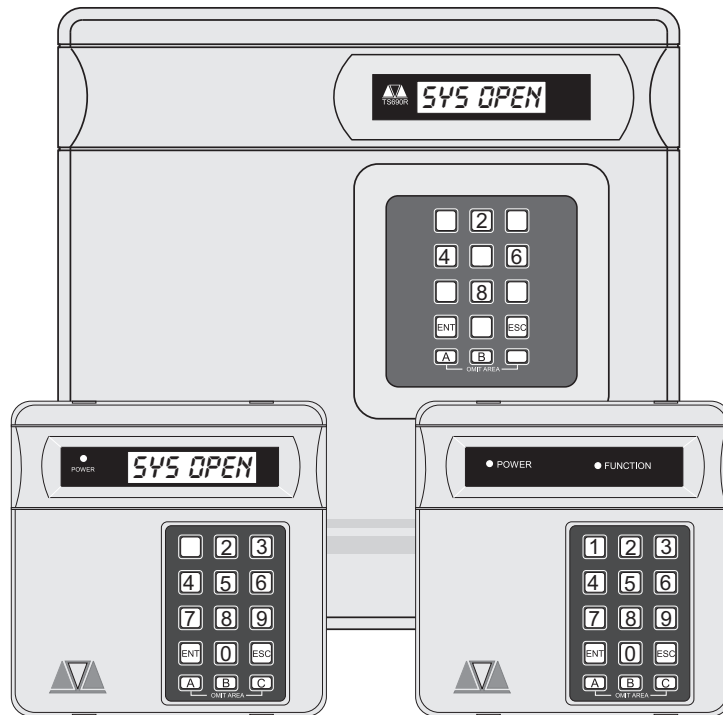


← Networker →

# TS690R

## Wireless Intruder Alarm Control Panel



## Installation & Programming Manual (DRAFT)

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# Overview

## Introduction

The TS690R wireless alarm control system has been designed to suit small to medium installation sites. The system can monitor 30 wireless zones and 8 conventional zones via remote keypads or LECs.

The TS690R is designed to meet the requirements of BS6799 class "III" and complies with all current NACOSS codes of practice for domestic and small business audible ONLY intruder alarm systems. The system can be certificated by approved installers as a Wirefree "Class III" installation.

The radio operating frequency between the control panel receiver and the detectors is 418MHz with a bandwidth of 200kHz. The radio section is approved to MPT 1340.

## Control Panel

The control panel is the controlling unit for the system, it has a power supply and connections for a standby battery. It has the following facilities:

- On board keypad
- 8 character Starburst LCD display
- Bell and strobe outputs
- 3 programmable outputs
- Extension loudspeaker output
- Printer output
- All system program information and the 150 event log is stored in a removable non-volatile memory (NVM)
- 10 user codes + engineer's code
- 2.1Ah battery capacity

## Jamming Detection

The TS690R features a radio jamming detection option which can be enabled or disabled (see "System Configuration" on page 31. When enabled the control panel monitors for other radio signals on the same frequency used by the detectors. If the control panel detects a continuous signal for more than 30 seconds the control panel will raise an alarm. In the unset state

the alarm causes the internal sounders to beep every minute and the display shows "JAMMED". In a full or part set state a full alarm is generated.

## Wireless Detectors

The TS690R uses the Scantronic 500 series range of wireless detectors. The following devices are available:

### *502r Watch Pendant PA*

The 502r watch pendant is designed for use as a panic alarm for the TS690R. The 502r comprises a plastic waterproof case that can either be worn on a strap round the wrist, round the neck as a pendant or clipped to a pocket.

### *509r Fire Detector*

The 509r fire detector sends a signal to alarm panel when it detects the presence of smoked.

### *515r Passive Infra Red*

The 515r Passive Infra Red (PIR) is an indoor detector which has a 10 metre range.

### *525r Remote Setting Device*

The 525r remote setting device can be used to set, unset and part set the alarm system. In addition, pressing the "ARM" and "OFF" at the same time will cause a panic alarm.

### *535r Universal Transmitter*

The 535r universal transmitter sends a signal to alarm panel when the associated magnet moves away from the case, and sends a restore signal when the magnet is re-aligned. If required, you can wire external normally closed devices (e.g. 20mm flush contacts) to the 535r.

## Remote Keypads

Up to 4 remote keypads can be connected to the control panel. Each remote keypad has two hard wired detection circuits and a single switched -ve output. There are two types of remote keypads that can be used:

**8 Character Starburst (TS690.STAR)**

The TS790 star remote keypad has a backlit 8 character Starburst display (LCD) and a backlit tactile rubber keypad.

**Remote Arming Station (TS700.ARM)**

The Remote Arming Station only allows setting and unsetting of the system. The unit has two indicator LEDs, the "Power LED" and a programmable "Function LED" (the "Function LED" may be programmed as "Fault" or "Area Set" etc.).

**TS700 LEC**

The Local Expansion Card (LEC) provides two programmable hard wired detection circuits and one programmable output.

**System Architecture**

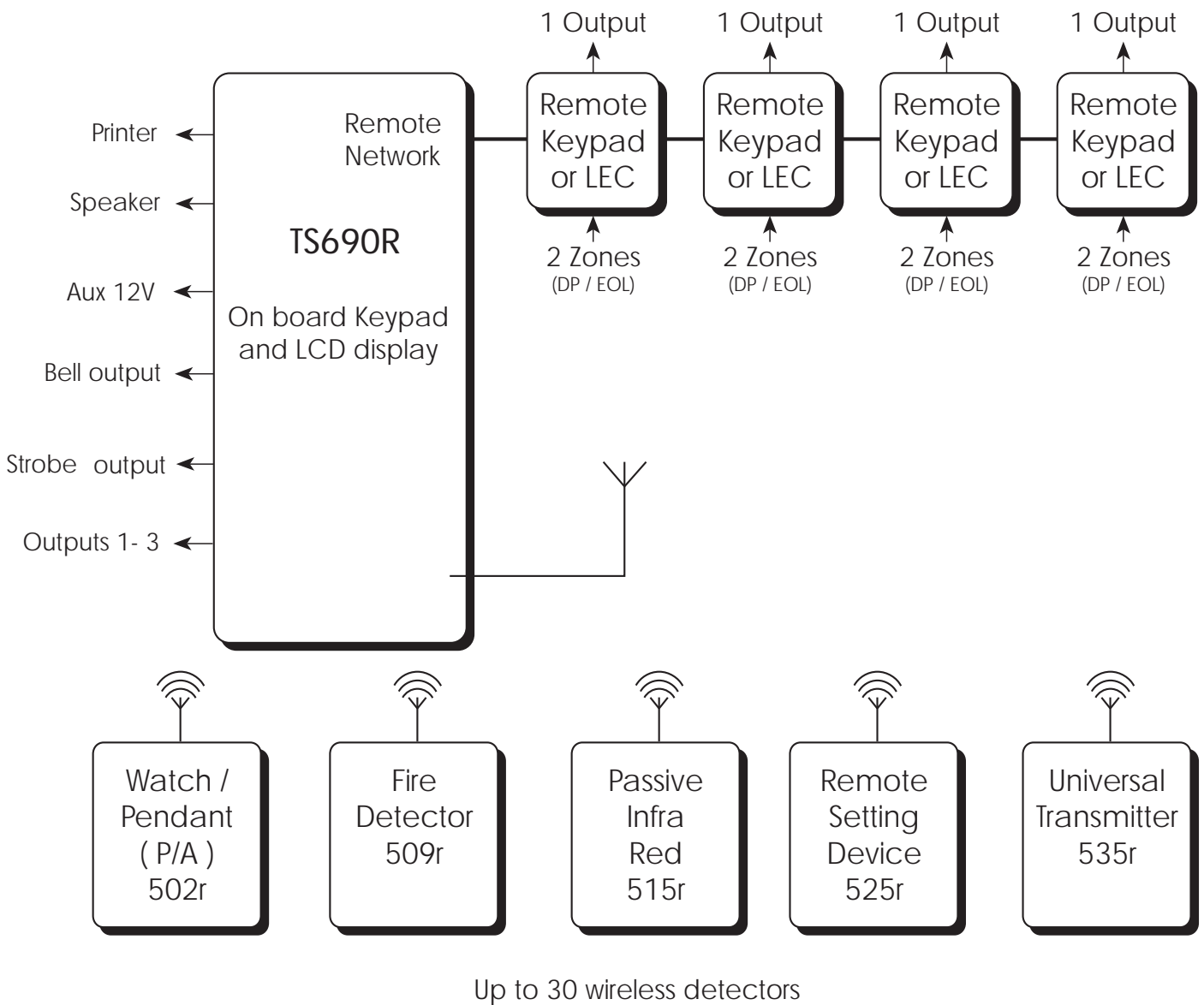


Figure 1. TS690R System Architecture

## Specifications

### Control Panel

Part No.:	TS690R
Input Supply:	230V $\pm$ 10% 50Hz
Current:	120mA (normal) 300mA (alarm)
Power Supply:	750mA
Standby Battery:	2.1Ah
Zones	30 wirefree devices 8 hard wired via
remotes/LECs	
Outputs 1-3:	1 = Switched -ve @100mA 2 = Switched -ve @100mA 3 = Switched -ve @100mA
Speaker Output:	16 Ohms
Bell Trigger:	Switched -ve @500mA
Strobe Trigger:	Switched -ve @500mA
Dimensions:	205(W) x 205(H) x 64(D) mm
Material:	3mm white polycarbonate
Weight:	1.4 Kg
Environment:	-10 to 55°C

### Starburst Remote Keypad

Part No.:	TS690.STAR
Display:	8 character Liquid Crystal
Current:	50mA (normal) 60mA (alarm)
Zones:	2
Output:	Switched -ve @100mA
Dimensions:	130(W) x 130(H) x 30(D) mm
Material:	3mm white Polycarbonate
Weight:	280g
Environment:	-10 to 55°C

### Arming Station

Part No.:	TS700.ARM
Display:	Power LED Programming function LED
Current:	30mA (normal) 40mA (alarm)
Zones:	2
Output:	Switched -ve @100mA
Dimensions:	130(W) x 130(H) x 30(D) mm
Material:	3mm Polycarbonate
Weight:	280g
Environment:	-10 to 55°C

### TS700 LEC

Part No.:	TS700.LEC
Current:	30mA (normal) 40mA (alarm)
Zones:	2
Output:	Switched -ve @100mA
Dimensions:	142(W) x 820(H) x 36(D) mm
Material:	3mm Polycarbonate
Weight:	213g
Environment:	-10 to 55°C

### 502r PIR

Part No.:	502rUK-00 (Scantronic)
Power Supply:	Two AAA Alkaline batteries
Power Life:	Approximately 14 months
Environment:	-10 to 55°C

### 509r PIR

Part No.:	509rUK-00 (Scantronic)
Power Supply:	Two AAA Alkaline batteries
Power Life:	Approximately 14 months
Environment:	-10 to 55°C

### 515r PIR

Part No.:	515rUK-00 (Scantronic)
Power Supply:	Two AAA Alkaline batteries
Power Life:	Approximately 14 months
Environment:	-10 to 55°C

### 525r Remote Setting Device

Part No.:	525rUK-00 (Scantronic)
Power Supply:	Duracell DL 1/3N (Alkaline)
Power Life:	Approximately 14 months
Environment:	-10 to 55°C

### 535r Universal Transmitter

Part No.:	535rUK-00 (Scantronic)
Power Supply:	Two AAA Alkaline batteries
Power Life:	Approximately 14 months
Environment:	-10 to 55°C

# System Installation

## Radio Site Survey

With a wirefree system we recommend that you carry out radio tests as part of a site survey to ensure that the control panel can receive the radio signal from the detectors. If you cannot do the tests during a survey, carry them out before installation.

### Procedure for simple Installation

1. Place the control panel in its planned location.
2. Power up the control panel.
3. Program the control panel to learn a detector.
4. Select the "Walk Test" option (see user guide).
5. Test the reception by triggering the detector at each planned location. If the control panel generates a tone the detector is being received.

### Procedure for Certified Installation

You will need a 545r Radio Signal Strength meter and a 546 Test Transmitter.

1. Switch the test transmitter on and place it at the proposed site for the control panel. The transmitter sends a pulsed signal, 10 seconds on and 5 seconds off.
2. Switch the test meter into "Track" mode and walk around the premises.
3. Check that the signal strength is between 5 and 9 at each proposed location for detectors.
4. Move to a different location to improve the signal strength if it is between 1 and 4. Make sure the new location is suitable for the detector.
5. Change the location of the test transmitter if the signal strength is not greater than 4 for any transmitter, make sure that the user agrees to the new location for the control panel.
6. For certified systems note down the signal strength for each detector location and keep a record in the control panel and in the installation file.

## Control Panel Location

The following considerations must be taken when installing the control panel.



1. Positioned in a convenient location to connect the mains supply.
2. Positioned within the protected area.
3. Positioned in a convenient location so that the users can reach the control panel in order to operate the system.
4. Ensure that there is a clear space around the control panel to allow it to receive a good radio signal.

### Do NOT locate the panel

5. Outside the area covered by the alarm system.
6. Near to ground level.
7. Close to or on large metal structures, for example: water tanks, cars, fridges and freezers.
8. Closer than 1 metre to mains wiring and metal water or gas pipes.
9. Inside steel closures.
10. Next to high voltage electrical equipment, or electronic equipment, particularly computers, photocopiers or other radios.

## Cable Routing

When installing cables, the following should be noted:

-  *Ensure that all Network and hard wired detection circuit cables are kept clear of mains supply cables, telephone cables, R.F. cables and cables supplying bells or sounders.*
-  *Mains power supply cables to the system must be connected to an un-switched fused spur that cannot be accidentally switched off. The mains cable must enter the housing via its own cable entry point.*

## Control Panel Assembly

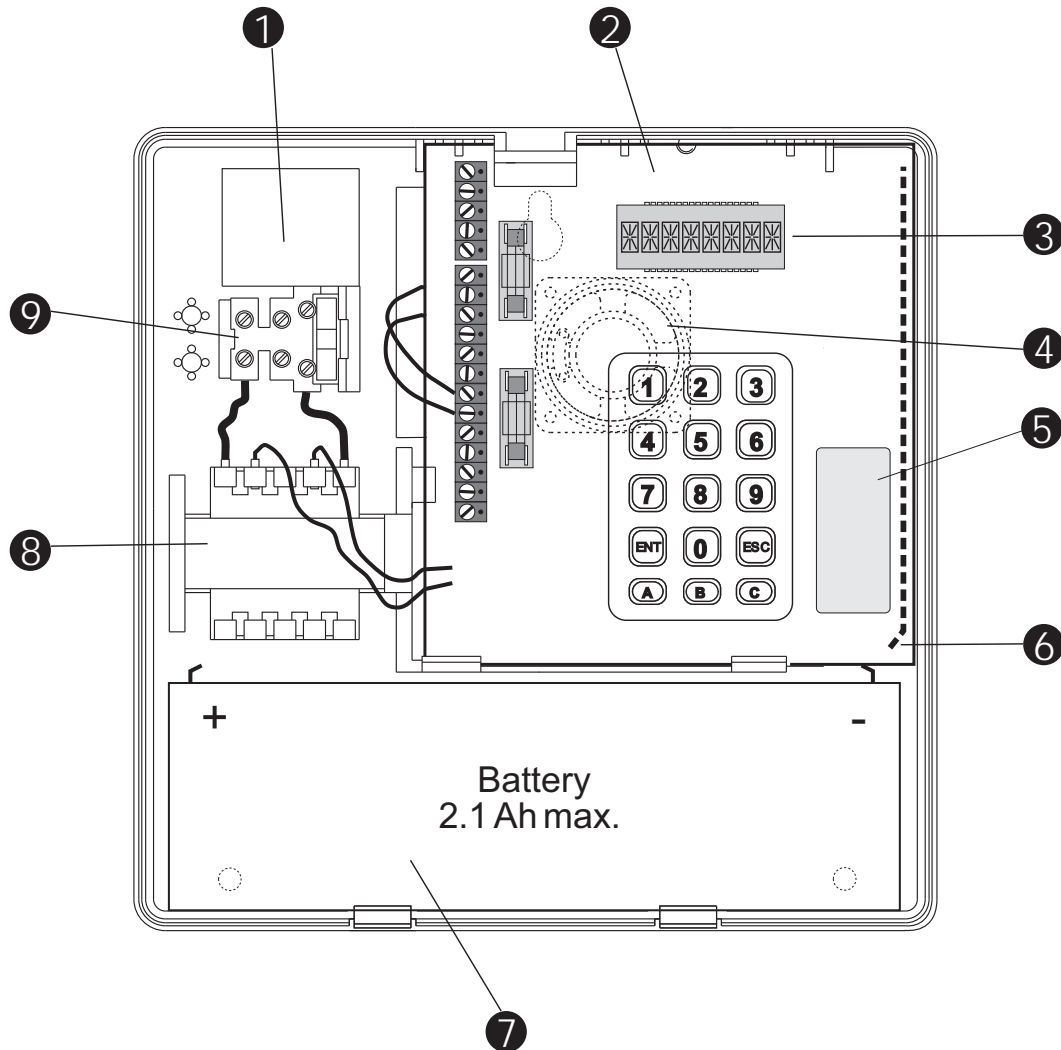


Figure 2. TS690R Control Panel Layout

- |   |   |
|---|---|
| <p>1 <b>Mains cable entry</b><br/>The main supply cable for the TS690R must enter the control panel via this entry point.</p> <p>2 <b>Main PCB</b><br/>The main Printed Circuit Board (PCB).</p> <p>3 <b>Display</b><br/>A back lit 8 character Starburst LCD.</p> <p>4 <b>Loudspeaker</b><br/>The internal sounder for the TS690R. It is located underneath the main PCB.</p> <p>5 <b>Radio Module</b><br/>Radio receiving module. <b>DO NOT</b> adjust the trimmer on the module.</p> <p>6 <b>Aerial</b><br/>Radio receiving aerial. The aerial must be positioned as shown when refitting the PCB.</p> | <p>7 <b>Standby Battery</b><br/>A 2.1 Amp Hour (Ah) battery must be fitted inside the TS690R in order to maintain the system in the event of a mains power failure.</p> <p>8 <b>Mains Transformer</b><br/>The mains transformer which transforms the incoming mains supply down to 18V a.c.</p> <p>9 <b>Mains Fused Terminal Block</b><br/>The mains connection terminals for the TS690R. The terminal block is fitted with a 200mA fuse.</p> |
|---|---|


## Control Panel Installation


Proceed as follows:

1. Remove the screw from the top of the control panel and lift away the front cover.
2. Ensure that there is no battery in the housing, then remove the Printed Circuit Board (PCB) as follows:
  - (a) Disconnect the AC leads from the transformer and disconnect the internal loudspeaker from the terminal block connections.
  - (b) Pull down the plastic clip at the bottom right hand corner of the PCB and gently lift the PCB forward.
  - (c) Repeat with the plastic clip at the bottom left hand corner of the PCB.
  - (d) The bottom of the PCB will then swing forward and the whole PCB will come away from the back box.
  - (e) Store the PCB in a safe place.
3. Hold the control panel back box in the required position (keyhole to the top) and mark the centre of the keyhole position. Remove the back box, drill and plug the hole.
4. Screw a No 10 screw into the plugged hole. Re-position the back box and mark the remaining two securing holes. Remove the back box, drill and plug the holes.
5. Re-position the back box and pass all cables into the back box via the appropriate cable entries.
6. Secure the back box using not less than 30mm x No 10 screws through the three securing holes.
7. Re-fit the PCB assembly by aligning the top of the PCB into the 2 supports in the top of the housing ensuring that the edges of the board sit between the 2 flanges and that aerial is positioned as shown in figure 2. Push the bottom of the PCB until it clicks in place.
8. Re-connect the AC leads to the transformer.
9. If a remote keypad is being fitted to the system, refer to page 12.

