WILTON SECURITY SYSTEMS
Electronic Security Specialists

INTRUDER ALARM GUIDE

This guide has been designed to help you understand the workings of a modern Intruder Alarm System.

It should be appreciated that this is only a guide and as such it should not be regarded, nor was it intended, to be an authoritative document on the subject.

No such guide can fully explain and detail all of the many and diverse components and functions available in modern Intruder Alarm Systems.

Wilton Security Systems

Wilton Security Systems Ltd are a small, family-owned business, which has been involved in the security industry for almost 40 years. Consisting of a small group of security professionals, with diverse but highly specialised backgrounds, who have joined together to provide a truly complete security service. We are able to provide everything from Intruder Alarms to Closed Circuit Television Systems, from Access Control to all forms of physical and electronic security.

We are also able to conduct commercial investigations and we even provide other security companies with highly specialised technical support services as well as working with our partners to offer the full range of security disciplines.

We have a sister company which is a flourishing 'Counter-Surveillance' division, (Wilton Associates) which specialises in 'de-bugging' within the commercial sector, around the world. *(You can learn more about this on the website: www.wiltonassociates.com)*

Our customers include a large number of 'Blue-Chip' companies, who rely on us to secure their assets both material and physical.

EN50131 European Standards for Intruder Alarm Systems

Professionally installed Intruder Alarm Systems have to be installed to a certain standard and the installing company has to be accredited and inspected to ensure compliance with those standards.

The standard was 'British Standards 4737' but has now been replaced by European Standards BS EN 50131.

(European Standards are not retrospective, therefore systems which are currently installed to British Standards will continue to be maintained and updated to that standard).

The European standards have been under development for some time, and not all of the standards are complete, but work on these standards continues.

However, there are a suite of European Standards available to enable companies to install to. To enable this, the European Standards will include a document **PD 6662:2016**.

This is a Published Document (PD) and is used to call up parts of the current British Standards where European Standards are still under development. As new parts of the European standards are completed, they will eventually replace those parts of the PD6662, which will eventually be phased out.

Risk assessment

One of the most significant issues within the European EN standards will be evaluating the risk associated with the premises and determining a grade of system. This is because once the grade of a system is determined it will define the extent of the system, it's signaling and tamper security requirements.

The risk assessment is a process undertaken by the installer. It is basically the process by which he/she gathers the information necessary to design a suitable intruder alarm system that is commensurate with the risk and which meets the needs of the client, i.e., the grade of the system.

The risk assessment comprises of two surveys:

- Location/Building survey
- Technical survey

The location survey comprises two stages:

- A risk assessment of the building itself (Structural)
- Building Contents – the total value of target items (electrical goods, jewellery and so on) will generally indicate the level of security required.
- A risk assessment of the building's fabric and structure – how easy of difficult it might be too entire the building, the level of physical security, location, break-in history and so on.

The technical survey looks at those factors than might influence the choice and design of system and the final system design proposal. It will look at any aspect that might impact on the performance of the system such as electrical interference from local plant or machinery.

The grade of intruder alarm system will depend upon the performance required as determined by the location survey.

SECURITY GRADES

One of the most important aspects of the EN 50131 requirements is the concept of a security grade. For each installation the grade of system has to be chosen according to various factors. In the EN the grade is described in terms of the type of intruder and how much effort they would put into a burglary.

What are the Grades?

Grade 1 – Low risk
Intruders are expected to have little knowledge of the alarm system and may be restricted to a limited range of easily available tools. *(Note: Equipment graded for these types of alarms are typically the cheap equipment found in DIY stores, therefore Wilton Security System will not fit Grade 1 alarm systems).*
Grade 2 – Low to medium risk
Intruders are expected to have a little more knowledge of the alarm system and use a general range of tools and some specialist equipment.
Grade 3 – Medium to high risk
Intruders are expected to be conversant with the alarm system and have a comprehensive range of tools and portable electronic equipment.
Grade 4 – High risk
To be used when security takes precedence over all other factors. Intruders are expected to have the resources to plan an intrusion in detail and have a full range of equipment, including the means to substitute vial components in the alarm system.

Most domestic installations will require a Grade 2 system, with larger homes falling into Grade 3. Most commercial premises will require a Grade 2 or 3 system. The majority of insurance companies normally require a Grade 3 system where the system is a requirement of insurance cover.

