FIRE ALARM SYSTEM BUYERS GUIDE

FIRE AND SECURITY

Contact

+44 (0) 161 874 5050

enq@touchstar.co.uk

touchstar.co.uk

7 Commerce Way, Trafford Park M17 1HW

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INTRODUCTION

The safeguarding of offices, warehouses, manufacturing plants and other working environments isn't just a priority; it is a necessity. Failing to protect your business premises against the risk and impact of fire hazards could result in non-compliance with key legislation, as well as potential injuries, death and damage to both premises and assets.

All of this can be mitigated with the installation of a robust fire alarm system. At TouchStar, we have been supplying tailored fire, security and monitoring solutions to businesses across a variety of sectors for more than 30 years.

Using our extensive experience in the fire and security sector, we have created this buyers guide that will help support you on your way through to the purchase of a new or upgraded system.

Covering everything from starting out, defining your system requirements, supplier selection and legislation through to types of systems and system support, we take you through the steps to help you determine the best fit solution for your premises.

1. The start point

Commercial fire alarm systems are a critical component in protecting your premises against the risk and impact of fire hazards. These systems provide prompt alerts, enabling swift responses that ensure safe evacuation and minimise the business impact of potential fire incidents.

The demands on any fire alarm system installation will vary from sector to sector. The first step towards designing a new system is to nail down exactly why it's needed and what it needs to achieve. Compliance and safety – are often the main reasons for looking to implement a new solution, demonstrating a commitment to safety and regulatory adherence is a necessity. However, there are many other motivations which will have an impact on the final proposed solution.

Whilst today's systems offer numerous operational and cost benefits, they are not faultless. Whatever the need, it is important that you take the time to thoroughly appraise your current organisational premises and set up at the outset. Choosing a best fit solution can really ensure your fire security operations are as robust as they can be, ensuring businesses are better protected, compliant, and effective. Some of the most common reasons for installing a fire alarm system include:

- **Legal & Insurance Compliance** – Meeting building codes and insurance policy requirements.
- **Enhanced Safety Procedures** – Saves lives by promptly alerting occupants to a fire incident.
- **Rapid Response** – Facilitating quick alerts to authorities for swift response and mitigation.
- **Cost & Impact** – Protecting assets and minimising the business impact of potential fire.
- **System Integration** – Modern fire alarm systems can be integrated with other security and building management systems, offering a seamless approach to overall safety and security. This integration can enhance situational awareness and streamline incident management processes.

2. Legislation and Compliance of Standards

When starting out, there are various industry standards and legislative requirements that should be considered alongside the installation of an intruder alarm system. These can be summarised as follows:

FIRE SAFETY LAW IN ENGLAND AND WALES

The **Regulatory Reform (Fire Safety) Order 2005**, often referred to as the RRO, Fire Safety Order, or FSO, is the cornerstone of fire safety legislation in England and Wales. This legislation outlines the fire safety responsibilities that must be adhered to by individuals and organisations. Compliance with the RRO is essential for ensuring the safety and well-being of occupants in all types of buildings.

- **Fire Safety Order**

The **Regulatory Reform (Fire Safety) Order 2005** applies to most commercial premises in England and Wales. It consolidates multiple fire safety laws into a single framework, defining a "responsible person" (employer, occupier, or owner) who must ensure fire risks are assessed, safety measures are implemented, staff are trained, and emergency plans are in place. The order is enforced by local Fire and Rescue Authorities who carry out routine, risk-based fire safety audits to ensure compliance. Those that are found to be non-compliant with the order can face issue notices, corrective actions or penalties.

BS 5839 AND EN 54 EUROPEAN STANDARDS

Operating in accordance with International and British Standards, the **BS EN 54** is a detailed set of European standards that address all the different components of fire detection and alarm systems for buildings. **BS 5839** ensures that any system installation is designed, installed and maintained with the level of protection needs that directly relates to the fire risk. By working with a supplier that adheres to these standards will ensure that you have system designed around relevant standards, detailing best practices and competency criteria.