## Mains Connection

The mains supply is connected to a 3 way "Euro Type" fused terminal block, which is fitted with a 200mA fuse. All electrical connections should be carried out by a qualified electrician and must comply with the current IEE regulations.

 *To comply with European regulations the supply should be fed from a readily accessible disconnect device, e.g. un-switched fused spur fitted.*

 *When making mains connections it should be ensured that if the cable slips in such a way as to place a strain on the conductors, the protective earthing conductor will be the last to take the strain.*

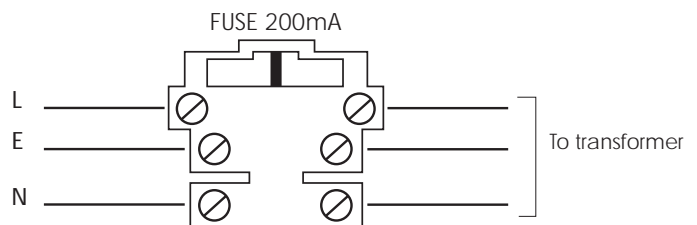


Figure 3. Mains Supply Connections

## Battery Connection

A 2.1Ah battery must be fitted to the system to allow it to function during a mains fail condition. The TS690R is equipped with a "Battery Protection" circuit so that if a battery is accidentally reverse connected or its voltage is below 4V. To clear the fault simply reconnect or replace the battery as appropriate.



- 7 **NVM**  
A removable non-volatile memory (NVM) device that stores all system program parameters and the 150 log events.
- 8 **Keypad**  
A back lit rubber key mat used for operating the system.
- 9 **Aerial**  
Radio receiving aerial. The aerial must be positioned as shown when refitting the PCB.
- 10 **Radio Module**  
Radio receiving module. **DO NOT** adjust the trimmer on the module.
- 11 **Speaker Volume**  
This adjust the volume of the internal sounder and any extension loudspeakers. Only the volume of the advisory tones such as entry, exit and chime may be adjusted using this control. Alarm tones are always at full volume.
- 12 **Bell Fuse**  
This 1 Amp fuse protects the supply to the external sounder/bell. The fuse is in-line with the [H/O +] terminal connection.
- 13 **AC Input**  
These flying leads provide the ac supply to the control panel. They are connected to the mains transformer and are not polarity conscious.
- 14 **Bell Connection Terminals**  
These terminals provide the necessary connections to the external sounder or bell. Full details of connections are on page 14.
- 15 **Extension Loudspeaker**  
This terminal provides an output to a 16 Ohm extension loudspeaker. The other side of the loudspeaker is connected to the [H/O-] terminal.
- 16 **Auxiliary Tamper**  
These two terminals provide tamper protection to auxiliary devices, such as power supplies, extension loudspeakers etc. If they are not used they must be linked out.
- 17 **Panel Outputs**  
These are three switched -ve outputs rated at 100mA. Each output is programmable and can be used to trigger other devices such as the SD1 + speech dialler.
- 18 **Remote Network**  
These terminals provide the necessary connections to remote keypads. Full details of connections are shown below.

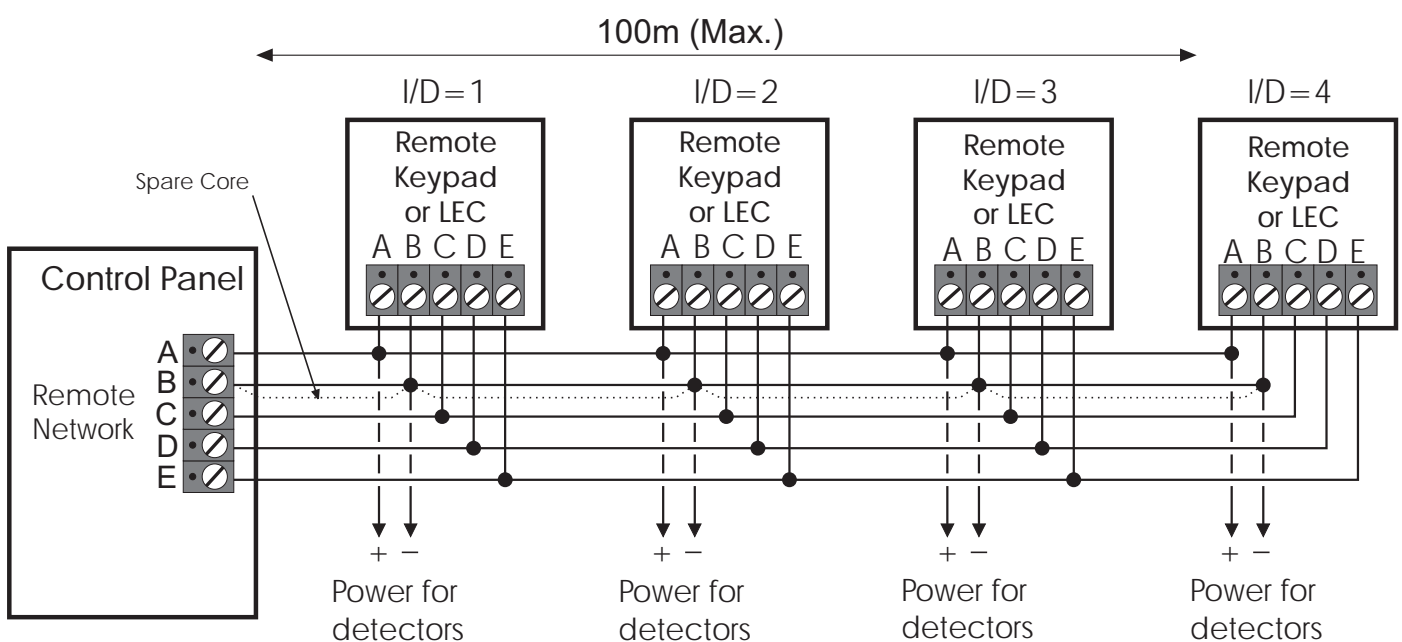


Figure 5. TS690R Main PCB

## Remote/LEC Network Wiring

The Remote Network connections are used for connecting either remote keypads or LECs. Each device has 5 connection terminals and therefore a 6 core cable is required for interconnection. It is recommended that the spare core is doubled up with the [B] connection as this will help reduce voltage drop on long cable runs.

Devices can be individually connected back to the control panel (star connection) or looped together (daisy-chain connection). Which ever method of connection is used the distance to the furthest device from the control panel must not exceed 100 metres.

Power for detectors are provided by the [A] and [B] terminals, see figure 5.

## Remote Keypads

Two types of remote keypads can be used on the system, however, only the TS790 Star remote keypad can be used for programming. Any combination of remote keypad can be used on the same system if desired.

### TS790 Star Remote Keypad

The TS790 remote keypad has a 8 character backlit Starburst Liquid Crystal Display (LCD).

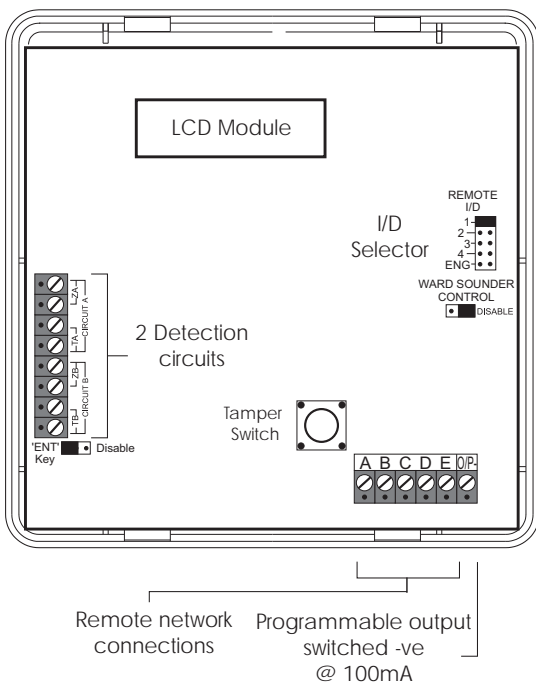


Figure 6. TS690R Remote Network Wiring

### TS700 Remote Arming Station

The TS700 remote arming station only has two indicator LED's, a power LED and a programmable function LED which follows the programmable output.

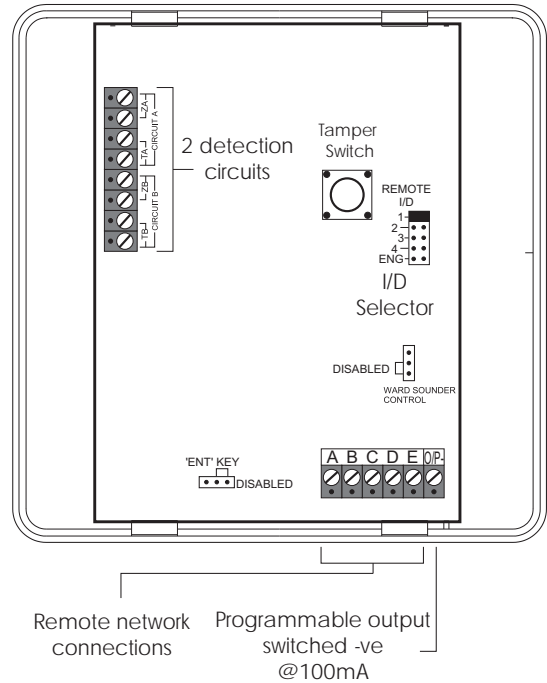


Figure 7. TS790 Star Remote Keypad Layout

### Installation Procedure.

**Always ensure that all power (mains and battery) is removed before making any connections to the remote keypad.**

1. Separate the cover and base by using a screwdriver to push 2 of the clips (top or bottom) inward from the base indents, then lift the cover assembly, noting that the PCB is fixed to the under side of the cover.
2. Hold the base in position (keyhole to the top) and mark the three securing holes, drill and plug the wall as required. Pass all the cables into the base via the cable entry points as appropriate and secure the base to the wall.
3. Connect "Remote Network" and detection circuit cables to the appropriate terminals.
4. Set the I/D selector jumper link to the required position:

TS690R			
I/D Selector	Circuit A	Circuit B	Panel Output
1	31	32	5
2	33	34	6
3	35	36	7
4	37	38	8
ENG/NULL	N/A	N/A	N/A

- No two remote keypads or LECs should have the same I/D.
- If the remote keypad has a "ENT" key enabled/disable link it can be used to limit the functionality of the remote keypad. If the "ENT" key is enabled the remote keypad can be used to set/unset and access all user menus. If the "ENT" key is disabled the remote keypad can only be used to set and unset the system.
  - Finally clip the remote keypad cover onto the base being careful not to trap any cables or to obstruct the tamper switch.

### TS700 LEC Installation

The TS700 LEC (Local Expansion Card) is connected to the "Remote Network" and provides two additional programmable detection circuits and a programmable output. The "Remote Network" may have up to three LECs connected, as the system will always require at least one remote keypad.

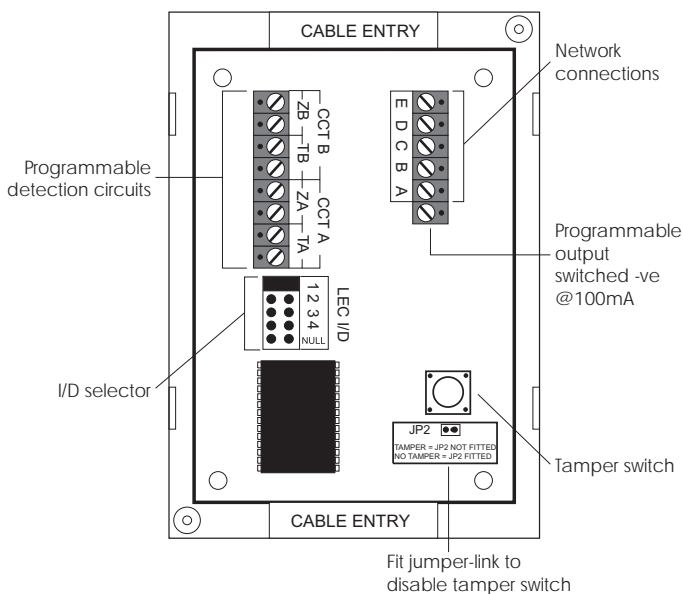


Figure 8. TS700 Remote Arming Keypad Layout

**Always ensure that all power (mains and battery) is removed before making any connections to the LEC.**

- Remove the cover from the base and carefully remove the PCB.
- If the LEC is being fitted inside the control panel you may remove the LEC PCB from its base and secure it to base of the control panel using self adhesive feet. If required, the tamper switch may also be disabled by fitting the jumper link across JP2, see Figure 8.
- If the LEC is being fitted outside the control panel, hold the base in position and mark the two securing holes. Drill and plug the wall, then pass all cables into the base via the cable entry points. Secure the base to the wall using the appropriate fixing screws.
- Connect "Remote Network" cables and detection circuit cables to the appropriate terminals, see Figure 8.
- Set the I/D selector jumper link to the required position:

TS690R			
I/D Selector	Circuit A	Circuit B	Panel Output
1	31	32	5
2	33	34	6
3	35	36	7
4	37	38	8
ENG/NULL	N/A	N/A	N/A

- No two LECs or remote keypads should have the same I/D.
- Finally clip the LEC cover onto the base being careful not to trap any cables or to obstruct the tamper switch.

### Hard Wired Detection Circuits

Detection circuits from remote keypads or LECs must be hard wired. Two methods can be employed:

#### Double Pole

The DP method requires the following:

- The detector alarm and tamper contacts are connected to the zone and tamper terminals respectively.
- The combined alarm and tamper loop resistance must be less than 100 Ohms.
- The maximum number of detection devices allowed in a circuit is ten.
- Normally open devices such as pressure pads and exit terminator buttons are connected between the zone and tamper terminals.
- If the detection circuit is not used links can be fitted across the zone and tamper loops or programmed as Not Used.

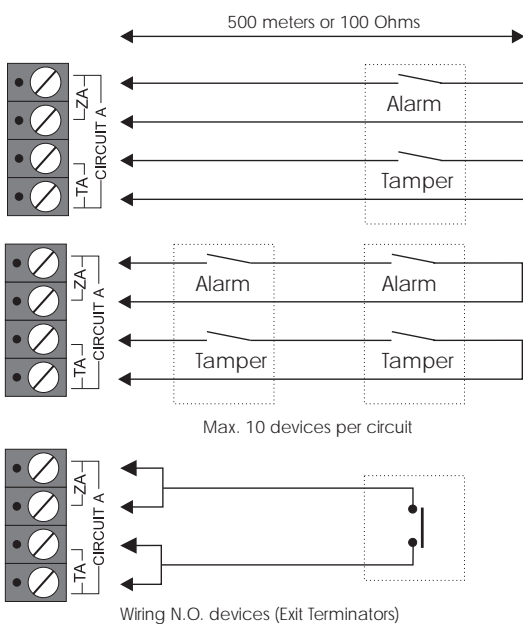


Figure 9. TS700 LEC Layout

#### End Of Line

The EOL method requires the following:

- The detector alarm contacts must have a 4K7 shunt resistor fitted.
- A 2K2 End of Line (EOL) resistor must be fitted at the point in the circuit furthest from the control panel.
- Loop resistance with the EOL resistor shorted must be less than 100 Ohms.

- The maximum number of detection devices allowed in a circuit is ten.
- Normally open devices such as pressure pads and exit terminator buttons are connected across outer terminals
- If the detection circuit is not used links can be fitted across the zone and tamper loops or programmed as Not Used.

