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INSTALLATION AND OPERATING HANDBOOK

Intelligent Security & Fire Ltd

AJ600N 4-ZONE
PROFESSIONAL
INTRUDER
ALARM SYSTEM

FOREWORD

A1 Security & Electrical Ltd. are leading manufacturers of electronic intruder alarm systems for the DIY market. All equipment is purposely designed and manufactured for installation by inexperienced persons using only conventional domestic tools.

The AJ600N Alarm System complies with the requirements of BS6707: 1956 - Intruder Alarm Systems for Consumer Installation. All components are designed and tested to provide a high standard of security and long reliable service.

Your purchase of the AJ600N Alarm System represents a major step forward in the protection of your property and its occupants, however, in order to provide maximum protection, it is important that you plan the installation before proceeding and that the procedures and advice contained in this manual are carefully followed.

Tools Required

Terminal Screwdriver
6 inch. Slotted Screwdriver
No.1 Point Cross-head Screwdriver
Wire-stripper
Hammer
Drill
6.5mm Masonry Drill-bit
Additional equipment required - 5 amp 3 core mains cable, sufficient to connect control panel to mains power supply.
Terminal Strip or Insulating Tape
3 Amp Unswitched Fused Spur Unit

Handbook

The AJ600N 'Installation and Operating Handbook' should be retained and kept in a safe place for future reference. As an aid to fault finding or checking your system, write down your Zone Descriptions and system details at the back of the handbook.

Safety Warning

Before proceeding with the installation, please note the following safety warnings:

1. For safety reasons, the complete system operates at 12 Volts power from the control panel transformer which is connected to the mains supply. In the event of a mains failure, the system operates from the rechargeable stand-by battery only. However, the complete installation and testing of the system should be undertaken with the control panel powered from the 12 Volt re-chargeable stand-by battery.

DO NOT CONNECT THE MAINS SUPPLY UNTIL THE INSTALLATION IS COMPLETE.

MAINS SUPPLY TO THE CONTROL PANEL MUST COME FROM A SEPARATELY FITTED UN-SWITCHED 3A FUSED SPUR UNIT CONNECTED TO THE MAINS CONSUMER UNIT AND SHOULD NOT BE CONNECTED TO CIRCUITS SUPPLYING DOMESTIC APPLIANCES, E.G., WASHING MACHINE, ETC. CONNECTION TO THESE CIRCUITS MAY CAUSE THE SYSTEM TO MALFUNCTION.

We strongly recommend that the services of a competent electrician are obtained to connect the mains supply to the control panel when the installation is complete.

2. The use of safety goggles is advised when drilling holes and hammering home cable clips
3. Before drilling holes in walls, check for hidden electricity cables and water pipes. The use of a cable/pipe locator may be advisable if in any doubt.

Local Authority Regulations

Depending on which area you live, you may be required, by law, to notify the Local Authorities and Police of your new alarm installation.

Local Authority requirements may differ from area to area, therefore, we advise that you contact your Local Borough Environmental Officer to obtain full details of your area requirements.



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GLOSSARY OF TERMS

PIR	- Passive Infra-Red Detector	Installation Code	- 4 digit unique code used to allow the system to be programmed.
MC	- Magnetic Contact	E/E Route	- The designated route for entry and exit to the premises.
PA	- Personal Attack button used to activate the alarm, irrespective of whether the system is armed or disarmed.	Exit Time	- A preset time delay to allow the user time to leave the premises when arming.
Siren Unit	- Siren/Anti-Tamper Unit, housed in the external Bell Box.	Entry Time	- A pre-set time delay to allow the user to reach the control panel to disarm the system.
LED	- Indicator Lights on the main control panel and PIR(s)	Zone	- A defined part of the premises protected by a detector and indicated on the control panel by LED(s).
PCB	- Printed Circuit Board.	24 Hr Monitoring	- Continuous monitoring of system components and wiring.
Day Mode	- The Control Panel Is On Stand-by.	SCB	- 24 hour monitoring circuit for the external Bell Box.
Links	- Small lengths of wire inserted into the zone/circuit connections when the control panel is new. Also inserted when testing the control panel. Links are removed when detector wiring is connected to the control panel pcb and should be retained in a safe place for future testing.		
Bell Box	- Rust proof external housing for the Siren/Anti-Tamper Unit.		
User Code	- 4-digit unique code used to disarm the system.		

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INTRODUCTION

The equipment within the AJ600N Kit comprises all the security components necessary for a complete intruder alarm system. The main components are as follows:

Alarm Control Panel

This is the heart of the intruder alarm system and contains the micro-processor electronic circuitry necessary to monitor the various detection circuits (zones) and to initiate an alarm condition in the event of an intrusion into a protected area. By means of the sixteen push-buttons on the front of the control panel, the user can arm/disarm the system, omit zones, view the event record, test the system or programme the various system functions, however, the access code ensures that only authorised users can operate the system. The control panel also contains a small integral loudspeaker used to indicate various conditions by means of a variety of tones. The various tones are explained later in this manual.

The AJ600N control panel has NVM (non volatile memory), this feature means that if all power is lost, the control panel will remember your programme selections i.e. user pass code, entry times etc., when power is reconnected. The control panel will also remember which mode it was in when power was disconnected, this means if an intruder activated the system and then switched off the power to your control panel, the anti-tamper unit in the bellbox would activate the external siren, if the power was then reconnected to silence the anti-tamper, the control panel would still be in active mode and the siren would continue.

Passive Infra-red Detectors

These detectors are designed to detect movement in a protected area by detecting any change in infra-red radiation. All living beings emit infra-red radiation, so the detector will initiate an alarm condition if anyone walks into its field of detection. The detectors will also detect animals, so ensure that pets are not permitted access to areas fitted with passive infra-red detectors when the system is armed. Additional passive infra-red detectors can be purchased separately, if required.

Magnetic Contacts

Each magnetic contact comprises two parts; a reed switch and a magnet. They are designed to be fitted to either doors or windows with the magnet screwed to the moving part and

the reed switch screwed to the door or window frame. When the system is armed and the door or window closed, the reed switch is closed by the magnet. Any subsequent opening of the protected door or window will open the switch and cause an alarm condition.

Additional Magnetic contacts can be purchased separately, if required.

Bell Box & Siren/Anti-Tamper Unit

The rustproof Bell Box houses the 115dB Siren Unit, which when assembled, installed and wired to the control panel will activate in the event of an intrusion with the system armed. In the event of the cable to the Siren Unit being deliberately cut or the supply to the control panel being interrupted, the Siren will operate from its own internal battery. The Siren Unit also features a back and cover anti-tamper device which will cause an alarm to activate if either the front cover is removed or the complete assembly is pulled off the wall. To comply with local Noise Abatement Legislation, a timer is incorporated both in the control panel and Siren Unit to silence the siren after a pre-determined time. The control panel timer is factory preset to 20 minutes, but can be set by the user between one minute and ninety nine minutes. The Siren Unit timer is factory preset to 20 minutes, but can be reduced to 3 minutes by cutting an on-board link, (see later).

Additional External Components

An additional strobe warning light may be purchased and fitted to the external casing, if required. In the event of an alarm, the flashing light will operate as a visual indication.

Note: The strobe flashing light continues to operate when the programmed siren duration has elapsed and the siren has stopped. The flashing strobe indicates that an alarm has occurred in your absence.

A 'Dummy' Bell Box (empty housing) can be purchased separately. This can be fitted as an additional and effective deterrent on the opposite side of the building to the real external unit.

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INTRODUCTION (CONT.)

Standard AJ600N Kit Contents/Parts List

Component	No. in Kit
4-Zone Control Panel	1
Bell Box	1
Siren/Anti-Tamper Unit	1
Passive Infra-Red Detectors (PIR)	2
Magnetic Contacts (MC)	2
Re-chargeable Battery	1
50mtrs of 6-core cable	1
Cable Clips and Fixings	
Spare Control Panel Fuses	

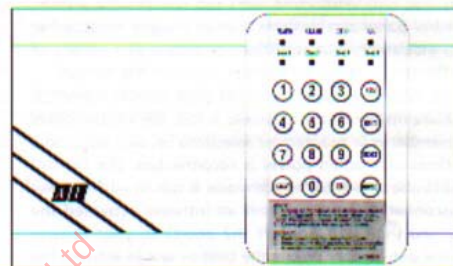
NOTE: Contents may vary from the standard AJ600 system.

Accessories To Expand The System

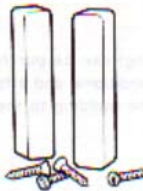
Component	Code
Dummy Bell Box	RF8001
Magnetic Contacts (Pack 4)	BA1002
Personal Attack Button	BA1003
Patio Door Contacts	BA1007
DIY Indoor Passive Infra-Red	BA1005
Strobe Light	BA1010
10 Metres 6-Core Cable	BA1015
Auto Security Dialler	CA1000
Piro 202 Combined Smoke & Intruder Detector	BA1014



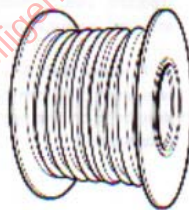
4-ZONE CONTROL PANEL



BELL BOX AND SIREN/ANTI-TAMPER UNIT



MAGNETIC CONTACT (MC)



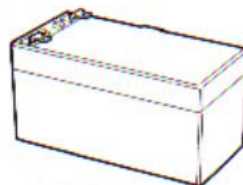
50mtrs OF 6-CORE CABLE



PASSIVE INFRA-RED DETECTOR (PIR)



CABLE CLIPS AND FIXINGS,
SPARE CONTROL PANEL FUSES



RE-CHARGEABLE BATTERY



AJ600N FEATURES

User Functions

ARM/DISARM

The system has an easy arming facility. The Away Key is pressed when the full system (all zones) are to be armed. Pressing the Home symbol will arm the system omitting pre-selected zones. The 'OMIT' key enables you to omit any zone combination you require on a once only or temporary basis.

QUICK SET

The final arming of the system can be quick and silent, this is useful for night setting when the entry/exit sounder can be silenced after a few seconds.

EVENT REPLAY

The AJ600N incorporates a log (memory) capable of storing 4 alarm events. Event replay will enable the user to establish which zones have been violated if an alarm has occurred.

ZONE OMIT

If the user is remaining on the premises and requires to arm the system while intentionally omitting zones.

RESET

Pressing the 'Reset' button clears any previously entered information at the keypad, e.g., incorrect key presses.

Installer Functions

PROGRAMMING

When a valid installer code has been entered, access to programming the various system options will be permitted.

