NESS 5000, 8 ZONE INSTALLATION MANUAL

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To the best of our knowledge, the information contained in this manual is correct at the time of going to print. NESS Security Products reserve the right to make changes to the features and specifications at any time and without notice in the course of product development.

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INTRODUCTION

Thank you for purchasing the NESS 5000 SERIES 8 zone Control Panel. The system was designed to provide you, the installer, with features and versatility never before offered in a Control Panel.

The high-impact polycarbonate housing not only offers strength but is aesthetically pleasing and therefore easily marketable Both the main circuit board and the lid are removable which allows you to easily install the system. Plug in terminal blocks eliminate the need to unscrew all connections before removing the board to provide ease of installation and service.

NESS Security Products over the years have always provided technically innovative quality products which have led to the 5000 SERIES being one of the most reliable on the market today. NESS' unparalleled technical support and service reinforces our commitment to the industry.

This manual will tell you all you need to know about installing and programming the system options. For client programmable features and operating instructions, refer to the INSTRUCTION MANUAL

TERMINOLOGY **********

In order to fully understand the 5000 SERIES 8 Zone Panel, you should become familiar with the terminology used throughout this manual. The following is a brief system description.

GENERAL

The 8 Zone Panel is constructed of Polycarbonate which is a material used in many high security applications such as bullet proof glass'. The panel is designed to meet or exceed Australian Standard AS.2201

Many features are provided to ensure :

Ease of installation and service; eg. removable lid, clip in PC boards and plug-in terminal blocks

Flexibility; eg. full Programmability via the inbuilt Keypad.

System Integrity; eg. Dynamic Battery Test.

High Security; eg. inbuilt Vibration Tamper.

MODES OF OPERATION

The Panel may be operated in 3 modes.

(1)Installation Program Mode; enables system parameters such as Zone types (Delay, Instant, Handover etc), to be programmed or reprogrammed by the installer.

(2)Client Program Mode; allows a client with a Master Code the capability of programming User Codes, Monitor Zones, Entry and Exit times etc.

(3)Normal Operating Mode; allows day to day operation by one or more clients.

POWER

A.C. power is supplied from the mains to the panel via a Plug-pack transformer which also provides an Earth connection to improve the Lightning Protection. A Stand by Battery is fitted to ensure that the system continues to operate it mains power is interrupted. The A.C. power is checked continuously while the battery is checked every hour and whenever the system is Armed. Battery testing is performed under load for extra security. This is called a Dynamic Battery Test.

INPUTS

A total of ten End-of-line Monitored Inputs are provided for connection to various devices.

One or more Defection Devices may be connected to any of the eight End-of-Line monitored zone inputs. The inputs can be programmed to suit various applications. A Movement Detector may require Two Trigger operation, whereas a Reed Switch will require Normal One Trigger operation. A Vibration Sensor would be programmed to one of eight Vibration Sensitivities. Smoke Detectors and Holdup Switches are required to operate always and would therefore be programmed to 24 Hour operation.

The Control Panel housing, external siren covers and many types of detectors are protected by Tamper switches designed to detect attempts to disable those devices. The tamper switches are connected to the Tamper Input. Activation of any tamper switch or its wiring will cause an immediate alarm at any time in all modes except Installation Program Mode. The system may be controlled by a Remote Keyswitch connected to the Panic/Keyswitch Input. Panic Buttons may also be connected to the same input.

OUTPUTS

Separately fused Siren outputs allow the connection of Internal and External Horn Speakers. A Latched output is provided for Strobe lights and a Resetting output for miscellaneous alarm devices such as Piezo sirens.

Other outputs are provided for connection to optional 5000 SERIES equipment. Remote Keyswitches, Standard Keypads and Intelligent Keypads can be located at remote points such as front or back doors to control the system and provide additional convenience and security. Satellite Sirens ensure maximum security against attacks to the Control Panel, Sirens or interconnecting cables. It contains it's own battery and electronics to operate independently of the Control Panel.

OPERATION

In Normal Operating Mode, the Panel may be Armed ready to detect intruders. It may be Disarmed when the premises are occupied or switched to Monitor Mode to allow only selected zones to be Armed simply. Thus the Perimeter may be protected whilst the internal zones are ignored.

Before Arming, all zones should be Secured. Activation of a detection device will cause the appropriate zone to become unsecured and may cause an alarm.

After Arming, the Panel will ignore most detection devices for the duration of the Exit Time to allow departure from the premises. During that time, certain Audible Warnings may be sounded by the beeper eg. a Low Battery, Mains Fail or a Zone Unsecured warning.

At the end of Exit Time, any zone that is still Unsecured may be Automatically Excluded. If a detector becomes faulty, the client may Manually Exclude the associated zone so that it is ignored and cannot generate an alarm. Manually Including the zone will allow it to generate an alarm again.

After the expiry of the Exit Time, the system will become fully Armed. An Instant Zone becoming unsecured will cause an immediate alarm. The alarm may be Silent it the system is monitored by a Central Station via a 5000 SERIES Dialler or a NESS Securitel' Interface Unit or it can be Audible in which case the Sirens sound for the programmed Reset Time while the Strobe Lights will continue running until the Panel is Disarmed.

When the alarm Resets, any zone that is still unsecured will be automatically Locked Out to prevent that zone from causing further alarms. If the zone is programmed for Conditional Lockout, the zone will become active again when the zone is secured so that it may cause further alarms whenever the zone becomes unsecured again.

All alarms are stored in Memory so that they can be recalled after the Panel is Disarmed. The zone that caused the alarm is stored as a Primary Alarm and any zones that are Unsecured within the Reset Time are Secondary Alarms.

When the client enters the premises, the Panel will ignore those zones that are programmed for Delay, Secondary Delay or Handover for the duration of the relevant Entry Time. Failure to Disarm the Panel within this time will cause an alarm.

FEATURES

Ultra-modern and impact resistant housing.

8 fully programmable zones plus tamper and panic inputs.

Fully programmable via Control Panel Keypad - eliminates the need for expensive programmers or PROMs.

All Programming data is permanently stored in a non-volatile EEPROM - more secure than battery backed-up memory.

Separate Installation and Client Programming modes.

The Control Panel housing has 4 separate tamper systems - Keypad, Wall, Lid and Panel impact. Tampers are monitored 24 hours a day.

Additional security is provided by the various programming options:

- Arm via a code
- Exclude zones via a code
- Partial Arming (Monitor mode)
- Extra Delay zone to cater for long and short entry paths
- Handover zones

TRUE DYNAMIC BATTERY TEST every hour and upon Arming thus guaranteeing the system's integrity.

Comes complete with an a.c. plug-pack and a 6.5 AH battery to maintain system security under all power supply conditions.

Outputs are separately fused.

Zone inputs can be split with two end-of line resistors so that two pieces of equipment (eg. reed switches) can both be monitored to provide maximum security.

ALL inputs and outputs are heavily protected against lightning and high voltage power supply transients. An earth terminal is provided for extra protection.

Fail-safe input system detects any component failure in the zone input circuitry and generates an alarm.

Detectors can be programmed to alarm on 1 or 2 triggers - cheaper and more secure than using pulse count detectors.

Vibration sensors can be connected to any or all zones without additional hardware and can be programmed to alarm on 1 of 8 sensitivities.

Separate Monitor alarm, 24 Hour alarm and Auxiliary outputs.

Easy connection of the 5000 SERIES satellite siren to greatly increase the security of your system.

Special inputs to allow the connection of NESS Remote Keypads. These keypads offer full programmability and operation of the Panel from a remote location.

Indication of unsecured zones while Arming.

5000 SERIES OPTIONAL EQUIPMENT

The following optional 5000 SERIES equipment is available for use with the 8 Zone Control Panel.

REMOTE KEYPAD

This Keypad is connected via 4 wires and can increase convenience of operation and security' of the system. It allows full programmability and operation with Audible feedback only.

INTELLIGENT REMOTE KEYPAD

This Keypad is connected via 4 wires and allows full programmability and operation of the system with complete Visual and Audible feedback.

SATELLITE SIREN

This Siren allows you to offer higher security for the installation It the system is attacked. Connected via 4 wires, It is fitted with It's own battery and electronics and operates independently of the Control Panel.

TELEPHONE AUTO DIALLER

This is a plug-in device and is fully programmable from the Control Panel's keypad. It is capable of automatically communicating information to most common digital receivers and/or to the client's home over a normal telephone line.

DIALLER REMOTE CONTROL

This is a small hand-held device which allows remote communication with the Auto-Dialler via the telephone line. It can be used to Arm the Control Panel, operate an output or receive status reports.

SECURITEL INTERFACE UNIT

This is a plug-in programmable device which offers similar features to the Auto-Dialler but provides a higher level of security in that the telephone line is monitored at all times.

RADIO CONTROL EOUIPMENT

A 4-channel Radio Control Receiver can be connected to the Panel to receive signals from the NESS hand-held Emergency/Panic buttons.

PRINTER/REAL TIME EVENT RECORDER

Records and or prints all activities of the Control Panel with a Time and Date Stamp.

OUTPUT EXPANDER

A plug-in device used for interfacing to Direct Line or other equipment. Requiring no programming, It provides 20 outputs such as individual alarms, zone Excluded etc.

ZONE EXPANDER

A plug-in device that provides an extra 16 zones and is fully programmable from the Control Panel's keypad.

INSTALLATION

Included in the 8 Zone Control Panel packaging
is the following equipment.

1 x 5000 SERIES 8 Zone Control Panel
1 x 12 Volt 6.5 A-h Rechargeable Battery
1 x 17 Volt Plug pack
3 x Ten Way Terminal Blocks
12 x 2K2 Resistors
1 x Spare Fuse 1.5 Amp
1 x A1len Key
1 x Installation Manual
1 x Instruction Manual

INSTALLATION PROCEDURE **********

For ease of installation it is recommended that the following procedure be followed:

1) Remove the cardboard terminal designation card.

2) CAREFULLY remove the keypad ribbon from the circuit board and unclip the lid .

3) Remove the rear tamper and battery terminal blocks from the circuit board. Unclip and remove the circuit board by pushing the retainer clips up. (located just below the battery)

4) Remove the battery.

5) Mount the polycarbonate rear housing. Wire the terminal blocks as per wiring instructions shown on the terminal designation card and as explained in this section.

6) Replace Battery. Clip in circuit board. Plug in the terminal blocks except those for the Satellite and Battery.

7) Replace lid and plug in keypad ribbon cable to the connector.

8) Replace the Terminal Designation Card.

9)Perform the Power up check.

10) Program Installation Options.

11) Carry out Test Procedure.

12) Perform “Check Before Entering Client Program Mode”.

INPUTS **********

The Control Panel contains 10 separate monitored inputs.

8 x fully programmable zones
1 x Tamper
1 x Panic/Keyswitch inputs
Each zone must be terminated with a 2200 ohm (2K2) End-of-Line resistor.
The Tamper input is wired in an identical manner to the zones. Thus it must be fitted with a 2K2 end-of-line resistor.
If a Satellite siren is being used then the 2K2 resistor MUST BE substituted with the 820 ohm resistor supplied with the satellite.

For wiring details for the Remote Keypads, Keyswitches, Panic Buttons and Satellite sirens, see the terminal designation card. Additional keypads may be connected in parallel.

OUTPUTS **********

The 8 Zone Control Panel contains the following outputs.

SIREN- A

Oscillating output fused via F3 (1.5A) for connection of TWO 8 ohm horn speakers MAXIMUM.

SIREN- B

Oscillating output fused via F4 (1.5A) for connection of TWO 8 ohm horn speakers MAXIMUM.

NOTE: An absolute maximum of three horn speakers only, can be connected to SIREN A and SIREN B outputs (ie. 2 speakers on siren A and 1 on siren B or vice-versa).

STROBE

Latched 12 Volt alarm output fused via F2 (1.5 A).

RESET OUTPUT

Resetting 12 Volt alarm output fused via F2 (1.5A).

NOTE: A TOTAL current of 1.5 Amps only, is available from the STROBE and RESET OUTPUTS.

SATELLITE SIREN

Four wire connection to NESS 5000 SERIES SATELLITE ONLY.
The satellite's battery charging circuit is fused via F2 (1.5A). The other terminals are current limited.

24 HOUR LATCHED ALARM OUTPUT PINS

Open collector (switched negative) sinks l00mA. This output is switched on when a 24 hour alarm occurs (ie. 24 Hr zones, Tamper and Panic).

MONITOR LATCHED ALARM OUTPUT PINS

Open collector (switched negative) sinks 100mA. This output is switched on when a Monitor zone alarms (refer to Instruction manual for programming).

AUXILIARY OUTPUT TERMINAL

Emitter follower (switches positive) 5 volts at 50 mA. This output switches on whenever any programmed Auxiliary zone becomes unsecured. It switches off when ALL Auxiliary zones are secured (refer to Instruction manual for programming).

This output can also be toggled on or off via the Auxiliary Key (9) on the keypad.

The number of outputs can be expanded by 20 with the addition of 5000 SERIES Output Expander.

POWER **********

The Control Panel power terminals consist of:-

AC INPUT TERMINALS

For connection of the NESS plug-pack, or an AC source with the following characteristics

@ 100mA load. 17 to 23 VAC at 50~60 Hz

@ 1.4A load. 17 to 13 VAC at 50~60 Hz

12 VOLT OUTPUT TERMINALS

D.C. regulated output, for powering of detectors etc.

13.8 Volts nominal, fused via Fl (1.5 Amp).

BATTERY TERMINALS

For connection of a rechargeable, 12 volt sealed lead acid standby battery with a minimum capacity of 2.4Ah. The charge current is limited to 450 mA maximum.

EARTHING **********

EARTH TERMINALS
For connection of the plug-pack earth wire.

Extensive testing in the field and rigorous testing in the laboratory has proven that a good earth dramatically improves the ability of the Control Panel's electronics to continue operating when its long cable runs (aerials) are subjected to induced high voltages (ie. lightning strikes).

Thus the connection of an earth is strongly recommended.

POWER UP CHECK **********

This test is carried out purely to ensure the panel isn't subjected to short circuits which may cause damage when the battery is connected. The AC supply is used in this test because it is overload protected. On failure of this test, refer to the Trouble Shooting section (page 33).

On completion of wiring :-

1) Check for erroneous open or short circuits (using a multimeter).