On completion of the Survey/Risk Assessment we will provide you with a full and detailed 'System Design Proposal' detailing our proposals and listing the equipment we intend to install and where it will be installed etc.

A quotation will also be prepared and supplied along with our Terms and Conditions of business.

NPCC Security Systems Policy

Police Response

In accordance with the National Police Chiefs Council (NPCC) Policy, the Police in the UK will only offer a response to verified alarm signals from systems which have been granted a Police URN (Unique Reference Number). With this approach, the Police aim to provide an effective response to genuine intruder alarms. Monitored systems can only be installed by certificated providers and must be subject to a maintenance agreement. Excess false alarms will jeopardise Police response…

We are currently on the list of '*Compliant*' companies of the Devon & Cornwall, Dorset, Surrey, Sussex, Hampshire, Hertfordshire, Bedfordshire, Kent, Essex, Thames Valley, Cheshire, West Midlands, Greater Manchester and London Metropolitan Police forces**.**

Police Accreditation

The SSAIB is approved by all UK police forces; therefore, SSAIB certificated installers can obtain police URNs for the systems they install

We are an '**Approved Installer**' of the **SSAIB** (The Security Systems & Alarms Inspection Board).

Under the NPCC policy we are regarded as a Police 'Compliant Company' and will therefore be able to provide 'Remotely Monitored' alarm systems with Police response.

SSAIB compliancy checks ensure:

- Alarm Company Personnel have been security screened to the relevant British Standard and DBS checked
- Competence and experience of management and staff
- Insurance cover is relevant to the level and nature of work undertaken
- Company Premises are adequate for their activity and that the security of documentation and records is ensured
- That best-practice installations standards are maintained.
- That sufficient staff and resources are employed to provide the services offered
- Compliance with all relevant standards and codes of practice, British or European
- Identity cards are carried at all times.

During the annual inspections carried out on us by the SSAIB, they look at examples of our installations and our administrative processes, raising any 'deviations' they discover from regulations, their own stringent requirements and other regulatory factors.

We have not had a 'Deviation' raised against us under this inspection regime since 2005.

Types of Alarm Systems

Audible Only alarms

This is generally the most basic option. If the alarm is triggered, an audible alarm sounds to alert you (or a neighbour) that an intruder has entered (or is trying to enter) the premises. This type of system may be appropriate for most typical dwellings. However, it depends on the location of the property, the lifestyle or nature of the occupier, or the content. The system should always be fitted by a certificated installer to the relevant European Standards

Remotely Monitored systems

The system installed may be the same or similar to an audible only system, except that when the alarm is activated, a signal informs a remote monitoring centre. They may confirm that the alarm is not false and if necessary, then inform the police. A unique reference number (URN), which identifies the premises must be obtained by the installer from the police when the system is installed. To get this number, the installer and the monitoring centre must be registered with a certification body (such as SSAIB).

Monitored systems do not guarantee a police response, which is governed by their workload at the time of the receipt of your alarm call. If, however it is reasonably certain that someone has entered the premises, it will be flagged as a priority call.

However, if a system has three false alarms in a year the URN will be revoked by the police. To be reconnected, evidence that the problem has been resolved must be provided to the police within three months.

Having a monitored system without Police response is also becoming very popular. If you have a non-Police monitored system, on receipt of an alarm call, the monitoring centre will contact your keyholders until someone responds and deals with the situation. Such systems are cheaper to monitor and maintain than a system with Police response.

'ALARM RECEIVING CENTRE'

Our Alarm Receiving Centre *(previously called a 'Central Station')* is able to receive and process alarm signals from your alarm system, which, if activated will contact the Centre and send electronic data, which are received and translated by computers.