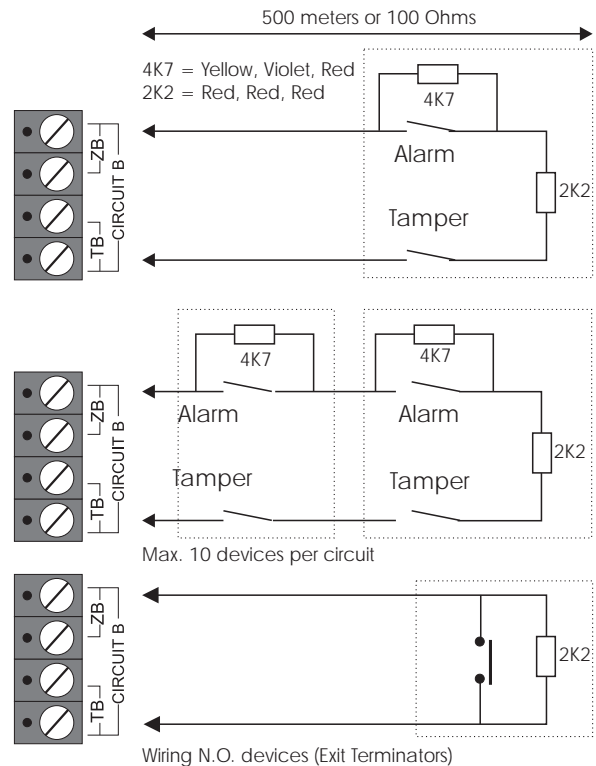


Figure 10. Double Pole Wiring

### External Sounder Connections

The following terminals have been provided to allow connections to an external sounder:

- H/O - This is used to provide a permanent -ve hold off to external sounders, strobes etc.
- H/O + This is used to provide a permanent +ve hold off to external sounders, strobes etc. It is protected by a 1 Amp fuse (Bell 12V).
- TR - This is the negative tamper return connection from the siren or bell.
- STB - This is the strobe output which will switch to 0V on alarm and is rated at 500mA. Connect the other side of the strobe to the H/O +.

TRG - This is the bell trigger output which will switch to 0V on alarm and is rated at 500mA. This output can be programmed for SAB or SCB operation, as follows:

**SAB:** TRG - will switch to 0V on alarm and will provide a maximum of 500mA.

**SCB:** TRG - will provide a negative hold off (500mA), which is removed on alarm.

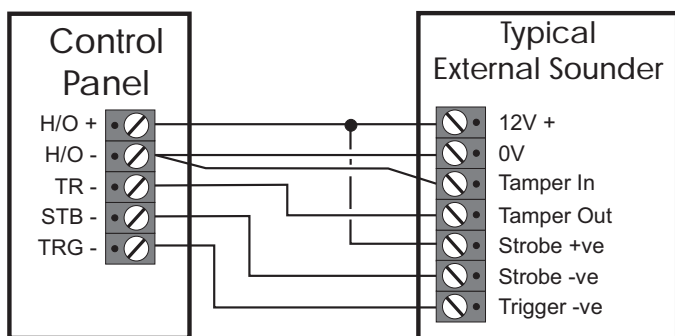


Figure 11. End of Line Wiring

### Auxiliary Tamper

These two terminals provide tamper protection to auxiliary devices such as power supplies, extension loudspeakers etc. If they are not used they must be linked out.

### Extension Loudspeakers

Up to two extension loudspeakers can be connected across the [SPK+] and [H/O-] terminals on the control panel PCB. The volume for the loudspeaker is controlled by VR1 "Speaker Volume".

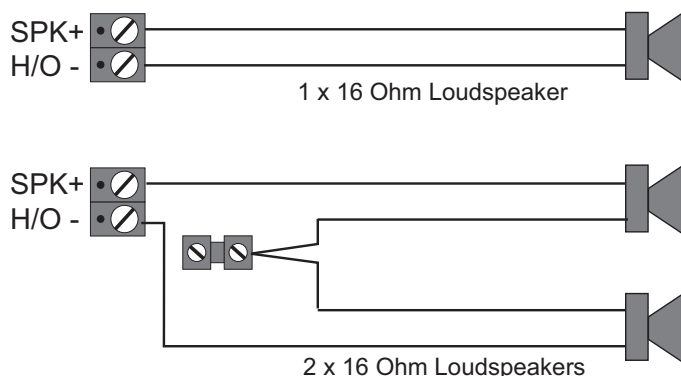
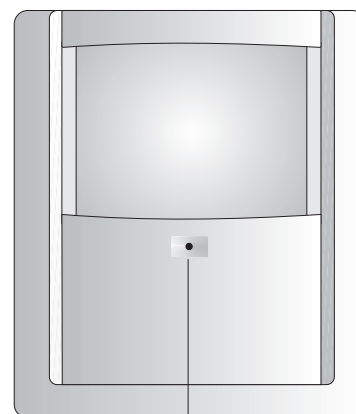


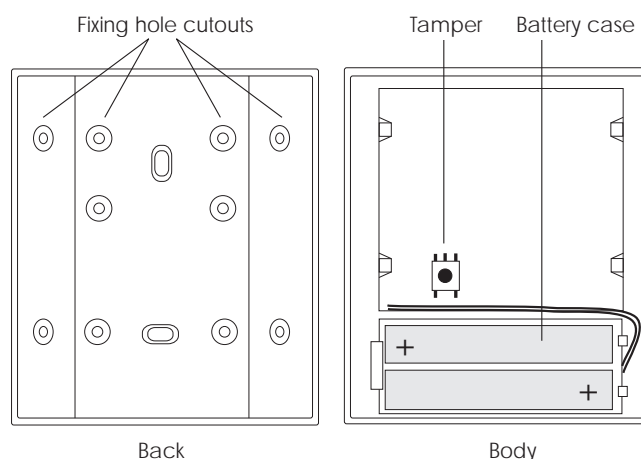
Figure 12. External Sounder Connections

### Installing a 515r PIR



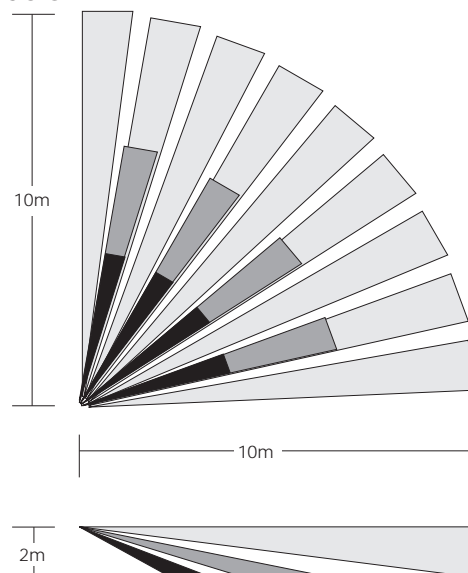
Activity LED

The 515r Passive infra Red (PIR) is an indoor detector designed to work with the TS690R control panel. The detector has a fan shaped sensitive area approximately 10 metres in radius.



### Siting the 515r PIR

You can mount the unit either flat against the wall, or in a corner. The area covered by the detector is shown below:



**Do mount the unit**

- Between 2 and 2.5 metres high for the best general coverage in an average room.

**Do NOT mount the unit**


- Facing a fire, boiler or window.
- Over a radiator.
- Near the floor.
- Close to or on large metal structures.
- Closer than one metre to mains wiring and metal water or gas pipes.
- Inside steel closures.
- Next to electronic equipment, particularly computers, photocopies or other radio equipment.
- Closer than 3 cm to a ceiling (to allow space for dismounting the unit in the future).

**Installation**

1. Open the detector by inserting a small flat bladed screwdriver in the slot at the bottom of the case.
2. Install two "AAA" size alkaline batteries (not supplied). Do not use rechargeable (Nickel Cadmium) batteries, because they are 1.2V and not 1.5V.
3. Learn the detector (see "Adding Devices" on page 33).
4. Mount the detector back box in its required position using two 16mm countersunk head screws.
5. Clip the body of the detector to the back box.

**Testing**

1. Put the TS690R control panel into walk test mode (user code + [ENT] + [2]).
2. Open and close the tamper for each PIR, this will put the detector in test mode.

 *After opening and closing the tamper, the detector remains in test mode for 30 minutes. In this mode the detector has a 30 seconds lockout time. At the end of the 30 minutes the detector reverts to normal mode, with a 3 minute lockout time.*

3. Make sure the control panel receives the alarm from each detector.
4. Choose another site for the detector if the panel does not receive the signal.
5. Wait 30 seconds with no movement in front of the detector before triggering it again.
6. Press [ESC] twice when you have finished testing, to put the control panel back in the open mode.

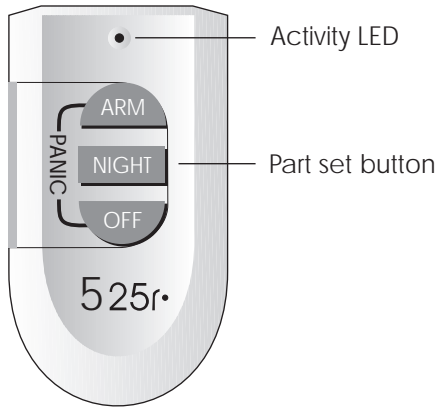
**Walk Testing and Lockout**

In normal use the 515r uses a three minute lockout timer in order to extend battery life. The lockout timer operates as follows:

1. The unit detects movement, signals the control panel, and starts the lockout timer.
2. If the unit detects movement while the lockout timer is running, then it restarts the lockout timer but DOES NOT signal the control panel.
3. When the lockout timer expires the unit signals the control panel the next time it detects movement.

If you want to test a 515r PIR in normal uses you must wait at least 3 minutes between activations. To make testing easier the detector changes the lockout period to 30 seconds for the first 30 minutes after you put the batteries in or after you trigger its tamper.

### 525r Remote Setting Device



The 525r remote setting device can be used to set, part set (part set A only) and unset the alarm system. In addition, pressing the "ARM" and "OFF" at the same time will cause a panic alarm. The 525r is assigned as a detection circuit.

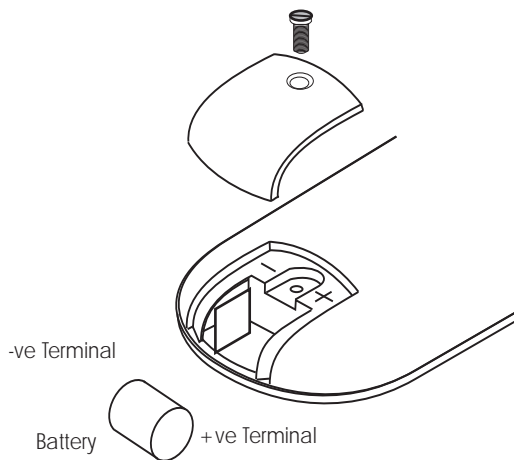
#### Learning

See "Adding Devices" on page 33.

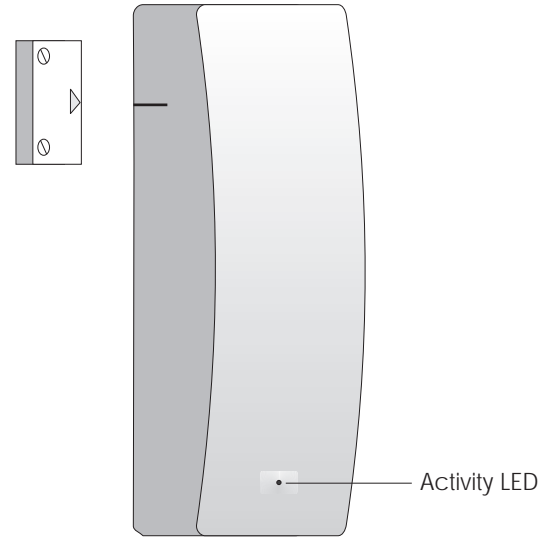
#### Changing the Battery

The battery used in the 525r is a Duracell DL 1/3N or CR 1/3N or K58L (Alkaline). The battery can be obtained from normal high street stockists.

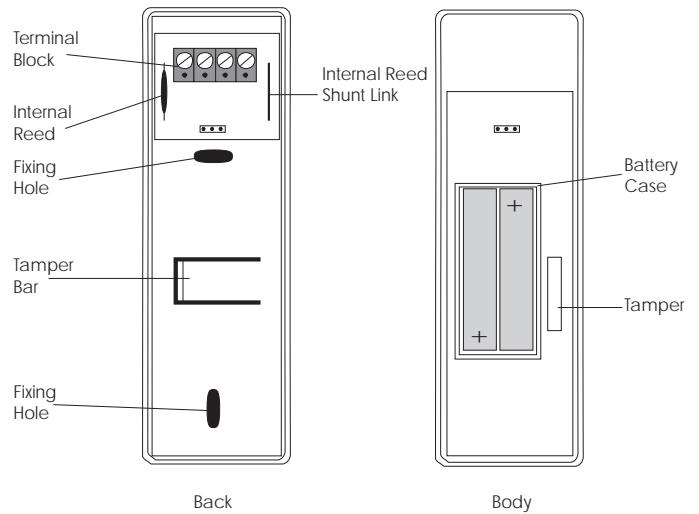
1. Undo the screw holding down the battery compartment cover.
2. Slide back the cover.
3. Replace the battery (make sure the battery polarity is correct).
4. Replace the cover and tighten the screw.



### Installing a 535r Universal Transmitter

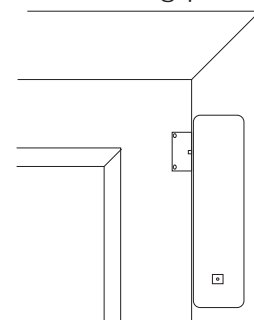


The 535r universal transmitter is designed to work with the TS690R control panel. The transmitter signals an alarm when the associated magnet moves away from the case, and sends a restore signal when the magnet is re-aligned.



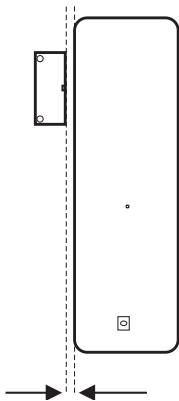
#### Siting the 535r Universal Transmitter

Where possible, mount the unit close to the top of the non-moving frame of a door or window, and the magnet on the moving part. If the frame is not wide enough, mount the magnet on the frame and the unit on the moving part.



## Do

- Make sure there is less than 10mm between the magnet and transmitter body with the door or window closed.



- Make sure the arrow on the magnet aligns with the mark moulded into the side of the case with the door/ window closed.

## Do NOT mount the unit

- On the hinged edge of the door..
- Near the floor.
- Close to or on large metal structures.
- Closer than one metre to mains wiring and metal water or gas pipes.
- Inside steel closures.
- Next to electronic equipment, particularly computers, photocopiers or other radio equipment.

*Using the internal Reed Switch*

If you plan to use the internal reed switch the YOU MUST CUT THE INTERNAL REED SHUNT LINK. However, if at a later date you wish to connect hard wired contacts you must re-solder the link.

*Installation*

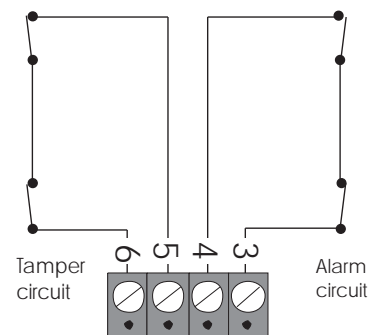
1. Open the transmitter by inserting a small flat bladed screwdriver in the slot at the bottom of the case.
2. Install two "AAA" size alkaline batteries (not supplied). Do not use rechargeable (Nickel Cadmium) batteries, because they are 1.2V and not 1.5V.
3. Learn the detector (see "Adding Devices" on page 33).

4. Mount the transmitter back box in its required position using two type "C" 15mm domehead screws.
5. Make sure the back is flush against the surface and pushes the tamper bar in far enough to activate the tamper switch.
6. Fit the body of the transmitter to the back box.

*Connecting External Door Contacts*

You can wire external normally closed devices to the 535r universal transmitter. You can connect several contacts in series, but the control panel will treat them all as one zone. Do not use more than 10 metres total cable length from the 535r to the last external contact.

1. Remove the wire links from the terminal connector.
2. Connect the normally closed contacts as shown:



3. Make sure the internal reed shunt link is intact. DO NOT CUT.

If you remove the external contacts at a later date, make sure you replace the wire links on the alarm and tamper terminals.

*Testing*

1. Put the TS690R control panel into walk test mode (user code + [ENT] + [2]).
2. Hold The detector in place.
3. Trigger the tamper.
4. Make sure the control panel receives an alarm.
5. Choose another site for the detector if the panel does not receive the signal.
6. Press [ESC] twice when you have finished testing, to put the control panel back in the open mode.

## Connecting a Printer

The TS690R supports two type of printers, the CPA6 printer (no longer available) and any standard RS232 printer. When using an RS232 printer a DCI/MPA printer adapter will be required. Menvier Security supply a DATAc printer kit which consists of a portable RS232 printer, charger unit and DCI/MPA adapter.

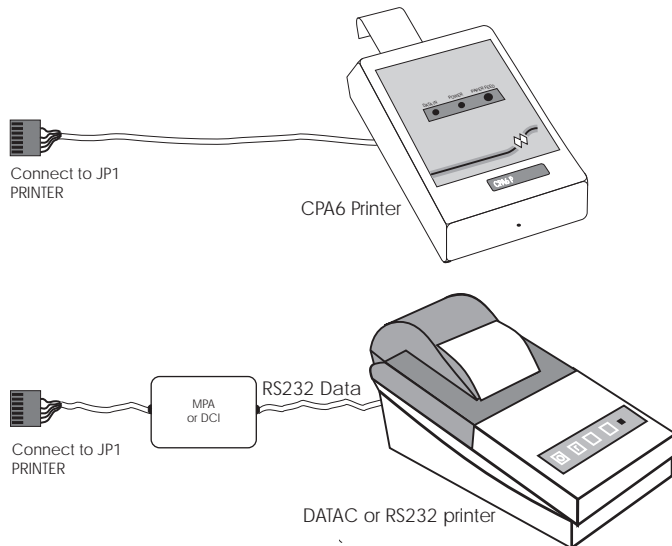


Figure 13. Printer Connections

### Using the CPA6 Printer

1. Plug the CPA6 printer directly on to the PRINTER plug (JP1) on the main control panel PCB.
2. The printer will printout a header, when finished the system event log can be printed.
3. When finished unplug the printer.