2) With the Control Panel lid open, apply AC power. If there are any sirens or piezo alarms connected, these should sound. The Control Panel's beeper will also sound.

3) Disconnect AC power.

4) Test complete. You are now ready to commence programming.

CONTROLS AND INDICATIONS **********

KEYPAD
The keypad consists of 12 buttons, 16 status lights and an internal beeper. Each button is used for four purposes,

a) to enter a number (eg. 1,2,3),

b) to select an installation programming option (eg. POE),

C) to select a client programming option marked in blue (eg. CODE 1),

d) to select a command marked in white (eg. ARM).

The PROG (or P) button is used to begin any programming sequence.

The END (or E) button is used in all cases to signify the end of the button sequence just pressed.

AUDIBLE INDICATIONS

Every time a button is pressed the Panel responds with a very brief beep in acknowledgment.

The beeper is also used to indicate whether the entry was valid or invalid. For example, whenever E is pressed, all the buttons pressed before it are checked to see whether they are valid. If they are valid, the response will be 3 short beeps.

If they are invalid (or incorrect) the response will be 1 long beep and they will be ignored.

At other times, the beeper will indicate various warnings such as 10 beeps for a low battery.

When Arming the Panel, 1-3 beeps will indicate that a zone is unsecured, eg. Zone 3 will be indicated by 3 long beeps.

A continuous tone on Arming indicates a Tamper or 24-Hour zone is unsecured. During Entry time, it indicates that an alarm has occurred.

VISUAL INDICATIONS

The panel has 16 indicator lights rounding the keypad. Each light has three basic states to indicate function.

These are: ON, OFF, FLASHING

ARMED MONITOR	**ON** The panel is Armed **FLASHING** The panel is in Monitor Mode	**OFF** The panel is Disarmed
ALARM MEMORY	**ON** Memory mode is selected **FLASHING FAST** An alarm has occurred	**OFF** No alarms **FLASHING SLOW** An alarm is stored in memory
ZONE EXCLUDED	**ON** The panel is in EXCLUDE mode **FLASHING** Zone(s) have been EXCLUDED	**OFF** No zones are EXCLUDED
PROGRAM	**OFF** The panel is in normal operation mode. **FLASHING SLOW** The panel is in installer program mode.	**ON** The panel is in client program mode. **FLASHING FAST** The program memory is faulty.
BATTERY	**ON** The panel battery is healthy.	**FLASHING** The panel battery is low. (If flashing in unison with the satellite light, the satellite battery is low.)
MAINS	**ON** The mains power is connected and turned on.	**FLASHING** The mains power is disconnected or turned off.
TAMPER SATELLITE	**OFF** The control panel and satellite siren tamper are secure and satellite siren battery is healthy.	**FLASHING** The panel or satellite siren tamper are unsecured. If flashing in unison with the battery light, the satellite battery is low.
LINE EXPAND	**OFF** The dialler is inactive. **FLASHING SLOW** The dialler senses a phone line fault or a failure to communicate with the base station. **FLASHING at the incoming call rate.** The dialler is detecting an incoming call.	**ON** The dialler has seized the phone line, a dialler or zone expander option is selected. **FLASHING FAST** The dialler or zone expander has a System fault, or the dialler cannot store the information just programmed into it.

ZONE INDICATIONS

There are 8 Zone indicator lights above the keypad. In normal operating mode they show the following states:

.

OFF Zone secured

ON Zone unsecured

FLASHING FAST Primary alarm ie. indicates the first zone to become unsecured and cause the alarm.

FLASHING SLOW Secondary alarm - ie. indicates those zones that have become unsecured during the Alarm Reset time.

As explained elsewhere in this manual, these zone lights are used to indicate other information in the Memory, Exclude, Monitor, Installation and Client Program modes.

INSTALLATION PROGRAMMING

THE POWER UP CHECK ON PAGE 13 SHOULD BE CARRIED OUT PRIOR TO PROGRAMMING

ACCESS TO THE INSTALLATION PROGRAM MODE

The Installation Program Mode is entered whenever programming options are to be changed by the installer. It can be accessed in three ways:-

a) by depressing the P button on power-up the Panel will be automatically programmed with the factory set default values (as shown in the summary at the end of this manual).

b) by depressing the E button on power up, the Panel will retain all previously programmed values. If no previous values were programmed, then the default values will be automatically selected.

c) by entering POOOOOOE if the Panel is currently in the Client Program mode. This will silence any alarm

HOW TO PROGRAM **********

Programming the NESS 5000 SERIES 8 zone Control Panel is achieved via the keypad. Every time a button is pressed the panel responds with a very brief beep in acknowledgment.

The PROG or P button is used to begin any programming sequence.

The Numeric keys are used to enter:
a) Programming options,

b) Programmed Values.

The END or E button is used in all cases to signify the end of the button sequence lust pressed.

END

Visual feedback of the value programmed is achieved by illuminating the zone, mains or battery lights. The particular type of indications are described for each option in the following pages.

Installation Programming options can be carried out in any sequence.
All programming operations follow the pattern shown below:

Select your option and view the current value **(PROG) (Option) (END)** enter the new value **(Value) (END) (Value) (END)**

One long beep indicates an invalid entry.

ZONE OPTIONS **********

Each zone can be independently programmed to any ONE of the six following options.

⇒ Instant
⇒ Delay
⇒ Handover
⇒ Secondary Delay
⇒ 24 Hour Audible
⇒ 24 Hour Silent

Options cannot be deleted, only changed by the selection of another option.

If more than one zone is required to be programmed for a particular option, say zone 2, zone 3 and zone 4, then enter

P(option)E 2E 3E 4E

As each zone is programmed, the corresponding zone light is illuminated.

SETTING A ZONE TO INSTANT **P 0 E**
****

An Instant Zone triggers an alarm the moment the zone is unsecured. This can only occur when the Panel is Armed and the Exit Time has expired.

To set , say, zone 1 and zone 3 to be instant enter:

POE 1E 3E

DEFAULT = ZONES 2 to 8 INSTANT (zone lights 2-8 on)

T0 VIEW Instant option ENTER

(PROG) (0) (END)

To ADD Instant zone(s) ENTER

(ZONE NUMBER) (END)

SETTING ZONES TO DELAY **P 1 E**
****

After expiry of the Exit Time, a delay zone becoming unsecured. will cause an alarm at the end of Entry Time t the Panel has not been Disarmed.

The only zones that should be programmed for delay are point of entry zones.

To set, say, zone 2 to be delayed, enter:

P1E 2E

DEFAULT = ZONE 1 DELAY (zone light 1 on)

To VIEW Delay option ENTER

(PROG) (1) (END)

To ADD Delay zone(s) ENTER

(ZONE NUMBER) (END)

SETTING ZONES TO HANDOVER **P 2 E**
****

A Handover zone is a combination of a Delay zone and an Instant zone. After Arming, the Handover zone is delayed to enable time to exit without triggering the alarm. It then automatically reverts to instant operation to provide greater security for detectors on the delay path.

If a normal entry is first made through a Delay zone, then all Handover zones will revert to delayed operation again to enable time to enter and Disarm the Panel without triggering an alarm.

Handover should be selected for all zones on the entry/exit path that require an entry/exit time. Handover should not be selected for actual "point of entry" zones (eg. front or back door).

To set, say, zone 3 and zone 8 to be handover, enter:

P2E 3E 8E

DEFAULT = NO HANDOVER ZONES (no zone lights on)

To VIEW Handover option ENTER

(PROG) (2) (END)

To ADD Handover zone(s) ENTER

(ZONE NUMBER) (END)

SETTING ZONES TO SECONDARY ENTRY DELAY **P 3 E**
****

A Secondary delay zone is essentially the same as a normal delay zone except that its Entry Time is equal to the programmed Exit Time. It can be used to provide additional entry time for a second entry path (eg. garage door).

Thus a front door may be programmed for an Exit Time of say 60 seconds and an Entry Time of 20 seconds for high security.

The garage door may be programmed for a Secondary Delay where both the entry and exit times equal the programmed exit time (say 60 seconds).

To set, say, zone 4 to be a secondary delay

P3E 4E

DEFAULT = NO SECONDARY DELAY ZONES

SETTING ZONES TO 24 HOUR AUDIBLE **P 4 E**
****

A 24 Hour Audible zone is a zone which triggers instantly after ft is unsecured whether the panel is Armed or Disarmed.

The alarm is audible and therefore the sirens and internal noise makers are activated.

To set, say, zone 7 and zone 8 to be 24 Hour Audible, enter:

P4E 7E 8E

DEFAULT = NO 24 HOUR AUDIBLE ZONES
(no zone lights on)

To VIEW 24 hour Audible option ENTER

(PROG) (4) (END)

To Add 24 hour Audible zone(s) ENTER

(ZONE NUMBER) (END)

SETTING ZONES TO 24 HOUR SILENT **P 5 E**
****

A 24 Hour Silent zone is a zone which triggers instantly after it is unsecured. This happens whether the panel is Armed or Disarmed.

The alarm is silent, that is, no sirens or noise of any description. This is used for remote signalling of silent hold-up alarms etc.

To set. say. zone 4 to be 24 Hour Silent, enter:

P5E 4E

DEFAULT = NO 24 HOUR SILENT ZONES
(no zone lights on)

To VIEW 24Hour Silent option ENTER

(PROG) (5) (END)

To Add 24 hour Silent zone(s) ENTER

(ZONE NUMBER) (END)

ZONE SENSITIVITIES **********

In addition to the selected ZONE OPTIONS (instant, delay, 24 Hr etc) each zone can be independently programmed to any ONE of the following ten sensitivities.

ONE trigger

TWO trigger

EIGHT Vibration Sensitivities

Sensitivities cannot be deleted only changed by the selection of another sensitivity.

Example of a Zone Assignment

ZONE	DESCRIPTION	ZONE OPTIONS	SENSITIVITIES
1	Garage door	Secondary delay	One trigger (long entry)
2	Front door Delay	One trigger	(short entry)
3	Hallway detector	Hand over	Two trigger
4	Perimeter reeds	Instant	One trigger
S	PIR lounge room	Instant	Two trigger
6	Smoke detector	24HR Audible	One trigger
7	Back door	Delay	One trigger (short entry)
8	Perimeter vibration sensors	Instant	Vibration medium sensitivity

SETTING ZONES TO ONE TRIGGER **P 10 E**
****

This option causes a zone to trigger whenever it is unsecured for greater than 200 milliseconds.

THIS IS THE NORMAL SELECTION FOR MOST DEVICES.

To VIEW one trigger option ENTER

(PROG) (10) (END)

To set, say, zone 5, zone 6 and zone 7 to alarm on one trigger, enter

PI0E 5E 6E 7E

DEFAULT - ALL ZONES ONE TRIGGER (all zone lights on)

To ADD one Trigger zone(s) ENTER

(ZONE NUMBER) (END)

SETTING ZONES TO TWO TRIGGER **P 11 E**
****

This option causes a zone to trigger whenever it is unsecured for greater than 200 milliseconds Twice within a 5 minute period or unsecured once for greater than 10 seconds.

An alarm will also occur if more than one two trigger zones are unsecured ONCE EACH during this 5 minute period (ie. each trigger adds).

VIEW Two Trigger Option ENTER

(PROG) (11) (END)

To set, say, zone 3 to alarm on two triggers, enter:

P11 E 3E

DEFAULT NO ZONES TWO TRIGGER (no zone lights on)

To ADD Two Trigger zone(s) ENTER..

(ZONE NUMBER) (END)

SETTING ZONES TO VIBRATION SENSITIVITIES **P 12 E to P 19 E**
****

When using vibration sensors, such as the Nessensor, any of the 8 zones can be programmed with individual sensitivities-

There are 8 sensitivities.

P 12 = maximum sensitivity
through to
P 19 - minimum sensitivity

To VIEW Vibration Sensitivities ENTER

(PROG) (12) to (19) (END)

To set, say, zone 5 to Medium sensitivity, enter:

P15E 5E

Refer to the following test procedure for testing the sensitivities.

DEFAULT = NO ZONES VIBRATION SENSITIVITY (no zone lights on)

To ADD zones ENTER..

(ZONE NUMBER) (END)

TEST PROCEDURE

A special test facility exists to test the operation of any zone without leaving the Installation Program mode. This is especially useful for setting up and testing the sensitivity of the vibration sensors.

1) Assign the zone which the vibration sensors are connected to, to be a 24 Hour Audible zone (P4E zone E).

2) Set the vibration sensitivity (as shown above) to Medium sensitivity eg. P 14 E or P 15 E for that zone.

3) Locate the sensor and cause some high frequency vibration within its vicinity This is best achieved by using a solid object such as a screwdriver end.

NOTE - Nessensors are very sensitive to high frequencies and insensitive to low frequencies. Therefore it is not necessary to apply much force to the protected structure, rather a very rapid succession of blows instead.

If sufficient vibration has been created to cause an alarm, then the sirens will be activated for 2 seconds. The sensitivity has been correctly adjusted when a single blow applied with a soft object (eg. by hand) does not cause an alarm. whereas a rapid series of blows will do so.

4) If the sensitivity needs to be changed. re-enter the desired level of Sensitivity and repeat step 3. Repeat for other zones.

5) When adjustment is complete, do not forget to set the zones back to their previous setting (ie. Delay, Instant etc).

NOTE: To avoid confusion, you should only set one vibration sensor at a time to be 24 Hour.

MISCELLANEOUS OPTIONS **********

Options P20E (conditional I full lockout) and P21E (seven special options) are programmed as per the following rule:

An option is selected by entering its value and is de-selected by entering its value again (ie. it toggles).

LOCKOUT AND CONDITIONAL LOCKOUT **P 20 E** **********

In order to ensure that alarm sirens reset at the end of Reset Time. the zone that caused the alarm must be locked out. Two options are provided for versatility; Lockout and Conditional Lockout. It is important to understand the difference.

If a zone is set to Lockout, it will generate an alarm once and once only, irrespective of whether a zone re-secures and subsequently unsecures. The zone will be locked out until the Panel is Disarmed.

Alternatively if a zone is set to Conditional Lockout (the default selection), it will alarm once when the zone becomes unsecured, but will not re-alarm if the zone remains unsecured. However, it the zone re-secures, then at a later time unsecures, the Panel will alarm again.