Zones

The AJ600N control panel incorporates four detection zones for the connection of the system detectors, i.e., Zone 1, 2, 3 and 4. Zone 1 is intended for exclusive connection to the detector(s) which are located within the Entry/Exit route and will operate the Entry/Exit timers and associated tones. The front door would normally be connected to Zone 1. Zones 2, 3 and 4 can be connected to other detectors protecting the remaining areas within the property, as required.

Note: The Entry/Exit zone cannot be omitted.

24 HOUR MONITORING CIRCUITS

A further three zones are provided which operate on a 24 hour basis (active whether the system is Armed or Disarmed). The 24 Hour zones are as follows:

PA

If a PA (Personal Attack) button is fitted to the system and connected to the PA zone, a full alarm condition will be initiated when the button is operated, irrespective of the system condition (Armed or Disarmed). PA buttons are not included in the AJ600N kit, but may be purchased separately at major DIY outlets. (Also see 'Fitting A PA Button', Page 18.)

24 Hour Zone

Many system components and associated wiring can be monitored on a 24 hour basis and will generate an alarm condition if accidentally damaged or if the equipment is intentionally tampered with. This is recommended for all system components with this facility, (see wiring procedures later in this guide).

Siren/Anti-Tamper Monitoring

Wiring to the external housing is always monitored on a 24 hour basis. In the event of the wiring to the external housing being damaged or deliberately cut, or the housing opened or completely removed, the control panel will initiate an alarm condition.

Programmable Zone Options

ENTRY EXIT

Zone '1' is programmed as Entry/Exit to allow the user a pre-selected (adjustable) time delay to exit and enter the premises without creating an alarm. During the Exit/Entry procedures, a low audible warning tone will be emitted from the control panel speaker. Normally the front door of the property would be the Entry/Exit route and would be connected to Zone 1.

WALK THROUGH ZONE

Zone '2' is programmed for a detector which is fitted between the entry/exit door and the control panel, e.g., in the downstairs hallway. When the entry/exit door is opened and the entry procedure begins, 'Walk Through Zone' is inhibited for the duration of the entry time, allowing the system to be disarmed without creating an alarm. However, if the 'Walk Through' zone is violated before the entry procedure is initiated, a full alarm will occur.

NOTE: It is advisable to change zone 2 to an instant zone if this facility is not required.

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AJ600N FEATURES (CONT.)

General System Programmable Options

ENTRY TIME

This is the programmed time to allow the user time to reach the control unit to disarm the system before an alarm occurs. This time may be set between 01 - 99 seconds, depending on your own requirements. When the system is new, the entry time is factory set to 30 seconds. Exceeding the programmed entry time will result in an instant alarm.

EXIT TIME

This is the time programmed to allow the user to exit the premises before the system finally arms. This time may be set between 01 - 99 seconds, depending on your own requirements. When the system is new, the exit time is factory set to 30 seconds.

Note: If a zone is open when the system is armed the control panel will emit a series of bleeps (different to the entry/exit tone) to indicate which zone is open, i.e. 1 bleep = zone 1 is open. It is not possible to arm the system until the zone is clear or omitted before arming.

If you are not clear of the protected area when the exit time expires and the system arms, subsequent movement will create an alarm.

ZONE OMIT

It is possible to pre-program a selection of zones for regular zone omitting, i.e. night setting when ground floor zones are armed whilst 1st floor zones are omitted. Once programmed the use of the 'Home' key will arm the system omitting the selected zones.

It is also possible to omit a specified zone(s) different to the 'Home' omit setting, this is explained later.

EXTERNAL SOUNDER DURATION

To comply with the local noise abatement legislation, the external siren timer is set to operate for 20 minutes. However, depending on the individual requirements of each installation, the timer may be adjusted between 01 - 99 minutes. (Refer to 'Introduction' for further details).

SYSTEM RESET (RETURN ALL OPTIONS TO FACTORY SETTINGS)

If the user/installer codes have been lost or forgotten, or if the installer is unsure of the programmed options, it is possible to return the control panel to the factory settings. All previous options will be cleared and the system will require to be programmed.

USER CODE

To disarm the system and perform other functions, the user must enter a unique 4-digit access code at the control panel keypad. The access code is factory set to '1234', but should be changed to your own unique code.

Notes: It is recommended that the code is changed at the end of the programming and not left as '1234'.

INSTALLATION CODE

To allow programming of the system options, a unique installation code must be entered at the control panel keypad. If the user is installing the system, you may choose your own code. However, if the system has been installed by you by an approved installer, the installation code may not be available. The code is factory set to '9999' and should be changed when the programming has been completed.

UNAUTHORISED ACCESS

The system is protected from unauthorised disarming by means of initiating an alarm if more than 4 incorrect attempts to enter the user code are made.

If any button is pressed when the system is armed, the entry/exit time will start.

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PLANNING THE INSTALLATION

General

Before attempting to install any wiring or system components, it is recommended that the installer prepares a plan of the proposed installation. This should help the installer to install the system using the most unobtrusive and effective methods. The following guide lines should be followed and used in conjunction with your own system plan and the example provided, as shown in Figs. 1 & 2.

LOCATING THE CONTROL PANEL

The control panel should be located out of obvious sight of potential intruders and in a safe location, but accessible for system operation. Typically, a control panel may be located in a small cupboard under the stairs (or other) close to the mains supply. An ideal height would be the same as a household light switch or similar. If small children are in the household, a further consideration should be given to keeping the unit out of reach. However, the final position of the control panel will depend on the individual user requirements. (Also refer to 'Installing The Control Panel', Page 9 for further information).

Note: Also consider the users ability to hear the Exit/Entry tone effectively when setting the system. It is preferable that the exit tone can be heard from outside the property when arming the system.

MAINS WIRING

Mains wiring to the control panel should come from an independently fitted, non-switched fused spur unit fitted adjacent to the control panel, and to comply with current electrical regulations, fitted with a 3 Amp fuse.

It is not advisable to connect the supply to other household circuits, as this may cause the system to malfunction. Attempt to keep the mains cable run as short as possible between the spur unit and the control panel, typically, 3 metres. (Also refer to 'Wiring The Mains Supply, Page 21 for further information)

Important Note 1: It is highly recommended that the services of a competent electrician are acquired for the connection of mains wiring. It would be an advantage to have the main supply spur unit fitted prior to commencing the installation to avoid any unnecessary delay in fully commissioning your system.

Important Note 2: Mains wiring must be kept separate from wiring to the detectors, both within the premises and on entering the control panel. Always route separately.

DETECTOR WIRING

Where only one detector per zone is to be connected, the cable should be run directly to the detector, however, if more than one detector is to be connected to a zone, either: run all cables back to the control panel or run one cable to the control panel and link the detectors in the 'Daisy Chain' configuration, (see wiring procedures later).

MAGNETIC CONTACTS

Decide which doors and windows are best protected by fitting the magnetic contacts. Normally the front and back doors should have magnetic contacts fitted. Additional contacts may be fitted where appropriate, e.g., garage door and patio door. The AJ600N kit is supplied with two contacts, however, further contacts may be purchased separately and fitted if required. (Also refer to 'Fitting Magnetic Contacts', Page 15 for further information.)

Note: It is not recommended to connect more than ten magnetic contacts to one zone, as this may cause difficulty in wiring and hinder any attempt to remedy faults efficiently.

PIR DETECTORS

Locate the PIR detectors in the corner of the room to be protected and positioned in such a way that an intruder would be forced to cross the PIRs field of view. PIR detectors respond more effectively when crossed, as opposed to movement towards the unit. If pets are in the household, ensure that the detectors are within areas where pets have no access, or are likely to gain access when the system is armed. If pets are present, a PIR may be intentionally omitted if required. The following environmental considerations should also be made during siting of PIRs to ensure trouble free operation;

1. Do not locate directly above a heat source, e.g., radiator, boiler, TV, etc.
2. Do not locate in a position likely to be in direct sunlight or where heat deflection from a metal or glass surface is likely.
3. Do not locate in a draughty positions, e.g., next to wall vents, etc.

Also refer to 'Fitting PIR Detectors, page 11' for further information.

EXTERNAL SIREN

The external housing should be located as high as possible in a prominent position so that it can be easily seen and heard. When running cable to the siren, the cable should enter through the rear of the casing through a hole in the wall. Surface wiring to the external siren is not advisable unless mechanically protected, e.g., steel tubing or equivalent. However, if surface wiring is unavoidable, the 24 hour monitoring will activate if damage or tampering occurs.

FURTHER CONSIDERATIONS

If the system is to be armed at night (zones omitted) while the occupants remain in the household, make sure that any detector(s) which are to be omitted are wired exclusively to one zone.

Pay particular attention to the most vulnerable points of entry to a property, which are the doors and windows to the side and rear of the property.



PLANNING THE INSTALLATION (CONT.)

Installation Example

The following example shows a typical two-storey domestic property floor plan layout, incorporating the suggested position of the control panel, external sounder and detectors for maximum security. Use this as a guide to your installation in conjunction with the recommendations for planning your intruder alarm system.

Important Note: Remember, your first line of defence against intruders is to make sure that all windows and doors close properly and are fitted with suitable strong locks.

In this example (Fig. 1 only), the front door is the Entry/Exit route to the property and is connected to Zone 1.

The back door is also fitted with a magnetic contact and is connected to Zone 2.

Room 1 is fitted with a PIR detector, detecting entry into the room from any angle, and is connected to Zone 3.

Room 2 is fitted with a PIR detector, detecting entry into the room from any angle and is connected to Zone 4.

ZONE 4 ALTERNATIVE (FIGS. 1 & 2)

The detectors in rooms 1 & 2 are both connected to Zone 4 and an additional PIR has been fitted within the upstairs hall. The upstairs PIR detector will detect entry into the upstairs hall and is connected to Zone 4. (This is the zone which will be intentionally omitted when the system is set at night).

The external bell housing is fitted as high as possible and visible on the side elevation.

Use this as a guide to plan your own unique installation.