### Using the DATAc / RS232 Printer

1. Plug the DCI/MPA on to the PRINTER plug (JP1) on the main control panel PCB.
2. Plug the other end of the DCI/MPA into the DATAc or RS232 printer.
3. In order for the printer to work correctly ensure the printer is set to the following:

Baud rate = 4800  
 Parity = None  
 Stop bits = 2  
 Data bits = 8  
 DTR = Normal

4. When set-up correctly the system event log can be printed.
5. When finished unplug the MPA/DCI.

## Programmable Outputs

The TS690R has many programmable outputs which can be used to drive relays, LED's etc. Each output can be programmed for a different function, see "Programmable Output Types" on page 24.

### Control Panel Outputs

The control panel has three programmable outputs:

- [1-] Switched -ve output rated at 100mA.
- [2-] Switched -ve output rated at 100mA.
- [3-] Switched -ve output rated at 100mA.

### Remote Keypads & TS700.LECs

Each remote keypad and TS700 LEC has one programmable output:

- [O/P] Switched -ve output rated at 100mA.

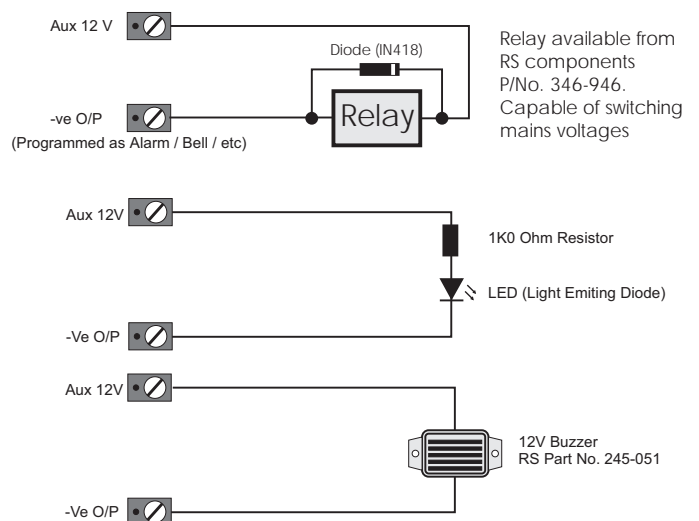


Figure 14. Output Examples

## Pre Power-Up Checks

Once the system is installed, but prior to powering-up, give the system one final check to ensure that:

1. The wiring conforms to the requirements detailed in this manual and that all interconnections are correct (A to A, B to B etc.).
2. All system cables are kept clear of mains supply cables, telephone cables and R.F. cables. It is recommended that cable ties be used to keep cables separated.
3. Verify that maximum cable lengths and resistance's are not exceeded.
4. Mains power supply cables to the system are connected to an un-switched fused spur.

## Initial Power-Up

To power the system for the first time:

1. Place a small screwdriver blade between the pins on the control panel PCB, marked "FACTORY RESET". This will ensure the factory default parameters are set, *see page 21*.
2. Switch on the 240V mains supply and remove the screwdriver blade from the factory restarts pins.
3. Check that the control panel and remote keypads show "LID TAMP". The internal sounder and remote keypad sounders will operate.
4. Enter the engineers passcode (default 1234) to silence the sounders.
5. Connect the standby battery.
6. Enter the engineers passcode (default 1234) to select engineer's menu 1. Once you have completed the "Power-up Checks" you can continue to program the system.

## Power-Up Checks

When the initial power-up checks have been completed, check the following:

1. Switch off the 240V mains supply and measure the DC voltage at each remote keypad and ensure the voltage is greater than 11V whilst the system is powered from its standby battery.
2. Switch on the 240V mains supply and measure the DC voltage between the mains earth connection and AUX +12V. Then measure the DC voltage between the mains earth connection and AUX 0V. In both cases the measurement should be 1V or less. If the voltage is greater than 1V, the system has an "Earth Fault" and all cables should be checked for isolation to Earth.

## NVM Defaults

Section	Option	Default
User Codes	User 00 Engineer	1234
	User 01 Master	5678
	User 02 - 10	Not Used
Panel Outputs	Panel Output 1	Walk Test
	Panel Output 2	Courtesy Light
	Panel Output 3	SW12V
	Panel Output 5	Code Accepted
	Panel Output 6	Code Accepted
	Panel Output 7	Code Accepted
	Panel Output 8	Code Accepted
Circuits	Circuits 01 - 38	Not Used
System Timers	00 2nd Alarm Time	005 seconds
	01 No of Re-arms	003
	02 Settle Time	005 seconds
	03 Part Set Coms Dly	030 seconds
	04 Exit Time	030 seconds
	05 Entry Time	015 seconds
	06 Bell Duration	020 minutes
	07 Bell Delay	000 minutes
	08 D-Knock Delay	008 seconds
	09 Test Time	014 days
	10 Second Entry	015 seconds
	11 Abort Delay	180 seconds
	12 Monitor Duration	010 seconds
	13 Part Set Bell Delay	030 seconds
	14 Courtesy Duration	060 seconds
15 AC Off Delay	000	

Section	Option	Default
Setting Modes	Full Set	Final Exit Setting
	Part Set A	Timed Exit
	Part Set B	Timed Exit
	Part Set C	Timed Exit
Rem Reset	Algorithm	004
Configuration	00 Bell is an SAB	Yes
	01 User 1 Limited	No
	02 Fire Signals All	Yes
	03 Silent 24hr Circuits	No
	04 Enable Duress	No
	05 Invert Abort	No
	06 Monitor Polling Sig	No
	07 User Reset	No
	08 Fob unset with entry	Yes
	09 Passcode + ENT	No
	10 Loud Chime Tones	Yes
	11 Do Battery Test	No
	12 Final Exit is Night	No
	13 Mimic Alms & Flts	No
	14 Invert panel outputs	No
	15 Set with AC off	No
	16 Tamper user reset	No
17 Enable jamming	Yes	



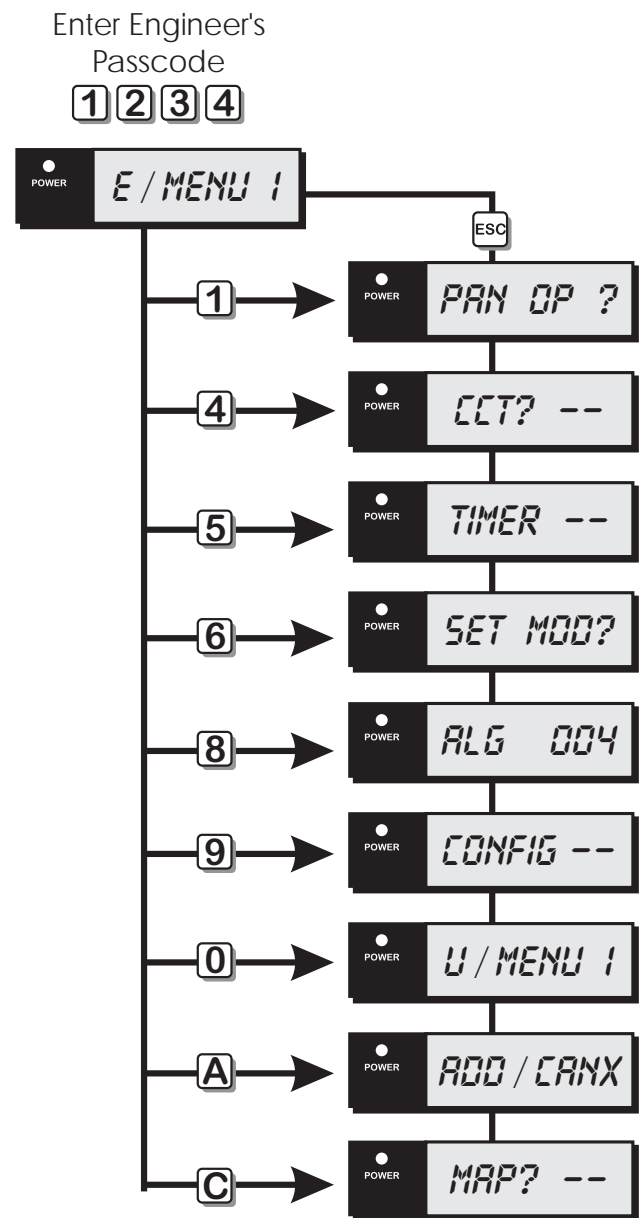
# Engineer's Menu 1

## Introduction

Engineers menu 1 is the first of two engineers menus, which is selected when the engineer's passcode is entered. The engineer may leave "Engineer menu 1" by pressing the [ESC] key. The system will return to the unset condition but the remote keypads will show "ENGINEER ON SITE". This message will be cleared the next time a valid user passcode is entered or by exiting the engineer's mode via user menu 1.

### Menu contents

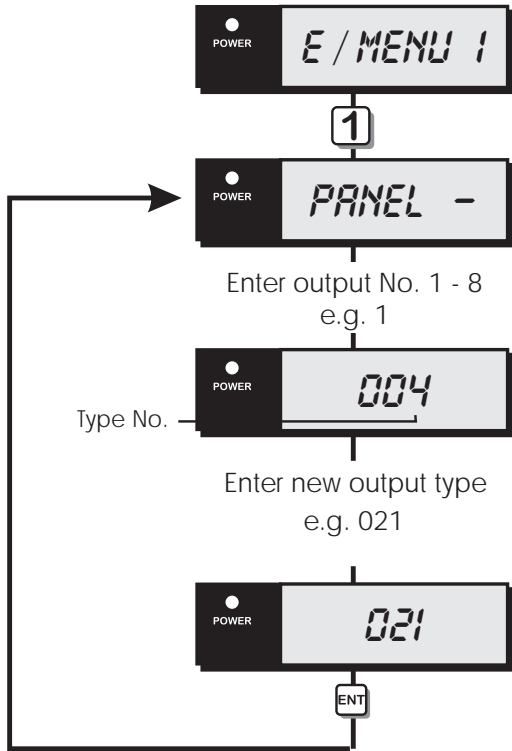
Hot key	Option	Page
<b>1</b>	Program Panel Outputs	24
<b>4</b>	Program Circuits & Attributes	26
<b>5</b>	Program System Timers	28
<b>6</b>	Program Setting Modes	30
<b>8</b>	Remote Reset Number	30
<b>9</b>	Program Configuration	31
<b>0</b>	Goto User Menu 1	32
<b>A</b>	Add/Cancel Detectors	33
<b>C</b>	Re-Map Detectors	34



Engineers Menu 1

### Panel Outputs [1.1]

Outputs 1 - 3 on the control panel and remote keypad outputs 5 - 8 can be programmed to any of the output types shown on pages 24 to 26. In addition, all panel outputs can be inverted, see "Configuration option 14" on page 32.



Panel Outputs Flowchart

### Programmable Output Types

No	Type/Description
000	<b>Bell On</b> Activates when the main Bell trigger is on and deactivates at the end of the Bell Duration time or when the alarm is cancelled by the user.
001	<b>Strobe On</b> Activates when the Strobe trigger is on, and deactivates when the alarm is cancelled by the user.
002	<b>Switch 12V</b> Activates when the system is set and deactivates when an alarm occurs or the system is unset. This output is normally used for latching detectors.
003	<b>Detector Reset</b> Normally active at all times and deactivates for 3 seconds when a valid passcode is entered prior to setting the system. This output is normally used for detector that required power to be removed in order to reset them, e.g., smoke detectors.
004	<b>Walk Test</b> Activates when the "Walk Test" option is selected and deactivates when the "Walk Test" option is finished.
005	<b>Alarm</b> Activates when an intruder alarm is detected and deactivates when the alarm is reset or aborted.
006	<b>P.A.</b> Activates when a PA alarm is detected and deactivates when the alarm is reset.
007	<b>Fire</b> Activates when a Fire alarm is detected and deactivates when the alarm is reset.
008	<b>System Set</b> Activates when any ward is set and deactivates when the system is fully unset.
009	<b>Code Accepted</b> Activates for 10 seconds following entry of any valid passcode.
010	<b>24 Hour</b> Activates when a 24Hr alarm is detected and deactivates when the alarm is reset.

No	Type/Description	No	Type/Description
011	<b>Second Alarm</b> Activates when a different detector causes an alarm and remains active for the duration of the "2nd Alarm Time". This output is normally used for an ALARM CONFIRMATION signal.	024	<b>Test Fail</b> Activates when a circuit fails test,, deactivates when reset by the engineer.
012	<b>Courtesy Light</b> Activates during entry and when any remote keypad is used. The duration of this output is controlled by the setting of the "COURTESY DUR" timer.	025	<b>First Knock</b> Activates when a double knock circuit is activated for the first time. Deactivates when the circuit is activated for the second time or when the system is reset.
013	<b>Engineer On Site</b> Activates when the engineer's passcode is entered and deactivates when a user passcode is entered.	026	<b>Abort</b> Activates for 5 seconds after an alarm is aborted by the user. The period in which the alarm may be aborted is set by the "Abort Delay" see System Timers.
014	<b>Circuits Omitted</b> Activates when any circuit is omitted and deactivates when all circuits are reinstated.	027	<b>Timed Output</b> Activates when a "Monitored" circuit is triggered and remains active for the duration of the "Monitor Delay" see System Timers.
015	<b>Auxiliary</b> Activates when an Auxiliary alarm is detected and deactivates when the alarm is reset.	028	<b>Chime Mimic</b> Activates for 2 seconds when a circuit that is programmed as "chime" is activated.
016	<b>Part Set C Selected</b> Activates when "Part Set C" is selected. Deactivates when the system is unset.	029	<b>2nd Entry</b> Activates when the second entry timer is started and deactivates when the second entry timer expires.
017	<b>Part Set B Selected</b> Activates when "Part Set B" is selected. Deactivates when the system is unset.	030	<b>Entry</b> Activates when the panel is in the entry mode.
018	<b>Part Set A Selected</b> Activates when "Part Set A" is selected. Deactivates when the system is unset.	031	<b>Exit</b> Activates when the panel is in the exit mode.
019	<b>Full Set Selected</b> Activates when "Full Set" is selected. Deactivates when the system is unset.	032	<b>Duress Alarm</b> Activates when a duress passcode is entered and deactivates when the duress alarm is reset.
020	<b>Tamper Fault</b> Activates when a Tamper alarm is detected and deactivates when the alarm is reset.	033	<b>System Part Set</b> Activates when the system is part set fails to set and deactivates when the system is fully set or unset.
021	<b>Signal Jammed</b> Activates when the control panel detects a continuous radio signal for 30 seconds on the same frequency used by the detectors. Deactivates when the signal is removed.	034	<b>Battery Fault</b> Activates when a battery fault occurs and deactivates when the battery fault is cleared.
022	<b>Mains Off</b> Activates when mains power is removed and deactivates when the mains power is restored.	035	<b>Set Fail</b> Activates when the system fails to set and deactivates when the set fail condition is reset by the user.
023	<b>Exit / Entry</b> Activates when the panel is in the exit or entry mode.	036	<b>System Open</b> Activates when the system is unset,, deactivates when the system is fully set or part-set.

No	Type/Description
037	<b>24hr cct Omitted</b> Activates when one or more 24 Hour circuits are omitted.
038	<b>Sounder Control</b> Normally used as the 0V connection for an extension loudspeaker so that only system alarm tones are generated.
039	<b>Call Engineer</b> Activates when the system requires an "Engineer Reset", deactivates when the system is reset by the engineer or "Remote Reset".
040	<b>General Fault</b> Activates during battery fault or when the system is prevented from being set. Deactivates when all faults are cleared.
041	<b>Battery Test</b> Activates for 1 minute on the hour every hour. This output is used to test the battery in remote PSU using a 519FM monitor PCB).
042	<b>Fob Active</b> Activates when the 525r remote setting device is used.
043	<b>System Full Set</b> Activates when all areas within the system are set and deactivates when any area is unset.
100 - 137	<b>Circuit Mimic</b> Will mimic (active when circuit is active) circuits 01 to 38 respectively.
200 - 237	<b>Circuit Alarms</b> Active when a circuit causes an alarm, for circuits 01 to 38 respectively.

## Program Circuits [1.4]

The TS690R can monitor up to 38 detection circuits. Each circuit must be programmed in order for the system to respond correctly.

### Circuit Types

The circuit type defines how the circuit will respond when it is triggered. The following circuit types are available:

- 0 **Not Used**  
A circuit that will never generate any alarm.
- 1 **Night**  
A circuit that will generate a full alarm when the system is set.
- 2 **24hr**  
A circuit which is monitored at all times. When triggered in the unset condition a local alarm is generated and when triggered in the set condition a full alarm is generated.
- 3 **PA Silent**  
A circuit which is monitored at all times. When triggered it will activate any outputs that are programmed as P.A.
- 4 **PA Audible**  
A circuit which is monitored at all times. When triggered it will activate any outputs that are programmed as P.A. and generate a full alarm condition.
- 5 **Fire**  
A circuit that is normally connected to a smoke detector. When triggered it will generate a fire tone on the internal sounders, the external sounders are pulsed for the bell duration and any outputs programmed as fire will be activated.
- 6 **Auxiliary**  
A circuit which is monitored at all times. When triggered it will activate any outputs programmed as Auxiliary.
- 7 **Final Exit**  
This must be the first detector or door contact that is triggered when entering the protected area. When the setting mode for the system is programmed for Final Exit setting, opening and closing of this circuit during the exit procedure will cause the system to set. Once set, activation of this circuit will start the entry timer.

**8 Exit Terminator**

A circuit that is normally connected to a push button outside the protected premises, which can be used to finally set the system or area.

**9 Keypoint**

A circuit that may be connected to a keyswitch to allow setting and/or part-setting of the system. The keypoint circuit can only be used with the standard hard-wired circuits.

The Keypoint circuit has two groups of attributes. The first group of attributes controls which group is set/unset when the circuit is switched between "Healthy" and "Active". The second group of attributes controls which group is set/unset when the circuit is switched between "Healthy" and "Shorted".