To set, say, zone 3 and 6 to lockout, enter

P20E 3E 6E (zone light 3 & 6 on)

To return zone 6 to Conditional lockout, enter 6E again, (zone light 6 off).

DEFAULT ALL ZONES ARE CONDITIONAL LOCKOUT (all zone lights off).

To VIEW Lockout option ENTER. -

(PROG) (20) (END)

To CHANGE Lockout option ENTER

(ZONE NUMBER) (END)

KEYSWITCH OPERATION **P 21 E 1 E**

This selection is indicated by the zone 1 light.

The keyswitch input can operate in two ways:

a) Restricted operation for higher security.
A Delay one must be activated prior to operating the Keyswitch otherwise an alarm will occur (zone 1 light off).

b) At all times (zone 1 light on).

To VIEW keyswitch option ENTER

(PROG) (21) (END)

To VIEW the option enter P 21 E.

Then to CHANGE the option enter 1 E

DEFAULT - RESTRICTED OPERATION
(zone I light off)

To CHANGE keyswitch option ENTER...

(1) (END)

KEYPAD ARMING **P 21 E 2 E** **********

This selection is indicated by the zone 2 light.

There are two methods of Arming via a key pad.

a) Single Digit Arming (OE)
zone 2 light off.

B) Arming via ACCESS CODE (0 code E)
zone 2 light on.

To VIEW Keypad Arming option ENTER

(PROG) (21) (END)

To VIEW the option enter P 21 E

Then to CHANGE the option enter 2 E.

DEFAULT = SINGLE DIGIT ARMING
(zone 2 light off)

To CHANGE Keypad option ENTER

(2) (END)

AUTO - EXCLUSION OF ZONES **P2IE 3E** **********

This selection is indicated by the zone 3 light.

On Arming, all unsecured zones can be treated in the following ways:

a) Automatically be Excluded at the end of exit time (zone 3 light off).

NOTE: any Auto Excluded zone will be Included when the zone becomes secured and will generate an alarm if it becomes unsecured.

b) Cause the panel to ALARM at the end of EXIT TIME (zone 3 light on).

To VIEW Auto-exclusion option ENTER

(PROG) (21) (END)

To view the option enter P 21

Then to change the option enter 3

DEFAULT = AUTOMATIC EXCLUSION
(zone 3 light off).

To CHANGE Auto-exclusion ENTER

(3) (END)

ENTRY WARNING BEEPS **P21E 4 E** **********

This selection is indicated by the -zone 4 light

Whenever a delay zone is unsecured and Entry Time begins, the system's beeper may:

a) Beep at one second intervals for entry time (zone 4 light off).

b) Remain silent for the duration of entry time (zone 4 light On).

To VIEW Entry Warning Option ENTER…

(PROG) (21) (END)

To VIEW the option enter P 21 E.

Then to CHANGE the option enter 4 E

DEFAULT = BEEPS AT ONE SECOND INTERVALS (zone 4 light off).

To CHANGE Entry Warning option ENTER.

(4) (END)

PANIC ALARMS **P21E 5E** **********

This selection is indicated by the zone 5 light.

Keyswitch or keypad panics that are activated can be selected to be either:

a) Audible:- Full siren and beeper (zone 5 light off)

b) Silent:- No siren and beeper for remote signalling (zone 5 light on).

To VIEW Panic alarm option ENTER.

(PROG) (21) (END)

To VIEW the option enter P 21 E.

Then to CHANGE the option enter 5 E

DEFAULT - AUDIBLE PANIC (zone 5 light off)

To CHANGE Panic Alarm option ENTER...

(5) (END)

ZONE, TAMPER AND CODE ALARMS **P21E 6E** **********

This section is indicated by the zone 6 light.

Alarms that are caused by Zone, Tamper or Code Alarm (3 incorrect attempts), can be selected to be either:

a)Audible:- Full siren and beeper (zone 6 light off)

b) Silent:- No siren and beeper (tor remote signalling; zone 6 light on).

To VIEW this option ENTER..

(PROG) (21) (END)

To VIEW the option enter P 21 E.

Then to CHANGE the option enter 0 E

DEFAULT = AUDIBLE ALARM (zone 6 light off).

To CHANGE this option ENTER..

(6) (END)

M0NITOR ALARMS TO DIALLER **P21E 7E** **********

This selection is indicated by the zone 7 light.

During Monitor modes 1 and 3 (audible alarms), zones that cause an alarm can be programmed to:

a) Not output zone alarms to Dialler (zone 7 light off).

b) Output zone alarms to Dialler (zone 7 light on).

To VIEW this option ENTER

(PROG) (21) (END)

To VIEW the option enter P 21 E.

Then to CHANGE the option enter 7 E.

DEFAULT = NO MONITOR ALARMS TRIGGER THE DIALLER (zone 7 light off)

To CHANGE this option ENTER...

(7) (END)

SIREN RESET TIME **P 22 E** **********

This option sets the Audible Alarm's operating time.

The time is indicated by Its value being flashed via the zone 1 mains/battery lights. (eg. 10 minutes zone 1 light followed by mains [0] light).

The timer is programmable from 1 to 99 minutes in one minute increments.

To VIEW Siren Reset Time ENTER..

(PROG) (22) (END)

To VIEW the programmed time enter P 22 E.

Then to CHANGE the time to, say, 11 minutes enter: 11 E.

NOTE: Whilst a time is being displayed the keypad is inoperable.

DEFAULT = 10 MINUTES

To CHANGE Siren Here Time ENTER.

(TIME) (END)
(In minutes)

CHECKS BEFORE ENTERING Client Program Mode **********

For security, all 24Hr. inputs are active during Client Program Mode. Therefore, after installation programming has been completed, there are some basic checks that should be performed in order to save frustration and possible embarrassment.

1) Check that the Tamper input is properly terminated with a 2K2 resistor.

2) Check that the Keyswitch/Panic input is also terminated with a 2K2 Resistor. (820 ohm if a Satellite is used).

3) Ensure rear panel tamper is secured.

4) Close the lid of the Control Panel
FAILURE TO COMPLETE THESE TASKS WILL RESULT IN THE CONTROL PANEL GOING INTO ALARM AS SOON AS INSTALLATION PROGRAM MODE IS EXITED.
You are now ready to exit the Installation Program Mode and enter the Client Program Mode.

This is done by entering **P E**

Upon entering the Client program mode, the PROGRAM light will stop flashing and will be constantly illuminated.

NOTE: It is important that you enter the master code at this point. Client Program mode will automatically be exited if a button is not pressed within 2 minutes.

ie:P1 E code E code E

Entering the master code will allow you to re-enter the Client program mode if the panel has entered the normal operating mode.

SEE THE INSTRUCTION MANUAL FOR FURTHER INFORMATION.
NOTE. All the programmed information is not stored to memory until the panel has exited Client Program mode into normal operating mode. Therefore It power is disconnected during Installation or Client Program modes, all NEW programmed information will be lost.

TESTING AND TROUBLESHOOTING

To ensure reliable operation of any system, correct testing procedures should be carried out prior to handing the competed installation over to the customer.

Using a digital multimeter, the following procedures are recommended for testing a 5000 SERIES 8 Zone system.

FUSES

With the power removed from the Panel, set your meter to the lowest ohms range and check that the 4 fuses measure less than 0.5 ohms.

VOLTAGES

All zone inputs, the Tamper input and the Keyswitch/panic inputs should be terminated with a 2K2 ohm end of line resistor. When correctly secured, the voltage reading across each zone input should be 2.5 volts + or - 0.2 volts.

If the voltage reading is above or below this reading, check your detector wiring and cabling.

Check that the DC. output to the detectors is 13.4 to 13.8 volts.

If a Satellite siren is installed, the correct voltages across pos. and neg. should be 13.4 to 13.8 volts. The voltage reading between the control and neg terminals must be in the range of 2.4 to 2.7 volts for reliable operation. Ensure that an 820 ohm resistor has been substituted for the 2K2 ohm resistor in the External Tamper input of the 8 Zone.

When checking Tamper in put voltages or Satellite voltages, ensure that all Tamper switches are secured, including the lid tamper, as all of these points are WIRED IN SERIES.

WALK TESTING **********

There are two simple methods of walk testing all zones. Method "B" is the most convenient way of walk testing a system unless monitor mode options have been reprogrammed from the default values ie. Monitor type 2 (P7E 2E) selected and all zones programmed to be monitor zones (P8E, all zone lights on).

METHOD A

1) Select Installation Program Mode.

2) Program all zones to 24hr. Audible (P4E 1E to 8E).

3)Un-secure each zone in turn the buzzer and all sirens will sound for two seconds each time a zone is triggered.

4)Reprogram each zone to their correct type after completion of the walk test.

METHOD B

1) Select normal operating mode.

2) Select Monitor Mode(8E).

3) Un-secure each zone in turn - the buzzer and all the sirens will sound for two seconds each time a zone is triggered.

4) Return to the Panel and ensure all zone lights are flashing to indicate that they have been triggered.

TROUBLE SHOOTING **********

SYMPTOM	CAUSE	REMEDY
Control Panel not Starting up when AC. voltage is applied.	Excessive load connected to the Power supply. Current limit protection operating.	Check for short circuits and excessive load on the power supply outputs.
Starts up Armed (and in alarm) with finger on the P or E button.	Keypad tail connected incorrectly or the keypad is faulty.	Check Keypad connection or replace.
The Control Panel alarms on exit from Installation Program mode.	24Hr zone, Tamper or Keyswitch /Panic inputs unsecured.	For security, all 24Hr, Tamper and Panic circuits operate in Client program mode. Ensure they are secured before entering Client program mode.
Cannot exit from Client Program mode using PE.	Client Code 1 (Master Code) not programmed.	Program Access Code 1 prior to exiting Client Program mode.
Panel automatically exits Client Program mode.	For security, Client Program mode automatically exits when no keys are pressed within a two minute period.	Avoid leaving the Panel in program mode without pressing buttons for long periods of time.
Program light flashes rapidly after exiting Client Program mode.	Access Code 1 (Master Code) not programmed and panel has automatically exited Client Program mode.	Program Master Code as soon as possible after entering Client Program mode.
	OR	
	Program memory faulty hence Panel cannot save data in the EEPROM.	Power down and Power up using the End Key and exit both Installer and Client program modes again. If the light still flashes, return Panel for service.
Programmed values are not retained in memory when power is removed from the control Panel and then re-applied.	Power removed prior to exiting Client program modes. All programming is stored to memory on he exiting of Client Program mode.	Exit user program mode to operation mode. Do not remove power during any programming.
	OR	
	The system has been powered up into Installation program mode using the P button thus re-loading all default values.	Enter Installer Program mode by powering up with E button to retain previously programmed data.
The Panel goes into alarm when Disarming the Panel with a 5000 SERIES keyswitch.	Entry zone has not been activated prior to using the Keyswitch if the Entry restriction on the Keyswitch has not been disabled (21E 1E).	Enable option P21E 1E or ensure delay zone is being activated prior to operation of the Key-switch.
The Heat Sink is warm to touch.	Normal operation.	This is normal operation.

SYMPTOM	CAUSE	REMEDY
Instant zones will not trigger after Arming the Panel.	All zones. except 24Hr zones, Are ignored during Exit Time after arming.	Trigger the zones after Exit Time.
Sirens, Strobes or Detectors not working.	Blown Fuses.	Check for short circuits on outputs and replace blown fuses.
After Arming, the beeper in the Control Panel, Keypads and Keyswitches gives a constant beep until the end of Exit Time.	A 24Hr, Tamper or Panic input is unsecured.	Ensure a 2K2 ohm is fitted to the keyswitch/Panic input and that all tamper and 24Hr zones are secured.
The internal and external sirens sound for two seconds at the end of exit time.	The Panel has been Armed with a zone unsecured.	Disarm, secure the unsecured zone and re-arm.
The Tamper light flashes always.	Tamper circuits are unsecured.	Check the rear Panel Tamper, front Panel Tamper and External Tamper switches are all secured with the relevant values of resistors. All Tampers are wired in series as far as the Panel is concerned.
The Battery light is flashing.	The Panel has been powered up initially on AC. and has not yet been Armed, the battery is not connected or the battery is flat.	Arm and Disarm the Panel which will cause a dynamic battery test to be carried out. Connect the battery, or replace the battery.

SPECIFICATIONS

Construction	3mm Polycarbonate.
Dimensions (mm)	233 wide x 300 high x 85 deep.
Weight (with 6.5 AH battery)	3.3 kg.
Plugpack	Input -240V a.c Output-17Va.c.at 1.4A.
Power supply	13.8 V d.c. at 1.25 Amps, current limited.
Quiescent Current	Less than 80 mA.
Operating Voltage	10 V to 15V d.c.
Rechargeable Battery	12 V, 6.5AH.
Battery Charge Current	450 mA maximum, current limited.
Dynamic Battery Test	Every hour and when the Panel is Armed. (whether mains power is on or off)
Dynamic Battery Test Low Voltage	10.7 V with a 5A load.
Fuses (5x20 mm)	4x1.5A, fast bow.
Zone Inputs	End-of-line resistor = 2200 plus/minus 900 ohms
Remote Tamper Input	Same as zone input.
Remote Keyswitch / Panic Button Input	Same as zone input.
Remote Keypads' Inputs	Proprietary.
Intelligent Keypad Outputs	Proprietary.
Internal Siren Output	Open collector, fused.
External Siren Output	Open collector, fused.
Satellite Siren Output	Proprietary.
Maximum number of Sirens	3 x 8 ohm ohm speakers (not including Satellite sirens since they have a separate siren driver circuit)
Latched Alarm (Strobe) Output	1.5 A at 12 V, open collector, fused.
Power Output for Optional Equipment	With battery, 12 V, 1.5 A, fused.
Resetting Alarm Output	1.5 A at 12 V, open collector, fused.
24 hour Alarm Output	100 mA at 12 V, open collector, current limited.
Monitor Alarm Output	100 mA at 12 V, open collector, current limited.
Auxiliary Output	50 mA at 5 V emitter follower, current limited.