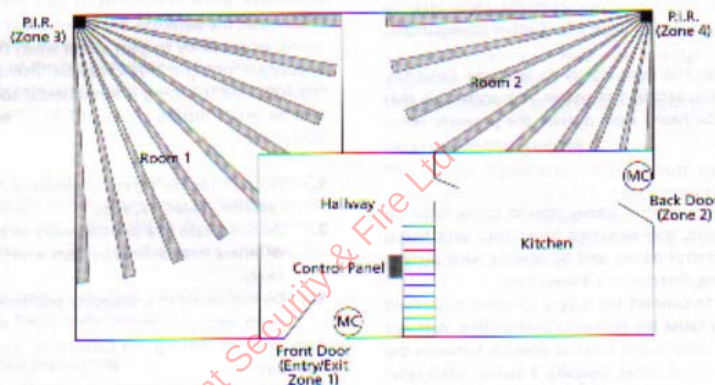


Fig 1. Typical Ground Floor Plan

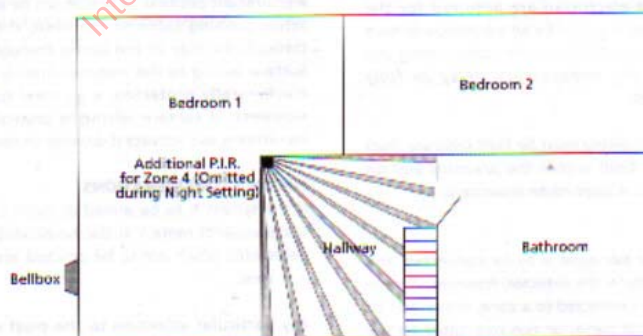


Fig 2. Typical First Floor Plan

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INSTALLING THE CONTROL PANEL

Choose a suitable position to locate the control panel as described in 'Planning The Installation'.

Note: The control panel should be mounted on an even flat surface to prevent the possibility of distortion to the control panel casing.

1. There is no need to remove the front cover screws, simply loosen the two front cover screws, then lift the cover from the top lip and place safely to one side.
2. Note the cable entries that you may require before fixing the control panel:

Note: The final use of cable entries will depend on the individual installation requirements. However, always keep mains and detector wiring separate.

3. Hold the control panel in position and mark mounting holes of the casing. A small spirit level placed on the casing will ensure a perfect level.
4. Remove the control panel, drill holes and insert the plastic wall plugs. Fix the control panel loosely using the two slotted holes at the top. The top screws and the remaining bottom screw may be tightened when the installation is complete.

Important Note: Do not drill holes with the control panel in position, as the resultant vibration may cause damage to components.

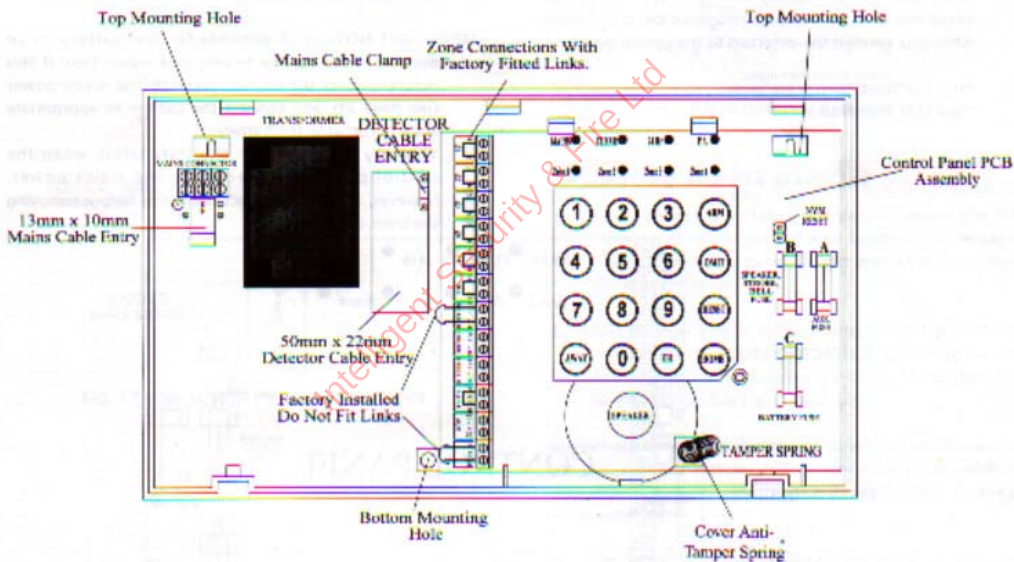


Fig 3. Control Panel Internal Physical Layout.

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INSTALLING THE CONTROL PANEL (CONT.)

Testing The Control Panel

Before continuing with the installation, the control panel should be tested with no detector or mains wiring connected and powered from the 12 Volt battery only. The control panel is factory fitted with small wire links inserted to the zone connections. These can be removed, then replaced when testing the control panel to simulate a detector opening and closing.

Note: If the front cover tamper switch is not defeated, the control panel would indicate a 24 hour fault, indicated by the appropriate panel LED and internal sounder activating. (See Step 2).

1. Connect the 12 Volt battery to the red and black battery leads. Observe the correct polarity, red wire to the red battery terminal (+) and black wire to the black battery terminal (-).
2. Connect a short piece of the alarm cable (approx. 50mm) between terminals 11 and 20, this will defeat the front cover tamper spring while you test the zones. Leave this wire connected throughout the installation while you connect the detectors to the control panel.
3. Press key 'reset' then press 'away'. Clear LED illuminated.

4. Remove the factory fitted link from Zone 1. The associated zone LED will flash and the internal speaker will beep once. Refit the link to extinguish the Zone LED and silence the tone. Repeat this procedure for Zones 2, 3 and 4. The control panel will beep twice for zone 2, three times for zone 3, and so on...
5. To test the 24 hour zone, press 'reset'. Remove the wire link from the 24 hour terminals (11 and 12) to activate the internal speaker. Replace the link, then enter user code (1234). Check the 24 hour Zone LED illuminated, then press 'Reset'.
6. To test the SCB (19 & 20) and PA (9 & 10) circuits, repeat step 5, removing the appropriate wire link each time.
7. To end the test sequence, press 'Reset'.
8. The battery must now be disconnected, but will be connected when testing each detector as it is installed. When mains power is connected, the battery will recharge to its full capacity.

IMPORTANT NOTE: It is possible for the battery to be discharged during the testing and installation. If it occurs, connect the control panel to the mains power (see page 21), and connect the battery to appropriate leads to recharge the battery.

You may continue with the installation when the control panel is connected to the mains power, however, always disconnect the mains before removing the front cover.

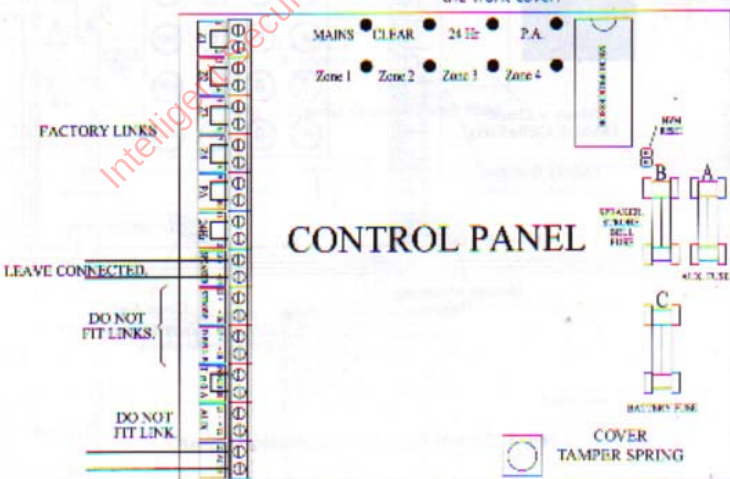


Fig. 4. Control Panel PCB Layout Showing Factory Links Fitted

FITTING PIR DETECTORS

The two 'Petite 101' Passive Infra-Red Detectors supplied with this kit are designed for internal use only and comply with current BS 4737 regulations for intruder alarm systems. Each detector is designed to detect an intruder by means of sensing the change of infra-red levels when entering the protected area. Each detector range is approximately 12 metres, covering 90° when mounted at a height of approx. 2.2 metres. The unit may be tilted 8° to change the detection pattern if required, (see Fig. 6). However, before fitting, observe the environmental considerations as described in 'Planning The Installation'. A maximum of six PIR detectors can be connected to the system.

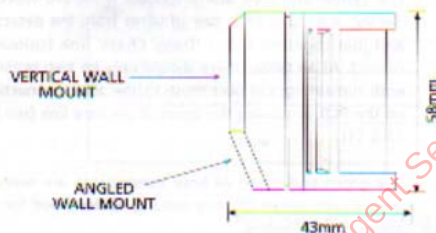
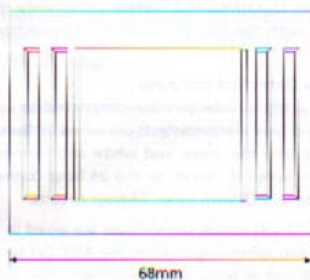
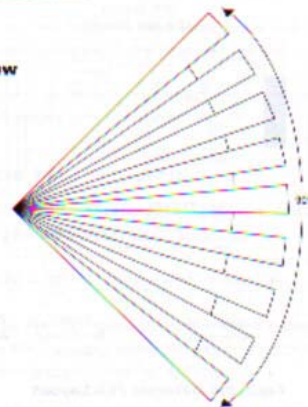


Fig. 5 Petite 101 PIR Physical Dimensions

Plan View



Side View

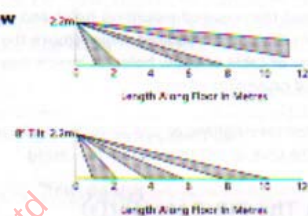


Fig. 6 Detector Patterns

Mounting The PIR Detector

1. First, choose a suitable position to locate the PIR detector, then run the required length of 6-core cable back to the control panel. Do not connect at the control panel at this stage.
2. Slightly loosen the bottom securing screw of the PIR and remove the cover. Remove the PCB by un-clipping the PCB from the base (observe the clip at the bottom left of the casing). (See Fig. 7, Page 12)

Important Note: Do not purposely touch the small sensor in the centre of the detector PCB marked P.I.R. as any marking may impair the unit performance. If accidentally touched, clean with a lint-free cloth.

3. The unit can be mounted for the standard 12m range by using the top two side holes, or tilted down by 8° using the bottom two side holes. Alternatively, the unit can be ceiling mounted using the two holes at the extreme top of the casing. Cable entries are provided top and bottom, as required.

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FITTING PIR DETECTORS (CONT.)

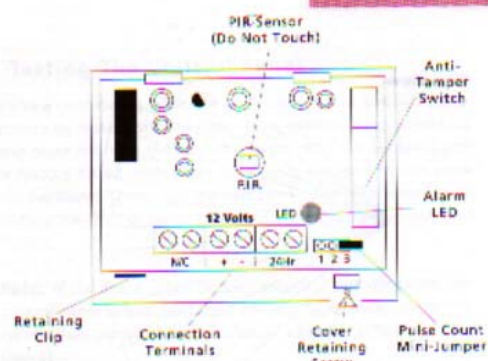


Fig. 7. PIR Detector PCB Layout

4. Push out the required mounting holes and cable entry, then fix the unit as required. Only remove the minimum number of cable or screw holes, as insects may enter the PIR and cause false alarms.

