamming		

Notes:1. 13 Open and 14 Close provide the same functions as 4 Open/Close, but on two separate channels.
2. 15 Zone omitted - the control unit sends this signal for five seconds when a user omits a zone.
3. The control unit sends 08 RF Low Battery when the radio detector with a low battery causes an alarm or sends a supervision signal. To enable this facility in day mode set Menu 37 to option 1.
4. The control unit delays reporting/loging either mains loss, or exiting engineering with mains loss, by 15-18 min (chosen randomly). If you chose a Scandinavian default in Command 0 then the control unit waits at least 60 minutes before reporting.

Communication Acknowledge (Command 122)

Option 1 of this Command will be available if you select option ✗1 (Ireland) in Command 0. In addition, the option is only <u>effective</u> if you have selected Scancom Fast format in Command 103.

Once the communicator has made a call and the ARC returned an acknowledgement then with this Command enabled the keypad will display the message "Call your CS" and beep for 10 seconds when the system is unset or disarmed. To clear the display the user must enter a valid access code.

In addition, if you have used Command 121 to program channel 3 with Fast Format communications then the control unit will add a 20 second delay before dialling an alarm call.

To disable Communication Acknowledge use option 0.

Report Restorals (Command 123)

This option is only available if you have selected Scancom Fast format in Command 103.

Restore off (0)   The system does not communicate restorals.

Restore on (1)   Enabled. The system will communicate restorals.

Reverse Open/Closed (Command 124)

Note: This Command is normally used in France.

This option is only available if you have selected Scancom Fast format. With this option enabled the Open/Close Fast Format channel is reversed as follows:

	Option disabled	Option enabled
On setting system	False	True
On unsetting system	True	False

Note: This option does not afffect the separate Open channel and Close channel.

No Closing Signal if More Than One Circuit Omitted (Command 125)

Note: This Command is required for Belgian BVVO approval.

This option is only available if you have selected Scancom Fast format. When this option is enabled the control unit will NOT transmit a Close signal if a user has omitted two or more zones.

Select Language (Command 126)

The control unit can display messages on the keypads in one of several different languages. Use Command 126 to select the language you wish to use. The options available are:

Option 0: English (default)   Option 5: French
Option 1: Italian   Option 6: German
Option 2: Spanish   Option 7: Norwegian
Option 3: Portuguese   Option 8: Swedish
Option 4: Dutch   Option 9: Danish

Radio Zone Supervision Fail Response (Command 128)

If the system is fitted with a 9955 Radio Expander then all the radio zones are supervised. Should a radio zone not communicate with the 9955 expander for one hour or more then the 9955 reports a supervision failure to the control

unit. Use Command 128 to select how the control unit will respond to the reported supervision failure.

Option 0   Full alarm (all sounders and communication to the ARC).

Option 1   Internal, external and keypad sounders.

Option 2   Keypad sounders.

Option 3   Communication to the ARC and no sounders.

Option 4   Prevent the control unit setting until the faulty radio detector responds to supervision.

Telecommand Requires Entry for Unset (Command 129)

If the system is fitted with a 9955 radio expander then the user can employ a telecommand to set and unset the system. Command 129 provides two options for unsetting the system with a telecommand:

Option 0   The user must first trigger the entry zone and start the entry timer before unsetting the system with a telecommand.

Option 1   The user can unset the system using a telecommand without first starting the entry timer by triggering the entry zone.

Report Mode (Command 131)

SIA reports are called 'Telegrams'. Each telegram contains the site identification number (normally six digits long) and relevant event information. The amount of information reported depends on the SIA mode you select: Basic, Summary, Intermediate, or Full. Figure 23 shows the types of report for each mode. (Note that each mode also contains all the reports in the mode above it.) Use the table to decide which mode is appropriate for the installation.

Option 0   Basic

Option 1   Summary

Option 2   Intermediate

Option 3   Full

The system also provides a "custom" mode which allows any combination of event information. However, you must use <Downloader> to create the combination required.

SIA alarm transmissions will take considerably more telephone time than Scancom Fast format since the system transmits extended alarm data to the ARC.