5000 SERIES INSTALLATION PROGRAMMING SHEET (X represents factory setting)
****

		1	2	3	4	5	6	7	8
P 0 E	INSTANT	.	X	X	X	X	X	X	X
P 1 E	DELAY	X	.	.	.	.	.	.	.
P 2 E	HANDOVER	.	.	.	.	.	.	.	.
P 3 E	SECOND DELAY	.	.	.	.	.	.	.	.
P 4 E	24 HR. AUDIBLE	.	.	.	.	.	.	.	.
P 5 E	24 HR. SILENT	.	.	.	.	.	.	.	.
		1	2	3	4	5	6	7	8
P 10 E	1 TRIGGER	X	X	X	X	X	X	X	X
P 11 E	2 TRIGGER	.	.	.	.	.	.	.	.
P 12-19 E	VIBRATION	.	.	.	.	.	.	.	.
		1	2	3	4	5	6	7	8
P 20 E	LOCKOUT	.	.	.	.	.	.	.	.
		1	2	3	4	5	6	7	8
P 21 E	MISCELLANEOUS (See page 15 to 17)	.	.	.	.	.	.	.	.

P 22 E	ALARM RESET TIME (In minutes)	10 Min. (Default)

X = DEFAULT SETTING

CLIENT PROGRAM SUMMARY (See 5000 series user book for details)
****

P 1 E	MASTER CODE	
P 2 E	USER CODE 2	
P 3 E	USER CODE 3	
P 4 E	USER CODE 4	
P 5 E	ENTRY DELAY TIME	20 Sec. (Default)
P 6 E	EXIT DELAY TIME	60 Sec. (Default)
P 7 E	MONITOR MODE TYPE (1 to 4)	
P 8 E	MONITOR ZONES	
P 9 E	AUX. OUTPUT ZONES	

5000 SERIES 8 ZONE INSTRUCTION MANUAL

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SEVEN HILLS. 2147
NSW AUSTRALIA

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PERTH	Phone:	(08) 9328 2511	

TABLE OF CONTENTS

INTRODUCTION **********

Thank you for purchasing a NESS 5000 SERIES Control Panel. Please do not be frightened by its apparent complexity. The Panel is very powerful but also very easy to use and you only need to use as many or as few features as you require.

At the very least, you need only know how to ARM and DISARM the Panel plus have a basic understanding of the indicators. Please take the time to read this manual so that you understand the full benefits of the 5000 SERIES Control Panel.

TERMINOLOGY **********

The microcomputer based 8 Zone CONTROL PANEL forms the heart of your security system and connects to all other equipment. Each ZONE of the Panel will be connected to one or more detection devices to protect an area such as the front door, hallway, windows, etc.

The Panel is said to be ARMED when it is set to detect an intruder. At other times it is DISARMED.

Normally a zone is considered SECURED Activation of a detector will cause the zone to be UNSECURED and may cause an alarm.

Detectors such as fire detectors and panic buttons must be able to generate an alarm at all times regardless of the Panel setting. A zone with this assignment is called a 24 HOUR ZONE.

Before leaving the premises you must ARM the Panel to enable it to detect intruders and generate an alarm. After ARMING, the Panel will ignore most detectors for the EXIT DELAY TIME to enable you to depart without triggering an alarm.

When you enter the premises the Panel will ignore selected zones for the ENTRY DELAY TIME and will not alarm unless you fail to DISARM the panel during this allowed time.

If you wish to protect one area while you occupy another, MONITOR MODE allows selected zones to be Armed while leaving others Disarmed.

The Control Panel housing and the metal covers over external sirens are protected by TAMPER switches to detect someone attempting to disable the security system. Activation of these switches will cause an instant TAMPER ALARM.

If a detector becomes faulty, you can EXCLUDE the associated zone so that it is totally ignored and cannot generate an alarm. INCLUDING the zone will enable it to generate an alarm again.

The Control Panel is fitted with a STAND-BY BATTERY to ensure your security system continues to operate it the MAINS POWER is interrupted. This battery is checked every hour and whenever you Arm the Panel.

Whenever an alarm occurs, it may be silenced by entering an ACCESS CODE, otherwise it will reset at the end of RESET TIME. All alarms are stored in MEMORY and may be retrieved at any time by entering MEMORY MODE.

****

The 5000 SERIES 8 Zone Control Panel is one pan of an integrated range of equipment.

4 Access codes.

Monitor mode (partial Arming). Simple operation allows selected zones to be Armed while others are ignored. Ideal for monitoring doors and windows while you are safe inside.

Additional security is provided by the various programming options:

- Arm via a code

- Exclude zones via a code

- Indication of zones that are unsecured when arming.

Special interface to allow the connection of NESS Remote Keypads which offer full programmability and operation of the panel from a remote location.

Unique keyswitch input to allow simple remote operation of the Control Panel.

Easy connection of the 5000 SERIES Satellite Siren to greatly increase the security of your system.

The Control Panel housing has 4 separate tamper systems - Keypad, Wall, Lid and Panel impact. The panel impact tamper system protects against control panel intrusion by heavy impacts. These tampers are protected 24 hours a day.

Different siren sound for 24-hour alarms

Outputs are separately fused.

Unique dynamic input system which will detect any component failure of the zone input circuitry and generates an alarm.

ALL inputs and outputs are heavily protected against lightning and high voltage power supply transients. An earth terminal is provided for extra protection.

TRUE DYNAMIC BATTERY TEST under load, every hour and when Arming the panel. Your system will warn you in advance of possible battery failure. Works irrespective of whether the mains is on or off.

A large 6.5 A-H backup battery and a 1.4 amp plug-pack transformer provides more than sufficient current to maintain the operation and security of the entire system, even under full alarm conditions.

The mains input is constantly monitored. A warning is given when the mains is disconnected.

Audible warnings to indicate trouble when Arming.

Comprehensive Memory Mode for easy retrieval of important events such as Primary Alarms, Secondary Alarms, Tamper Alarms, Low Battery and Mains Fail.

All Programming data is permanently stored in secure non-volatile EEPROM.

5000 SERIES OPTIONAL EQUIPMENT **********

The following optional 5000 SERIES equipment is available for use with the 8 zone Control Panel.

Remote Intelligent Keypad
Remote or Intelligent Keypads can increase convenience of operation and security of your system.

Remote Keyswitch
The Remote keyswitch will simplify the operation of the Control Panel it is required.

Satellite Siren
Fitted with its own battery and electronics, a Satellite Siren will operate independently of the control panel if there is any interference to the system wiring.

Telephone Auto Dialler
The Telephone Auto Dialler allows the 5000 SERIES Control Panel to communicate alarms via your telephone line.

Dialler Remote Control
This small hand-held device allows communication and remote control between you at a remote telephone and your Control Panel. Securitel is a Trademark of Telecom Australia.

Securitel Interface Unit
Similar to the Telephone Auto Dialler but provides higher security.

Radio Control Equipment
A Radio Control Receiver can be connected to the Panel to receive signals from Radio Transmitters such as hand-held panic/emergency buttons.

Real Time Event Recorder Printer
This device is connected to the Panel to RECORD and/or PRINT when any activity takes place.

Output Expander
Provides 20 additional outputs for interfacing to other equipment.

Zone Expander
Provides an extra 16 Zones for the Panel.

SPECIFICATIONS **********

Construction	3mm Polycarbonate.
Dimensions (mm)	233 wide x 300 high x 85 deep.
Weight (with 6.5 AH battery)	3.3 kg.
Plug pack	Input -240V AC. Output-17V AC. at 1.4A.
Power supply	13.8 V DC. at 1.25 Amps, current limited.
Quiescent Current	Less than 80 mA.
Operating Voltage	10 V to 15V DC.
Rechargeable Battery	12 V, 6.5AH.
Battery Charge Current	450 mA maximum, current limited.
Dynamic Battery Test	Every hour and when the Panel is Armed. (whether mains power is on or off)
Dynamic Battery Test Low Voltage	10.7 V with a 5A load.
Fuses (5x20 mm)	4 x 1.5A, fast blow.
Zone Inputs	End-of-line resistor = 2200 plus/minus 900 ohms
Remote Tamper Input	Same as zone input.
Remote Keyswitch / Panic Button Input	Same as zone input.
Remote Keypads' Inputs	Proprietary.
Intelligent Keypad Outputs	Proprietary.
Internal Siren Output	Open collector, fused.
External Siren Output	Open collector, fused.
Satellite Siren Output	Proprietary.
Maximum number of Sirens	3 x 8 ohm Ohm speakers (not including Satellite sirens since they have a separate siren driver circuit)
Latched Alarm (Strobe) Output	1.5 A at 12 V, open collector, fused.
Power Output for Optional Equipment	With battery, 12 V, 1.5 A, fused.
Resetting Alarm Output	1.5 A at 12 V, open collector, fused.
24 hour Alarm Output	100 mA at 12 V, open collector, current limited.
Monitor Alarm Output	100 mA at 12 V, open collector, current limited.
Auxiliary Output	50 mA at 5 V emitter follower, current limited.

CONTROLS AND INDICATIONS

KEYPAD

The keypad consists of 12 buttons or keys. Each button of the keypad is used for three. purposes,
a) to enter a number (eg. 1,2,3),
b) to select a client programming option marked in blue (eg. CODE 1),
c) to select a command marked in white (eg. ARM).

The PROG (or P) button is used to begin any programming sequence.

The END (or E) button is used in all cases to signify the end of the button sequence just pressed.

AUDIBLE INDICATIONS

Every time a button is pressed the Panel responds with a very brief beep In acknowledgment.

The beeper is also used to indicate whether the entry was valid or invalid. For example, whenever E is pressed, all the buttons pressed before it are checked to see whether they are valid. If they are valid, the response will be 3 short beeps.

If they are invalid (or incorrect) the response will be 1 long beep and they will be ignored.

At other times, the beeper will sound various warnings such as 10 beeps for a low battery.

When Arming the Panel, 1-8 beeps will indicate that a zone is unsecured, eg. Zone 3 will be indicated by 3 long beeps.

A continuous tone on Arming indicates a Tamper or 24-Hour zone is unsecured. During Entry time, it indicates that an alarm has occurred.

VISUAL INDICATIONS

The panel has 16 indicator lights surrounding the keypad. Each light has three basic states to indicate function. These are: ON, OFF, FLASHING

ARMED MONITOR	**ON** The panel is Armed **FLASHING** The panel is in Monitor Mode	**OFF** The panel is Disarmed
ALARM MEMORY	**ON** Memory mode is selected **FLASHING FAST** An alarm has occurred	**OFF** No alarms **FLASHING SLOW** An alarm is stored in memory
ZONE EXCLUDED	**ON** The panel is in EXCLUDE mode **FLASHING** Zone(s) have been EXCLUDED	**OFF** No zones are EXCLUDED
PROGRAM	**OFF** The panel is in normal operation mode. **FLASHING SLOW** The panel is in installer program mode.	**ON** The panel is in client program mode. **FLASHING FAST** The program memory is faulty.
BATTERY	**ON** The panel battery is healthy.	**FLASHING** The panel battery is low. (If flashing in unison with the satellite light, the satellite battery is low.)
MAINS	**ON** The mains power is connected and turned on.	**FLASHING** The mains power is disconnected or turned off.
TAMPER SATELLITE	**OFF** The control panel and satellite siren tamper are secure and satellite siren battery is healthy.	**FLASHING** The panel or satellite siren tamper are unsecured. If flashing in unison with the battery light, the satellite battery is low.
LINE EXPAND	**OFF** The dialler is inactive. **FLASHING SLOW** The dialler senses a phone line fault or a failure to communicate with the base station. **FLASHING at the incoming call rate.** The dialler is detecting an incoming call.	**ON** The dialler has seized the phone line, a dialler or zone expander option is selected. **FLASHING FAST** The dialler or zone expander has a System fault, or the dialler cannot store the information just programmed into it.

ZONE INDICATIONS

There are 8 Zone indicator lights above the keypad. In normal operating mode they show the following states:

.

OFF Zone secured

ON Zone unsecured

FLASHING FAST Primary alarm ie. indicates the first zone to become unsecured and cause the alarm.

FLASHING SLOW Secondary alarm - ie. indicates those zones that have become unsecured during the Alarm Reset time.

As explained elsewhere in this manual, these zone lights are used to indicate other information in the Memory, Exclude, Monitor, Installation and Client Program modes.

PROGRAMMING

HOW TO ENTER PROGRAM MODE

The program Mode is entered whenever programming options are to be changed.

IMPORTANT: The Control Panel will automatically exit the Program Mode if no keys are pressed within a two minute period.

TO ENTER PROGRAM MODE, PRESS

(PROG) (MASTER CODE) (END)
The Program light will be illuminated.

HOW TO PROGRAM

Programming the NESS 5000 SERIES 8 zone Control Panel is achieved via the keypad on the front. Every time a button is pressed, the panel responds with a very brief beep in acknowledgment. Each button is used for three purposes,

a) to enter a number (eg. 1,2,3),

b) to select a programming option

c) to select a command (eg. ARM).

Note: that programming options can only be selected whilst in PROGRAM mode.

Programming of options can be carried out in any order.

The PROG or P button is used in the selection of PROGRAM mode, and thereafter in the selection of the option to be programmed.

The END or E button is used in all cases to signify the end of the button sequence just pressed.

Visual feedback of the options programmed is achieved by illuminating the zone indicator lights or flashing the BATTERY/ MAINS light. The particular type of indications are described with the setting of each option in the following pages.

All Programming follows this pattern

Select your option and VIEW the current value

(PROG) (OPTION) (END)

ENTER the new value(s)

(VALUE) (END)

One long beep indicates an invalid entry.

ACCESS CODES **********

The control Panel may be programmed with up to 4 separate Access Codes. Therefore each user may be allocated with their own unique code for higher security.

REMEMBER

Access CODE 1 (master code) MUST be programmed.

All codes must contain a minimum of 3 digits to a maximum of 6 digits and must not begin with a zero.

Codes 2,3 and 4 are optional.

A code may be cancelled by beginning the code with zero.

As a security measure, the existing code will not be displayed and the new code must be entered twice. If the second entry differs from the first, the existing code will remain unchanged.

To input Code 1 ENTER

(PROG) (1) (END) (_ _ _ _) (END) (_ _ _ _) (END)

(_ _ _ _) Represents the numbers required as the code.

To input Code 2 ENTER

(PROG) (2) (END) (_ _ _ _) (END) (_ _ _ _) (END)

(_ _ _ _) Represents the numbers required as the code.

Access Codes 3 and 4 are programmed as above.