When programming the Keypoint circuit the eight standard attributes are not available, instead the attributes are used to select the Key Point operation as follows:

- [1] Full Set Mode - "Healthy" to "Active".
- [2] Part Set Mode A - "Healthy" to "Active".
- [3] Part Set Mode B - "Healthy" to "Active".
- [4] Part Set Mode C - "Healthy" to "Active".
- [5] Full Set Mode - "Healthy" to "Shorted".
- [6] Part Set Mode A - "Healthy" to "Shorted".
- [7] Part Set Mode B - "Healthy" to "Shorted".
- [8] Part Set Mode C - "Healthy" to "Shorted".

**Circuit Attributes**

Each circuit type can have one or more attributes assigned to it to alter its operation. The following circuit attributes can be programmed:

**1 Access**

Circuits programmed with this attribute are automatically isolated during the entry procedure to allow a "walk through" route for the user to access the remote keypad. The "Access" attribute can only be assigned to Night and Final Exit circuit types.

**2 Double Knock**

Circuits programmed with this attribute will only cause an alarm condition if:

- a) The circuit is activated twice within the Double Knock window (this time may be set in the System Timers menu).
- b) The circuit remains active for the whole duration of the Double Knock window. The

"Double Knock" attribute can only be assigned to Night, 24hr and Auxiliary circuit types.

**3 Test**

Circuits with this attribute will be disabled from the system for the period set by the "Test Time" (see System Timers). If the circuit is activated during this period the activation will be logged and the user is informed of the circuit failure when trying to set the system. The test fail message may only be cleared with the Engineers passcode. If at the end of the test period no activations have occurred the circuit is automatically removed from test and behaves as normal. The test period is initiated by entering the Engineers passcode. The "Test" attribute can only be assigned to Night, 24hr, PA Silent, PA Audible, Fire, Auxiliary, PSU Battery, PSU Fuse and PSU Power circuit types.

**4 Omittable**

Circuits with this attribute are allowed to be omitted by the user when setting the system. The "Omit" attribute can only be assigned to Night, 24hr, Auxiliary, PSU Battery, PSU Fuse and PSU Power circuit types.

**5 Reset**

This attribute is normally assigned to a circuit that is connected to a vibration or smoke detector, so that during the "Detector Reset" period the circuit is not monitored. The "Reset" attribute can only be assigned to Night, 24hr, Fire and Auxiliary circuit types.

**6 Monitored**

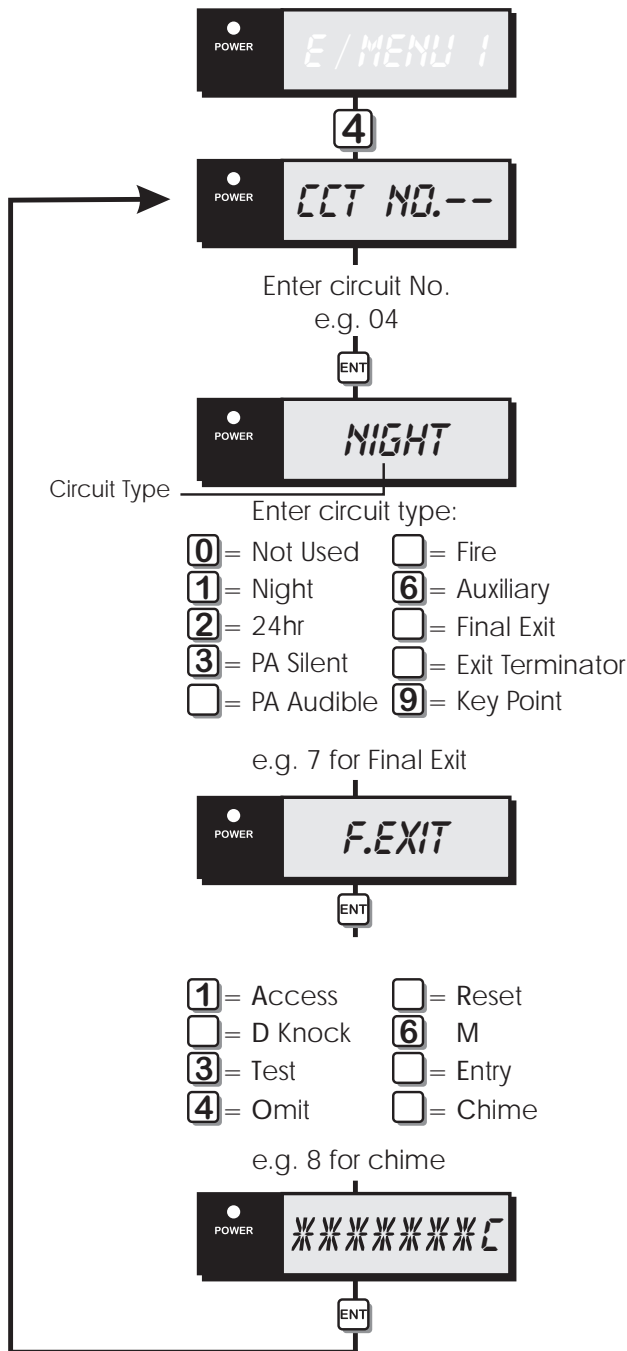
Circuits with this attribute will activate the "Timed Output" when triggered. The "Monitored" attribute can only be assigned to Night, 24hr, Fire, Auxiliary and Final Exit circuit types.

**7 Entry**

Circuits with this attribute will initiate the entry procedure when the system is part-set and respond as normal when full set. This attribute must be assigned to all circuits that are required to initiate the entry procedure in the part-set condition. The "Entry" attribute can only be assigned to Night, 24hr and Final Exit circuit types. When assigned to a 24 Hour circuit type, the circuit can be used to initiate the entry procedure. Once the system is unset the 24 hour will revert to normal operation.

8 Chime

Circuits with this attribute will cause the internal sounders and remote keypad sounders to generate a two tone "chime" sound if the circuit is activated. The users may enable or disable the chime feature, or select it to operate when the system is unset or part-set. The "Chime" attribute may only be assigned to Night, 24hr, Auxilliary, Final Exit and Exit Terminator circuit types.



Program Circuits Flowchart

System Timers [1.5]

The system timers are as follows:

- 00 2nd Alarm Time  
This timer controls the duration of the "Second Alarm" output. This timer has a working range of 000-199 seconds.
- 01 No of Re-Arms  
At the end of the bell duration time the system re-arms all circuits that are healthy. Circuits that are still in an alarm are isolated until they change to a healthy condition. This counter controls the number of times that a "circuit" will re-arm before it is locked out of the system. This counter has a working range of 000-199.
- 02 Settle Time  
When setting the system by "Final Exit" or "Exit Terminator", detectors that are on the exit route sometimes take 3-4 seconds to settle after activation. The delay programmed in this timer is used to allow these detectors to settle before the system or area is set. This timer has a working range of 000-199 seconds.
- 03 Part Set Comms Delay  
When the system is part-set the communication of an alarm signal to the central station can be delayed by the value set in this timer. If the timer is set to 199 the part-set communications are disabled. This timer has a working range of 000-199 seconds.
- 04 Exit Time  
This timer sets the delay between the user initiating the exit procedure and the system (or area) actually setting. If during the exit time an "Exit Terminator" circuit is activated the exit time is cancelled and the system sets immediately. This timer has a working range of 000-199 seconds.
- 05 Entry Time  
When the system is set or part-set, and the entry procedure is initiated, the entry timer starts to count down. If a valid user passcode has not been entered when the timer reaches zero, the internal sounders are activated and the "2nd Entry" timer is started. This timer has a working range of 000-199 seconds.

**06 Bell Duration**

This controls the duration of the external bell/sounder. If the timer is set to 199 the bell output is continuous. This timer has a working range of 000-199 minutes.

**07 Bell Delay**

This timer delays the activation of the external bell/sounder and internal sounders. This timer has a working range of 000-199 minutes. Note: Any alarm during the entry procedure will cancel the bell delay.

**08 Double Knock Delay**

This is the "Double Knock" time window in which either two circuit activation must occur within this time to generate an alarm condition. Or the circuit must remain active for the whole duration of this time to generate an alarm condition. This will only apply to circuits with the "Double Knock" attribute. This timer has a working range of 000-199 seconds.

**09 Test Time**

This timer varies the number of days that "Test" attribute may be applied to a circuit. If the timer is set to 000 then circuits will remain on test until the "Test" attribute is removed. This timer has a working range of 000-030 days.

**10 Second Entry**

When the "Entry Timer" has expired the "2nd Entry timer" starts to count down, if at the end of this time the system or area has not been unset then a full alarm will be generated. This timer has a working range of 000-199 seconds.

**11 Abort Delay**

This timer sets the period in which the alarm signal may be aborted following an alarm condition. When an alarm occurs, the "Abort Output" (043) is only activated if the system is unset within this period. If the system is unset after this period the abort output is NOT activated. This timer has a working range of 000-199 seconds.

**12 Monitor Delay**

This timer affects the duration of the "Timed Output" (No. 042). This timer has a working range of 000-199 minutes.

**13 Part Set Bell Delay**

This is a "Part-Set Bell Delay" and operates as follows:

a) If the "Pset Com.Dly" is set to 000 and an alarm is activated whilst the system is part-set,

the "Bell Delay" timer is started. At the end of the bell delay the internal sounders are activated for the duration of the "Pset Bel.Dly". At the end of this delay the bell output is activated.

b) If the "Pset Com.Dly" is not set to 000 and an alarm is activated whilst the system is part-set, the "Bell Delay" timer is cancelled and the internal sounders are activated for the duration of the "Pset Bel.Dly". At the end of this delay the bell output is activated.

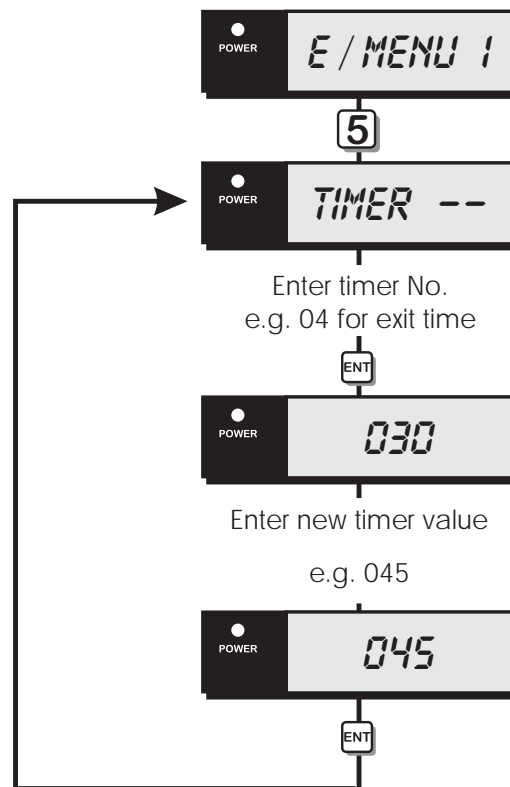
If the "Part Set Bell Delay" timer is set to 199 the bell output is not activated when an alarm occurs whilst the system is part set. This timer has a working range of 000 - 199 seconds.

**14 Courtesy Duration**

This timer is used to control the duration of the output type "Courtesy Light". This timer has a working range of 000-199 seconds.

**15 AC Off Delay**

This timer delays the "audible" mains off indication when the mains power is removed. The display and any outputs programmed as "Mains Off" are not affected. This timer has a working range of 000-199 minutes.

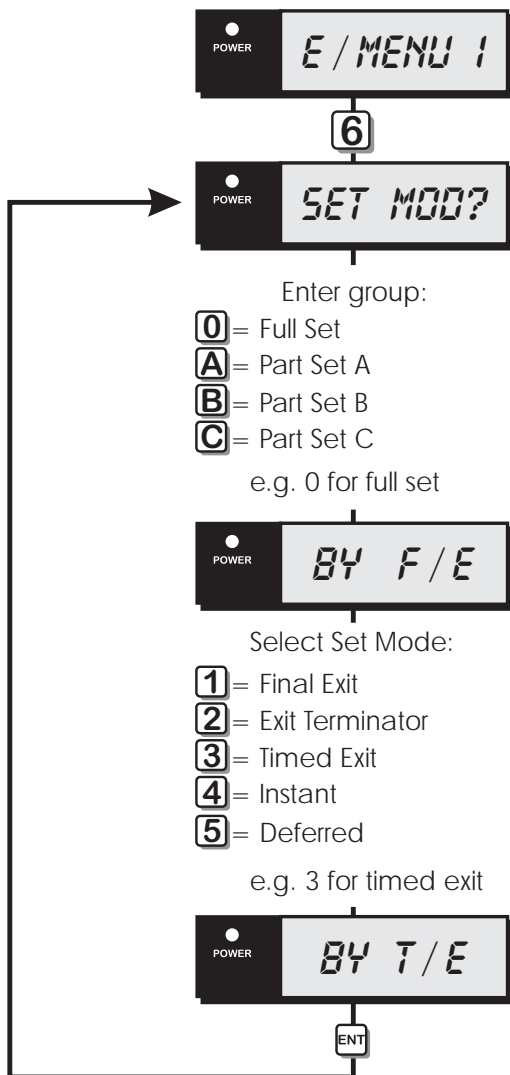


System Timers Flowchart

### Setting Modes [1.6]

The setting mode for full set and each part set can be configured to the following setting modes:

- 1 **Final Exit**  
The system will set when the final exit circuit is triggered and when the settle timer expires.
- 2 **Exit Terminator**  
The system will set when the final exit circuit is triggered, the exit terminator button is pressed and after the settle timer has expired.
- 3 **Timed Exit**  
The system will set when the exit timer expires or if the exit terminator button is pressed.
- 4 **Instant**  
The system will set instantly.
- 5 **Deferred**  
As timed exit, however, if any circuits are activated during the exit procedure the exit timer is restarted.

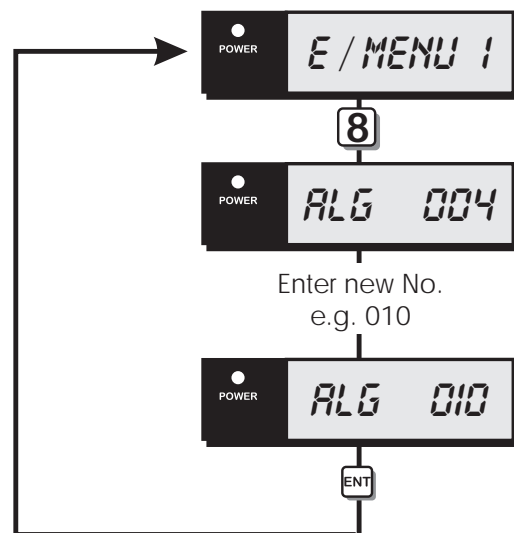


Setting Modes Flowchart

### Remote Reset Algorithm [1.8]

When the system is programmed for "Engineer Reset" the requirement to send an engineer to site can be overridden by the user by using the "Remote Reset" facility. If an alarm is generated the system will respond with a four digit "seed" code which the user quotes to the Alarm Receiving Centre or alarm company. The "seed" code is then entered into a decoder and a unique "Remote Reset" code is generated. This is passed back to the user and on entering the "Remote Reset" code, the system is reset.