Note: Do not over-tighten or use large headed screws when mounting the unit, as this may distort the casing.

Wiring The PIR Detector(s)

1. Thread the cable through the entry on the base, then strip back 5mm of each core, twist the end, then fold over and wire into the appropriate terminals on the PIR as shown in Fig. 9.
2. The 'Petite 101' incorporates an anti false alarm feature designed to compensate where the detector may be affected by environmental changes, e.g. insects, air temperature, etc. This feature is called 'Pulse Count' and may be selected for 1, 2 or 3 pulses. Factory set to '2'.

When the PIR has been fitted and the correct environmental considerations have been observed, the recommended pulse count is 2. In cases of extreme environmental problems, it may be necessary to select pulse count 3.

Note: The higher the pulse count, the more paces an intruder will have to move before triggering the alarm.

3. Select the required pulse count, (See fig 8), then refit the cover and tighten the retaining screw. The PIR(s) is now ready to be connected at the control panel and tested.



Fig. 8. Pulse Count Mini-Jumper Positions

Wiring PIR(s) At The Control Panel

General

Where only one PIR is to be connected to a zone, the wiring quite simple, i.e., the 12 volt connections (red wire and blue wire) from the PIR must be connected to the + and - Al connections on the PCB. The yellow and blue wires from 1 alarm detector contacts (N/C) are wired directly into the required zone, the green and white Anti-Tamper connection however must be wired in 'Series' with other 24 HR circuits (See Fig. 9 & 10).

One detector per zone

If you are installing the system using only the detector supplied with the kit, follow Wiring Connections shown Fig. 17.

Multiple Detectors per zone

Where multiple detectors are connected to one zone, 1 yellow and blue alarm contacts are wired in 'Series' with all detectors, and the green and white anti-tamper connection (24Hr) are wired in 'Series' to the 24 hour connections at the control panel PCB with other 24 hour circuits.

1. All 12 volt power connections are wired in 'Parallel', i.e. all red wires together in the AUX (+) terminal on the PCB and all black wires together in the AUX (-) terminal on the PCB, (see Fig. 10).
2. The yellow and blue alarm contact wires are wired 'Series', e.g., take each pair of wires from the detector and join together like a 'Daisy Chain' link (colour colour). At all times, there should only be two separate ends remaining. Connect these to the zone connection on the PCB, removing the appropriate wire link (see Fig. 10 & 11).
3. The green and white 24 hour connections are wired 'Series' with other 24 hour circuits, as described for alarm contact wiring.

Note: Where series connections are made, terminal block insulating tape should be used to avoid bare wires touch each other.

4. Bring the detector cable(s) through the required control panel entry and strip back 5mm on each core.
5. Ensure that the battery is disconnected and no mains supply is connected to the control panel. Remove appropriate wire links, then connect the wires to terminals as shown in Fig. 9. and Fig. 10.
6. When the wiring has been completed, connect battery (observe polarity), red to red and black to blue. **Wait 4 minutes for the detectors to stabilise.** LED will be illuminated.

Note: If other LED's are illuminated, refer to 'Fault Finding'.



FITTING PIR DETECTORS (CONT.)

Testing The PIR(s) At The Control Panel

1. Clear the area protected by the PIR(s) ready for testing. Press 'Away'. Clear LED will illuminate. Slowly walk across the PIR(s) detector field of view. As you are detected, the LED on the PIR will illuminate, the control panel speaker will emit bleeps corresponding in number to the zone the detector is connected to.
2. When clear of the detector, the internal sounder will silence and the relevant LED will extinguish.
3. Allow ten seconds for the detector to settle, then move again to confirm that the PIR gives the desired protection within the area required. Repeat the test for other PIRs, if fitted.

Note: When testing PIR detectors, ensure that movement occurs only within the area being tested.

4. When the detectors have been tested successfully, press 'Reset' to return to the 'Stand-By' mode.
5. Now disconnect the battery for safety, before continuing with the installation.

Simple Fault Finding

If the PIR is not operating, i.e., LED not illuminating, the following simple checks should be carried out:

1. Allow 4 minutes for the unit to stabilise.
2. If the PIR LED does not light, check the power supply to the PIR, possibly damaged cable or control panel fuse blown (Fuse A), (see Fig. 4, Page 10).
3. If the PIR false alarms, the unit may be positioned incorrectly. Re-position the unit and adjust the pulse count if necessary.
4. If the PIR LED is operating, but not activating an alarm, check that the relevant zone wire link has been removed at the control panel PCB.

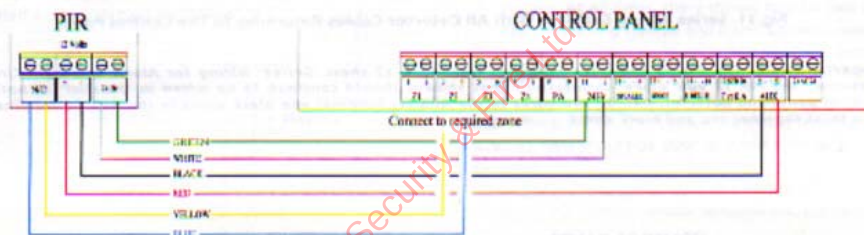


Fig.9. Schematic Wiring Diagram For Single Detector To Zone

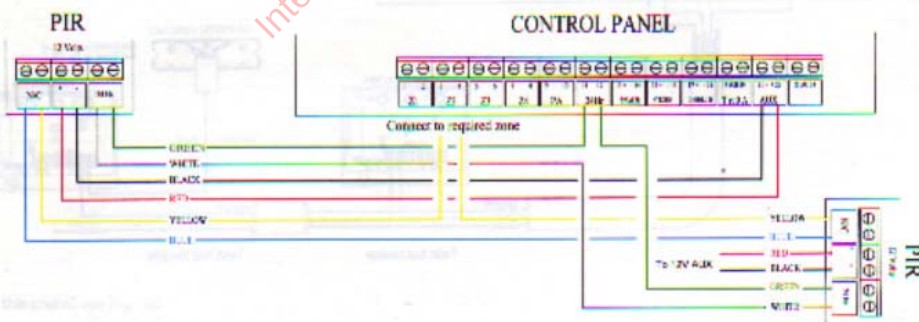


Fig.10. Schematic Wiring Diagram For Two Detectors To Zone

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SERIES WIRING EXAMPLES FOR PIR DETECTORS

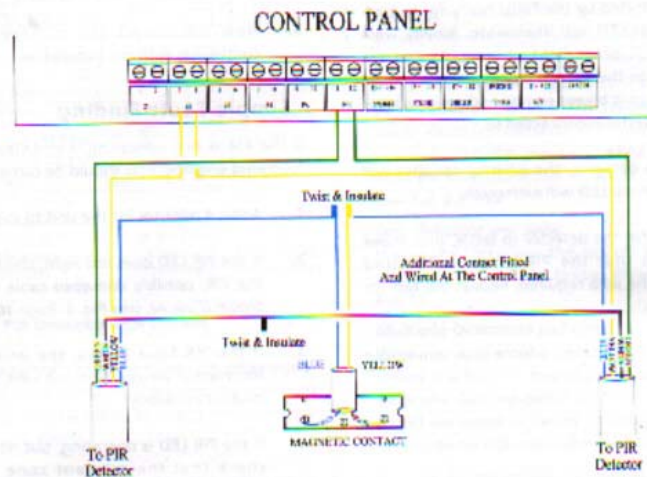


Fig.11. Series Wiring Example With All Detector Cables Returning To The Control Panel

Important Note: The wiring examples shown in Figs. 11 & 12 show 'Series' wiring for Alarm and 24Hr Circuits. However, the PIR 12 volt power connections (not shown) should continue to be wired in 'Parallel' at both the control panel and detector, i.e., all red wires in the AUX (+) terminal and black wires in the AUX (-) terminal. Do not twist together red and black wires.

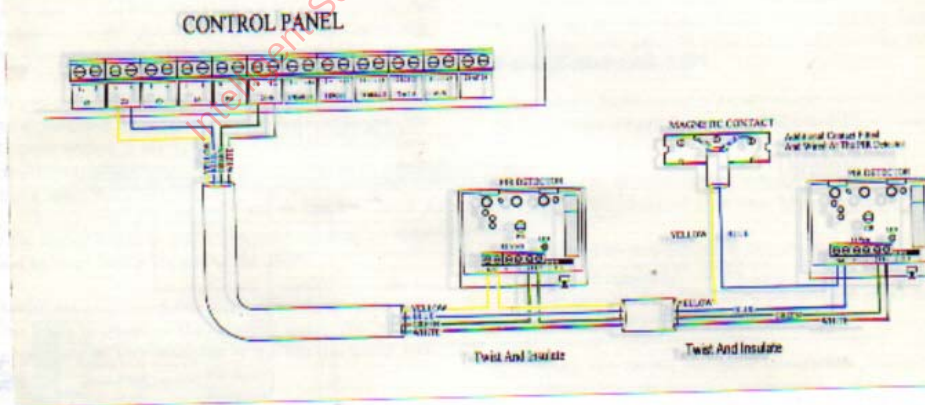


Fig.12. Series Wiring Example Detector to Detector With One Cable Returning To The Control Panel (Daisy Chain)

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FITTING MAGNETIC CONTACTS

Decide which doors/windows are best protected using the magnetic contacts. It is recommended that the two contacts provided with the AJ600N kit are fitted to the front and back doors of the property, and any additionally purchased contacts fitted where appropriate. It is recommended that no more than 10 magnetic contacts are connected to the same zone.

1. Run the required length of alarm cable from the doors or windows into the control panel. If one or two contacts are required to be fitted, run cables directly to control panel. If more than two contacts are fitted, additional cable may be required to route all cables individually to the control panel.

Alternatively, cables may be linked to each contact in 'Daisy Chain' configurations and terminated appropriately, however, working space at magnetic contacts is limited and may prove tricky. Do not make connections to the control panel at this stage. (See Fig. 15. & 16., Page 16).

2. Fit the magnet to the moving frame of the window or door (opening edge opposite hinge) and make sure that the parallel gap to where the reed switch on the frame is fitted is no more than 9mm Max.