1) To program code 1 to be, say, 3456, then enter:

P 1 E 3456 E 3456 E

2) To program code 2 to be, say, 9765, then enter:

P 2 E 9765 E 9765 E

3) To CANCEL code 2, then enter:

P 2 E 09765 E 09765 E

ENTRY DELAY TIME **********

The Entry Delay Time is the time the Control Panel gives you to disarm the Panel after a delay zone is unsecured.

For maximum security, the Entry Delay Time should be as short as possible.

The Entry Delay Time can be set to a minimum of 1 second up to a maximum of 99 seconds.

1. To view the current Entry Delay Time, enter:

P5E

2. The value programmed will be displayed via the zone (1-8), battery (9) and mains (0) lights. The display of the current value must be complete before a new value can be entered.

3. To change the current value to say, 10 seconds enter: 10 E

Zone 1 light will flash on for 1 second followed by the MAINS light (0) to indicate the new value

To VIEW the Entry Delay Time ENTER
(PROG) (5) (END)

To CHANGE the Entry Delay Time ENTER
(VALUE) (END)

EXIT DELAY TIME
****

The Exit Delay Time is the time the Control Panel gives you to secure and depart the premises after the Panel is Armed.

The Exit Delay Time should be just long enough to allow departure comfortably without rushing and making mistakes.

The Exit Delay Time can be set to a minimum of 1 second up to a maximum of 99 seconds.

1. To view the current Exit Delay Time, enter:

P 6E

2. The value programmed will be displayed via the zone (1-8), battery (9) and mains (0) lights. This display of the current value must be complete before a new value can be entered.

3. To change the current value to say, 80 seconds enter: 80 E

Zone 8 light will flash on for 1 second followed by the MAINS light (0) to indicate the new value

To VIEW Exit Delay Time ENTER
(PROG) (6) (END)

To CHANGE Exit Delay Time ENTER
(VALUE) (END)

MONITOR MODE 'TYPE
****

The 8 zone Control Panel provides an unique Monitor mode to ensure your security even while the Panel is disarmed and the premises are occupied.

Typically, Monitor mode is used to monitor the perimeter zones (doors, windows) of a house while the occupants are at home or to monitor entry through front doors or fire doors in shops and offices while the premises are in use.

You can program which zones are to be monitored as well as select 1 of 4 different types of Monitor alarms.

The 4 different types of Monitor mode alarms are:

1 = Beeper warning for the duration of the panel entry time, then full siren alarm. Used for perimeter protection.

2 = Beeper and siren operate for 2 seconds only. Use this for medium security warnings or as a walk test mode.

3 = Full siren alarm immediately. Use this for high security, such as monitoring fire doors etc.

4 = Zone number is beeped out only. Use this for door opened warning.

To select, say, Monitor mode 3, enter:

P7E 3E

When the above option is programmed into the panel, zone light 3 will flash on for 1 second.

Talk to your security installation company about your specific requirements.

To VIEW Monitor Mode Type ENTER
(PROG) (7) (END)

To CHANGE Monitor Mode Type ENTER
(VALUE) (END)

ZONES TO BE MONITORED

Any zone can be selected for operation in Monitor mode. However, do not select a zone that has been installed to generate a 24 hour alarm (eg. Fire Detector).

To remove a zone from the Monitor mode selection, re-enter the zone number.

To program, say, zones 3 and 4 to be Monitor zones, enter,

P8E 2E 3E 4E

As each zone is programmed, the corresponding zone light is illuminated (if it was previously off). If the zone light was previously on, it will be extinguished, thus de-selecting that zone from Monitor mode.

To VIEW Zones to be monitored ENTER
(PROG) (8) (END)

To CHANGE zones to be monitored ENTER
(ZONE NUMBER) (END)

ZONES TO CONTROL THE AUXILIARY OUTPUT

The 8 Zone Control Panel provides an Auxiliary output which can be turned on and off by ANY selected zones or via the keypad. This output can be used for a variety of applications. Talk to your security installation company about your specific requirements.

A zone programmed for Auxiliary will cause the Auxiliary Output to turn on when it becomes unsecured, regardless of whether the Panel is Armed or Disarmed.

To remove a zone from the selection, re-enter the zone number of the zone to be removed.

To program, say, zones 4, 6 and 8 to control the Auxiliary Output, enter:

P9E 4E 6E 8E

As each zone is programmed, the corresponding zone light is illuminated (if it was previously off). If the zone light was previously on, it will be extinguished, thus de-selecting that zone.

The output can also be turned on or off (toggled) by pressing 9 E while Disarmed or in Monitor mode.

To VIEW Auxiliary Zones ENTER

(PROG) (9) (END)

To CHANGE Auxiliary Zone(s) ENTER.

(ZONE NUMBER) (END)

PROGRAMMING SUMMARY

DESCRIPTION	OPTION	DEFAULT	PROGRAMMED
Code 1	**P1E** code **E** code **E**		
Code 2	**P2E** code **E** code **E**		
Code 3	**P3E** code **E** code **E**		
Code 4	**P4E** code **E** code **E**		
Entry Delay Time	**P5E** time **E**	20 secs	(1-99)
Exit Delay Time	**P6E** time **E**	60 secs	(1-99)
Monitor Type	**P7E** type **E**	Type 2	(1-4)
Monitor Zones	**P6E** zone **E**	All Zones	(1-8)
Aux Output Zones	**P9E** zone **E**	All Zones	(1-8)

OPERATION

GENERAL INFORMATION

This section describes the operation of a typical Control Panel installation. Keep in mind that your installation may vary depending on the selected options and equipment.

The operating instructions which follow will endeavour to cover the most common options. If you have any doubts speak to your Installer.

The Control Panel is normally operated via the keypad on the front of the Panel or the optional Remote Keypad, or the optional Intelligent Remote Keypad.

OPERATING RULES

The various operations that can be performed are indicated in white on the top of the relevant buttons, (eg. memory).

Generally, the Panel will be in the Disarmed, Armed or Monitor modes which provide different levels of security for your premises.

Three other temporary modes, Program, Memory and Exclude, allow you to perform various operations. The Panel will automatically exit from these temporary modes it you do not press any buttons on the keypad within a 2 minute period.

The optional keyswitch is operated by turning it clockwise (until it stops) momentarily.

If you make a MISTAKE while entering any codes, press the END (E) button and start again.

When you are required to enter your Access code, you are given THREE opportunities to enter it correctly. After the third invalid attempt the alarm is activated (requiring the correct code to silence the alarm). This prevents anyone trying to guess your code by entering random numbers.

ARMING THE CONTROL PANEL

The Control panel must be ARMED prior to vacating the premises in order to detect intruders.

Ensure that the Panel is not in Program, Memory or Exclude modes.

NOTE: If the panel is already in alarm, you must first silence the alarm before you can Arm.

There are three methods of Arming the Panel.

a) Normally the panel is ARMED by entering on the keypad
0 E

b) However, your Installer may have programmed the Panel to require the entry of a code to Arm the Panel.
0 (CODE) E

c) If the optional keyswitch is connected, this is turned momentarily to ARM the Panel.

1. CHECK that all windows and doors are securely locked.

2. Enter **(0) (END)** or **(0) (CODE) (END)**

3. The ARMED light should be **ON** and the keypad should beep 3 times.

4. Leave the premises within your Exit Delay Time.

5. At the end of the Exit Delay Time, three beeps will indicate successful Arming.

If something is wrong when Arming the control panel, the normal 3 beeps will be replaced by other warnings;

10 BEEPS Indicates either a Mains fault, Control Panel Battery fault or Satellite Siren Battery fault.
LONG BEEPS Warn that a zone is unsecured. Eg. 4 long beeps if zone 4 is unsecured.

CONSTANT TONE Indicates a 24 hour zone is unsecured. (Tamper, Panic or 24 hour zone.)

SIREN WARNING At the end of the Exit Time, all zones should be secured. If any are unsecured, the siren will sound as a warning to indicate that those zones have been automatically Excluded. For maximum security, you should return, DISARM, check the premises and then ARM again. Continual warnings could mean that a detector is faulty and may have to be manually Excluded. If the Auto Exclude option is disabled, the siren will sound continuously if a zone is unsecured at the end of Exit Time.

DISARMING THE CONTROL PANEL

****

Upon entering the protected premises through a delay zone, the Control Panel responds with BEEPS AT ONE SECOND INTERVALS as a reminder to Disarm. You then have your programmed Entry Delay Time to Disarm the Panel by either:

a) Entering one of your access codes and END, OR

b) Activating the keyswitch.

If the Panel is not Disarmed by the end of the Entry Delay Time, an alarm will occur. You may still enter your code to silence the alarm.

1. ENTER the protected premises via a DELAY ZONE.
2. LISTEN for the beeps coming from the panel.
3. Enter **(CODE) (END)**
4. The ARMED light should now be extinguished.

If one of your codes is, say, 7676 then to Disarm, enter

7676 E

If you make a mistake in entering your code, then you must press E and start again. Three incorrect entries will cause an alarm.

A Continuous beep on entry is a warning that an alarm occurred while the Control Panel was Armed, the external strobe light (If fitted) will also be flashing as a reminder.
The 1 second entry beeps (not the continuous warning) can be disabled as a function of the installation options.

MONITOR MODE

****

Monitor mode allows you to ARM selected zones while others are ignored. Typically, Perimeter zones (doors and windows) can be Monitored while the occupants are at home.

To select MONITOR mode, either

a) Press **8E**, OR

b) If you are using a Remote Keyswitch, first Arm the Panel (by turning the keyswitch once), then turn the keyswitch twice within 2 seconds.

The Control Panel will respond with 3 beeps and the Armed/Monitor indicator will FLASH to indicate that you are in Monitor mode.

Monitor mode cannot be selected while in Program memory or Exclude modes.

To EXIT from monitor mode, either

a) Enter **(CODE) E** to DISARM, OR

b) Activate the keyswitch momentarily to DISARM, OR

c) Enter **0E**, or **0 (CODE) E**, to ARM the Panel.

NOTE: If an alarm occurs, while in Monitor mode, silence the alarm by entering **(CODE) E** or activate the keyswitch.

If an alarm does occur in Monitor mode, the zone light will remain flashing as a memory until you exit Monitor mode.

EMERGENCY FUNCTIONS

****

For personal protection, the Control Panel contains an INSTANT panic feature. Panic can be used to;

Scare away intruders inside or outside your premises.

Summon help from friends or neighbours.

Test the operation of the siren.

Three Emergency functions exist:

MEDICAL. A silent alarm that is only used if the Alarm system is monitored remotely (eg. Central Station).

FIRE. An audible alarm that activates sirens and will transmit the alarm signal if monitored remotely (eg. Central Station).

PANIC. This function may have been programmed to be either;

a) Audible - Activates sirens and will transmit the alarm signal if monitored.

b) Silent - Will transmit the alarm signal if monitored remotely.

To activate emergency alarms:

MEDICAL	enter	**1E**
FIRE	enter	**2E**
PANIC	enter	**3E**

To SILENCE the siren, you must enter:
(CODE) E

Panic cannot be used while the Panel is in Program, Memory or Exclude mode

If you have the optional Remote Keyswitch, press the separate panic button fitted above the keyswitch.

EMERGENCY!

1. ENTER	**3E**	The siren will sound.
2. ENTER	**(CODE) E**	The siren will stop.

ZONE EXPANDER FUNCTIONS

****

These buttons are ONLY USED in conjunction with the NESS 5000 Series Zone Expander to address the sixteen additional zones.

(4) (END)
Address first additional bank of 8 zone

(6) (END)
Address the second bank of 8 zones

ALARMS

Alarms may be caused by one of the following condition

* A Zone has been activated while the Panel was Armed.
* A Tamper circuit has been activated.
* A Panic button has been activated.
* A 24 Hour Zone has been activated.

All of these can cause your sirens and strobe to operate. Various visual indications relevant to the alarm will be retained in the memory. If this occurs, disarm your Control Panel which will silence and reset the alarm. The cause of the alarm can be identified by entering the Alarm Memory Mode as described under ALARM MEMORY.

RESETTING AN ALARM

Your Panel can be reset and the alarm silenced by entering your **CODE** followed by the **END** button.

Alternatively, if a keyswitch is installed, the Panel may be reset by momentarily activating the keyswitch.

If you arrive at your premises and find the strobe light flashing (if installed), reset the panel as below. Refer to the description listed under ALARM MEMORY, to help you interpret the flashing lights on the panel and what they mean.

Enter **(CODE) (END)**

ALARM MEMORY

The 8 Zone Control Panel contains a comprehensive Alarm Memory to show those alarms that occurred while the Panel was last armed. To view the MEMORY display, enter

5 E

The Panel will respond with 3 beeps, the ALARM/MEMORY light will be illuminated and the other indicators will change to show the alarms, if any.

This Memory display may only be selected while the Panel is In the Disarmed, Monitor or Armed modes.

1. To View Memory press **(5) (END)**
2. Observe lights,
3. To Exit press **(END)**

The Indicators are used as follows:

ZONE LIGHTS	FAST FLASH SLOW FLASH	for a primary alarm, ie. point of entry. for a secondary alarm, ie. other zones entered by the intruder.
ARMED LIGHT	FLASHING	for a Panic or Code alarm.
TAMPER LIGHT	FLASHING	for a Tamper alarm, ie. Siren Cover, Satellite Siren etc.
BATTERY LIGHT	FLASHING	for a low battery.
MAINS LIGHT	FLASHING	for a Mains failure.
BATTERY & TAMPER LIGHTS	FLASHING	for a Satellite low battery.

EXCLUDING ZONES

****

If a detector becomes faulty and cannot be secured when Arming the Panel, then its zone may be excluded, ie. ignored by the system so that it does not generate false alarms. Zones can only be excluded during the EXIT DELAY

To enter the Exclude mode, FIRST ARM THE PANEL and then press **7E.**

1. ARM the Panel.

2. Press **(7) (END)**

3. Enter the zone(s) to be EXCLUDED **(ZONE) (END) (ZONE) (END)**

4. To Exit and save Exclusion **(END)**

If you make a mistake, enter the zones number again to remove it from your selection.
Zones which you exclude will be indicated by the relevant zone light Showing a steady light in the exclude mode.
Premises can achieve a higher level of security by partially arming the control panel when people still occupy some areas To do this first Arm the Panel and then exclude those zones those zones and depart the premises. The exit delay time will be automatically re- enabled allowing them time to depart.