Note: The control unit delays reporting/loging either mains loss, or exiting engineering with mains loss, by 15-18 min (chosen randomly). The control unit delays reporting/loging either mains restore, or exiting engineering with mains restored, by 60-90 sec (chosen randomly). If you chose a Scandinavian default in Command 0 then the control unit waits at least 60 minutes before reporting.

BASIC

Event	SIA Code	CID Code
ALARM ABORT	BC	406
ALARM CONFIRM	BV	139
BURG	BA	130
DURESS	HA	121
EXIT TIMEOUT	EA	-
FIRE	FA	110
GLOBAL TAMPER	TA	137
KEYPAD FIRE	FC	110
KEYPAD MEDICAL	MA	100
KEYPAD PA	HA	120
MAN TRIGGER TEST REPORT	RX	601
PA TELECOMMAND	PA	120
PANIC	PA	120
PERIODIC TEST REPORT	RP	602
SENSOR TAMPER	TA	137
SMOKE DETECTOR ALARM	FA	111
ZONE OMIT	BB	573

SUMMARY

Event	SIA Code	CID Code
ARM	CL	401
DISARM	OP	401
EXPANDER MISSING	TA	137
EXPANDER TAMPER	TA	137
FIRE RESTORE	FR	110‡
LID TAMP	TA	137
PANIC RESTORE	PR	120‡
PARTN RESET	OR	305
PROG MODE END	LS	628
PROG MODE START	LB	627
RESET	OR	305
SMOKE DETECTOR RESTORE	FR	111
SOUNDER TAMPER	TA	137
SYS TAMPER	TA	137
TA (Technical alarm)	UA	150‡
TA RESTORE	UR	150
TAMPER IN DAY	TA	-
TAMPER KEYPAD	TA	137
TAMPER USER CODE	JA	461

INTERMEDIATE

Event	SIA Code	CID Code
BURG RESTORE	BR	130‡
DOWNLOAD SUCCESS	RS	412
EXPANDER MISSING RESTORE	TR	137‡
EXPANDER TAMPER RESTORE	TR	137‡
GLOBAL TAMPER RESTORE	TR	137‡
JAMMING	XQ	380
KEYBOX CLOSED	UR	150
KEYBOX OPEN	UA	150
LID TAMP RESTORE	TR	137‡
PASSWORD DEFAULTS LOADED	RH	-
SENSOR TAMPER RESTORE	TR	137‡
SOUNDER TAMPER RESTORE	TR	137‡
SUPERVISION FAIL	BZ	381
SYS TAMPER RESTORE	TR	137‡
TAMPER KEYPAD RESTORE	TR	-
TX BATTERY TROUBLE	XT	384

FULL

Event	SIA Code	CID Code
AC LOST	AT	301
AC RESTORE	AR	301‡
AUX RESTORE	YQ	-
AUX TROUBLE	YP	-
BATT MISSING	YM	311
BATT RESTORED	YR	311‡
LOW BATT	YT	311
LOW BATT RESTORE	YR	311‡
TD (Time and day) RESET	JT	625
TELCO1 FAULT	LT	351
TELCO1 FAULT RESTORE	LR	-
USER CODE CHANGED	JV	-
USER CODE DELETED	JX	-

Figure 23. SIA Telegram Reports

Send Tamp as Burg (Command 132)

DD243: 2002 states that alarm signals and confirmation signals must be transmitted using certain codes. In some case these codes do not conform to Cooper Security Ltd's implementation of the SIA standard. In addition, some ARC's experience problems if a control unit sends "restore" messages using SIA. The ARC interprets "restores" as "user restores". When using SIA reporting Command 132 allows you to program the control unit to send tampers as alarm, and disable the transmission of "restore" messages.

Option 0: (Default) The control unit sends all SIA messages as specified in Command 131.

Option 1: For full alarm response the control unit sends tampers as burglary (BA) and sends Contact ID 130 in place of Contact ID 137. In addition the control unit does not send: FR (fire restoral), PR (panic restoral), UR (technical restoral), BR (burglary restoral) or TR (tamper restoral).

Contact ID Options (Command 143)

If you selected Contact ID in Command 103 then use Command 143 to select the types of contact ID messages that will be sent.

Option 0 Mode Basic, comprises all the messages with numbers in the "CID Code" column of Fig 23, with the exception of those marked with an "‡".

Option 1 Mode Basic + Restore. With this option the system sends all the messages with numbers in the "CID Code" column of Fig 22.