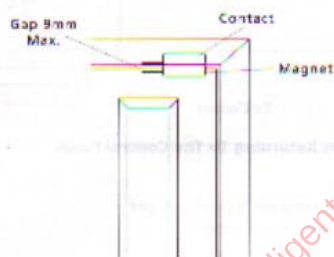


Fig. 13. Typical Position Of Contact Fitted to Door

Wiring Magnetic Contacts

1. If single contacts are to be fitted to a zone, strip back 5mm of each core, then connect the yellow and blue alarm wires to the appropriate contact terminals, as shown in Fig. 14. The remaining spare wires from the cable should be trimmed and tucked away.
2. If multiple contacts have been fitted and wired in the 'Daisy Chain' configuration, wire the contact as part of the chain, see Fig. 16.
3. Fit the contact to the door/window frame parallel to the magnet ensuring that the opening gap is no more than 9 mm max.

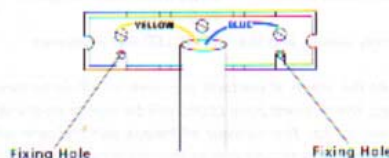


Fig. 14. Individual Contact Wiring

Wiring Contacts At The Control Panel

Where only one contact is fitted to a zone, the wiring may be quite simple, i.e., yellow and blue contact wires connected directly to the required zone. However, where multiple contacts are connected to one zone, the wiring should be as follows;

1. The yellow and blue alarm contact wires are wired in 'Series', e.g., take each pair of wires from the contacts and join together like a 'Daisy Chain' link (colour to colour). At all times, there should only be two separate ends remaining (yellow and blue). Connect these to the zone connections on the PCB, removing the appropriate wire link.

Note: Where 'Series' connections are made, terminal block or insulating tape should be used to avoid bare wires touching each other.

2. Bring the contact cable(s) through the required control panel entry and strip back 5mm on each core.
3. Ensure that the battery is disconnected and no mains supply is connected to the control panel. Remove the appropriate wire links, then connect the wires to the control panel terminals as shown in Fig. 15. or Fig. 16.
4. When the wiring has been completed, connect the battery (observe polarity), red to red and black to black.
5. Wait 4 minutes for any PIR detectors to stabilise, then clear the protected area(s).
6. No LED's should be illuminated.

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SERIES WIRING EXAMPLES FOR MAGNETIC CONTACTS

Testing Contacts At The Control Panel

1. First, close all doors/windows fitted with contacts.
2. Press 'Away', and the 'CLEAR' LED will illuminate.

Note: At this stage, if contacts are open or PIR detectors are activated, the relevant zone LED(s) will be illuminated and the panel will bleep. The number of bleeps will indicate which zone is open. You should ensure that no movement occurs in areas fitted with PIR detectors, as this may confuse you during the test sequence. If walking past a PIR is unavoidable, allow 10 seconds at the control panel for the PIR to settle.

Open the first contact, the control panel will bleep corresponding in number to the zone the detector connected to, and the relevant Zone LED will flash. Close contact to silence the speaker and extinguish the LED.

3. Repeat the test sequence for all other contacts fitted.
4. When the contacts have been tested successfully, press 'Reset' to return to the 'Stand-by' mode.
5. Now disconnect the battery before continuing with installation.

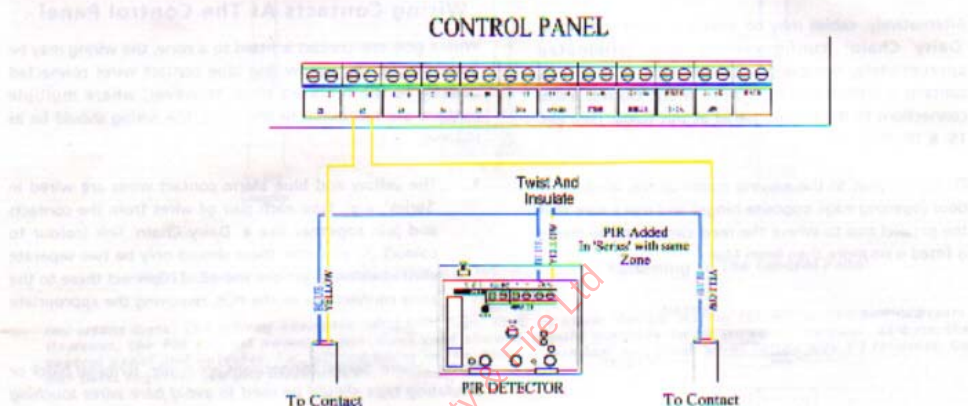


Fig.15. Series Wiring Example With All Contact Cables Returning To The Control Panel

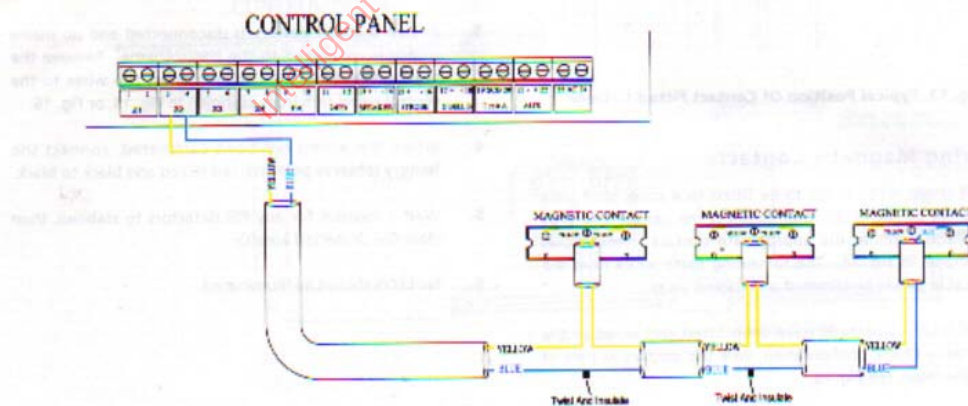


Fig.16. Series Wiring Example Contact to Contact With One Cable Returning To The Control Panel (Daisy Chain)

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SYSTEM SCHEMATIC WIRING DIAGRAM FOR ALL DETECTORS

Note 1: All wires must go to the relevant terminal on the control panel PCB.

Note 2: Green and white anti-tamper connections must be 'Series' wired before connection to the 24 Hr terminals on the control panel PCB.

Note 3: All 12 volt power connections from the PIRs must be 'Parallel' wired when connecting to the AUX terminals.

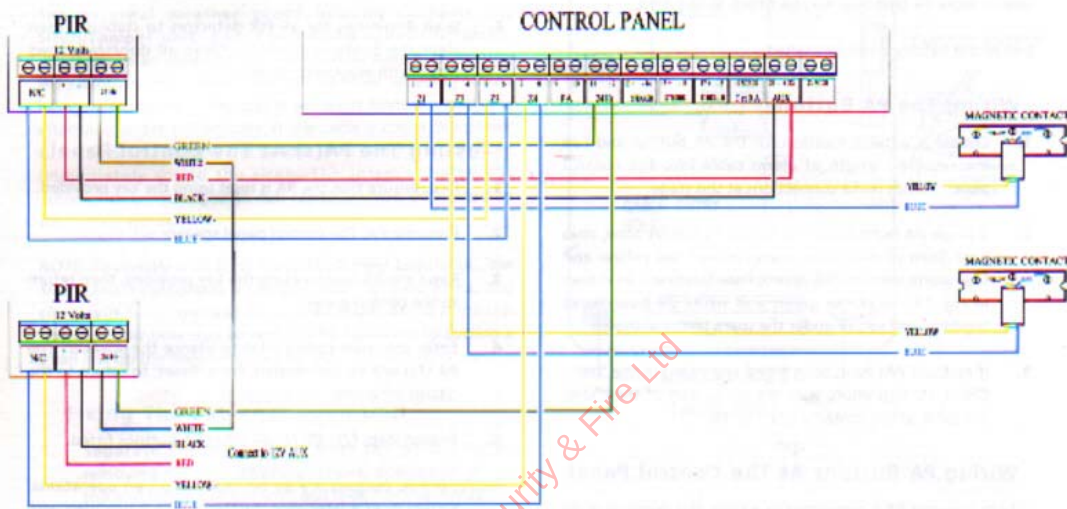


Fig.17. Typical Schematic Wiring Diagram With All Detectors Supplied With The AJ600N Kit Connected To The Control Panel

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FITTING A PA BUTTON (NOT SUPPLIED)

The AJ600N incorporates a zone which may be connected to a PA (personal attack) button. The PA button operates on a 24 hour basis irrespective of whether the system is armed or disarmed. Pressing the PA button will initiate a full alarm condition, i.e., internal speaker and external siren activating. If a strobe warning light is fitted to the bell housing, this will also operate.

PA buttons may be fitted near the front door, or in a bedroom. If small children are in the household, position the PA button out of reach and place the keys in a safe place. One or more PA button(s) may be fitted, as required.

Ensure the battery is not connected

Wiring The PA Button

1. Choose a suitable location for the PA button and run the required length of alarm cable into the control panel. Do not make connections at this stage.
2. If single PA buttons are connected to the PA zone, strip back 5mm of each core, then connect the yellow and blue alarm wires to the appropriate terminals, as shown in Fig. 18. Twist the green and white 24 hour wires together and secure under the spare terminal shown.
3. If multiple PAs have been fitted and wired in the 'Daisy Chain' configuration, wire the PA as part of the chain, the same as the contacts, (see Fig. 16)

Wiring PA Buttons At The Control Panel

Where only one PA is connected to a zone, the wiring is quite simple, i.e., yellow and blue PA wires connected directly to the PA zone and green and white anti-tamper connections wired in 'Series' with other detectors to the 24 terminals on the PCB.

Where multiple PA(s) are connected to the PA zone, the wiring should be as follows:

1. The yellow and blue PA alarm wires are wired in 'Series', e.g., take each pair of wires from the PAs and join together like a 'Daisy Chain' link (colour to colour). At all times, there should only be two separate ends remaining (yellow and blue). Connect these to the PA zone connections on the PCB, removing the PA wire link.
2. The green and white 24 hour connections are wired in 'Series' with other 24 hour zone wiring, as described for the alarm contacts, (see Fig. 12.)

Note: Where 'Series' connections are made, terminal block or insulating tape should be used to avoid bare wires touching.

3. Bring the PA cable(s) through the required control panel entry and strip back 5mm on each core.
4. Ensure that the battery is disconnected and no mains supply is connected to the control panel. Remove the PA zone wire link, then connect the wires to the control panel terminals as shown in Fig. 18.
5. When the wiring has been completed, connect the battery (observe polarity), red to red and black to black. No LED's should be illuminated.
6. Wait 4 minutes for all PIR detectors to stabilise, then clear the protected area(s). Close all doors/windows fitted with magnetic contacts.