All the lights will be turned off and then the Zone Excluded light will show a steady light. You may now exclude zones.

To exclude say, zones 4 and 8 after Arming,

7E 4E 8E E
Zone lights 4 and 8 will turn on.

INCLUDING ZONES

****

Zones which have been Excluded, may be included while you are in the Armed, Disarm or Monitor modes.

All Excluded zones are automatically Included when the panel is Disarmed. Thus if a detector is still faulty it must be Excluded again.

1. Press **(7) (END)**
2. Enter the zone(s) to be INCLUDED **(ZONE) (END) (ZONE) (END)**
3. To Exit and save Inclusion **(END)**

The main reason for providing the capability to include zones, is to allow an easy means for employees working back to include their own areas on leaving the premises. The Exit Time will re-start automatically.

Pressing 7E will light the zone lights for the zones that have been Excluded.

To Include, say, zones 4 and 8 press,
7E 4E 8E E
Zone lights 4 and 8 will turn off.

An attempt to include a zone which has not already been excluded, will result in one long beep and the zone remains unchanged.

If you make a mistake selecting a zone to Include, it is not possible to exclude that zone, without returning to the Exclude Zone option

AUXILIARY OUTPUT

****

Any or all zones may be assigned to control the Auxiliary Output. While any of these zone(s) are unsecured, the Auxiliary output will be turned on Thus all zones must be secured for the Auxiliary output to be turned off.

By using the keypad it is possible to over-ride the zones controlling the output. If the output is on, press 9E and it will turn off. Press 9E again and it will turn on.

Enter, **(9) (END)**

* You cannot change the Auxiliary output while in the Program, Memory or Exclude mode

TESTING AND TROUBLE SHOOTING

TESTING **********

To ensure the integrity of your security system, it should be checked on a regular basis.

YOU can carry out any of the tests outlined below or engage a qualified Technician from a licensed Alarm Company to carry out a more technical assessment according to Australian Standards AS.2201.1

9.2 MAINTENANCE (extract AS.22O1.1)
9.2.1 Routine maintenance.
9.2.1.1 General Routine maintenance visits to the alarmed premises shall be made by an authorised representative of an alarm company at a minimum rate of twice per year with no more than 7 months between visits.

Remember: If your system is connected to a Central Monitoring station, please advise them prior to carrying out any of these tests.

SIREN TEST

- Enter 2 E, Siren will sound

- To reset siren Enter **(CODE) E**.

SYSTEM CHECK

-ARM Panel. **0E** or **O (CODE) E**.

-Wait for exit time to expire - trigger any Instant zone and the siren should sound, OR trigger a Delay zone - wait for the entry time to expire and the siren should sound

- Reset the panel **(CODE) E**.

WALK TEST

To check correct operation of all zones (indicated by a 2 second siren and beeper warning).

NOTE: Programming described in steps 14 are normal default values. Therefore these steps may be bypassed if Monitor mode is not being used and has not been reprogrammed.

1. Enter Program mode **P (CODE) E**
2. Select Monitor mode 2 **P 7E 2E**
3. Set all the zones to Monitor zones.

P 8E 1E 2E 3E 4E 5E 6E 7E 8E.
(Select only those zones whose lights are not lit.)

4. Exit the client Program mode **PE**

Ensure that all zones are secured and then,

5. Select Monitor mode. **8E**.

Now move around your premises and unsecured each detector in turn. The siren will operate for 2 seconds each time a detector is unsealed.
When you have tested all detectors, check the control panel to ensure that all zone indicators are flashing ie. all zones have been tested.

6. EXIT FROM MONITOR MODE by disarming the panel.

7. Don't forget to re-program the Monitor mode type, and Monitor zones back to their normal settings.

TROUBLE SHOOTING GUIDE

****

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Zone light on or long beeps on Arming.	Zone detection device (eg. reed switch, movement detector) unsecured. Number of beeps determine which zone is unsecured.	Close door or window. Find cause of movement.
10 beeps upon Arming. Mains light flashing Battery light flashing.	Mains power off. Battery low.	Check plug pack is plugged in and power point on, or call Installation Company.
10 Beeps at any time (mains / battery light flashing)	(as above)	(as above)
1 long beep during keypad entry.	Invalid keypad entry.	Press END button and re-enter.
Constant tone upon Arming.	Tamper, panic or 24 hour zone unsecured.	Check panic button (If installed), or call Installation Company.
2 second siren at end of exit time.	Zone unsecured before expiry of exit time.	Re-enter premises, disarm system, check zone isolate memory to determine zone
Constant tone on entering premises.	Alarm occurrence since last arming of panel.	Check Alarm memory to determine zone at fault.
External strobe light flashing.	Alarm occurrence since last arming of panel.	Check Alarm memory to determine zone at fault.
Siren sounding when system disarmed.	Tamper, panic or 24 hour zone activated.	Reset alarm by entering code or activating key-switch, check panic buttons (if installed), or call Installation Company.
Armed/monitor light flashing.	Monitor mode entered by mistake.	Exit monitor mode.
Zone Excluded light flashing.	A zone has been excluded.	Check zone excluded memory. Arm panel with all zones secured.
Tamper light flashing.	Tamper unsecured.	Call Installation Company.
Alarm memory light flashing.	Alarm in memory.	Check alarm memory to see cause of alarm.

OPERATION SUMMARY
****

ARM	**0 E** or **0 (CODE) E** or **Keyswitch**
DISARM	**(CODE) E** or **Keyswitch**
RESET ALARM	**(CODE) E** or **Keyswitch**
MONITOR MODE	**8E** or **Keyswitch**
Exit MONITOR MODE	**(CODE) E** or **OE**
ALARM MEMORY	**5E**
Exit MEMORY	**E**
EXCLUDE ZONES	**ARM** as above, then **7E** zone **E** zone **E** etc.
Exit EXCLUDE MODE	**E**
INCLUDE ZONES	**7E** zone **E** zone **E** etc.
Exit INCLUDE MODE	**E**
PANIC ALARM	**3E**
CHANGE AUXILIARY OUTPUT	**9E**

ZONE SUMMARY
****

	TYPE	LOCATION
ZONE 1	_____	_____
Z0NE 2	_____	_____
ZONE 3	_____	_____
Z0NE 4	_____	_____
ZONE 5	_____	_____
ZONE 6	_____	_____
ZONE 7	_____	_____
ZONE 8	_____	_____

NESS 5000 SERIES DIALLER

INSTALLATION MANUAL

This manual is designed to provide the installation instructions on the NESS SECURITY PRODUCT'S 5000 SERIES Dialler. For complete details on the warranty or the 5000 SERIES products. please refer to our conditions of sale.

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DESIGN CONCEPTS

The 5000 SERIES Dialler is totally unique in that 2 separate diallers share the one Circuit board and telephone line. It is not simply one dialler with two Client Account Numbers, but 2 separate, individually programmable diallers sharing the same hardware.

With this unique design and the many other features built into the 5000 SERIES Dialler, NESS has been able to provide you with a product capable of meeting the diverse needs of virtually all installations. In addition, it provides a simple means of overcoming, at no extra cost, the 8 alarm channel limitation of most Central Station equipment. Some of the unique capabilities of this Dialler are explained below.

EXTRA TELEPHONE NUMBER: The Primary and Secondary telephone numbers are basically designed for reporting to the Main and Back-up receivers of a Central Station. An Extra telephone number, which may be programmed by the client, has been provided for added flexibility. By setting option 4 of P35E, the Extra number will be used in addition to the Primary/Secondary numbers. If both options 0 and 4 of P35E are set, then only the Extra telephone number it used for either or both Diallers as required.

POCKET PAGER: To indicate an alarm via a 'beeper' type pocket pager, the Dialler only has to call a number and wait for a special Acknowledge tone. It does not have to send any alarm reports. This facility is available via option 5 of P36E.

COMMAND TONE: An optional Tone Generator may be purchased to remotely control certain aspects of the Dialler (if so programmed). To use the facility, call the Dialler and when it answers, put the Tone Generator near the mouthpiece and press its button. The Dialler will respond with a series of beeps depending on the options selected.

DIALLERS: The enormous flexibility of the Dialler can be seen from a few of the possible combinations described below.

1. Call the Primary number and, if no Acknowledge tone, call the Secondary number (ie. the Back-up receiver).

2. Call the Primary number and then repeat all alarms to the Secondary number.

3. As in (1) or (2) and then repeat the alarms to the Extra number as well. If no Acknowledge tone is received, this will be in Audible format if so programmed, or it could be a pocket pager.

4. Split the 22 possible alarm reports between the 2 Diallers so that more than 8 can be reported by the use of 2 client account numbers.
5. Send all alarm reports to both Diallers but only enable the Extra number on Dialler #2.

6. Use Dialler #1 to send 8 alarm reports plus 15 Client l.D.'s (one client account number) and then use Dialler #2 to send another 8 alarm reports via a second account number.

INSTALLATION

The 5000 SERIES Dialler board is designed to plug into the 8 Zone Control Panel. It cannot be used in conjunction with the 4 Zone Control Panel.

To install the Dialler, remove the Control Panel board from the housing, clip the Dialler into the third or fourth slot, connect the 13-way ribbon cable between the dialler and the control panel. Then re-install the Control Panel board. If a Zone Expander is being installed also, the Dialler must be fitted to the third slot.

TESTING

To test the Dialler after installation, exit from Program mode, Arm the Control Panel, create one or more alarms and then check what data was received by the Monitoring Station. The LINE/EXPAND indicator will turn on when the Dialler seizes the line. At the end of the call, it will turn off if the call was successful, or flash rapidly if the Kiss-off tone was not received.

A line fault will always result in the LINE/EXPAND indicator flashing slowly until the fault is corrected.

INPUTS

The telephone line plugs into the socket in the top left-hand corner of the Dialler board.

NOTE: The 5000 SERIES Dialler uses a Mode 5 connection and not Mode 3. However, the Mode 5 connection will work into any existing Mode 3 socket.

OUTPUTS

Four plug-in screw terminals on the right-hand side of the Dialler provide the following outputs

COMMON (-ve)
LISTEN output
AUXILIARY Output (of Dialler)
12 volt Output

Connect any speaker between the LISTEN and COMMON terminals to listen in to the telephone line when the Dialler is making a call. This simple procedure can be of tremendous assistance during fault finding.

The Dialler's own AUXILIARY Output is an open-collector Output capable of sinking 300mA.

Via the 13-way ribbon cable, the Dialler drives the LINE/EXPAND indicator on the Control Panel. This Dialler output is available for connection to remote equipment at the LINE LED INPUT/OUTPUT terminal on the Control Panel (centre of right-hand side).

The 13 Molex pins on the right-hand side of the Dialler are only provided for test purposes during production.

EARTH

For maximum protection against lightning, it is strongly recommended that the earth lug of the Dialler should be used by connecting it to the Earth lug of the Control Panel.

In lightning prone areas, Telecom will provide, on request and free of charge, lightning arrestors for additional protection of the telephone line.

PROGRAMMING

Programming the Dialler is virtually identical to programming the Control Panel - simply plug the Dialler in and use the Installation options on the following pages. However, for security reasons, the Dialler contains an optional Installer Access Code to protect the Central Station information. If this code has not been programmed, then all of the options are available to any installer for review and change.

If the Installer Access Code has been programmed, then only the P30E and P98E options are available for use without the code. To use any of the remaining options, you must first enter the code ie. in Installer Program mode, press:

P Code E

If the code is valid, the Dialler will respond with 3 beeps and the LINE/EXPAND indicator will turn on. This indicator will remain on until the use of a programming option which does not belong to the Dialler.

Each time you enter the Installer Program mode, you must use the Installer Access Code as above.

During programming, numeric values are displayed via the 8 ZONE indicators, the 9 (BATTERY) and the 0 (MAINS) indicators. For your convenience, single digit values remain displayed while multi-digit values are flashed Out.

During the programming of the telephone numbers, it is occasionally necessary to enter a special PAUSE digit. To do so, press and hold the E button for at least 1 second. For example to programme a telephone number commencing with 0 'PAUSE' 4, press 0, long E, 4 etc.
During the telephone number display, the PAUSE digit is represented by the TAMPER/SATELLITE indicator.

NOTE: each PAUSE = 2.5 seconds

The programming data for the Dialler is stored in a special memory on Exit from the Installation Programming mode. Thus if data is changed and the power is turned off before Exit from this mode, then the new data will be lost.
A number of the Installation Programming options are duplicated for the second Dialler and are accessed by adding 100 to the corresponding Dialler #1 option, eg.

P34E = Dialler #1 client account number.

Pl34E = Dialler #2 client account number.

The options belonging to Dialler #2 are identified in the option's title which is also underlined.

SOFTWARE DATE, INSTALLER PROGRAM ACCESS CODE.

P30E Code E Code E

Pressing P30E will display the release date (month and year only) of the Software version currently installed in the Dialler.

To program your secret Installer Access Code, enter it twice as shown above (ie. after the display of the date). The only constraint for this code is that it must always be 4 digits in length. For security reasons, it is not displayed at any time.

See page 4 regarding the use of this Installer Access Code. There is no default value for this code; ie. it is blank.

SET ALL OPTIONS to DEFAULT VALUES.

P98E

Press P98E at any time in Installer Program mode to clear the Installer Access Code, the telephone numbers and the Client Account Number, as well as set all the other programming options to their default values.
Note : If you need to reprogram the Dialler and do not know the Installer Access Code, you must use P98E to clear everything as above before you can gain access to the programme options.

PRIMARY TELEPHONE NUMBER.

P31E Telephone no. E

The Primary Telephone number may be up to 18 digits in length. If it is necessary to dial out through a PABX, you may need a PAUSE within the telephone number to slow down the dialling. To create a PAUSE, see page 4. The default telephone number is a single digit 0.

SECONDARY TELEPHONE NUMBER.

P32E Telephone no. E

The Secondary Telephone number may be up to 18 digits in length and defaults to 0.

EXTRA TELEPHONE NUMBER.

P33E Telephone no. E

The Extra Telephone number may be up to 18 digits in length and defaults to 0.

DIALLER #1 and #2 CLIENT ACCOUNT NUMBERS.

P34E number E

Enter the 4 digit Client Account Number as above. There are no other restrictions on what this number can be. The default is 0.

DIALLER #1 and #2 REPORTING.