3. Supplier Selection

There are many suppliers/installers that operate within the commercial security industry so it can be a complex task to narrow them down to the ones that will provide you with the experience, reliability, and support levels you may require.

Here are some common areas to consider when looking at potential suppliers:

ACCREDITATION / CERTIFICATION

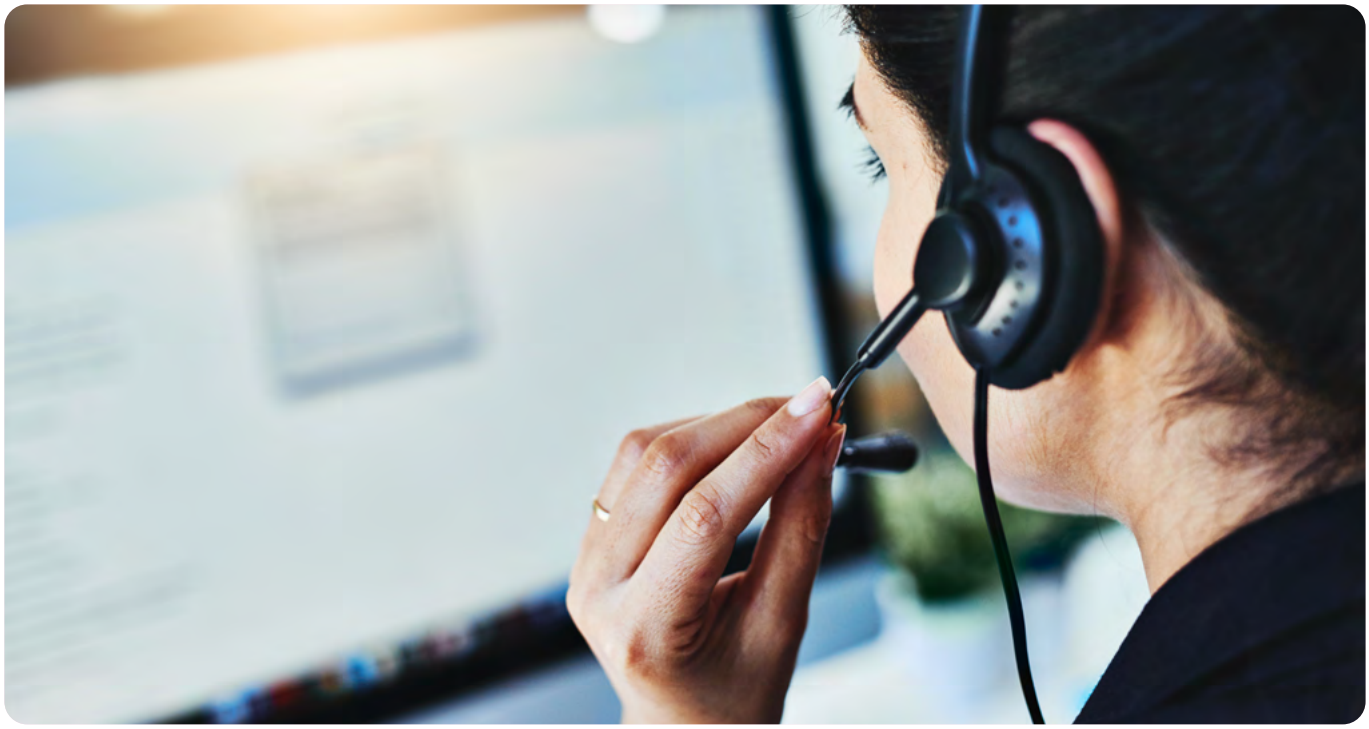
One of the best ways to determine whether you are dealing with a competent fire alarm installer is to check their accreditations. While any company can claim to meet British Standards, only certain organisations provide official accreditation to back up these claims, especially for fire and security installers:

- **BAFE**

BAFE (British Approvals for Fire Equipment) is the UK's independent fire safety register, ensuring that registered companies meet rigorous and continually reviewed standards of competency and skill. Partnering with a BAFE-registered provider guarantees high-quality, compliant fire safety solutions, enhances trust and credibility, and offers expert guidance and tailored protection, ultimately ensuring peace of mind.