If the keypad display shows "Custom" when you enter Command 143 then <Downloader> has been used to program this Command.

Plug by Communicator Outputs (Commands 151 to 158)

The main circuit board of the control unit provides eight programmable outputs that can be used to control a plug-by communicator. The outputs can be connected to the communicator by an twelve-way wiring harness provided with the control unit. See "3. Installation - Fitting a Plug-by Communicator" for details of the wiring harness.

Commands 151 to 158 allow you to assign one of several channels to each output. Command 151 controls output 1, 152 output 2, and so on up to Command 158 which controls output 8. Each Command has the same options, as follows:

00	Not used	13	Open
01	Fire	14	Close
02	PA	15	Zone Omitted
03	Burglar	16	Medical Assistance
04	Open/Close	17	Key Box
05	Alarm Abort	18	Anti Mask
06	Technical Alarm	19	Smoke Detector
07	Alarm Confirmation	20	Comms Acknowledge (see Note)
08	RF Low Battery	21	Battery Fault
09	Supervision Loss	22	Alarm Partition 1
10	RF Jamming	23	Alarm Partition 2
11	AC Fail	24	Alarm Partition 3
12	Tamper Alarm (Day tamper)	25	Alarm Partition 4

Note: 1. If the control unit is using Fast Format signalling, and has sent a Burg to the ARC, then the control unit activates the output pin assigned to Comms Acknowledge when the ARC returns a Comms Acknowledge signal. (Use Command 101 to enable comms.)
2. The control unit delays reporting/loging either mains loss, or exiting engineering with mains loss, by 15-18 min (chosen randomly). If you chose a Scandinavian default in Command 0 then the control unit waits at least 60 minutes before reporting.

Confirmation Timer (Command 160)

Note: Enable Alarm Confirmation (Command 89) to access this Command.

This Command controls a timer. The timer starts when an alarm is triggered for the first time. If a second alarm is triggered before the timer expires then the control unit transmits a confirmed alarm to the ARC. You can set the timer to any value in minutes between 1 and 999. For DD243: 2002 compliance set confirmation time to default (=30 mins).

Internal Sounder (Command 161)

Note: Enable Alarm Confirmation (Command 89) to access this Command.

This Command selects whether the control unit will operate the internal sounder for a confirmed alarm of for an unconfirmed alarm.

Option 0   The control unit operates the internal sounder for an unconfirmed alarm.

Option 1   The control unit operates the internal sounder for a confirmed alarm.

External Sounder (Command 162)

Note: Enable Alarm Confirmation (Command 89) to access this Command.

This Command selects whether the control unit will operate the external sounder for a confirmed alarm of for an unconfirmed alarm.

Option 0   The control unit operates the external sounder for an unconfirmed alarm.

Option 1   The control unit operates the external sounder for a confirmed alarm.

Confirmation After Entry (Command 163)

Note: Enable Alarm Confirmation (Command 89) to access this Command.

This Commands controls how the system treats alarms that arise during entry. The options select the number of non-entry route zones that must be triggered to provide a confirmed alarm during the entry time.

Option 0   No zones (alarm confirmation disabled during entry).

Option 1   One zone (not DD243:2002 compliant).

Option 2   Two zones.

Use option 0 if you are trying to comply with DD243 sections 6.4.2, 6.4.3, 6.4.4 or 6.4.6. These sections cover entry methods where:

> Unlocking the final door unsets the system.

> Unlocking the final door disables confirmation.

> Opening the entry door disables confirmation.

> The user must call the ARC to unset the system.

Option 0 ensures that you will never get a confirmed alarm caused by users wandering from the entry route.

To comply with DD243:2002 6.4.5 you should use option 2. This section covers unsetting the system with a "portable ACE" (proximity reader or telecommand).

Option 2 ensures that if the user unsets the system by means of a proximity reader or telecommand, they cannot cause a confirmed alarm by wandering from the entry route. However, if an intruder goes through the front door, they will eventually cause a confirmed alarm if they are still wondering around the premises after the entry time has expired.

User Reset After Confirmed Alarm (Command 164)

Note: Enable Alarm Confirmation (Command 89) to access this Command.