P35E option E

0 = Do not use the Primary and Secondary telephone numbers at all (ie. only the Extra number can be used).

1 = Alternate calls between Primary and Secondary telephone numbers if no Acknowledge tone is received. Note: if no Acknowledge tone is received for either number, then no transmission will be made.

2 = Use Primary number for half of the calls and then if no Acknowledge tone is received, use the Secondary number for the remainder of the calls.

3 = Transmit to the Primary number and when complete, REPEAT all the data to the Secondary number. Note: this will only occur a successful if transmission was made to the Primary telephone number within 5 calls.

Only one of the above options is allowed and the default is 1.

4 = Allow the Extra telephone number to be used

5 = Disable the Test (Status) Reports when the Dialler Auto-Answers (see P44E).

Options 4 and 5 may be chosen in addition to the other options.

DIALLER #1 and #2 TRANSMISSION FORMAT.

P36E option E

1 = If no acknowledge tone is received, transmit in the NESS Audible format.

2 = If transmitting in Low Speed format, old alarms which are still active are to be included in the transmission.

3 = If a high speed acknowledge tone is received, transmit using the Ademco Extended format.

4 = Invert 8/9 for Open/Close in Low speed format.

5 = If an acknowledge tone is received from a 'beeper' type pocket pager system do not transmit any alarm reports.

None, one or all of the above options may be chosen and the default is none. The Dialler always transmits in the format identified by the Acknowledge tone but this may be modified by the above.

TYPE of DIALLING.

P37E option E

1 = Use Decadic or Touch-Tone dialling depending on the type of dial-tone received. (First call only).

2 = Use Decadic dialling only.

3 = Use Touch-Tone dialling only.

4 = Use Touch-Tone dialling only and dial using Telecom Australia's EASY DIAL facility.

Only one of the above options is allowed and the default is 1.

5 = Dial as above even if a Dial tone is not received.

6 = Use New Zealand style Decadic pulses.

Options 5 and 6 may be chosen in addition to the other options.

7 = Only transmit in Ademco Extended Format

TIME to WAIT for ACKNOWLEDGE TONE BEFORE REDIAL.

P38E time E

This option defaults to 15 seconds and should rarely need to be changed. It may be set from 10 to 25 seconds.

MAXIMUM NUMBER of DIAL-OUT ATTEMPTS.

P39E number E

This option defaults to 6 dial attempts (the maximum allowed by Telecom Australia) and should rarely need to be changed. It may be set from 1 to 6 attempts.

OUTPUT CONTROL and INDICATION OPTIONS.

P40E option E

1 = Trigger the siren/strobe for the Reset time on a Line Fault.
2 = Trigger the siren/strobe for the Reset time on no Kiss-off.
Note: triggering is via the Keyswitch/Panic input of the Panel.
3 = When the Kiss-off tone is received. beep the siren 3 times.
4 = When the Kiss-off is received. turn the strobe on for 3 seconds.
5 = Turn the LINE/EXPAND indicator on during a call (page 2).
6 = Allow the client to program the Medical Alarm (P53E).
7 = Allow the client to program the Extra number (P33E).
8 = Trigger the siren/strobe for the reset time on a line fault only when armed. (Must be used with function 1. ie. With 1 and 8 lights on, line fault will cause an alarm only when armed.)

None, one or all of the above options may be chosen and the default is option 5.

AUXILIARY OUTPUT DRIVE.

P41E option E

0 = No Auxiliary drive

1 = Turn 0utput ON when a Line Fault is detected.

2 = Turn output ON when a Kiss-off tone is not received.

3 = Turn output ON when a Kiss-off tone is received.

4 = Turn output ON when a Command tone is received. If this option and Arm via Command Tone (P44E) are both selected, then receipt of the tone will operate both the Auxiliary output and Arm the panel simultaneously.

5 = Turn output ON when the panel is Disarmed.

Only one of the above drive options is allowed and the default is 0.

6 = Output follows the drive condition.

7 = Output toggles on each occurrence of the drive condition.

8 = Output will Pulse on each occurrence of the drive condition.

Only one of the options 6, 7 and 5 is allowed in addition to one of the other options.

TIME DELAY BEFORE PULSING the AUXILIARY OUTPUT ON.

P 42 E time E

The Auxiliary output may be delayed by this preset time if the option 8 (Pulse) is chosen in P41E above. The default time is 0 seconds but it may be set from 0 seconds to 120 minutes as follows

0 to 100 = 0 to 100 seconds.
101 to 220 = 1 to 120 minutes.

TIME PERIOD of the AUXILIARY OUTPUT PULSE.

P 43 E time E

The Auxiliary output will stay on for this preset time if option 8(Pulse) is chosen in P4lE above. The default time is 1 second but it may be set from 0 seconds to 120 minutes in the same manner as P42E.

RING-DETECT and TEST CALL OPTIONS.

P 44 E option E

1 = Enable Auto-Test calls when Armed

2 = Enable Auto-Test calls when Disarmed

3 = Enable Call-Back calls when Armed.

4 = Enable Call-Back calla when Disarmed.

5 = Enable Auto-Answer capability when Armed.

6 = Enable Auto-Answer capability when Disarmed.

7 = Enable the panel to be Armed on receipt of the Command tone. If already Armed, the tone will be ignored unless it has been programmed to drive the Auxiliary output as well. (See P41E option 4).

None, one or all of the above options may be chosen and the default is none.
Select both options 1 and 2 to enable Auto-Test calls always.

TIME BETWEEN AUTOMATIC TEST CALLS.

P 45 E time E

Automatic Test Calls are identified as such at the Central Station and are used to check the integrity of the Dialler and the telephone line. To use the facility the Test alarm (P62E) must be enabled by assigning it a channel number.
Then set the time between Test Calls using this option.
This time defaults to 168 hours but may be set from half-hourly to 250 hours.
A conversion table of hours to days is shown below.

0 = half-hourly	24 = 1 day	120 = 5 days
1 = 1 hour	48 = 2 days	144 = 6 days
2 = 2 hours	72 = 3 days	168 = 7 days
9 = 9 hours	96 = 4 days	240 = 10 days

TIME REMAINING BEFORE FIRSI' TEST CALL.

P 46 E time E

After installation, set this time to position the first Automatic Test Call at the required time.
This option defaults to 0 hours but may be set from 1 to 250 hours.
The time commences on Exit from installation Programme mode.

DOUBLE RINGS NEEDED FOR CALL-BACK.

P 47 E number E

This option defines the number of double rings needed to make the Dialler Call-Back, ie. to make it send a Test Call immediately and hence before the time defined in P45E.
The number may be set from 1 to 13 and the default is 3 double rings.

DOUBLE RINGS NEEDED FOR AUTO-ANSWER.

P 48 E number E

This option defines the number of double rings needed to make the Dialler Auto-Answer, ie. to answer an incoming call. The number may be set from 1 to 15.
The default is 3 double rings

ABORT TIME DELAY for DELAYED DIALLING

P 52 E time E

This Option defaults to 10 seconds but may be set from 1 second to 120 minutes in the same manner as P42E. To make use of the delay on an alarm, the ABORT feature must be selected for that alarm.

MEDICAL ALARM TIME DELAY.

P 53 E time E

This option defaults to 0 seconds which means that Medical Alarms from the panel (1 E) are sent immediately if enabled in the Dialler(P65E).

When the time is other than 0, then alarms are only sent by the Dialler if the Medical Alarms are NOT received within that time. For example, if the time is 24 hours then an alarm will be sent if the client does not press 1 E on the panel every 24 hours. The time may be set from 1 to 250 which represents 0.1 to 250 hours. In this situation, an immediate alarm can still be sent by pressing l E twice within a 6 minute period.

DIALLER #1 and #2 ALARM REPORTING.

P xx E channel E value E

The 8 Zone Control Panel produces the following 22 alarms which must be assigned to the 9 channels allowed in a transmission to a Central Monitoring Station.

The channel number can be from 0 to 9 and the current selection for an alarm is shown via the 8 ZONE indicators, the 9 (BATTERY) and the 0 (MAINS) indicators. Only one channel may be selected for an alarm at any one time.
One or more of the three special features explained below may be selected for each alarm and the current selection is shown via the indicators as follows:

Function	**Indicator**	**Option**
ABORT TIME	Arm/Monitor	11
RESTORE	Alarm/Memory	12
MULTIPLE REPORTS	Zone Excluded	13

Thus to set Zone 1 alarm to channel 6 and select all of the three special features, press the buttons:

P71E 6E 11E 12E 13E

Ie. P 71 E channel E abort E restore E multiple E

The following three features may be used to modify, for each alarm, the basic transmission procedure to a Central Station.

ABORT TIME: Delay dialling until after this time. If the Control Panel, or the input is reset during the Abort Time, the alarm is cancelled and no dialling takes place.

RESTORE: When a alarm becomes sealed, a restoral transmission is sent to the Central Station.

MULTIPLE REPORTS: Each time an alarm occurs, a transmission will be sent to the Central Station.

The three special features are COMMON to both Diallers but may be changed while in the programme option for either one.
For example, P71E12E sets the Restore option for zone 1 on both Diallers, while P171El2E would then reset the option for both Diallers.

The 22 alarms and their corresponding programming options are as follows:

P57E	= Arm/Disarm (Open/Close)	P66E	=	Keypad Fire alarm
P58E	= Control Panel fail	P67E	=	Keypad Panic alarm
P59E	= Battery Fail	P68E	=	Keyswitch Panic alarm
P60E	= Satellite Battery fail	P69E	=	Duress alarm
P61E	= Mains fail	P7OE	=	Zone Excluded (isolated)
P62E	= Test			
P63E	= Tamper alarm	P7lE	=	Zone 1 alarm
P64E	= Keypad Code alarm	to		to
P65E	= Keypad Medical alarm	P78E	=	Zone 11 alarm

If you wish to disable one of the 22 alarms so that it will never be reported, then enter a channel number of 98, which will blank all the channel indicators ie. 1 to 0.
For example, to disable Zone 1 so that it never reports, press the buttons:
P 71 E 9 8 E

If you wish to use the Satellite Battery alarm, you must enable it in P60E by setting its channel to any value (0 to 9). Once enabled, it is automatically combined with the main Battery Fail alarm (P59E) and sent with the channel number assigned to P59E.

To ensure correct alarm transmission in the various formats, certain alarms MUST BE SET to specific channels as defined in the following table. An ***** indicates that any channel number may be used.

		Low Speed	High Speed	Extended H/S
P57E	= Arm/Disarm	8	8	9
PS9E	= Battery Fail	*	0	9
P6iE	= Mains Fail	*	*	9
P62E	= Test	*	9	9
P70E	= Zone Excluded	*	*	9

Extended high Speed format allows 15 Client ID.'s to be sent via one Client Account Number. The Dialler uses this feature and hence if Extended format is selected, the 15 ID.'S are transmitted automatically Via Dialler #1. If Low Speed or High Speed formats are being used, then it is not possible to transmit any Client I.D's at this stage.

INSTALLATION PROGRAMMING OPTIONS SUMMARY

Default value			
none		P3OE code E code E	= Installer Access Code
-		P98E	= Set all options to default
o		P3lE telephone no.E	= Primary telephone no.
o		P32E telephone no.E	= Secondary telephone no.
o		P33E telephone no.E	= Extra telephone no.
o	#	P34E number E	= Dialler #1 Client Account no.
Alternate	#	P35E option E	= Dialler #1 Reporting options
automatic	#	P36E option E	= Dialler #1 Transmission format
automatic		P37E option E	= Type of dialling
15 seconds		P38E time E	= Time to wait for Acknowledge tone
6		P39E number E	= Number of dial out attempts
option 5		P4OE number E	= Output control and indication options.
none		P41E option E	= Auxiliary output drive
o seconds		P42E time E	= Time before Auxiliary output pulse
1 second		P43E time E	= Time period of Auxiliary output pulse
none		P44E option E	= Ring-Detect and Test-Call options
168 hours		P45E time E	= Time between automatic Test-Calls
o hours		P46E time E	= Time before first Test-Call
3		P47E number E	= Double rings for Call-Back
S		P48E number E	= Double rings for Auto-Answer
10 seconds		P52E time E	= Abort Time Delay
o seconds		P53E time E	= Time delay for Medical alarm
none	#	P57E channel E value E	= Arm I Disarm (Open/Close)
none	#	P55E channel E value E	= Control Panel fail
none	#	P59E channel E value E	= Battery fail
none	#	P60E channel E value E	= Satellite Battery fail
none	#	P61E channel E value E	= Mains fail
none	#	P62E channel E value E	= Test
none	#	P63E channel E value E	= Tamper alarm
none	#	P64E channel E value E	= Keypad Code alarm
none	#	P65E channel E value E	= Keypad Medical alarm
none	#	P66E channel E value E	= Keypad Fire alarm
none	#	P67E channel E value E	= Keypad Panic alarm
none	#	P68E channel E value E	= Keyswitch Panic alarm
none	#	P69E channel E value E	= Duress alarm
none	#	P7OEchannel E value E	= Zone Excluded (partial Seal)
none	#	P71E channel E value E	= Zone 1 alarm
		to	to
none	#	P78E channel E value E	= Zone 8 alarm

# indicates those options applicable to Dialler #2. Add 100 to the above option number

INSTRUCTION MANUAL

DIALLER OPERATION

If you have a 5000 SERIES Dialler fitted to your 8 ZONE Control Panel, you are provided with many additional features as well as the capability to transmit alarms to a Central Monitoring station. This manual is designed to provide instructions on those Dialler features which may be under your control.
It should be read in conjunction with the main 5000 SERIES Instruction Manual.

REGULAR CALLS

To ensure the integrity of your security, the Dialler will be installed to make regular calls to your Central Monitoring Station. For industrial and commercial premises, this will normally happen twice a day; when the Control Panel is Disarmed and again when Armed. Alternatively, regular TEST calls can be sent from once every half hour to once a week. The latter is often used for domestic premises. Your security installer will advise you on the appropriate timing of the TEST calls for your premises.

LINE/EXPAND INDICATOR

The LINE/EXPAND indicator is shared between the Dialler and the Zone Expander since each only uses it for a short time. Normally the indicator will be off.
When the Dialler seizes the telephone line to make a call, the indicator will turn on.
At the end of a successful call, the indicator will turn off.
An unsuccessful call will leave the indicator flashing rapidly until the next call.