- **The Fire Industry Association (FIA)**

The Fire Industry Association (FIA) is the UK's largest fire protection trade body and it plays a pivotal role in shaping fire safety standards by providing expert technical training, qualifications, and guidance to professionals across the industry. Partnering with a member of the FIA ensures collaboration with a company committed to high safety standards and third-party certification, backed by the latest industry best practices and regulations.



3. Supplier Selection (continued)

Other industry standard accreditation to look out for include:

CASE STUDIES / TESTIMONIALS

A company that can demonstrate a portfolio of happy clients, testimonials and case studies provides a good indication you are dealing with a reputable installer. Companies should also be happy to provide references or a site visit if applicable.

SERVICES

It is worth investigating what services your fire alarm system supplier can provide, and this can help you understand what support you are likely to expect. A supplier that has been established for many years and has their own in-house installation team provides a good level of confidence that you are likely to receive high service levels. However, it is also important to ensure that your service requirements are aligned with the capabilities of your supplier. Most suppliers can be grouped as follows:

- Supply Only.
- Supply and Install.
- End-to-End – Design, specification, install, support, monitoring and maintenance.

INSURANCE

Checking the insurance details of any supplier is a must. Most suppliers that carry an accreditation will be covered, but it is always a worthwhile activity to ensure that they have the correct cover in place.

It is important to check for the following:

- Employers' liability to cover their own staff in the event of an accident.
- Public liability to cover damage or injury to clients and their property.

4. Fire Risk Assessments

A fire risk assessment is a thorough evaluation of a building's fire safety, designed to identify risks and recommend improvements. Legally required under fire safety legislation, it ensures the protection of both people and property. The responsibility lies with the business's designated "responsible person," who must either conduct the assessment or commission it from a Third-Party Certificated provider, such as those registered under the BAFE SP205 Scheme.

This assessment is essential before specifying any fire alarm system, as it influences key safety measures like escape routes, emergency lighting, signage, and firefighting equipment. Additionally, it determines the appropriate fire system category, tailored to the specific needs of the premises – whether prioritising life safety, property protection, or both.

FIRE ALARM CATEGORIES

When selecting a fire alarm system for a commercial property, it's essential that this is specified against the correct category as determined by your fire risk assessment.

The three main categories are: **Category M** (Manual Systems), which rely solely on manual call points to trigger alarms; **Category L** (Life Protection Systems), which include automatic detection and are subdivided based on the level of protection needed; and **Category P** (Property Protection Systems), focused on safeguarding property with automatic detection and remote signalling to emergency services. In some cases, a mixed category system may be implemented to satisfy the requirements of all relevant parties.

5. The Survey Process

It is important that when considering a fire and security installation of any kind that you should look for a supplier that will help you undertake a no obligation appraisal of your requirements and objectives.

Requirements can vary from sector to sector, the size and complexity of the building and the type of business trading from the property can all have an impact on the final recommendations or the installation phase of your project.

Following your site survey, you should expect a provider to address the following aspects:

- **Insurance requirements.**
- **IT network requirements.**
- **Customer responsibilities.**

Any recommendations should follow the recommendations of your fire risk assessment whilst considering the scalability and futureproofing of your proposed installation.

6. Types of Fire Alarm Systems

In Article 13 the RRO 2005 states that '*the premises are, to the extent that it is appropriate, equipped with appropriate fire-fighting equipment and with fire detectors and alarms*.'

Once you have undertaken your fire risk assessment and specified what your new fire alarm system needs to be capable of, it's time to decide on the technology that will best do the job.

The system design specification should list the equipment and components to be supplied, detail their proposed locations, standards compliance and contain a general indication of their coverage or purpose.