If you enable Alarm Confirmation, and select Engineer Reset (Command 33) then you can use Command 164 to select whether the user can reset the system after a confirmed alarm.

Option 0   Disabled. The user cannot reset the system after a confirmed alarm.

Option 1   Enabled. The user can reset the system after a confirmed alarm.

Note that DD243:2002 states that the user can reset the system if any of the unsetting methods mentioned in sections 6.4.2, 6.4.3, or 6.4.6 are used. See "DD243:2002 ACPO Compliance" at the end of this chapter.

Partition Programming

Introduction

When programming the 9851 there are two ways of changing the control unit from a single system to a partitioned system: a) during initial power up or b) by using Command 98.

To create a partitioned system during initial power up see page 28.

If you have an existing 9851 that has already been programmed as a single system, and wish to convert it to a partitioned system, then:

1. Enter programming mode (if you are not already there).

2. Key in 98 ✔ at the keypad.
   The display shows: `Load default`

3. Press 1 ✔ at the keypad.
   The display shows (for example):   `Mult Sys?    OFF`

4. Either: Press 1 to create a partitioned system
   Or 0 to create a single system.
   The display shows (for example):   `Mult Sys?     ON`

5. Press ✔.
   The keypad gives a double confirmation tone and the system loads the factory default Command values, erasing all previously programmed values.

Notes:The log is protected and cannot be erased by the Installer.

Partition Programming

Once you have changed a 9851 into a partitioned system then you can use the following Commands to program each partition:

1. Use Commands 01 to 16 and ✘17 to ✘40 to assign each zone to a Partition.

   Each zone defaults to Partition A.

   Use ✘5 to assign zones to Partition B.

   Use ✘6 to assign zones to Partition C.

   Use ✘8 to assign zones to Partition D.

2. Use Command 32 to assign each keypad to a Partition as required. By default all keypads belong to all Partitions.

3. Program the exit mode, alarm response, entry time and exit time for each Partition as follows:

Partition	A	B	C	D
Exit Mode	C39	C62	C72	C76
Alarm Reponse	C47	C63	C73	C77
Entry Time	C43	C64	C74	C78
Exit Time	C44	C65	C75	C79

4. Use Commands 81 to 84 to assign bell outputs to each Partition as required.

Option ✗5 assigns an output to Partition A

Option ✗6 assigns an output to Partition B

Option ✗7 assigns an output to Partition C

Option ✗8 assigns an output to Partition D

5. Make sure that the master user understands how to assign individual user codes to each Partition.

Command Changes

When using a 9851 as a partitioned system then some of the programming Commands offer new options. Other programming Commands can no longer be used. The table below summarises all the programming differences between Partitioned systems and single systems.

Command	Partition System	Single System
01-40 Zone Programming	X5 to X8=Partitions	X5 to X8=Part Sets
28 Status Display	"Partn. Set."	"Level Set"
32 Keypads and Partns.	Link Kpd to Partition	Not available
39 Partition A Exit Mode	Opts 3 and 4 avail	Opts 3 and 4 not avail
43 Partition A Entry Time	No change	
44 Partition A Exit Time	No change	
45 Entry/Exit Tone Volume	Not available	Available
47 Partition A Alarm Response	Available	Not Available
60 Level B Final Exit	Not available	Available
61 Level B Entry Route	Not available	Available
62 Partition B Exit Mode	Options 2-4 change	Options 2-4 change
63 Partition B Alarm Response	Options 1-3 change	Options 1-3 change
64 Partition B Entry Time	No change	
65 Partition B Exit Time	No change	
70 Level C Final Exit	Not available	Available
71 Level C Entry Route	Not available	Available

Command	Partition System	Single System
72 Partition C Exit Mode	Options 2-4 change	
73 Partition C Alarm Response	Options 1-3 change	
74 Partition C Entry Time	No change	
75 Partition C Exit Time	No change	
76 Partition D Exit Mode	Options 2-4 change	
77 Partition D Alarm Response	Options 1-3 change	
78 Partition D Entry Time	No change	
79 Partition D Exit Time	No change	
81, 82, 83, 84 Outputs	17-20=Partition bells	17-20 not available
	21-24=Strobe sets	21-24 not available

ACPO DD243: 2002 Compliance

Please study this section If you are installing an intruder alarm system in England, Wales and Northern Ireland which has remote signalling, requires the local Police Authority to issue a URN (Unique Reference Number) and you have chosen to use "Sequential Alarm Confirmation" to comply with DD243: 2002.