In certain high-security applications, the installer may inhibit the above operation of the LINE/EXPAND indicator (but not the fault indications described below).

Every few seconds, the Dialler checks the telephone line for the existence of any "faults" (eg. the cutting of the telephone cable). Whenever a fault is detected, the LINE/EXPAND indicator will flash slowly until the problem is corrected.

Should the LINE/EXPAND indicator flash very rapidly then either the Dialler or the Zone Expander is faulty and should be repaired as soon as possible.

OPTIONAL FEATURES

Your installer can provide one or more of the following simple features, if required, to help you maintain maximum security.

Operate the siren and strobe on detection of a telephone line fault.

Operate the siren and strobe after an unsuccessful series of calls to the Central Monitoring Station.

Indicate a successful call to a Central Monitoring Station by beeping the siren 3 times (used when Arming).

Indicate a successful call to a Central Monitoring Station by operating the strobe for 3 seconds (used when Arming).

Operate the Dialler's AUXILIARY output on detection of a line fault, after a successful call or after an unsuccessful call.

REMOTE CONTROL/STATUS REPORT

An optional REMOTE CONTROL device may be purchased to either Arm the Control Panel via the Dialler or to operate the Dialler's AUXILIARY output from a remote location. These features can only be enabled by your installer.

To use the unique Remote Control features, ring your Dialler and wait for it to answer as follows:

1 long beep = Control Panel DISARMED	Auxiliary output OFF.
7 short beeps = Control Panel ARMED	Auxiliary output ON.

You then have 5 seconds to place the Remote Control device near the mouthpiece of the telephone and press the button to send a special tone to the Dialler. Once this tone is received, the Dialler will respond again with the above beeps to indicate the new status of the Control Panel or the Auxiliary output.
If you do not hang up within the next 5 seconds, the Dialler will provide a simple Status report of the zone(s) in alarm. This report consists of a 3 digit Dialler Identification plus 1 digit to indicate the zone in alarm. Thus if the Dialler Identification is 642 and zone 3 had alarmed, then the report will be 6423, ie.

6 beeps, pause, 4 beeps, pause, 2 beeps, pause, 3 beeps.

A second zone in alarm results in the Dialler ID being repeated, ie. the report would be 6423 followed by 6428 if both zones 3 and 8 had alarmed.

MEDICAL, FIRE, PANIC

Pressing the buttons 3 E will send a Panic (normally personal attack) alarm.
If required, this can be made to be silent for hold-up applications.
Pressing the buttons 2 E can send a Separate alarm to indicate Fire.

An optional RADIO PANIC BUTTON is available.

Pressing the buttons 1 E can send a separate alarm to indicate a Medical panic.
Alternatively, it can be arranged to automatically send a Medical alarm
if the buttons are not pressed within a preset time. For example, if the time
is 24 hours then an alarm will be sent if you do not press l E on the panel
every 24 hours. In this case, pressing l E twice within a 6 minute period
will send an alarm immediately.

Programming the Dialler is virtually identical to programming the Control Panel
with one exception. During the programming of the telephone numbers,
it is occasionally necessary to enter a special PAUSE digit.
To do so, press and hold the E button for at least I second. For example,
to programme a telephone number commencing with
0, 'PAUSE', 4, press 0, long E, 4 etc. During the telephone number display,
the PAUSE digit is represented by the TAMPER/SATELLITE indicator.
NOTE: each PAUSE = 2.5 seconds.

EXTRA CODES

The Dialler provides 11 extra codes which can be used in exactly the same manner as the first four of the Control Panel. To programme say, Code 5 to be 446, first enter the PROGRAM mode and then press the buttons;
P 0 5 E 4 4 6 E 4 E 6 E
Similarly, to programme Code 15, press the buttons;
P 0 1 5 E code E code E
Note the leading 0 for the option number of these codes.

EXTRA TELEPHONE NUMBER

An extra telephone number has been provided for your use if so required. Using this number, it is possible to have the Dialler ring the Central Monitoring Station and then to ring you at home. It can even give you an audible status report to tell you whether the Control Panel is Armed or Disarmed and what zones have alarmed. Alternatively the number can be used to call a 'beeper' type pocket pager to tell you that an alarm has occurred.

Your installer will advise you of exactly how the Dialler can be used to meet your needs. If necessary, the installer can allow you to change this extra telephone number, which can be up to 18 digits in length, including any PAUSE digits mentioned above. To program the number to be l2345678, first enter Program mode and then press the buttons:

P 33 E 1 2 3 4 5 6 7 8 E

MEDICAL ALARM TIME DELAY

This option defaults to 0 seconds which means that Medical Alarms from the panel (1E) are sent immediately. When the time is other than 0, then alarms are only sent by the Dialler if the Medical Alarms are NOT received within that time which may be Set from 1 to 250 which represents 0.1 to 25.0 hours. Thus to programme the time to be 24 hours, first enter Program mode and then press the buttons:

P 20 E 240 E

NOTE: Do not forget to change the time to 0 when you go on holidays.

AUTHORISATION
TELECOM AUSTRALIA - INSTRUCT1ONS TO CUSTOMER

Apparatus - Type : 5OOOD (5000 Series Dialler/Communicator)

Authorisation No. C87/3/94

5000 ZONE EXPANDER

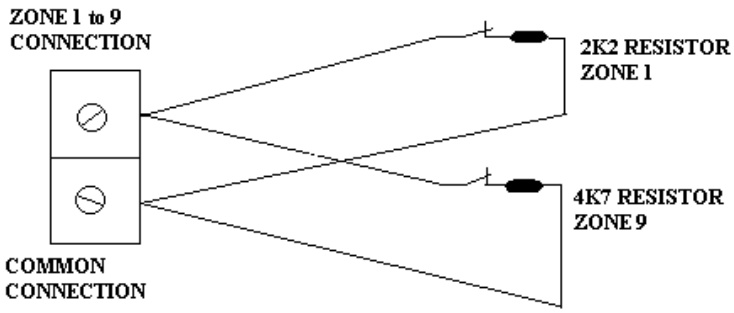
Design Concepts

The 5000 SERIES Zone Expander is intended as a low cost solution for those situations requiring more than 8 Zones. Thus the expander uses the indicators of the 8 Zone Control Panel to provide many zones, at a fraction of the cost of a large multi sector panels but at the same time offering increased security over the alternative of combining detectors to fit within the 8 Zones.

Installation

In most instances, the Zone Expander would be installed on the four inserts provided in the metal Expansion Box. Connection to the 8 Zone Control Panel, and Dialler if required, is via the 13-way strap. If you wish to locate the expander within the Control Panel, a short 13-way strap is available.

Each of the input terminals of the Expander can accept 2 separate zones which are identified by different End-of-line resistors (EOLR) The 2 zones may be wired using the following method.

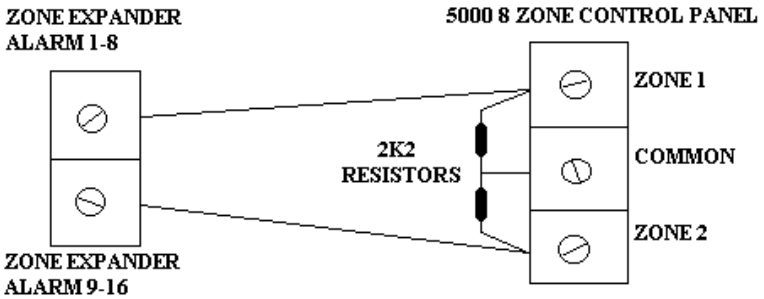


EXPAND 1 = Zones 1-8 = 2K2 EOLR (Red, Red, Black, Brown, Brown)

EXPAND 2 = Zones 9-16 = 4K7 EOLR (Yellow, Violet, Black, Brown, Brown)

End-of-line resistors **must** be 1%

The 16 expansion zones are normally grouped into two banks of eight. Each group uses a zone of the Control Panel. Do not forget to fit the panel's 2K2 End-of-line resistor.



IMPORTANT NOTES

(1)
The default settings have the Expansion Zones 1-8 and 9-16 driving their respective outputs. Using P423E / P623E and P424E / P624E it is possible to change the 8-8 split For example, suppose you want 12 PIRs as Instant zones and 4 others as 24 Hr zones then do the following :

- use P423E to select all 8 Zones to drive the 1-8 output
- use P623E to select 4 zones to drive the 1-8 output.
  The remaining 4 zones will drive the 9-16 output
- Connect the 1-8 output to the Panel and programme the panel as Instant
- Connect the 9-16 output to the Panel and programme the panel as 24Hr. You should also use P604E to provide the 4 zones with a 24Hr Alarm Memory

(2)
The Control Panel programming determines whether the groups of expansion zones are Instant 24Hr, Hand-over etc.

3)
We strongly recommend that EXPAND 1 (1-8) be connected to zone 1 of the Panel and EXPAND 2 (9-16) to zone 2 of the panel. This. makes it much, much easier for your client.

CLIENT OPERATION

The following commands are available

4E	-to see the sealed/unsealed state of EXPAND 1 ie. the Expansion zones 1-8.
6E	-to see the sealed/unsealed state of EXPAND 2 ie. the Expansion Zones 9-16.
45E	-EXPAND 1 Alarm Memory
65E	-EXPAND 2 Alarm Memory (NOTE. indicators are STEADY only. ON = alarm)
47E	-EXPAND 1 Excluding/Including of zones
67E	-EXPAND 2 Excluding/Including of zones (NOTE. zones can only be Excluded during Exit Time).

INSTALLATION PROGRAMMING

The following programme options are available for the Zone Expander. To use- the indicators of the Control Panel, each of the groups must have its own options,

EXPAND 1 (Zones 1-8)	EXPAND 2 (Zones 9-16)	DESCRIPTION
P404E zone E	P604E zone E	Provide the selected zones with a 24Hr Alarm Memory so that if they alarm while Disarmed, the alarm will be stored in 45E or 65E, use for 24Hr zones.
P410E zone E	P610E zone E	Selected zones will alarm on 1 trigger only
P411E zone E	P611E zone E	Selected zones will alarm on 2 triggers. If two 2-trigger, expansion zones each trigger once, then the panel will alarm.
P42OE zone E	P620E zone E	Selected zones are set for; Lockout - indicator ON Conditional Lockout - indicator OFF
P423E zone E	P623E zone E	Selected zones are combined to drive the '1-8' output for connection to the Control Panel
P424E zone E	P624E zone E	Selected zones are combined to drive the '9-16' output for Connection to the Control Panel
P99E		Reset all Expander options to the default values (ie. both EXPAND 1 and 2)

****

5000 Series Panel 8 Zone Version 3

INSTALLATION PROGRAMMING (Program light flashing)

P0E zone **E**	Instant
P1E zone **E**	Delay
P2E zone **E**	Handover
P3E zone **E**	Long Delay. Entry time same as Exit time
P4E zone **E**	24hr audible
P5E zone **E**	24hr silent
P10E zone **E**	Single trigger zones (1-8 default)
P11E zone **E**	Double trigger zones
P12E zone **E**	Vibration sensor. Highest sensitivity
to	
P19E zone **E**	Vibration sensor. Lowest sensitivity
P20E zone **E**	Conditional lockout (leds off) Lockout (leds on)
P21E option **E**	**1.** Disable Keyswitch entry/exit restriction
	2. Enable Arm via Code
	3. Disable Auto exclude (full alarm at end of exit time)
	4. Disable entry warning beeps (silent entry time)
	5. Enable silent Panic alarms
	6. Enable silent other alarms (except 24hr & Fire)
	7. Enable Monitor modes 1 & 3 to trigger dialler
P22E time **E**	Siren run time in minutes (1-99)
Exit Installation mode	**P E**

CLIENT PROGRAMMING (Program light on steady)

P1E code **E** code **E**	Code 1 (Master Code)
P2E code **E** code **E**	Code 2
P3E code **E** code **E**	Code 3
P4E code **E** code **E**	Code 4

Codes can be 3-6 digits in length, but cannot start with a 0

P5E time **E**	Entry time in seconds (1-99)
P6E time **E**	Exit time in seconds (1-99)
P7E option **E**	**1.** Entry delay the full alarm
	2. 2 seconds siren and sonalert
	3. Immediate full alarm
	4. Zone number pulsed via sonalert
P8E zone **E**	Monitor zones
P9E zone **E**	Auxiliary zones
Exit Client mode	**P E**

To re-enter Client program mode	**P Master Code E**
To re-enter Installation mode	**P 000000 E**

Note: Entry to Installer mode can only be made while in Client mode

Normal operating mode. Battery and Mains light ON

5000 Series Dialler Programming

Typical program for Central Station Communication.

P31E telephone number E	
P32E telephone number E	
P34E client account number E	
P36E 3E	Selects Ademco H.S. Format
P44E 1E 2E	Allows test calls
P45E hours E	Time between test calls (usually 168)
P46E hours E	Time before first test call
P57E 9E	Open/Close reports enabled
P59E 9E	Battery fail selected
P61E 9E 11E	Mains fail with abort time selected
P62E 9E	Test call report enabled
P70E 9E	Zone exclude reports enabled

Note: Ademco High Speed format has certain fixed reporting requirements.
These are as follows;

Channel 9 can only be used for 5 alarm reports. These are (i) Test calls, (ii) Open/Close, (iii) Battery fail, (iv) Mains fail and (v) Zone exclude. It is **not** permitted to send Zone reports down this channel. Zone, Tamper, Panic and Duress etc. can only report on channels 1-8. It is possible however, to allow 2 or more different Zones to report on one channel.

P71E 12E channel E	Zone 1 assigned to a channel (choose 1-8)
P72E 12E channel E	Zone 2 assigned to a channel (choose 1-8)
P73E 12E channel E	Zone 3 assigned to a channel (choose 1-8)
P74E 12E channel E	Zone 4 assigned to a channel (choose 1-8)
P75E 12E channel E	Zone 5 assigned to a channel (choose 1-8)
P76E 12E channel E	Zone 6 assigned to a channel (choose 1-8)
P77E 12E channel E	Zone 7 assigned to a channel (choose 1-8)
P78E 12E channel E	Zone 8 assigned to a channel (choose 1-8)

P63E channel E — Tamper report (choose 1-8)

P98E Clears dialler to factory default settings
(will also clear user codes 05 to 015)