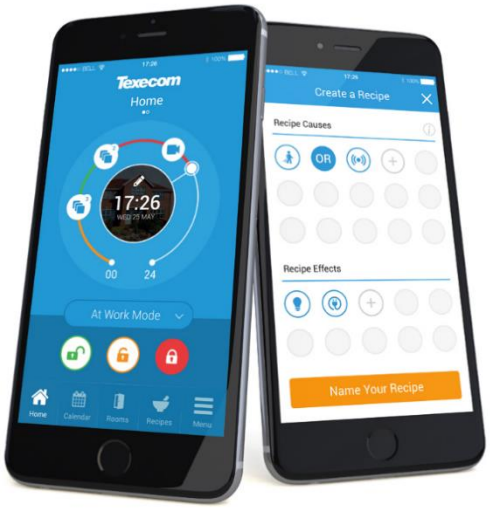
This equipment is able to distinguish between an 'Intruder' signal and a signal caused by the activation of a 'Panic Button'.

Costs for 'Remote Monitoring' include an annual 'Monitoring Fee' payable to the Alarm Receiving Centre. Also, to comply with European Standards and Police regulations we are required to 'service' your alarm every six months. *(Audible Only systems & non-Police systems only require one annual service visit)*
We are also obliged to make your system 'Engineer reset' which means if activated (including accidental activation's) you will not be able to reset the system yourself and normally an engineer will need to reset the system for you. However, normally your system can be reset 'remotely' if the cause of the activation is known and there is no need for your system to be checked by an engineer. (This saves time and money).

Your installation could include the provision of Texecom Connect

This will allow you to use your Smartphone to take direct control of your home and your security. Control the 'Arming' and 'Disarming' operation of your security system and receive notifications of system activity and alerts from anywhere in the world.

The Texecom Connect unit is an Ethernet or Wi-Fi communicator that facilitates the Texecom Connect experience by connecting any Premier Elite control panel to a local area network.



Available on the App Store GET IT ON Google Play

(Not currently available for Windows smartphones)

Please Note: This service is provided by Texecom Ltd (The alarm equipment manufacturers) and its operation is wholly outside the control of Wilton Security Systems Ltd. Please be advised that no guarantees are given on system performance in relation to any 'downtime' etc on their servers, nor can we be responsible for any notification failures of this system.

TEXECOM CONNECT is by far the most common form of monitoring being used by our customers today as it enables them to be alerted if their alarm activates, without the need of the alarm being monitored by our Alarm Receiving Centre with the associated costs of these services.

90% of our new installations in 2020 included this added equipment and service

Remote Servicing

If you have a TEXECOM CONNECT device connected to your intruder alarm system, it will also enable us to connect your system to the TEXECOM CLOUD service via the internet.

TEXECOM CLOUD enables us to remotely access the engineering programming and diagnostic part of your alarm system, in compliance with the requirements of BS9263:2016 'Code of Practice', for commissioning, maintenance, remote system checks and support for intruder and hold-up alarm systems.

This connection is fully encrypted and complies with GDPR legislation.

Please be assured that we cannot ARM or DISARM your system, this new facility does not allow us to control the operation of your alarm system in any way, it just provides us with access to your systems programming and diagnostic functions.

The system will remotely and autonomously interrogate your alarm system each week remotely and perform a diagnostic check, informing us if any issues that are found.

It will also enable us to access the system and make any minor programming changes that you may require without the need to visit your premises and potentially charge a call0out fee.

This is a very important and helpful function which can save you a lot of money over the years of its use.

WHAT DOES AN ALARM SYSTEM CONSIST OF?

Regardless of the size, type, complexity, or sophistication of the Intruder Alarm System that you might require, it will consist of three basics but distinctly separate sections:

1. **The CONTROL equipment.**

   *Now called **'Control & Indicator Equipment'** under the European regulations*

2. **The WARNING equipment.**

   *Now called **'Audible Warning Device'** under the European regulations*

3. **The DETECTION devices.**

In simplistic form, the **Detection Devices** are those items of alarm equipment that 'detect' the presence of an Intruder, and 'signal' that information to the **Control** equipment, which in turn operates the **Warning** equipment.

The design of any Intruder Alarm installation is dependent on a number of factors, from the type and size of the building to the individual requirements of the occupants. It is vital that before any installation of an alarm system is undertaken, your property should be subjected to a professional survey to determine the exact security requirements of both the building and the occupants.

Modern Intruder Alarm systems are very flexible in the functions and facilities that they are able to provide. The alarm system specified should be no more complicated that it needs to be to provide the level of protection required.

Therefore, the survey of your property should result in a written report specifying the exact position, type and performance criteria for each component part of the system, enabling you to fully evaluate the level of protection that the system will provide.