For installers in Scotland, the ACPOS Intruder Alarm Systems policy document is now published, and it states: "confirmation technology (BS DD243:2002 applies) is desirable for newly installed systems but is not mandatory in terms of this policy. Police response to line cuts will be at the discretion of individual forces". Cooper Security Ltd. therefore recommend that systems in Scotland are installed to comply with DD243:200, and installers obtain copies of the ACPOS policy from their local Police.

Note: *The installed system will only fully comply with the requirements of DD243: 2002 if it has been designed in accordance with this section.*

Please use the following recommended Commands to ensure that the installation is correctly programmed.

Recommended Programming Commands

Command 33 – System Reset = 1 = Engineer Reset. In addition various other forms of reset can be used such as RedCARE reset or Anti-code (if the CSID code has been programmed into the panel).

Commands 81, 82, 83, 84 – Output types. There are three new output types that you can use to indicate the status of the system: Alarm Confirm, Set Complete and Unset Complete.

Command 89 – Alarm Confirmation = **1 = enabled.**

The following Commands can only be accessed if you have enabled Alarm Confirmation.

Command 48 – Lockout Keypads During Entry = 1 = Yes. Use this option to comply with section 6.4.5.

Command 160 – Confirm time = 30 (default).

Command 161 – Internal Sounder = Sounder on confirmed/unconfirmed alarm.

Command 162 – External Sounder = Sounder on confirmed/unconfirmed alarm.

Command 163 – Confirm After Entry = 0 = When a user starts the entry timer then the control unit disables alarm confirmation. Use this option to comply with sections 6.4.3, 6.4.4 and 6.4.6.

Confirm After Entry = 2 = The control unit starts a confirmed alarm if an intruder activates two separate zones after the entry timer expires. Use this option to comply with section 6.4.5.

Command 164 – User Reset After Confirmed Alarm = 1 = enabled to allow users to reset the system after a confirmed alarm.

The table opposite summarises which options to select on various Commands in order to comply with paras 6.4.2 to 6.4.6

DD243: 2002 Para:	6.4.2	6.4.3	6.4.4	6.4.5	6.4.6
Possible Installation	Unset from outside using a keyswitch zone input.	Lock Set Exit Mode.	Keypad and user access code.	Portable ACE (with reader inside premises).	Requires ARC to unset.
Alarm Confirmation (Command 89)	Enabled				
Confirmation Time (Command 160)	30 to 60 minutes				
Lockout Keypads During Entry (Command 48)	No (Option 0)	No (Option 0)	No (Option 0)	Yes (Option 1)	No (Option 0)
Confirmation on Entry (Command 163)	Never (Option 0)	Never (Option 0)	Never (Option 0)	Two zones (Option 2)	Never (Option 0)
User Reset After Confirmation (Command 164)	Enabled (Option 1)	Enabled (Option 1)	Disabled (Option 0)	Disabled (Option 0)	Enabled (Option 1)

Alarm Filtering

The Intruder Alarm System should either:

a) Have the means to indicate to the ARC whether the IAS is set or unset **(open and close signals)**; or

b) Be capable of generating a secondary signal identifiable at the ARC as a mis-operation signal. (**Refer to Command 36 Alarm Abort**).

5. Testing

Reading the Log (Command 90)

The control unit keeps a log of recent events The log can contain up to 500 events. Each event is represented by a short text message, shown below and on the next page. To review the event log, make sure the system is in programming mode, then:

1. Key in 90✓.

    The display shows the most recent event in the log. For a list of the log messages see below.

2. Key in 1 to show earlier events or 3 to see more recent events.

3. Key in 0 to print the log if there is a printer attached to the system.

4. Key in 7 to toggle a logging printer on or off. (The keypad gives a chime tone when switching the logging printer on, and a "beep beep" confirm tone when switching the printer off.)

5. Press ✓ to toggle between the event message and the event time.

6. Press ✗ to leave the log.

The table below and on the next page shows all the messages that can appear in the event log. The left hand column shows the messages that appear on a keypad display. The middle column shows the corresponding messages that appear in a printed log. Note that each event in a printed log is preceded by the date and time in numerical format.