Testing The PA(s) At The Control Panel

1. First, ensure that the PA is reset using the key provided.
2. Press the PA. The control panel speaker will sound.
3. Reset the PA button using the key provided, then return to the control panel.
4. Enter user pass code (1234) to silence the speaker. The PA LED will be illuminated. Press 'Reset' to return to the 'Stand-by' mode.
5. Repeat steps (2) - (5) for all other PA buttons fitted.

NOTE: If P.A. buttons are to be installed on an operational system or at a later date, further advice is provided with the units.

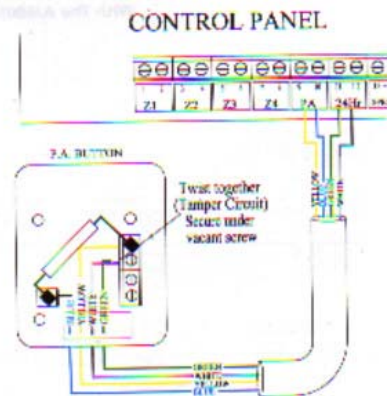


Fig. 18. PA Button Wiring Diagram

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FITTING THE EXTERNAL SIREN UNIT

Wiring The Siren Unit At The Control Panel

1. Ensure that the mains power is switched off and the battery is disconnected.
2. Remove the control panel front cover.
3. Strip back 5mm off all cable strands.
4. Twist and double over each end evenly, then connect to the terminals as shown in fig. 20.
 - a. connect the red wire to terminal 17 marked 'bell +'
 - b. connect the black wire to terminal 18 marked 'bell -'

Remove the wire link from terminals 20 and 19

 - c. connect the green wire to terminal 20 marked 'SCB 0'
 - d. connect the white wire to terminal 19 marked 'SCB Rt'
 - e. connect the blue wire to terminal 15 marked Strobe +
 - f. connect the yellow wire to terminal 16 marked Strobe -

Strobe light purchased separately.
5. Reconnect the battery.

6. At the siren housing, connect the battery link to both BATT terminals (see fig. 20)
Important note: When the 'BATT' link is fitted at the SirenUnit, the Siren should not activate. If the siren does activate, it is possible that fuse B is blown or the wiring is incorrect. Remove the 'BATT' link and check fuse B at the control panel. Replace if blown, then return to the siren, replace the 'BATT' link and secure the cover.
If the siren still cannot be silenced from the control panel the battery may be discharged, connect the control panel to the mains power, this will silence the siren and recharge the battery. If the siren continues to sound the wiring should be re-checked. If the siren will not silence after performing these checks, contact the HELPLINE for advice.
7. Replace external siren cover.

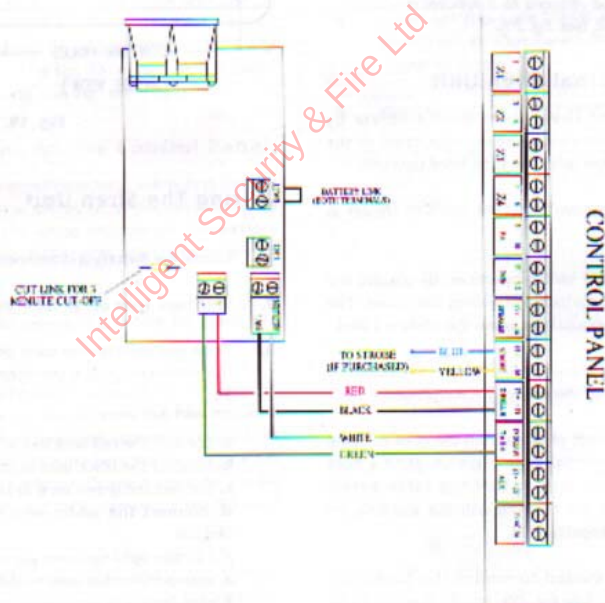


Fig 20.

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WIRING THE MAINS SUPPLY

WARNING ELECTRICITY CAN KILL !

We strongly recommend the services of a qualified electrician to carry out the mains wiring.

As described earlier in this guide, it is very important that the mains supply to the alarm control panel has its own circuit from the mains consumer unit and is not connected to domestic electrical circuits. If the supply has been connected to a domestic circuit which has domestic appliances connected, e.g., fridge, washing machines, etc., the control panel microprocessor may intermittently malfunction due to power surges and electrical interference.

Ideally, the mains supply should come from an independently fitted, un-switched fused spur unit fitted adjacent to the control panel, and to comply with current electrical safety regulations, fitted with a 3A fuse.

The spur unit should be fitted close enough to the control panel so that it can be easily identified as the alarm system mains supply.

1. Run the required length of 5 amp 3-core mains flexi-cable between the control panel and spur unit. Feed one end through the cable entry and connect to the mains transformer terminal block, as shown in Fig. 21.

Do not connect to mains power until you have completed steps 2 and 3.

Note: Remember to keep mains and detector wiring separate.

Live (L)	-	Red or Brown
Neutral (N)	-	Black or Blue
Earth	-	Green and Yellow

Once connected use cable clamp provided to secure in position.

2. The control panel fixing screws may now be finally tightened. (Ensure that the control panel rechargeable battery is now fitted).
3. Remove the temporary anti-tamper wire from terminals 11 & 12. In doing so, the internal speaker will sound. Refit the control panel cover, then enter the user code '1234'. Press 'Reset' to return the system to the 'Stand-by' mode.
4. Connect the remaining end of the mains cable to the spur unit.
5. When the mains power is connected, the green 'Mains On' LED will be illuminated. The control panel and Siren Unit rechargeable batteries will be charged to full capacity after approximately 14 hours.

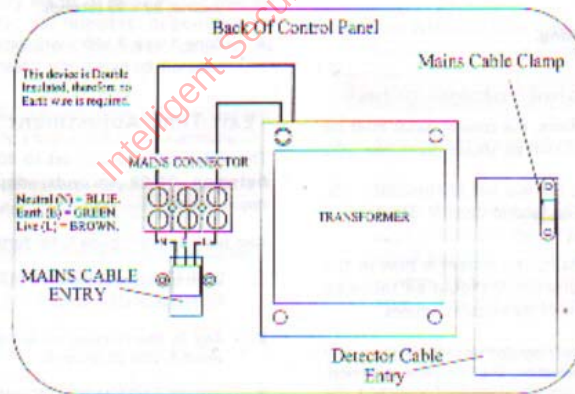


Fig. 21. Mains Wiring To Control Panel Transformer

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PROGRAMMING

General

Programming of the AJ600N system options is divided into two distinct categories, i.e., User Programming and Installer Programming. User programming is used when the system is fully operational. While installer programming is only carried out when the system is new or when subsequent changes are required.

Access to either programming mode requires a valid user or installer code to be entered. The more complex and less required programmable options are available using the installer code only. This prevents the user from accidentally changing the system functions. **The control panel has many of the options set at the most common levels, please consider whether you really need to change them before re-programming:**

Entry/Exit Zone	-Factory set as Zone 1
Entry Time	-Factory set as 30 seconds
Exit Time	-Factory set as 30 seconds
Siren Duration	-Factory set as 20 minutes

Programmable options using the installation passcode only are;

- a) **Selecting Walk Through Zones.**
- b) **Entry Time Adjustment.**
- c) **Exit Time Adjustment.**
- d) **Selecting 'Home' zones (Part setting)**
- e) **Siren Duration.**
- f) **Select user code arming**
- g) **Change Installer Code.**
- h) **Reset System**

Programmable options using the user code only are;

- a) **Change User Code.**
- b) **Temporary zone omitting.**

Installation Mode

Before changing installer options, the control panel must be in the 'Installer Mode'. This will be shown by 'Clear' LED flashing.

1. Enter the installer code '9999'.
2. The 'Clear' LED will flash. The system is now in the installer mode. This procedure should be followed before programming any of the installer options.

Important Note: When selecting options, the system will allow 10 seconds to make a selection. If this time is exceeded, the control panel will exit the function and revert to the 'Installer Mode', and the option key will have to be pressed again.

Before starting to program your selection read all steps first.

Selecting Walk Through Zones

'Walk Through' is programmed for zones connected to detectors which are sited between the Entry/Exit door and control panel.

Any or all zone(s) can be programmed as 'Walk Through', except zone1.

Zone 2 is factory set as walk through.

Also see 'Features', page 5 for further information.

1. With the control panel in the 'Installer Mode' (the Clear LED's flashing), press 7. The current or factory 'Walk Through' zone(s) will be illuminated.
2. Key in the zone number(s) which you require to be 'Walk Through'. The appropriate zone LED(s) will illuminate. If you require to remove an existing 'Walk Through' zone, press the zone number to extinguish the appropriate LED.
3. When completed, press 'arm' to save the selection. An acceptance tone will be heard and the 'Clear' LED will be flashing.

Entry Time Adjustment

The entry time is factory set to 30 seconds, but may be set between 01-99 seconds, depending on your own requirements. Also see 'Features', page 5, for further information.

1. With the control panel in the 'Installer Mode' (Clear LED flashing), press 3. Zone 1 and 2 LED's will illuminate.
2. Key in the number of seconds required, e.g., 01 = 1 second, 99 = 99 seconds.
3. Zone 1 and 2 LED's will extinguish and an acceptance tone will be heard. The 'Clear' LED will be flashing.

Exit Time Adjustment

The exit time is factory set to 30 seconds, but may be set between 01-99 seconds, depending on your own requirements.

Also see 'Features', page 5, for further information.

1. With the control panel in the 'Installer Mode' (Clear LED flashing), press 2. Zone 1 and 2 LED's will illuminate.
2. Key in the number of seconds required, e.g., 01 = 1 second, 99 = 99 seconds.
3. Zone 1 and 2 LED's will extinguish and an acceptance tone will be heard. The 'Clear' LED should be flashing.

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PROGRAMMING (CONT.)

Selecting 'Home' Feature

The 'Home' button can be used to arm the system omitting a selection of pre-selected zones. Only the entry/exit zone (zone 1) cannot be omitted.

This feature is useful if you have a regular requirement to arm the system with a zone(s) omitted i.e. night time setting when you may wish to have the detectors on the ground floor armed, whilst the detectors on the first floor are disarmed.

To select the zones you wish to be omitted when you use the 'Home' feature:

Note: Steps 1 -2 must be completed within 10 seconds or step 1 will have to be repeated.