The "Remote Reset" code is generated using an algorithm identified by a 3 digit number. Alternative algorithms can be selected but these must correspond to that used by the ARC (or alarm company) otherwise the "Remote Reset" code will be incorrect. (Default = 004)



Remote Reset Algorithm Flowchart

## Configuration [1.9]

The configuration options are as follows:

- 00 Bell Is an SAB**  
When programmed as "Yes" the control panel bell output applies 0V when active. When programmed as "No" the control panel bell output removes 0V when active. *(Default = Yes)*
- 01 User 1 Limited**  
When programmed as "Yes" user 1 is disabled from option 8 (Configure Part-Sets) in user menu 2. When programmed as "No" user 1 has access to all user menus and options. *(Default = Yes)*
- 02 Always Signal Fire**  
When programmed as "Yes" fire alarm activations are signalled to the ARC at all times. When programmed as "No" fire alarm activations are signalled to the ARC only when the system is full set. *(Default = Yes)*
- 03 Silent 24hr Circuits**  
When programmed as "Yes" 24hr circuit are silent. When programmed as "No" 24hr circuits are audible. *(Default = No)*
- 04 Enable Duress**  
When programmed as "Yes" the reversal of the first two digits on any passcode will generate a duress alarm. When programmed as "No" the reversal of the first two digits on any passcode will NOT generate a duress alarm. *(Default = No)*
- 05 Invert Abort O/P**  
When programmed as "Yes" the abort output is normally active and deactivates for 5 seconds when an alarm is aborted. When programmed as "No" the abort output is normally inactive and activates for 5 seconds when an alarm is aborted. *(Default = No)*
- 06 Monitor Polling Signals**  
When programmed as "Yes" the system will monitor the polling signals from all wirefree detectors. This is transmitted by each detector every 29 minutes. If this option is enabled and two consecutive polling signals are not detected by the control panel, the panel will generate a tamper alarm. When programmed as "No" the system will not monitor polling signals from wirefree detectors. *(Default = Yes)*
- 07 User Reset**  
When programmed as "Yes" alarms can be reset by the user. When programmed as "No" alarms can only be reset by the engineer or via remote reset. *(Default = No)*
- 08 Fob can only Unset with Entry**  
When programmed as "Yes" the 525r remote setting fob can only be used to unset the system after the entry timer is started. When programmed as "No" the 525r remote setting fob can be used to unset the system at any time. *(Default = Yes)*
- 09 Passcode and "ENT"**  
When programmed as "Yes", all passcodes require an additional press of the [ENT] key to gain access to the system. When programmed as "No", access to the system only requires the entry of the passcode. *(Default = No)*
- 10 Loud Chime Tones**  
When programmed as "Yes" the chime tones are always at full volume. When programmed as "No" the chime tones are at the level set by VR1 on the main PCB. *(Default = Yes)*
- 11 Do Battery Test**  
When programmed as "Yes" the control panel battery and any monitored PSU batteries are tested every hour and when exiting the engineer's mode. When programmed as "No" the control panel battery and any monitored PSU batteries are not tested. *(Default = No)*
- 12 F.Exit is Night**  
When programmed as "Yes" final exit circuits change to night circuits when the system is part set. When programmed as "No" final exit circuits remain as final exit circuits when the system is part set. *(Default = No)*
- 13 Mimic Alarms and Faults**  
When programmed as "Yes" any outputs programmed as the type "Circuit Alarm" will activate when the relevant circuit is in alarm or in a fault condition. When programmed as "No" any outputs programmed as the type "Circuit Alarm" will activate when the relevant circuit is in alarm. *(Default = No)*

**14 Invert Panel Outputs**

When programmed as "Yes" the three panel outputs on the control panel switch from 0V to +12V when active (+ve applied). When programmed as "No" the outputs on the control panel switch from +12V to 0V when active (+ve removed). (Default = No)

**15 Allow Set with AC Off**

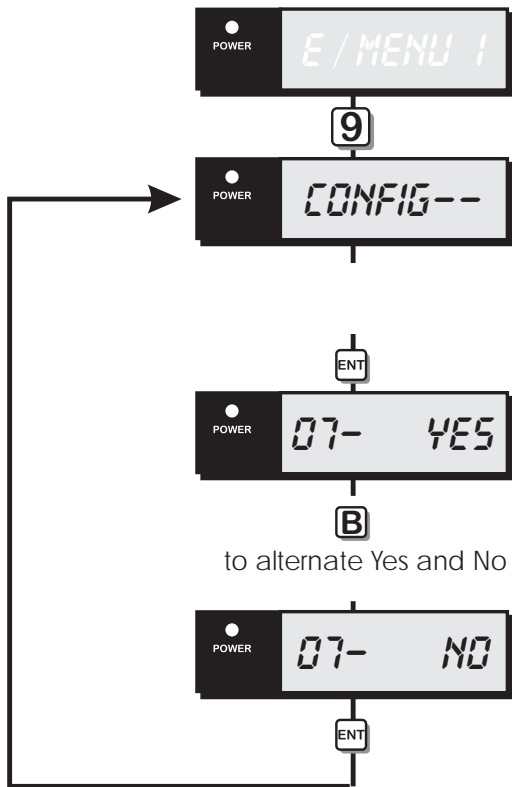
When programmed as "Yes", the system can be set with no mains power. When programmed as "No", the system cannot be set with no mains power. (Default = No)

**16 Tamper Engineer Reset**

When programmed as "Yes" the any tamper alarm will require resetting by the engineer or remote reset. When programmed as "No" tamper alarms can be reset by the user. (Default = No)

**17 Enable Jamming Detection**

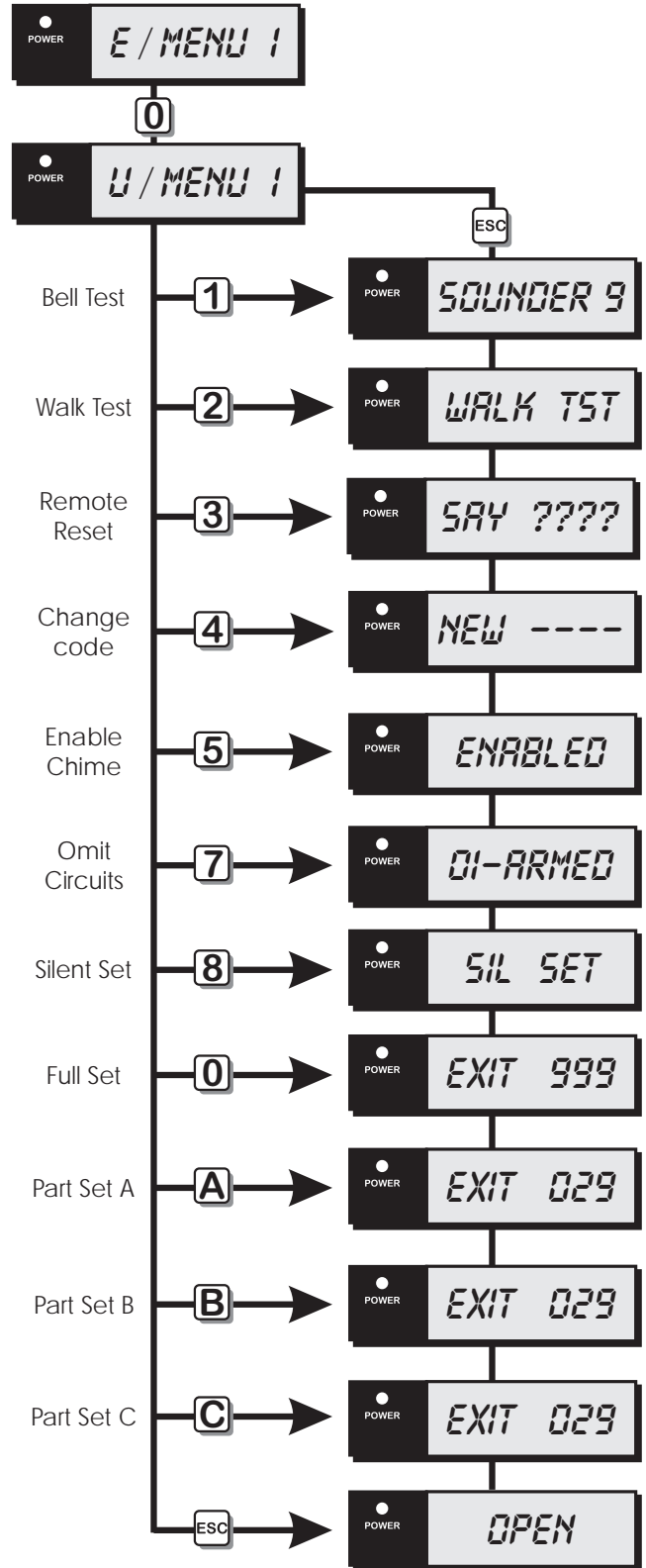
When programmed as "Yes" radio jamming detection is enabled. When programmed as "No" radio jamming detection is disabled, see page 4 for details of jamming. (Default = Yes)



Configuration Flowchart

**Goto User Menu 1 [1.0]**

This option allows the engineer to access "User menu 1", the flowchart below shows the options within "User menu 1", for full details refer to the "Operators Manual".



User Menu 1 Flowchart


## Add/Cancel Devices [1.A]


This option allows the engineer to add and remove wirefree detectors to and from the system.

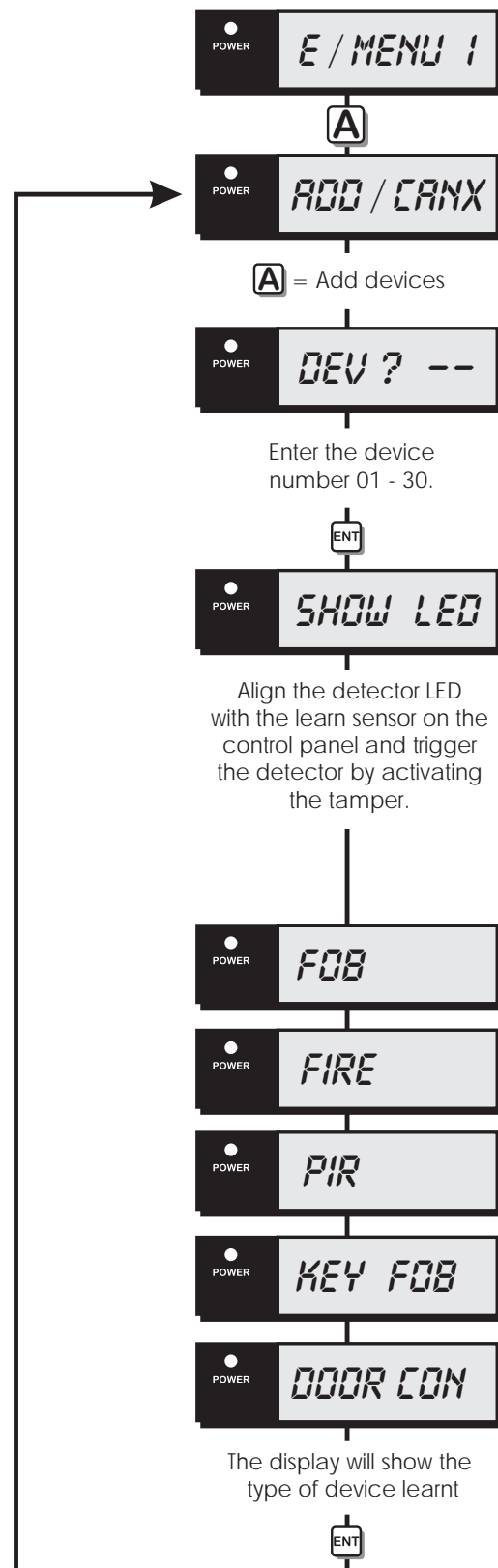
### Adding Devices

Devices are added to the system as follows:

1. Ensure that "E/MENU 1" is selected.
2. Press [A] to select the add/cancel devices option.
3. Press [A] to add a new device.
4. The display will prompt you to enter the device number (01 - 30). Enter the device number and press [ENT].
5. The display will show "SHOW LED", align the activity LED of the detector or remote setting device with the learn sensor on the main PCB (top right hand corner).
6. Trigger the detector by operating the tamper or pressing a button on the remote setting device.
7. The activity LED flashes and transmits a unique identity code to the learn sensor. The control panel will give a rising multi-tone sound and the display will show the device type learnt:
8. FOB = 502r watch pendant  
 FIRE = 509r smoke detector  
 PIR = 515r PIR  
 KEY FOB = 525r remote setting device  
 DOOR CON = 535r universal transmitter
9. Press [ENT] to continue. If required, repeat from step 3 for other devices or press [ESC] to leave this programming option.

 *If you enter a device number that is currently being used by another detector the display shows "\*\* IN USE\*\*" when selecting the device at step 4.*

 *If you try to learn the same device twice the display will show "\*\*ON SYS\*\*" when triggering the detector at step 6.*



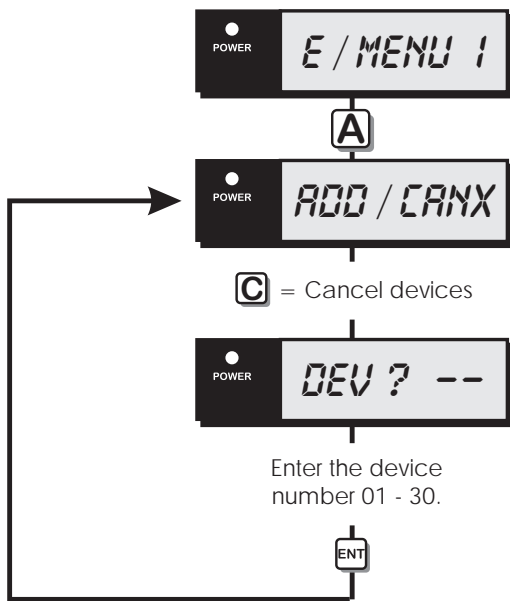
Add devices Flowchart

### Removing Detectors

Devices are added to the system as follows:

1. Ensure that "E/MENU 1" is selected.

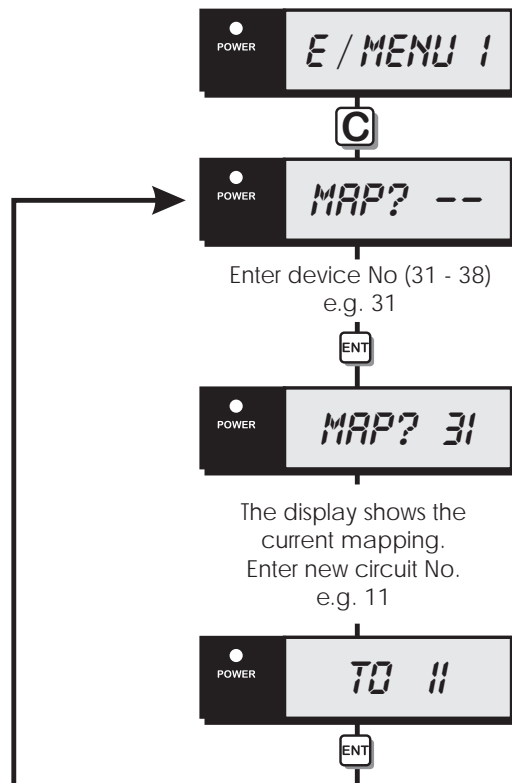
2. Press [A] to select the add/cancel devices option.
3. Press [C] to remove an existing device.
4. The display will prompt you to enter the device number (01 - 30). Enter the device number and press [ENT]. The control panel will give a rising multi-tone sound.
5. If required, repeat from step 3 for other devices or press [ESC] to leave this programming option.




Cancel Devices Flowchart

## Re-Map Keypad Circuits

This option allows the engineer to re-map the remote keypad circuits. By default all wirefree devices are allocated to circuits 01 - 30 and remote keypad circuits are allocated to circuits 31 - 38. Using this option it is possible to re-map the remote keypad circuits to circuits 01 - 30. For example if your system of only uses 10 wirefree detectors and one remote keypad, you can re-map circuits 31 and 32 (remote keypad 1) to circuits 11 and 12 so that the circuit numbering remains sequential.



Re-Map Keypad Circuits Flowchart

 *Wirefree detectors cannot be mapped to circuits 31 to 38. To re-map a wirefree detector it must be cancelled from the system and then relearnt to a new device number.*

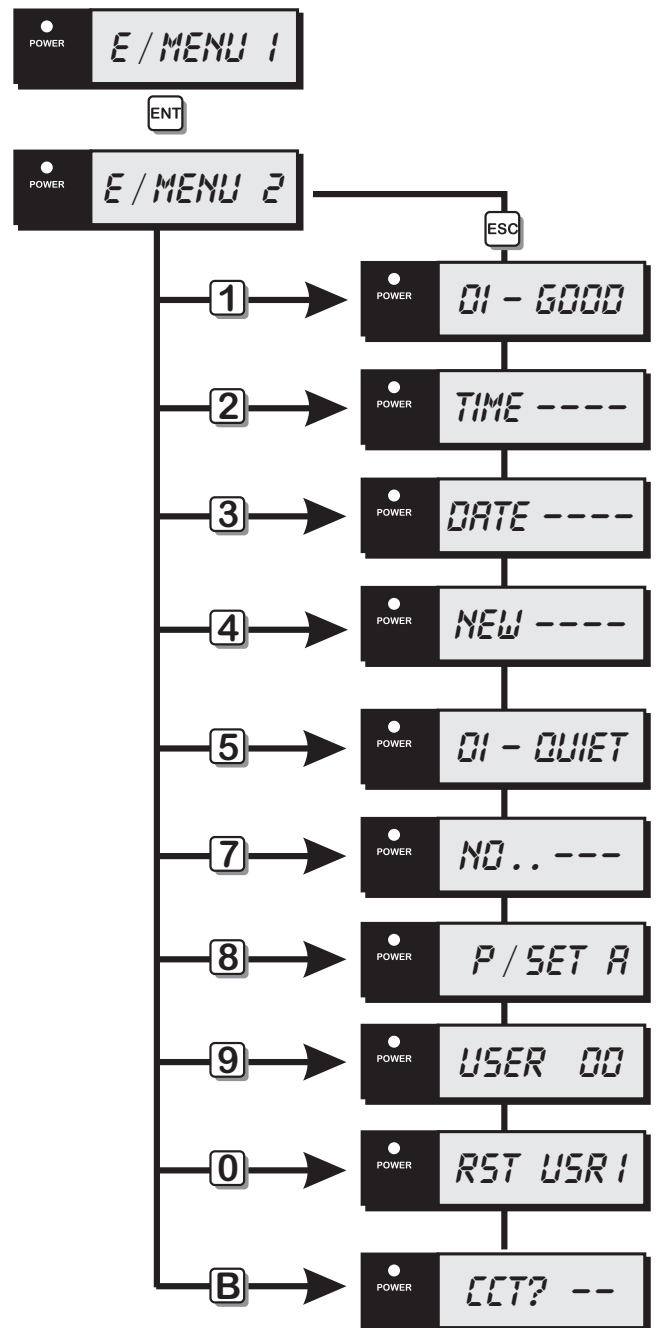
# Engineer's Menu 2

## Introduction

Engineer's menu 2 is selected by pressing the [ENT] key whilst Engineer's menu 1 is selected. Each menu option can be selected by pressing the relevant "Hot key".