Before choosing an alarm system you should consider the quality of equipment that is to be installed and the standard of workmanship available from the installer.

You are now helped in this as your system will be installed using equipment that fully complies with the European Standards, that specify those items of equipment that have been tested and comply with their exacting standards, equipment reliability, build quality and the way that such equipment should be installed are all covered.

INTRUDER ALARM SYSTEMS

This guide will now attempt to describe in more detail but 'basic' terms the way that various aspects of your alarm system operate and to describe some of the functions available to you. You will appreciate that there are very many different types of equipment available; this guide deals only in broad terms and specifically with the more common equipment types.

Despite the apparent complexity of the different systems, rest assured that the operating procedures have been designed to be as simple as possible for you the user.

1. The CONTROL Equipment

Often described as the 'Heart' of any Intruder Alarm system, but perhaps better described as the 'Brain', modern control units feature the latest in 'Micro-chip technology' to enable them to perform many complex functions whilst still being easy to operate by the user.

The use of 'Micro-processors' as found in computers, enables the panel to be 'programmed' to perform a multitude of tasks, from switching the system 'On' and 'Off' *(Setting and Unsetting)* to altering the system configuration and timers.

The control unit will operate on mains derived 240-volt electricity, although the actual alarm circuits and wiring operate on a low-voltage of 12 volts. In the event of a 'power-cut' the system is fitted with a standby, rechargeable battery that will take over and operate the system for a prescribed time *(depending on system Grade etc),* until main's power is restored. When the mains supply is restored, it will automatically recharge the battery.

The alarm system will have several different 'User Functions' available. A general description of the most common features is now given. Not all of the described functions are available on all control panels.

All Control Panels today are operated by the use of a numerical keypad, you use a four (or six) figure 'User' code to 'Set' and 'Unset' the system.

This 'User' code can be changed at any time and on most control systems you can have more than one 'User' code and allocate different levels of security to each code. i.e. Cleaners, keyholders etc.

If your system is to be Remotely Monitored you will be required to set and unset the system by the use of 'Proximity Tokens'. This is achieved by presenting a 'Proximity Token' at the keypad, without having to use any code numbers. *Whilst mandatory on monitored systems this is an upgrade option on 'Audible Only' systems.*

Alarm systems also provide facilities to enable you to use part of the system whilst another part is switched off.

An example of this would be at night, when you could switch on the unoccupied part of the premises (downstairs) whilst you occupied the upper part of the premises. (Bedrooms, etc.).

If required, provision can be made to enable you to temporarily 'omit' certain zones from your system, when setting. This might be useful if you need to leave an animal in a room protected by a movement detector.

Having entered your 'user-code' and selected either 'Full' or 'Part' system *(depending on which parts of the premises you wish to be protected),* you will hear a low audible warning tone informing you that the system is setting.

Assuming you intend to leave the premise's empty and have selected 'Day' or 'Full' system, the tone will continue to sound until you have left the premises and the pre-programmed 'Exit' time has expired. *(Or Front door has been closed depending on system programming)*

On re-entering the premise's, you will again hear the warning tone, which reminds you to 'Unset' (Turn Off) the system within the pre-programmed 'Entry' time.

Another timer within the system controls the automatic reset of the alarm system should it be activated. In the event of your alarm activating, it will sound the alarm for a pre-set period of time *(normally 15 minutes*). After which the audible alarms will be silenced. The strobe light will continue to flash until the system has been reset.

On all of the panels that WILTON SECURITY SYSTEMS install, provision is then made for the system to perform an 'automatic reset' of the system. That is to say that all detection devices that are not in an alarm condition, will reset and continue to operate should the intruder re-enter the premises. *(If your alarm is remotely monitored it will not signal again to the Alarm receiving Centre until it has been reset)*

Another function found on most systems is 'CHIME' Certain zones can be programmed to generate a 'Bleep' tone whenever that zone is activated.

An example of this would be in a shop, where the front door can be so programmed to 'Chime' whenever it is opened, thus indicating a customer has entered the premises.
The Operators Keypad is able to display its status and will show when 'Setting', if any part of the system is in a 'Fault' condition.