Note that neither the Installer nor the user can erase the log.

In the log user codes are represented by numbers as follows:

U00	Installer	U19	Idle
U01	User code 1	U20	Telecommand
...	...	U21	Keyswitch
U16	User code 16	U22	Remote Reset
U17	Duress code	U23	Download
U18	Control Unit	U24	Virtual keypad

Keypad and Event Log Displays

Keypad	Printed*	Meaning
AC Fail	AC Lost	Mains supply failed
AC Restore	AC Restore	Mains supply restored
Alarm Abort	USER Alarm Abort	User aborted alarm
AntiMask Al Znn	Anti Mask Alarm Znn	Anti Mask alarm on zone nn
AntiMask Rs Znn	Anti Mask Restore Znn	Anti Mask zone nn restored
AntiMask Tp Znn	Anti Mask Tamp. Znn	Tamper on antimask zone nn
Aux DC Fail	AUX Trouble	Aux power failed
Aux DC Fail Rstr	AUX Restore	Aux power restored
Bad Checksum	EEPROM Failure	The control unit has detected data corruption in its memory
Batt Load Fail	Batt Load Test Fail	Battery failed load test
Batt Missing	Battery Missing	Batter disconnected
Batt Missing Rstr	Battery Restored	Battery re-connected
Burg Znn Alarm	Burg: ZONE	Intruder alarm on zone nn
Burg Znn Rstr	Burg Restore ZONE	Instruder alarm on zone nn restored
Codes Defaulted	Passwords Loaded	User access codes and installer code returned to default values
Al Confirm Znn	Confirmed Znn	Confirmed alarm on zone nn
Defaults Loaded	Defaults Loaded	All programming defaults loaded
Download OK	USER Remote Download	Download completed successfully
Unn Dload Fail	Download FAIL	Download failed
EEProm Fail	EEPROM Bad Data	Control unit memory damaged
Expander Missing	Expander Missing	Expander disconnected
Expander Restore	Expander Restored	Expander reconnected
Expander Tmp	Exp. Tamper	Expander tamper alarm
Expander Tmp Rst	Exp. Tamper Restore	Expander tamper alarm restored
Fire Znn Alarm	Fire ZONE	Fire alarm on zone nn
Fire Znn Reset	USER Fire Reset	Fire alarm on zone nn reset
Fire Znn Rstr	Fire Restore ZONE	Fire alarm on zone nn restored
Knn Excess Keys	Tamper Usercode KEYPAD	User has tried to enter access code too many times on keypad nn
Knn Missing	K/P Missing KEYPAD	Keypad nn disconnected
Knn Restore	K/P Miss Restore KEYPAD	Keypad nn re-connected
Knn Tamper	Tamper K/P KEYPAD	Tamper alarm on keypad nn
Tamper Knn Restr	Tamper K/P Restore Knn	Tamper alarm on keypad nn
Fr Knn Alarm	K/P Fire Knn	Fire alarm started at keypad nn
Md Knn Alarm	K/P Medi Knn	Medical alarm started at keypad nn
Key Sw Set Znn	Key Switch Set Znn	System set by keyswitch on zone nn
Key Sw UnsetZnn	Key Switch Unset Znn	System unset by keyswitch on zone nn
Key Box Cls Znn	Keybox Close Znn	Keybox on zone nn closed
Key Box Opn Znn	Keybox Open Znn	Keybox on zone nn opened
Lid Tamp Rst	LidTamper Restore	Control unit lid tamper alarm restored
Lid Tamper	Lid Tamper	Control unit lid tamper alarm
Low Bat Znn	Tx Lo Batt ZONE	Low battery detected on radio zone nn
Low Bat Znn Rstr	Tx Lo Batt Restore ZONE	Low battery on radio zone nn restored