## Menu Contents

Hot key	Option	Page
<b>1</b>	View Circuits	36
<b>2</b>	Set System Time	36
<b>3</b>	Set System Date	36
<b>4</b>	Change Passcode	37
<b>5</b>	Chime Circuits	37
<b>7</b>	Print System Log	37
<b>8</b>	Configure Part Sets	38
<b>9</b>	View System Log	38
<b>0</b>	Reset User Code 1	39
<b>B</b>	Circuit Text	40

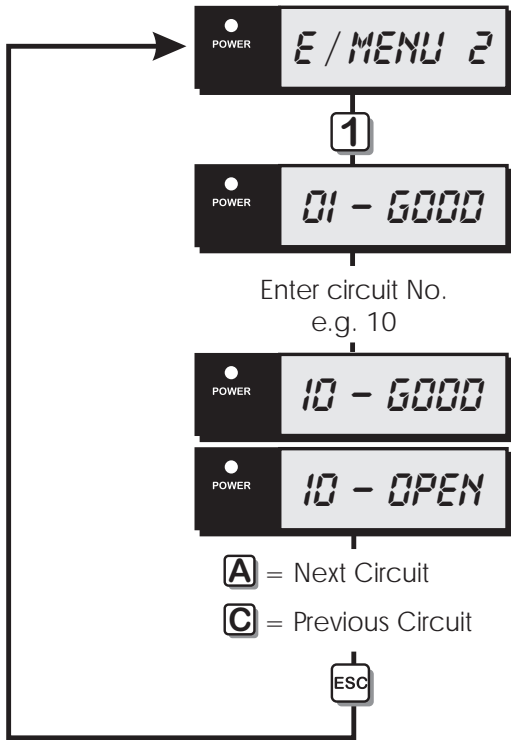


Engineer's menu 2

### View Circuits [2.1]

Each detection device may be viewed to ascertain its status. The circuit status conditions and resistance are shown below:

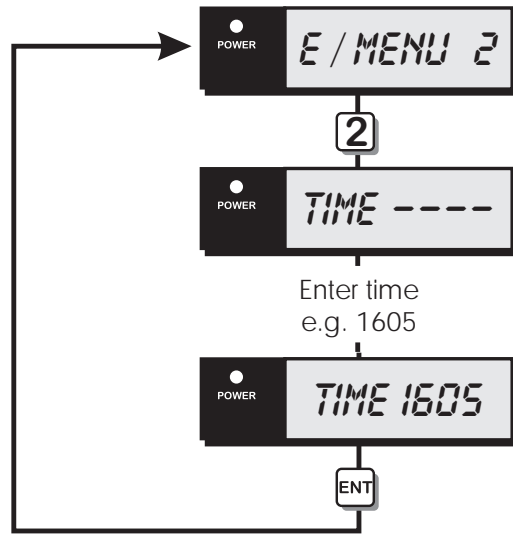
Display	Details
GOOD	Detector is healthy
OPEN	Detector is an alarm state
TAMP	Detector is in a tamper state



View Circuits Flowchart

### Set System Time [2.2]

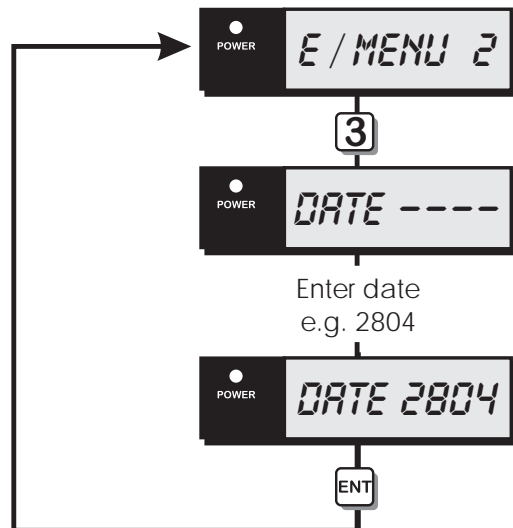
The system time is displayed in a 24hr format on all remote keypads and is also used to time stamp events in the system event log.



Set System Time Flowchart

### Set System Date [2.3]

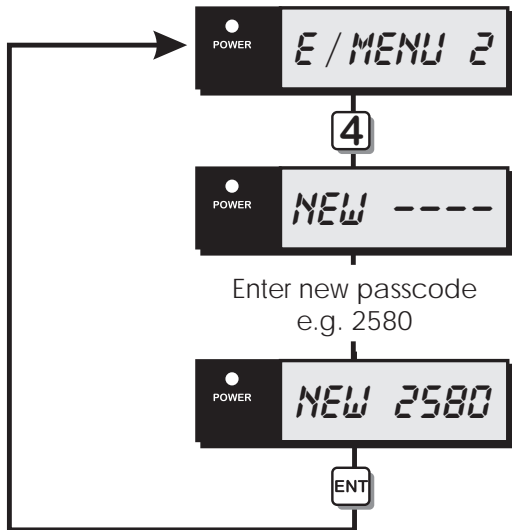
The system date is displayed in a day/date/month format on LCD remote keypads. It is also used to provide date stamps for events in the system log.



Set System Date Flowchart

### Change Passcode [2.4]

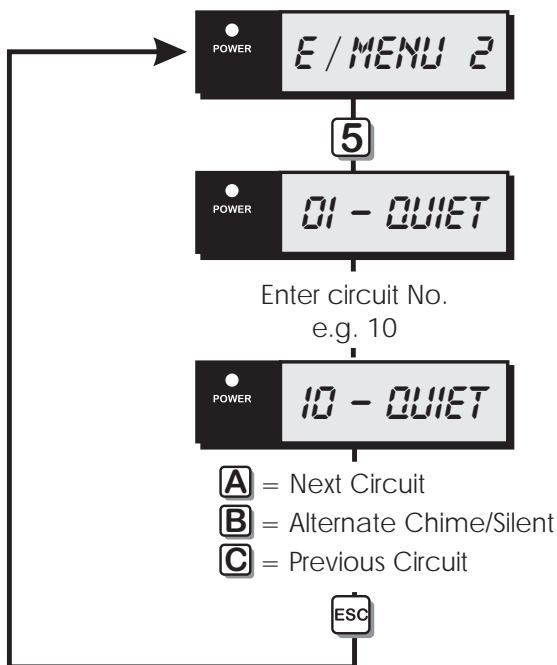
This option allows the engineer to change their passcode. The default passcode is 1234 but the installation engineer should change this to their own personal 4 digit passcode.



Change Passcode Flowchart

### Chime Circuits [2.5]

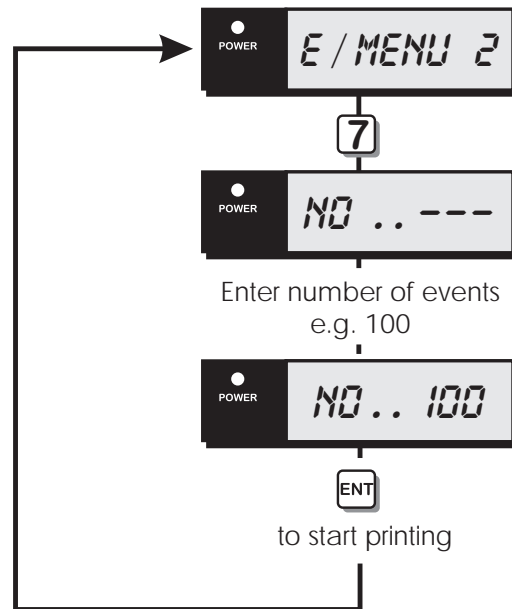
This option allows an alternative method of programming circuits as "chime".



Chime Circuits Flowchart

### Print System Log [2.7]

The system log stores 150 events, if a printer is connected to the system it is possible to print a selected number of events. Once the printout has been started it can only be stopped by selected this option again and entering "000" for the number of events.




Print System Log Flowchart

### Configure Part Sets [2.8]

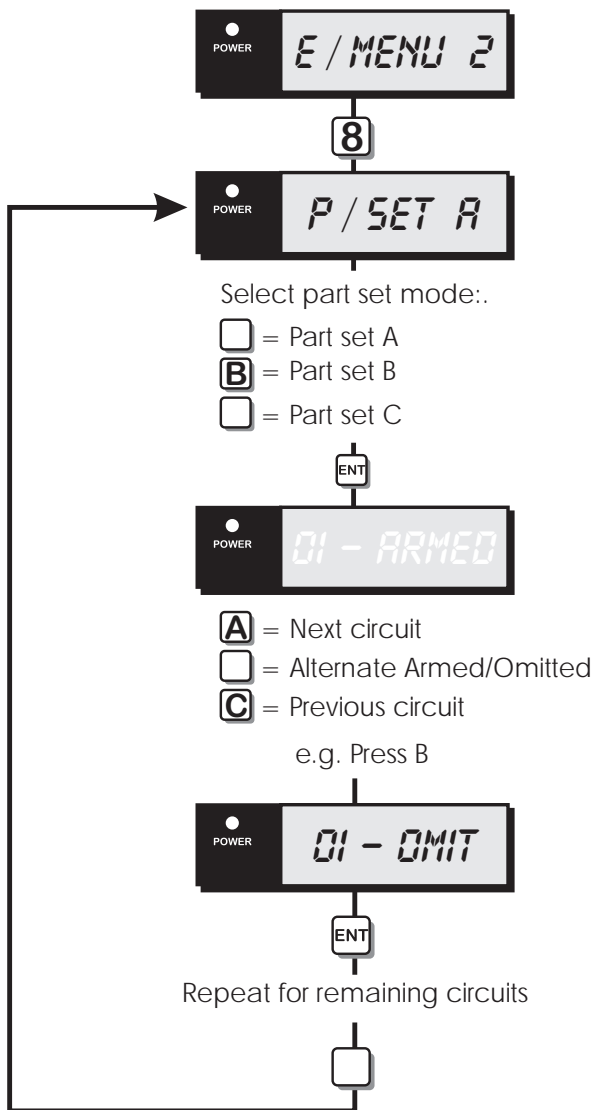
The TS690R can be configured to have up to three parts set modes (Part Set A, Part Set B and Part Set C). This option allows the engineer to configure each part set mode. Within each part set mode you must designate which circuits will remain armed and which circuits will be omitted. When the user selects the relevant part set mode the system only arm the circuits that are designated as armed and isolate the circuits that are designated as omitted.

Only the circuit types "Night", "Final Exit" and "Exit terminator" can be designated as omitted.

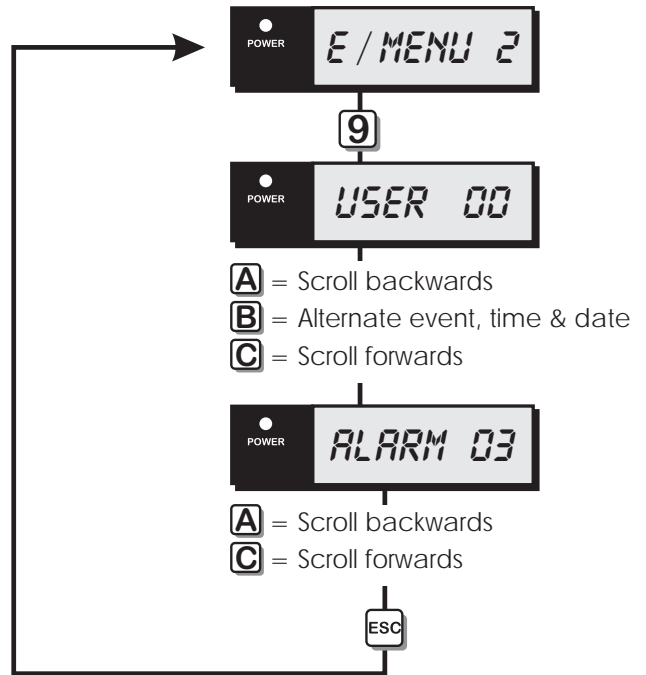
 *If the system uses a 525r remote setting device the "NIGHT" button is always assigned to "Part Set A".*

### View System Log [2.9]

The engineer can use this option to view the system log. The [A] and [C] keys allow you to scroll backwards and forwards through the log events.



Configure Omits Flowchart

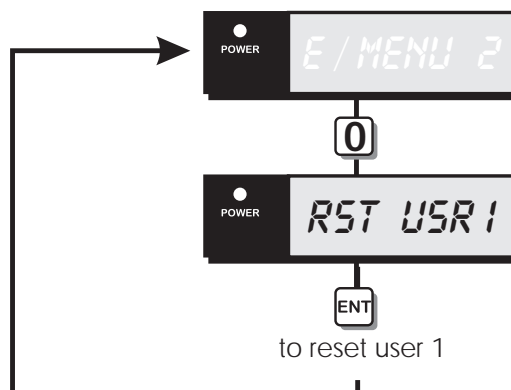


View System Log Flowchart

Log Event Codes	
Display	Description
<i>AC OFF</i>	Mains power removed
<i>AC ON</i>	Mains power restored
<i>ALARM 01-38</i>	Full alarm from circuit 01-38
<i>AUX 01-38</i>	Auxiliary alarm from circuit 01-38
<i>AUX TAMP</i>	Auxiliary tamper alarm
<i>BATT FLT</i>	Battery fault (voltage below 10.5V)
<i>BELL TST</i>	Bell test performed
<i>C TMP 01-04</i>	Code tamper from keypad 01-04
<i>CCT ISOL</i>	24hr circuits isolated
<i>DATE CHG</i>	System date changed
<i>DEFLT 01</i>	User 01 reset to 5678 by the engineer
<i>DURS 01-10</i>	Duress alarm from user 01-10
<i>E ALM 01-38</i>	Entry time-out alarm from circuit 01-38
<i>ENTRY 01-38</i>	Entry timer started by circuit 01-38
<i>FACT RST</i>	System "Factory Restarted"
<i>FIRE 01-38</i>	Fire alarm from circuit 01-38
<i>FIRST 01-56</i>	The first activation of a D-Knock circuit
<i>FOB 01-38</i>	525r remote setting device operated
<i>FULL SET</i>	System full set
<i>JAMMED</i>	System jammed by another radio source
<i>KEYSW 01-38</i>	Key point operation from circuit 01-38
<i>LID TAMP</i>	Control panel lid removed
<i>NO EVENT</i>	No log event
<i>OMIT 01-38</i>	Circuits 01-38 omitted
<i>OMIT REM</i>	All omitted circuits reinstated
<i>OMITR 01-38</i>	Circuit 01-38 reinstated
<i>P/SET A/B/C</i>	System part set A, B, or C
<i>PARLM 01-38</i>	Panic alarm from circuit 01-38
<i>PANIC 01-10</i>	Panic alarm from user 01-10
<i>R ADD 01-04</i>	Remote keypad added to the system
<i>R REM 01-04</i>	Remote keypad removed from system
<i>R TMP 01-04</i>	Remote keypad tamper
<i>REARMED</i>	System re-armed all healthy circuits
<i>REM RST</i>	System reset by "Remote Reset" code
<i>SET FAIL</i>	System failed to Set
<i>SITE RST</i>	System "On-Site" restart
<i>SYS OPEN</i>	System fully unset
<i>TAMP 01-38</i>	Tamper alarm from circuit 01-38
<i>TC OFF</i>	All circuits taken off "Test"
<i>TESTD 01-38</i>	Number of circuits tested during a walk test
<i>T FAIL 01-38</i>	Circuit failed during "Test"
<i>TIME CHG</i>	System time changed
<i>USER 00-10</i>	User code entered 00-10
<i>WALK TST</i>	System "Walk Test" selected

### Reset User Code 1 [2.0]

This option allows the installation engineer to reset the master user (user 01) back to the factory default code of "5678". This feature is useful when the master user has forgotten their passcode or has accidentally changed it without realising. This operation is logged.



Reset User Code Flowchart

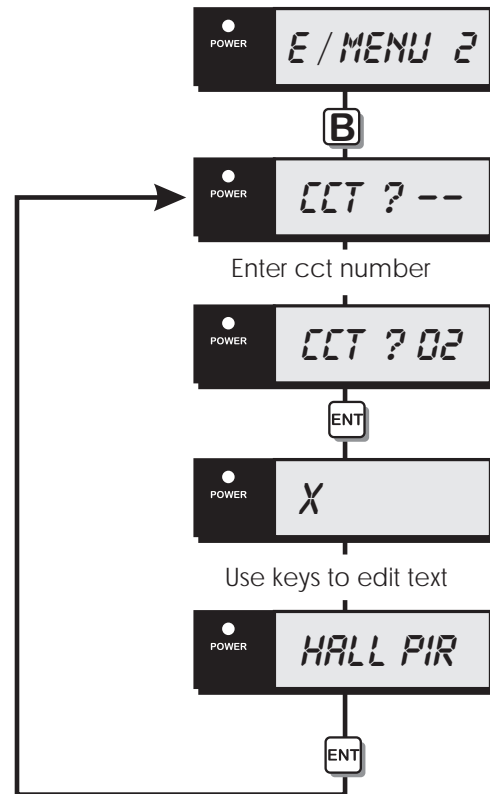
### Circuit Text [2.B]

Each detection circuit can have up to 8 characters of text assigned to it. When this option is selected the keys on the keypad function as shown below:

<b>1</b>	A	<b>2</b>	E	<b>3</b>	I
<b>4</b>	O	<b>5</b>	U	<b>6</b>	0 (Zero)
<b>7</b>	Cursor left	<b>8</b>	N/U	<b>9</b>	Cursor right
<b>ENT</b>	Accept text	<b>0</b>	Space	<b>ESC</b>	Abandon
<b>A</b>	Next letter	<b>B</b>	Erase text	<b>C</b>	Prev. letter

The table below shows some of the available characters and key sequences used to select them.

Character	Key Sequence	Character	Key Sequence
A	1	V	5A
B	1A	W	5AA
C	1AA	X	5AAA
D	2C	Y	5AAAA
E	2	Z	5AAAAA
F	2A	@	1C
G	2AA	?	1CC
H	3C	<	1CCC
I	3	=	1CCCC
J	3A	>	1CCCCC
K	3AA	:	1CCCCCC
L	3AAA	0	6
M	4CC	1	6A
N	4C	2	6AA
O	4	3	6AAA
P	4A	4	6AAAA
Q	4AA	5	6AAAAA
R	4AAA	6	6AAAAAA
S	5CC	7	6AAAAAAA
T	5C	8	6AAAAA AAA
U	5	9	6AAAAA AAAA



# Appendices

## Setup New Users

The TS690R allows up to 10 users to operate the alarm system, each user is assigned a user type and 4 digit passcode. User 01 is the master user which has a default setting of 5678.

### User Types

The following user types are available:

#### Master

User 02-10 can be programmed as the type "Master". If the installation company has programmed the master user for full access, he or she will have access to all user menus and options. If the installation company has programmed the master user for limited access, he or she will NOT have access to "User menu 2" options 6 and 8.

#### Standard

Users 02-10 can be programmed as the type "Standard". This user type can only access "User menu 1".

#### Holiday

Users 02-10 can be programmed as the type "Holiday". This user type allows the alarm system to be set and unset, and access to "User menu 1". However, the passcode is automatically deleted from the system when a master user passcode is used to unset the alarm system. Normally the master user would assign this passcode type a temporary user whilst they are away on holiday etc.