On most panels we install today the operator's keypad is fitted with a display which has a full alphanumeric display that will display in plain text something like **'Front door open'.**

Various electronic audible tones are also generated to indicate the status of the system.

The keypad is not normally fitted to the control panel, but is a much smaller, self-contained unit fitted remotely from the control panel at some convenient position, from which the user can operate the alarm system. E.g., near the front door.

More than one such keypad can be installed if system design or the user requires it.

The control panel *(without any key-pad etc.)* Is known as an 'End Station' and this can normally be placed out of sight etc. The use of remote 'Key-pads' and 'End-Stations' normally results in a much neater installation.

Systems also have a 'Log' that provides a historical record of alarm activation's etc. Using the alpha-numeric display, each such event will have a 'Date-Time' stamp thus providing a unique record of who set the system, when and if activated, which zone was violated etc.

This provides an invaluable record of events in the case of an Intruder or other emergency. If you assign a separate 'User-code' to one of your members of staff, it will enable you to interrogate the log and determine the time they entered or left your premises!

This 'Log' also provides a valuable technical record for the engineer in the event of a system malfunction. Most panels will enable us to produce a hard copy 'Print-out' of the 'log', in order that the events can be recorded or the system parameters viewed.

As you are probably now aware the functions available from most control panels are many and varied. It is therefore vital that when your survey is carried out, full discussion between you and the surveyor results in a system design that fully meets your requirements.

2. The audible WARNING Equipment

This is the part of the system that signals the presence of an intruder or other emergency.

This includes the bells, sirens, electronic speakers, flashing lights etc. Any of which may be used to provide what is known as **'Local Audible Warning'.**

Like Control equipment there are many different types of external sounders in all shapes, sizes and colours. Electronic sounders that produce a sound similar to a Police-car siren are now more common than the previously more common bell.

WILTON SECURITY SYSTEMS use such electronic sounders, which are housed in a Polycarbonate cover *(no rusting box in years to come!)*

External sounders are designed to be 'Tamper-proof' and 'Weather-proof' and feature 'Self-Actuating' electronics, which will operate the sounder if removed from the wall or separated electronically from the control unit.

A high-intensity flashing xenon strobe is also incorporated in the external sounder. This will flash in conjunction with the audible alarm thus enabling easy identification of your premises if your neighbours have similar alarms. The strobe will also continue to flash, after the audible warning has reset, thus providing continued indication of an alarm condition at your premises, without infringing noise abatement regulations. *(Clean Neighbourhood and Environment Act 2005)*

Your external sounder unit is fitted with LED's (Light Emitting Diodes) 'Confidence Lights' that produces a small and discreet alternating flashing light from within the unit. This shows the box is 'real' and enhances the deterrent value of the system. There is also an option to illuminate your box so that the complete box is internally illuminated, providing additional deterrent value, especially where the property is located in a dark environment.

An identical box, without any sounder or electronics is normally positioned on the rear elevation of your property, to further increase the deterrent value of your alarm installation. These 'Dummy' boxes are identical in appearance to the main sounder, but normally without a confidence light being fitted, although there is an option for a battery powered unit to be included.

Legislation also requires for provision of a separate timer to be fitted within the external sounder. This timer must prevent the sounder from operating in excess of 15 minutes regardless of whether the control panel has a 'reset' facility. All external sounders fitted by WILTON SECURITY SYSTEMS fully comply with these requirements.

An internal sounder is normally fitted within the protected premises to supplement the external alarm and to provide the warning tones associated with Faults and the Entry and Exit procedures.

3. The DETECTION devices

These are the devices that detect the presence of an intruder and signal that information to the control equipment. There are numerous different types and principles; these are the most common;

MOVEMENT DETECTORS

The most common method of intruder detection today is the movement detector, of which the 'Passive Infra-Red' movement detector is the most common.

Typically, the P.I.R. Detector is about the size of a cigarette packet and is mounted in a room to provide "Volumetric" protection to that area.
Although P.I.R. Detectors are suitable for most applications, if the environment is not conducive to P.I.R. technology, then we would install 'Dual-Technology' detectors, which incorporate P.I.R. and a second detection technology called Microwave, which together provides a very high immunity to false alarms.