1. With the control panel in the 'Installer Mode' (Clear LED flashing), press 6, the current zones selected to be omitted will be illuminated.
2. Key in the zone number(s) which you require to be omitted when using the 'Home' feature. The appropriate zone LED(s) will illuminate.
3. Press 'Arm' button to store your selection, the control panel will beep to confirm acceptance of your selection.

Note: If you wish to change your selection, repeat step 1, press appropriate key to select/deselect before pressing 'Arm'

Siren Duration

The siren duration is factory set to 20 minutes, but may be changed to between 01 - 99 minutes, depending on individual requirements. Also see 'Features', page 5 for further information.

1. With the control panel in the 'Installer Mode' (Clear LED flashing), press 4. Zone 1 and 2 LED's will illuminate.
2. Key in the number of minutes required, e.g., 01 = 1 minute, 99 = 99 minutes.
3. Zone 1 and 2 LED's will extinguish and an acceptance tone will be heard. The 'Clear' LED will be flashing.

Change User Code By Installer

It is possible to change the user code whilst in 'installation mode'. Follow instruction detailed in 'change installation code' but at STEP 1 press 5.

Change Installation Code

The installation code is factory set to '9999', but **must** be changed to your own unique 4-digit code when the installation is complete. Steps 1 and 2 must be completed within 10 seconds. Have your new code ready to enter.

1. With the control panel in the 'Installer Mode' (Clear LED flashing), press 1. The four zone LEDs will illuminate.
2. Key-in the new 4-digit unique installation code.
3. As each digit is entered, a zone LED will extinguish. Press arm - an acceptance zone will be heard.
4. Press 'Reset' to return to the 'Stand-by' mode. Confirm the code is correct by entering the new code. The 'Clear' LED should flash. Press 'Reset' to return to the 'Standby' mode.

Note 1: Choose a number which is personally significant that will not be easily forgotten.

Note 2: Do not enter the same number as the user code.

System Reset

If the user pass code has been lost or forgotten, or the installer is unsure of the options programmed, the system may be returned to the factory settings by the following method:

1. With the control panel in the 'Installer Mode' ('Clear' LED flashing), press 0.
2. The system is now returned to the factory settings. Continue to re-programme the options as required.

Lost Or Forgotten Installer Code:

1. Switch off mains power and remove the front cover.
2. Disconnect the control panel rechargeable battery.
NOTE: the anti-tamper unit in the bellbox will sound the siren due to the loss of power. If it is inconvenient to allow the siren to continue until you have reset the system, remove the link from one of the 'BATT' terminals on the anti-tamper unit in the bellbox.
3. *Note: The mains and battery power supply must be removed before continuing.*
Place a screwdriver across both of the NVM RESET pins positioned on the control panel PCB (see fig. 4)
4. With the screwdriver still in place - reconnect the battery and wait 5 seconds.

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PROGRAMMING (CONT.)

5. Remove the screwdriver, replace front cover and reconnect the mains. The control panel has been returned to factory set and will require reprogramming with all the previous requirements. (Remember to reconnect the 'BATT' link in the anti-tamper unit if it was removed).

The following functions may be performed using the user code.

Selecting 'Code Arming'

For convenience the control panel is factory set to be able to be armed without entering the user code. To avoid accidental arming, or if there is a concern regarding children arming the system, it is possible to program the control panel to require the user code to be entered before allowing the system to be armed.

Note: Steps 1-2 must be completed within 10 seconds or step 1 will have to be repeated.

1. With the control panel in the 'Installer Mode', (clear LED flashing), press 8 then press 2.
2. Press 'Arm' button to store your selection, the control panel will beep to confirm acceptance of your selection.

Note: If you wish to change your selection, repeat steps 1 and 2, press key 2 to select/deselect before pressing 'Arm'.

Change User Code By User

The user code is factory set to '1234', but must be changed to your own unique 4-digit code when the installation is complete.

1. Enter factory user code '1234'.
2. The clear LED will flash and 4 zone LED's will be illuminated.
3. Key-in the new 4-digit unique user code.

The new code must be entered whilst the LED's are lit/flashing.
4. As each digit is entered, a zone LED will extinguish. Press 'Arm' button to confirm selection, an acceptance tone will be heard, only the mains LED will be illuminated.
5. Press 'Reset' to return to the 'Stand by' mode.

Note 1: Choose a number which is personally significant and will not be easily forgotten.

Note 2: Do not enter the same number as the installation code.

Testing Siren and Strobe

To test the siren and strobe;

1. Arm the system, Press 'Away' then 'Arm', the exit timer will start, press 'Arm' again to quick set the system.
2. Walk in front of a PIR detector or open a door or window fitted with a magnetic contact, the external sounder and strobe will activate, (you can open the contact in the entry/exit route, however you will have to wait for the selected entry time to end before the system will activate.)
3. Return to the control panel and enter the user passcode (1,2,3,4), the sounder will cease and the relevant zone LED will be illuminated.
4. The strobe light will continue to flash until the 'Reset' key is pressed and the system returned to standby.

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FAULT FINDING

A1 Security & Electrical Ltd. has built a successful world wide reputation by providing both DIY enthusiasts and professional installation companies with high quality security products backed with an unsurpassed after sales advisory service.

The AJ600N DIY kit is designed and tested to provide a high standard of security and long reliable service. However, if you become confused or run into any difficulty, please telephone our **HELPLINE between 9am-5pm, Monday-Friday and 10am - 4pm Saturday - Sunday**. A member of our customer service department will be pleased to talk through any problems which you may encounter. (See page 27 for telephone number).

Before contacting our customer service department, we recommend that you carry out the simple checks detailed in the 'Fault Finding' section.

Important Note: For safety reasons, switch off the mains supply to the control panel before carrying out fault finding. Fault finding should be carried out using the 12volt battery only.

Control Panel LED Indicators

When faults occur with the system, the relevant zone LED(s) will be illuminated on the control panel to indicate where the fault exists.

NOTE: THE LED NUMBER(S) SHOULD BE NOTED IF CONTACTING A1 WITH TECHNICAL OR FALSE ALARM QUERIES.

Only detectors or wiring connected to the zone indicated will require to be checked. It is not necessary to check the complete system if only one LED is illuminated. However, where more than one LED is illuminated, further checks may be required.

Note: The 'Mains' LED is illuminated when the supply is On and extinguished if Off.

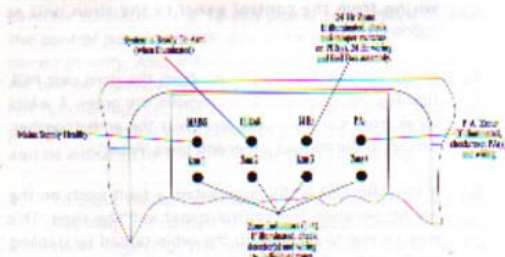


Fig. 22. Control Panel LED Indicators

Siren Sounding Continuously

The following procedure applies only if the 24 hour LED is not illuminated. If the 24 hour LED is illuminated, refer to '24Hr Faults'.

If the external siren continues to operate and will not silence by entering the correct user code, the power supply to the external siren is suspect. The following checks should be carried out to establish the cause:

1. Check Fuse B on the control panel PCB. Replace if blown, then press 'Reset'. The siren should now silence if the fuse was blown.

Note: A quick method of confirming that Fuse 2 is blown is to check the PIR LED(s) are operating.

2. If Fuse B is O.K., check the connections at both the control panel and external siren, (see Fig. 20, page 20). If the connections were incorrect or insecure, the siren should silence when the correct connections are made.
3. If the external sounder still continues to operate, the continuity of each of the red and black wires from the control panel to the siren should be checked as follows:
 - a) First, remove the 'BATT' link from the siren unit PCB to temporarily silence the siren, (see Fig. 20, page 20). Remove all four siren connections at both the control panel and siren unit PCB. The 24 hour LED will be illuminated.

Note: Ensure that the control panel front cover anti-tamper switch is defeated and no other anti-tamper devices are opened.

- b) To check the continuity of the red and black wires, twist the ends together at the siren unit and return to the control panel. Connect the red and black wires to the SCB connections on the PCB, then press 'Reset'. If the 24 Hr LED extinguishes, the red and black wires are O.K. If the 24 hour LED does not extinguish, the red or black cores may be damaged. Physically check the cable for obvious damage and/or renew.

- c) Reconnect the wiring to the correct connections as shown in Fig. 20, page 20, and replace the 'BATT' link.

4. If the siren still continues to operate after re-connection to the siren unit, contact the HELPLINE for further advice.

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FAULT FINDING (CONT.)

24Hr Faults

24 Hour faults are indicated by the 24Hr LED being illuminated. In addition, the internal sounder will be emitting a two-tone warning and the external siren will also be activated.

To silence the internal/external sounders, press 'Reset' to stop strobe lights (if fitted), followed by the user code.

The most common 24 Hr faults may be caused by either of the following problems:

- Control panel anti-tamper switch not operating correctly against the cover and/or PIR detector cover anti-tamper switch(es) not operating against the covers correctly.
- Incorrect Siren Unit wiring, or bell box anti-tamper switch requires adjustment.
- 24 Hr zone to detector wiring is open, e.g., damaged or incorrect wiring.

CHECK CONTROL PANEL COVER ANTI-TAMPER

- Remove front cover, then defeat the anti-tamper switch by pressing down on the spring.
- Enter user code to silence alarm and press 'Reset'. If the 24 HR LED extinguishes, replace the cover ensuring that the Anti-Tamper spring operates correctly against the cover. If the 24 HR fault remains, continue with further checks. Enter installation code before replacing cover, then press 'Reset'.

CHECK PIR DETECTOR ANTI-TAMPERS

- Ensure that all the PIR detector anti-tamper devices are operating correctly. Tighten or secure the cover(s), if required.
- If the fault persists, determine whether the fault is in the internal wiring or the siren wiring/tamper switch, as follows.

INTERNAL/EXTERNAL FAULT DIAGNOSIS

Before proceeding with wiring checks, ensure that all connections to the control panel are satisfactory, e.g., loose connections or insulation preventing good contact at the terminal(s). If the fault still persists, proceed as follows:

To determine whether the fault exists on the internal wiring to the PIR(s) or on the wiring to the external siren or bell box tamper switch, the following simple diagnosis should be made first.

- Remove the 24 HR zone wiring from the control panel 24Hr PCB terminals and insert the factory wire link.

- Press 'Reset'. If the 24 HR fault clears, the fault exists on the internal 24 HR zone wiring and not on cabling to the Siren Unit or the bell box tamper switch.
- If the 24Hr LED does not extinguish, the fault exists on either the wiring to the siren unit or bell box tamper switch.
- Replace the 24 HR zone wiring and proceed to check either the internal wiring or wiring to the siren unit.