#### Set Only


Users 02-10 can be programmed as "Set Only". This user type allows the alarm system to be set and access to "User menu 1".

#### Reset Only

Users 02-10 can be programmed as "Reset Only". This user type allows 24hr alarms to be reset and access to "User menu 1" option 1 to 7 and 9.

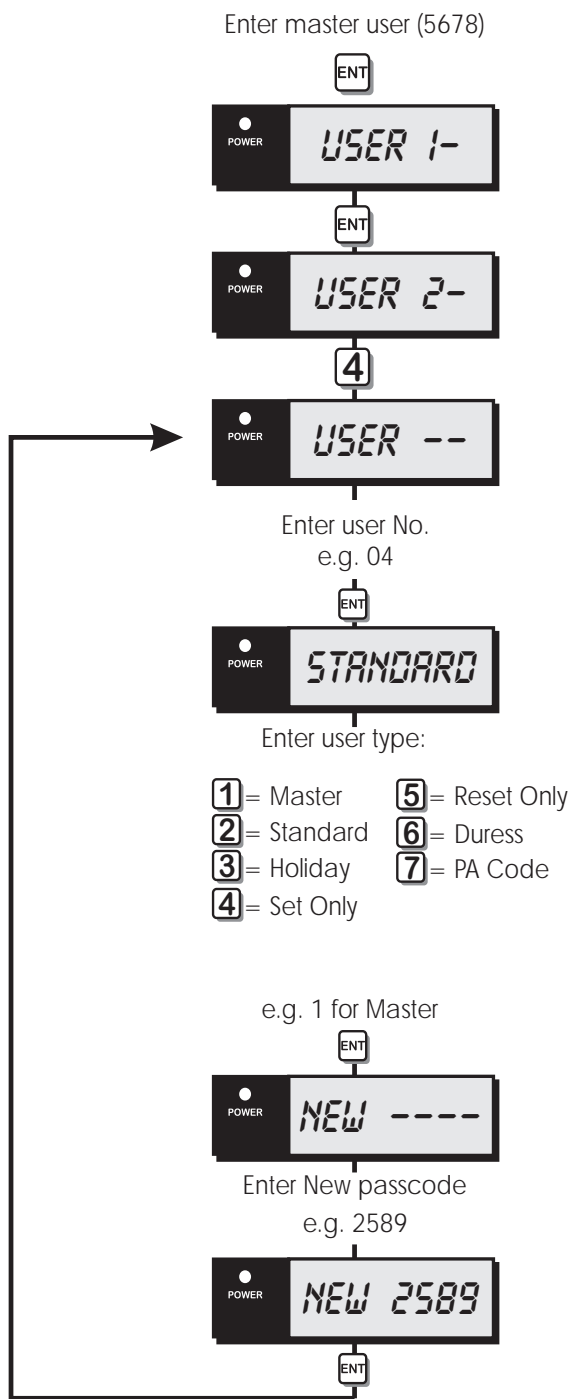
### Duress

Users 02-10 can be programmed as "Duress". When this user type is entered a silent "Panic Alarm" (i.e., Bell and sounders not triggered) is transmitted to the central station via the telephone line and remote signalling device (if fitted). The user will still be able to set and unset the alarm system and access "User menu 1".

 *All other user code types will generate a "Duress" alarm if the passcode is entered with the first two digits reversed (e.g., for a standard passcode of 2580 enter 5280 to generate a "Duress" alarm). If required, this feature can be disabled by the installation company or by making the first two digits of the passcode the same.*

### PA Code

Users 02-10 can be programmed as "PA Code". When this user type is entered a "Panic Alarm" is transmitted to the central station via the telephone line and remote signalling device (if fitted). The external sounder(s) and strobe light(s) are also activated.



Setup New Users Flowchart

### Part-Set Application Example

This application example shows how to configure the part set buttons to set different areas of a 3 bedroom house.

Using the drawing of a typical 3 bedroom house, the following part set modes are required:

- Part Set A      Circuits 01 through to 08 armed and circuits 09 and 10 omitted.
- Part Set B      Circuits 01 through to 09 armed and circuit 10 omitted.
- Part Set C      Circuits 01 through to 06 armed and circuits 07 through to 10 omitted.

1. First create a table listing the circuits that are required to be armed (A) and omitted (O) for each part set mode:

Circuit	Location	P-Set A	P-Set B	P-Set C
01	Front Door	A	A	A
02	Hallway d detector	A	A	A
03	Hall door to garage	A	A	A
04	Garage door	A	A	A
05	Garage back door	A	A	A
06	Kitchen door	A	A	A
07	Dinning room PIR	A	A	O
08	Lounge PIR	A	A	O
09	Bedroom 2 PIR	O	A	O
10	Landing PIR	O	O	O

2. From the above table, program circuits 01-10 as omitted or armed for each part set mode (see "Configure Part Sets on page 38).

**👉** Circuit 02 (Hallway detector) must be programmed as a "Night" circuit with the "Entry" attribute. This will ensure that the entry timer is started when the occupants come downstairs to unset the system.

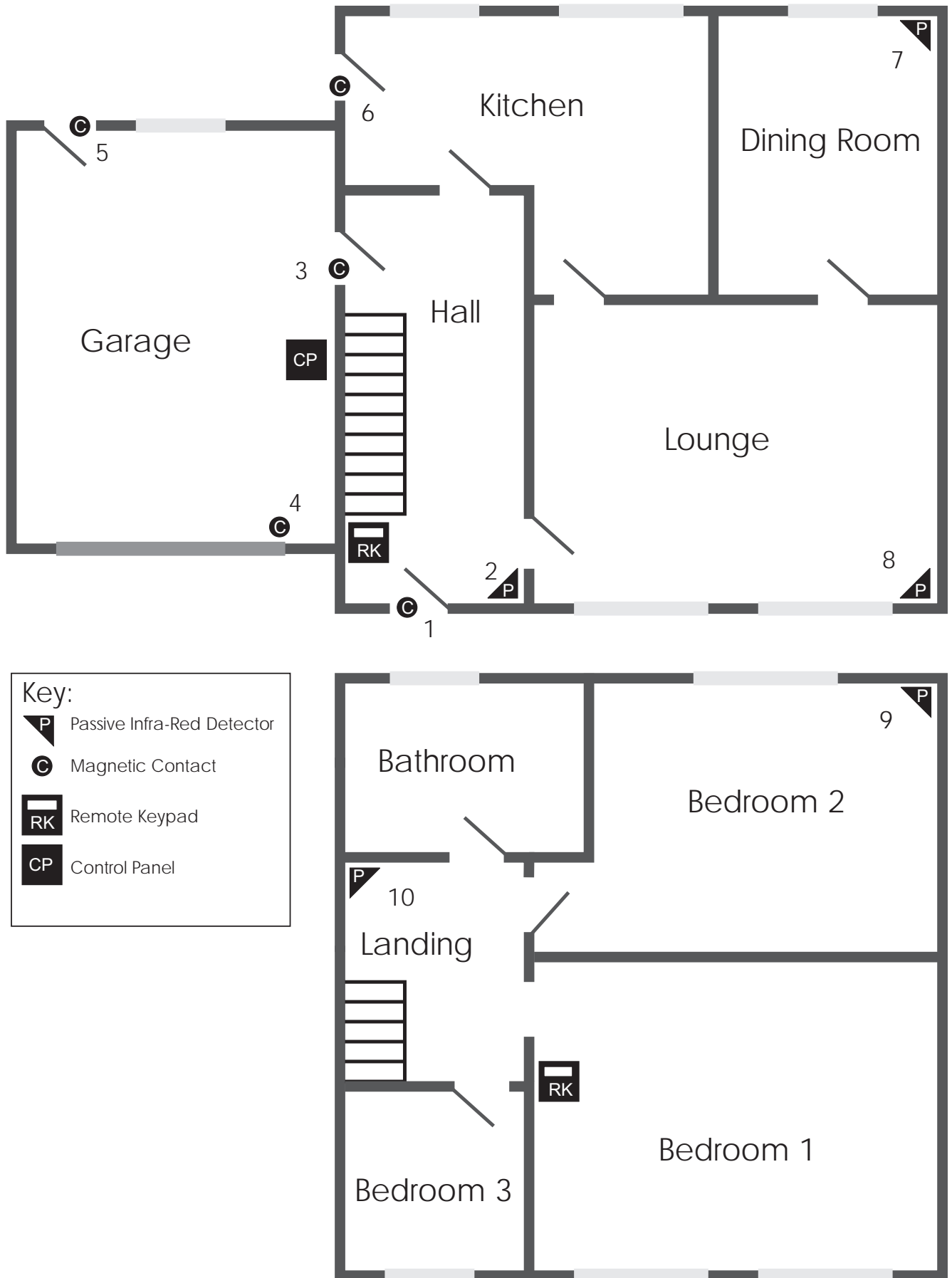


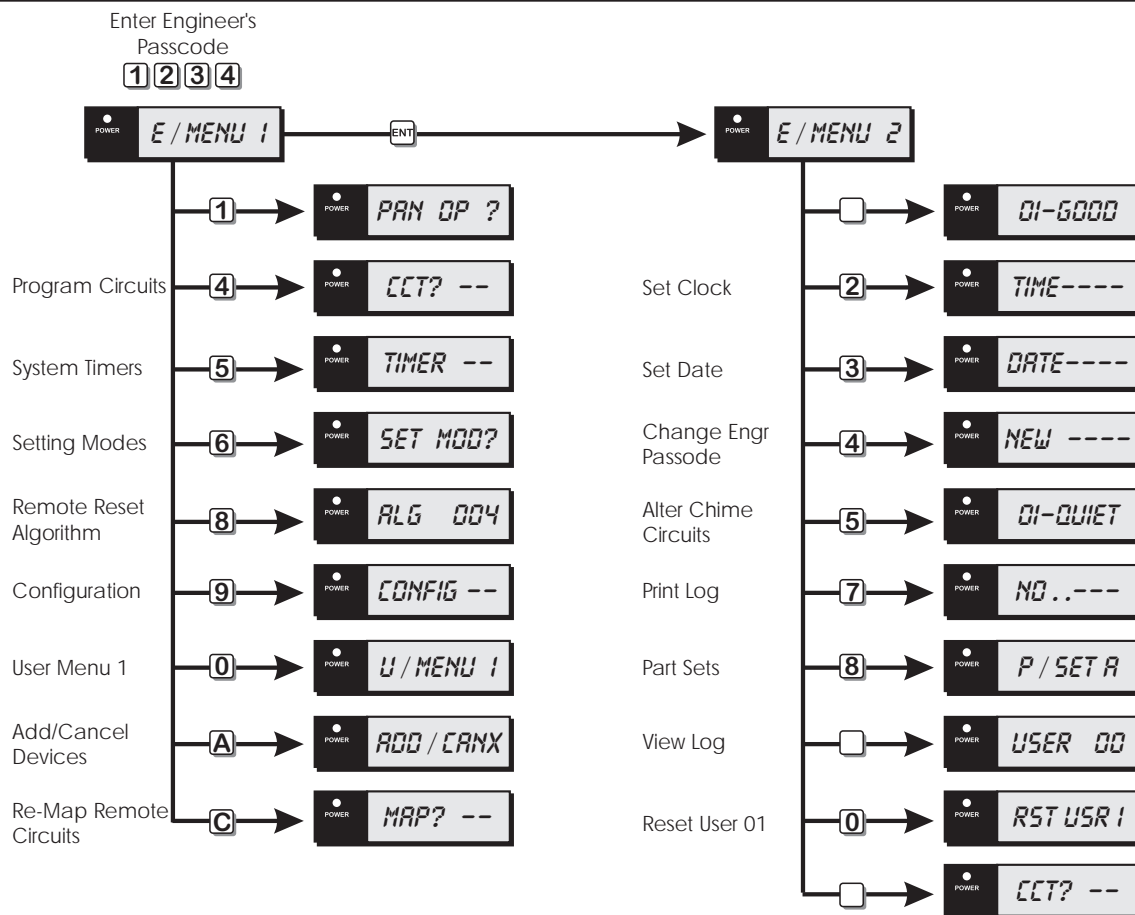
Figure 15 A Typical 3 Bedroom House

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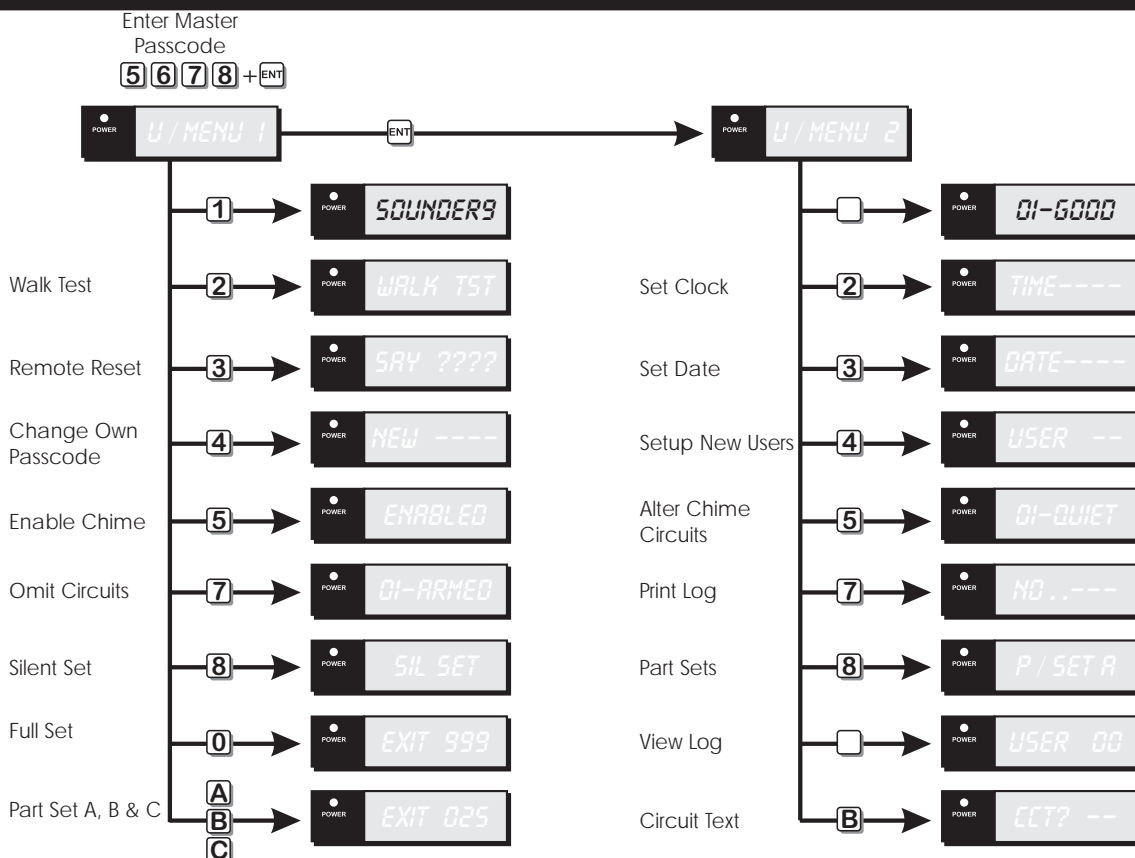
Notes

Notes

## Quick Reference Engineers Menus



## Quick Reference User Menus



## Output Types

No.	Output Type	No.	Output Type	No.	Output Type
000	Bell On	016	Part Set C Selected	032	Duress Alarm
001	Strobe On	017	Part Set B Selected	033	System Part Set
002	Switch 12V	018	Part Set A Selected	034	Battery Fault
003	Detector Reset	019	Full Set Selected	035	Set Fail
004	Walk Test	020	Tamper Fault	036	System Open
005	Alarm	021	Signal Jammed	037	24hr Omit
006	P.A.	022	Mains Off	038	Sounder control
007	Fire	023	Exit / Entry	039	Engineer Reset Required
008	System Set	024	Test Fail	040	General fault
009	Code Accepted	025	First Knock	041	Battery test
010	24 Hour	026	Abort	042	FOB active
011	Second Alarm	027	Timed output	043	Full set
012	Courtesy Light	028	Chime mimic	100-137	Circuits Mimics 01 - 38
013	Engr On Site	029	2nd Entry	200-237	Circuit Alarms 01 - 38
014	Ccts Omitted	030	Entry		
015	Auxiliary	031	Exit		

## Circuit Types

Circuits	
No	Type
0	Not Used
1	Night
2	24 Hour
3	PA Silent
4	PA Audible
5	Fire
6	Auxiliary
7	Final Exit
8	Exit Terminator
9	Key Point
Attributes	
No	Type
1	Access
2	Double Knock
3	Test
4	Omit
5	Reset
6	Monitor
7	Entry
8	Chime

## System Timers

No	Timer
00	2nd Alarm Time
01	No. Re-arms.
02	Settle Time.
03	P. Set Comms Dly
04	Exit Time
05	Entry Time
06	Bell Duration
07	Bell Delay
08	D.Knock Delay
09	Test Time
10	Second Entry Time
11	Abort Delay
12	Monitor Delay
13	Part Set Bell Delay
14	Courtesy Duration
15	AC off Delay

## Setting Modes

1	Final Exit
2	Exit Terminator
3	Timed Exit
4	Instant
5	Deferred

## Configuration

No	Option
00	Bell is an SAB
01	User 1 Limited
02	Fire signals always
03	Silent 24hr ccts
04	Enable duress
05	Invert Abort O/P
06	Monitor Polling Signals
07	User reset
08	Fob unset with entry
09	Passcode + ENT
10	Loud Chime tones
11	Do battery test
12	F.Exit is NIGHT in P.Set
13	Mimic Alarm & Faults
14	Invert Panel Outputs
15	Allow set with AC off
16	Tampers user reset
17	Enable Jamming

## User Types

1	Master
2	Standard
3	Holiday
4	Set Only
5	Reset Only
6	Duress
7	P.A. Code



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