DOOR CONTACTS

Perhaps the oldest and most well-known detection device is the magnetic 'Door Contact'. This comprises of a magnetic reed switch fitted in a door frame with a magnet sited alongside it in the actual door. When the door is opened and the magnetic field removed from the area of the reed switch, then the alarm signal is generated.

Use of these switches today is normally limited to the final exit door (Front door) to provide an indication to the control unit when the 'User' leaves the premises, thus activating the Exit/Entry warning tones.

BREAK-GLASS DETECTORS

These units are basically a special microphone and amplifier that are tuned to the specific frequency to that generated by breaking glass. They 'Listen' for that unique sound and ignore other normal sounds within its detection area.

INERTIA DEVICES

There are numerous types of Inertia or vibration detectors available that are able to react to 'vibration' associated with forced entry into premises. Electronics within the units are able to filter out normal background disturbance and determine when the device registers a sudden increase in vibration that might be associated with the violent vibration caused in forcing a window open against its frame etc.

PERSONAL ATTACK BUTTONS

These buttons are connected to your alarm system and are 'Active' at all times, even when your alarm system is not 'ARMED'.

In the event of an emergency, they can be operated to cause a full alarm condition. They are most frequently sited adjacent to the front door or adjacent to a bed.

If your system has 'Remote Signalling' to our Alarm Receiving Centre, Personal Attack alarm signals are normally 'transmitted' silently, if providing Police response.

GENERAL

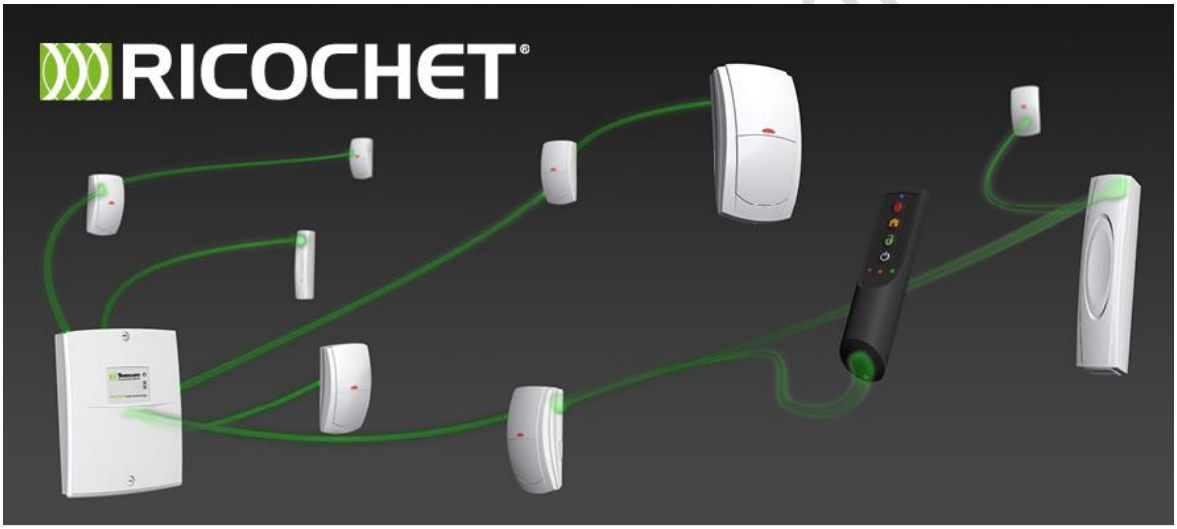
There are of course many other specialist devices available that can be incorporated into any installation for specific and unusual applications. Your surveyor will be able to advise you if your circumstances dictate this.