INTERNAL WIRING CHECKS

- Check connections to the control panel or detector(s) are satisfactory, e.g., loose connections or insulation preventing good contact at the terminals.
- Remove the green and white wires from the PIR detector 24Hr terminals and twist the ends together. Return to the control panel and press 'Reset'. If the fault clears, the wiring to the control panel may be excluded as the cause. The HELPLINE should be contacted.
- If the fault persists, a fault on the wiring exists. This may be due to damage caused by stapling or stretching during installation and may have caused unseen damage to the individual cores inside the insulation. Renew the wiring as necessary.

SIREN WIRING AND TAMPER SWITCH CHECKS

- Check connections to the control panel are satisfactory, e.g., loose connections or insulation preventing good contact at the terminals.
- Remove the bell box cover and check the operation of the anti-tamper switch. A small click should be heard when the cover is placed against the wall. It may be necessary to bend the anti-tamper switch arm to ensure correct operation.
- Return to the control panel and press 'Reset'. If the 24Hr LED is not extinguished, proceed to check the wiring from the control panel to the siren unit as follows:
- Firstly, remove the 'BATT' link from the siren unit PCB, (see Fig. 20, page 20). Then remove the green & white wires from the siren unit and twist the ends together. Return to the control panel and press 'Reset'.
- If the 24Hr LED is still illuminated, a fault exists on the wiring between the control panel and the siren. This may be due to damage to the cable caused by stapling or stretching during installation and may have caused unseen damage to the wires inside the insulation. Renew the wiring and replace the 'BATT' link.

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FAULT FINDING (CONT.)

6. If the 24Hr LED extinguishes, the wiring and control panel may be excluded as the cause. The HELPLINE should be contacted for further advice.

Intermittent 24 HR Faults

The most obvious intermittent 24 HR faults may be caused by the yellow and blue alarm zone connections at the PIR detector being wrongly wired to the 24 HR zone at the control panel and incorrect wiring of siren unit, please check connections to siren unit carefully. Intermittent faults may also be due to other causes, e.g., unsatisfactory connections.

1. Check that all 24 HR and alarm wires go to the correct connections on the control panel PCB or detector. Also check any twisted connections, which are made at the control panel for 'Series' wiring, are twisted tightly. Check that the insulation on each core is removed sufficiently to allow a good contact at the terminals.

Checking PA And Zone Wiring

If a PA or zone LED is illuminated, the following checks should be carried out to determine if the fault is in the control panel, wiring or detector(s).

1. Remove the appropriate yellow and blue zone or PA wires from the control panel PCB and insert the factory wire link. Press 'Reset', followed by the user code. The zone LED(s) should be extinguished, indicating the fault exists outwith the control panel, i.e., wiring or detector.

Note: If the fault still shows with the wire links inserted, contact the HELPLINE for further advice.

2. Check the wiring and connections at the detectors, referring to the appropriate wiring diagram for each detector. Press 'Reset', followed by the Away Button to check diagnosis each time.

Note: If a fault is indicated on a zone which has a PIR detector connected, the 12 volt power connections to both the control panel and PIR should be re-checked, observing correct polarity. Also, if Bell Fuse B is blown, the supply to the PIR will be disconnected. This would be indicated by the PIR not functioning, i.e., the LED not operating when you walk past the PIR. An early indication of a 12 volt power loss would also be indicated by the external siren also activating.

3. To check the wiring between the control panel and the PIR, magnetic contact or PA, open each item in turn and twist together the yellow and blue alarm or PA connections. Return to the control panel each time, pressing 'Reset', followed by the user code to check diagnosis.

Note: Remember that in removing the PIR cover to diagnose the faulty zone, you will create an additional 24Hr fault when

the cover is off.

4. If a zone fault still exists when the zone wiring is twisted at the detector(s), the wiring may be damaged between the control panel and detector. Repair or re-new the damaged cable, as necessary.

Important Note: These procedures refer to checking one detector per zone. If multiple detectors are connected to one zone, twist each of the yellow and blue alarm zone connections until the fault is cleared, each time confirming diagnosis by pressing 'Reset', followed by the user code.

Checking The Control Panel

If the control panel appears to malfunction in any way, it should be returned to the factory condition by removing all the installed detector, PA and SCB wiring and inserting the appropriate factory wire links. The mains supply must be switched off and testing performed using the 12 volt battery only.

1. Switch off the mains supply.
2. Check Fuses 1 and 2. Replace if necessary with the spare fuses supplied.
3. Disconnect the battery, then disconnect all wiring to the control panel PCB and insert the relevant factory wire links as shown in Fig. 4., page 10, then continue to test the control panel as described also on page 10.

Note: Do not remove factory connected wires to the control panel PCB, (see Fig. 4, page 10). Do not fit wire links to these terminals, as damage to the control panel may occur.

HELPLINE

Telephone: 0151-489 0166

Monday to Friday - 9:00am to 5:00pm

Saturday and Sunday 10:00am - 4:00pm

Helpline ref no:

FREE PRODUCT REPLACEMENT

The HELPLINE may recommend the return of any item deemed to be faulty, so that it can be checked and replaced or repaired by A1 Security and Electrical Ltd., free of charge.

Please give a brief description of the problem, pack the item in a stout box, affix the pre-paid label supplied by the HELPLINE and post it back to A1 from your local Post Office.

*** Remember to include your name, helpline ref. no. and address with the parcel.**

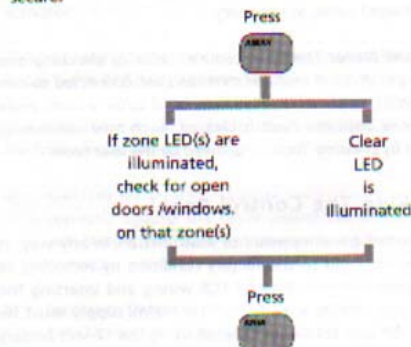
UPON RECEIPT OF THE ITEM WE SHALL DESPATCH A FULLY TESTED REPLACEMENT TO YOU WITHIN TWO WORKING DAYS.



OPERATING INSTRUCTIONS

'AWAY' Arming All Zones

Before arming the system, ensure all detectors are unobstructed and that all doors and windows are closed and secure.

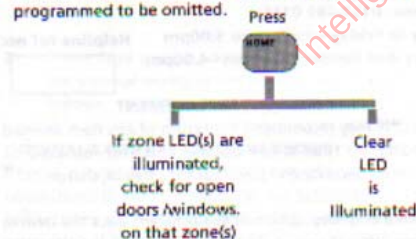


Note: During the last ten seconds of the exit time, the exit tone will speed-up. When the system sets, a confirmation beep will be heard.

If code arming has been selected, then simply enter user code before pressing the 'Home' or 'Away' key

'HOME' Arming Selected Zones

If the user requires to arm the system at night while remaining on the premises, the 'Home' facility can be used to arm the system with regularly used pre-selected zones programmed to be omitted.



Note: During the last ten seconds of the exit time, the exit tone will speed-up. When the system sets, a confirmation beep will be heard.

The system will be armed after the programmed exit time expires.

Additionally

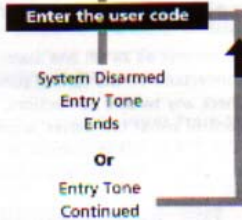
Press **ARM** (Again)
The system will arm silently after a few seconds

Disarming The System

Note1: This procedure can also be used to disarm the system when 'Night Time Set' with zones omitted. Skip the first two steps.

Note2: If an alarm has occurred and the system is disarmed, take note of zone LED(s) showing. Do not press 'Reset', (see 'Event Replay')

Enter the premises via the designated Entry Route
Entry tone starts. Proceed directly to the control panel



Event Replay

If an alarm has occurred, 'Event Replay' will enable the user to recall the zone(s) which have caused the alarm to activate. Up to 4 alarm events will be recorded.

Note: Do not press 'Reset' before using event replay

Enter the user code
to silence alarm

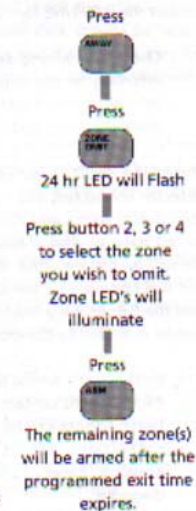
Press **EVENT REPLAY**
up to four times to recall the last 4 alarm events in sequence (Note the Zone LED(s))

Press **RESET**
twice to return to the 'Day' mode

If reset has been pressed, another alarm activation will have to be caused to check which zones activated on the previous 2 occasions

Occasional Zone Ommiting

If a zone combination different to that chosen for the 'Home' button is required, it is possible to select a zone (s) to be omitted on a temporary basis



ZONE DESCRIPTIONS

It is important that you fill in the Zone descriptions below and where the detectors are fitted. This will aid you when checking your system, fault finding or installing additional detectors.

ZONE 1

ZONE 2

ZONE 3

ZONE 4

**A1 Security & Electrical Ltd,
16 Brickfields,
Huyton Trading Estate,
Huyton, Merseyside
L36 6HY.
Helpline No:0151-4890166**

Post to:

**A1 Security & Electrical Ltd,
16 Brickfields,
Huyton Trading Estate,
Huyton, Merseyside
L36 6HY.**



1 YEAR GUARANTEE

A1 SECURITY & ELECTRICAL LTD.

A1 Security & Electrical Ltd. guarantee to the original Purchaser that this intruder alarm product will be free from defects in materials and workmanship for a period of 1 year from the date of purchase. Any product found to have defects in material or workmanship within the period of this guarantee shall be replaced by A1 Security & Electrical Ltd. free of charge.

The conditions of this guarantee are as follows:

1. The product has been properly installed and maintained.
2. Defects or damage due to normal wear and tear, accident, misuse or interference are not included.
3. The product returned for inspection by A1 Security & Electrical Ltd.
4. The claim on this guarantee is processed by an approved retailer.
5. This guarantee card is returned duly completed to A1 Security & Electrical Ltd. at the address below within 28 days of the date of purchase of the product.

Note: This guarantee does not affect any statutory rights.



AJ600N GUARANTEE REGISTRATION FORM

NAME _____

NAME & ADDRESS OF PLACE OF PURCHASE

ADDRESS _____

OCCUPATION _____

DATE _____

AGE (PLEASE TICK BOX)

UNDER 18 ☐ 18-25 ☐
26-40 ☐ OVER 40 ☐

SIGNATURE _____