Keypad	Printed*	Meaning
Low Batt Rstr	Low battery Restore	Control unit low battery restored
Low Battery	Low Battery	Low battery on control unit
Test Call	Man Trig Test	Test call made
PA Knn Alarm	K/P PA KEYPAD	Panic alarm raised from keypad nn
PA Znn Alarm	Panic Alarm ZONE	Panic alarm raised from zone nn
PA Znn Rstr	Panic Restore USER	Panic alarm on zone nn restored
RF Jamming	Jamming Start	Radio jamming detected
RF Jamming Rstr	Jamming End	Radio jamming removed
RF Sup Fail Znn	Supervision Fail ZONE	Radio detector on zone nn failed supervision
RF Sup Rstr Znn	Super'ion Restore ZONE	Radio detector on zone nn restored to supervision
Set Fail Znn	USER Exit Timeout ZONE	System setting failed because of fault on zone nn
Smk Det Alm Znn	Smoke Det. Alarm Znn	Smoke detector alarm on zone nn
Smk Det Res Znn	Smoke Det. restore Znn	Smoke detector on zone nn restored
Soak Fail Znn	Test Zone Fail ZONE	Soak fail test on zone nn caused alarm
Sounder Tamp Rst	Sounder Tamper Restore	Tamper on sounder restored
Sounder Tamper	Sounder Tamper	Sounder tamper
System Rearmed	Rearmed	System rearmed
System Startup	Startup	Power applied to system
System Tamper	Confirmed Zone 99	
System Tamper Rst	System Tamp Restore	
Tamper Znn	Sensor Tamper ZONE	Zone nn cause tamper alarm
Tamper Znn Rstr	Tamper Restore ZONE	Tamper alarm on zone nn restored
Tech Znn Alarm	TX ZONE	Technical alarm on zone nn
Tech Znn Rstr	TA Restore ZONE	Technical alarm restored on zone nn
Tel Line Fault	Tel Line Fault	Telephone line fault detected
Tel Line Rstr	Tel Line Restore	Telephone line restored
Tcmd Low Bat	Telecomm Low Battery	Telecommand low battery
Telecmmd PA	Telecmd Panic	PA started from telecommand
Test Call	Periodic Test	The control unit made a test call
Unn Change Unn	USER Changed USER	User nn changed access code for user nn
Unn Delete Unn	USER Deleted USER	User nn deleted access code for user nn
Unn Off-Site	USER Prog. Mode End	Engineer exited programming mode
Unn On-Site	USER Prog. Mode	Engineer entered programming mode
Bypass Supr. Znn	Unn Supervision Bypass Znn	Supervision on zone nn bypassed
Unn System Reset	USER Reset	User nn reset system
Unn System Set	USER Armed LEVEL	User nn set system
Unn System UnSet	USER Disarm LEVEL	User nn unset system
Unn System Unset	USER Duress	
Unn Time/Date	USER Reset Time/Date	User nn changed the time and date
Unn Znn Omit	USER Omitted ZONE	User nn omitted zone nn
Unn Znn Unomit	Zone Unomit ZONE	User nn un-omitted zone nn

* Printed event messages start with a time and date stamp.

Printing the Log

To print the event log, make sure the system is in programming mode, then Key in 90 ✔ 0.

Figure 24 below shows a sample of a printed log.

```
– 9851 –
14/12/01 18:42:30 Sounder Tamper
<END OF LOG>
```

Figure 24. Sample Log Print

To stop printing press ✘.

To print a listing of the panel's configuration key in 90 8 ✔.

Testing Outputs (Commands 91-96)

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 ✔ to end each test:

91✔ To test output 1 (usually the external sounder/bell).

92✔ To test output 2 (usually the strobe output).

93✔ To test output 3.

94✔ To test the internal sounder output. (This command is not available in a partitioned system.)

95✔ To test the keypad sounder.

96✔ To test output 4.

Engineer Walk Test (Command 97)

Allows the engineer to test all devices on the system.

1. Enter programming mode.

2. Key in 97 ✔

    The display shows: `97: Walk Test`

3. Open and close each alarm and tamper contact in turn.

    The system gives a chime tone each time you open and close a detector contact. The displays shows: "A:Zone:" and the zone number of every detector you have tested (note that the display shows each zone number for one second, in sequence). If you also test the tampers on each zone the display shows the letter "T" against each zone number.

4. Press ✘ 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.

Index

Symbols

A

B

C

Notes:

DECLARATION OF CONFORMA NCE

Cooper Security Ltd issues this certificate to
certify that the equipment known as:

9851

Complies with the following directive:

1995/5/EC R&TTE Directive

Signed

Stewart Taylor, Technical Director

Date: 4 September 2002