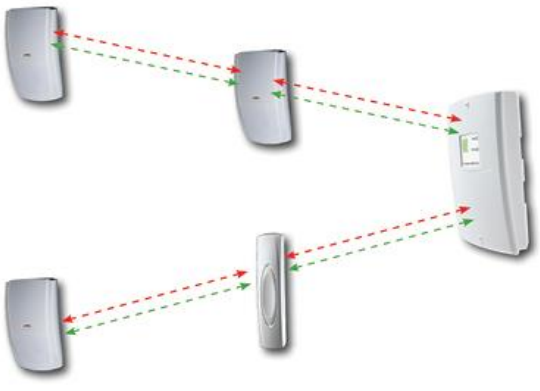
WIRELESS ALARM SYSTEMS

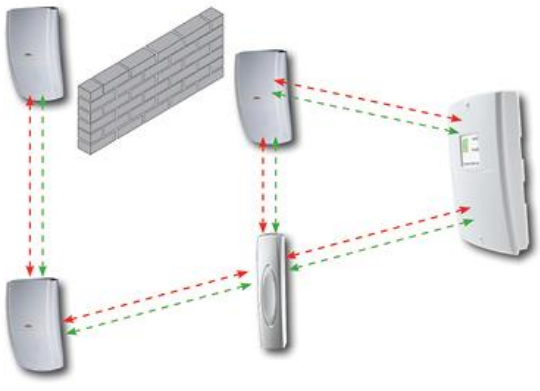
Wireless Intruder Alarm systems are becoming increasingly popular and 50% of the systems we install today are 'Wireless'.

The most obvious advantage of this type of system is the fact that with the absence of wires, it is often possible to achieve a neater installation. *(Although it goes without saying, we always endeavour to achieve the neatest possible installation and conceal the wiring wherever practical).*

We use the Premier Elite Wireless Systems from Texecom. Texecom has developed a new method of wireless security signalling based on the concept of mesh networking. Mesh-networking is the process whereby every single wireless device is capable of receiving and retransmitting any signal from any other wireless device on the network. The size, scalability and range of the entire system are extended as wireless signalling is no longer limited by point-to point communications. The range of a **RICOCHET™** enabled wireless system is greater than previous systems, with multiple devices capable of relaying messages to and from even the most remote locations in a building.







There are obvious advantages in having a wireless system, mostly associated with the fact that there are no wires to have to try and conceal in your premises, but the disadvantages are that they are typically more expensive than a Hard-Wired system, as detectors etc also have to incorporate a transmitter to communicate to the alarm control panel and their internal batteries will need to be replaced periodically, typically each year.

Well, that is it! If you are more confused now, that before you read this booklet, then we apologise.

You will at least now realise that having an Intruder Alarm System installed, involves careful planning and understanding of your particular needs, this is why it is vital that the system is designed only after a thorough site survey by one of our experienced surveyors.

We offer an industry leading 'Customer Price Promise', whereby if you should manage to obtain a quotation for the installation of AN IDENTICAL SYSTEM *(e.g., same equipment, same specification and same level of service)* we will match that price and give you a further 10% discount. We also offer special discounts if you have an alarm fitted in conjunction with a neighbour *(details on request)*

We have not even mentioned yet, details of our after-sales service and maintenance programs.

Briefly, your Intruder Alarm System will be unconditionally guaranteed for 12 months from the date of installation. In the unlikely event of a breakdown during the first 12 months, we will repair or replace the offending part of your system completely free of charge.

At the end of the year of installation, we will attend your premises and complete a 'Preventative Maintenance' inspection of your system. We will correct any problem found and give you a written report on the condition of the system. This is also Free of Charge.

For the following year, and successive years, we will offer you a competitively priced 'Maintenance Contract' that will guarantee the services of our engineer should your system develop a fault and provide you with an annual inspection of the system.

We offer three different levels of maintenance cover so you are able to select the one that best meets your budget and requirements. On 'Audible Only' (Non-Monitored) systems, they are not mandatory, so the choice is yours.

All of our systems fitted with a TEXECOM CONNECT can benefit from our remote access service which is provided free of charge as part of the maintenance contract.

If your alarm system is connected to our Alarm Receiving Centre, (Monitored) having such a maintenance contract is a Police requirement and must involve 6 monthly preventative maintenance inspections.

On 'Audible only' systems where your Insurance Company requires that you have an alarm system fitted, they will normally insist that you have a maintenance contract with an annual maintenance visit.

Finally, we hope that this guide has gone some way to answer some of the questions you may have had about Intruder Alarm systems. However, this is not intended as a substitute for discussion and if you require any further help or advice, please do not hesitate to contact us or ask us to come and complete a security audit/survey of your premises.

All surveys are completely free of charge and without obligation.

In 2018 84% of all new installations completed by us, Resulted from a personal recommendation by one of existing customers!

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CCTV Systems