Fire alarm systems typically consist of smoke detectors, heat sensors, a control panel, fire extinguishers, emergency lighting and a communication network. As a start point, there are several different types of systems on the market which can be defined as follows:

CONVENTIONAL FIRE ALARM SYSTEM

Conventional fire alarm systems offer a basic entry level system which are more suitable for smaller premises. This type of battery backed up system is wired back to a fire control panel and required to be triggered manually, often by a fire exit location. Whilst these systems are both cost-effective and a reliable choice for smaller premises, they lack the advanced detection capabilities and scalability of more sophisticated systems, which may limit their effectiveness in larger or more complex environments.

ADDRESSABLE FIRE ALARM SYSTEM

Offering distinct advantages for commercial operations, addressable fire alarm systems provide precise location identification, enhanced communication, improved reliability, flexibility, scalability and reduced false alarms. These systems provide a robust choice for comprehensive fire protection in any commercial environment but can be more expensive and complex to install compared to wireless alarm options.

WIRELESS ALARM SYSTEM

Perfect for temporary sites or those whereby a wired connection is not viable. Wireless systems are much easier to install, which is of particular benefit to complex operations where dedicated wired installations are not feasible. Wireless communication connects the detectors and components back to the main control panel. These are quicker and less disruptive to install.

AIR ASPIRATING SMOKE DETECTION SYSTEMS

Aspirating smoke detection systems continuously sample air to provide critical early detection of potential fire hazards, allowing valuable time to investigate and initiate an appropriate response. They are ideal for areas where early detection is paramount such as IT server rooms or storage facilities with valuable assets. They provide flexible and wide area coverage and can be installed in various environments. These systems are typically more complex and expensive to install – and require careful calibration due to their highly sensitive nature.

7. Fire Protection Products

FIRE ALARM SYSTEM CONTROL PANELS

A fire alarm control panel serves as the hub as part of a comprehensive fire alarm system. It is the core component that integrates and manages all fire protection devices within the setup.

Every sensor, detector, and warning device will connect with the control panel, which in turn, continuously monitors their status.

When any of these devices are triggered – the control panel processes the alert and notifies the user immediately. The alarm control panel ensures that the user is promptly informed of any potential threats, enabling swift and appropriate responses to safeguard their people, premises and assets.

DETECTORS

There are various types of detection devices and features that may be incorporated. The type and number of detectors will be specified by your installer dependent upon the outcome of your fire risk assessment:

- **SMOKE**

The two most recognised smoke detection technologies are ionisation and optical. Ionisation smoke detectors are particularly responsive to flaming fires, as they detect the tiny particles produced by fast-burning fires. In contrast, optical smoke detectors are more effective at sensing smouldering fires, as they detect larger smoke particles that are typical of slow-burning fires.

- **HEAT**

Heat detectors are commonly used in areas whereby smoke detectors are less feasible. These detector types can be classified as either fixed temperature or rate of rise, triggered either when a maximum temperature has been reached or following a rapid increase in temperature. Heat detectors are less susceptible to false alarms caused by smoke, dust or steam, which is why they are well suited to areas such as kitchens or dusty industrial environments. However, their limitation is that they typically react only after a fire has begun to raise the temperature, potentially delaying the detection.

- **MULTI SENSOR DETECTORS**

Multi-sensor detectors integrate smoke and heat detection into a single device, offering a significant advantage in minimising false alarms and enhancing reliability. By combining both detection technologies, these sensors provide a more comprehensive approach to fire safety, addressing limitations of single function detectors. Multi sensor detectors are particularly beneficial in complex environments where one sensor may not be sufficient. These device types are typically more expensive, making them less economical for some applications compared to simpler, single-function devices.

7. Fire Protection Products (continued)

WARNING SOUNDERS AND BEACONS

For commercial premises, it is crucial that fire alarm sounders should be strategically placed in all common areas of a building to alert occupants of a potential fire as quickly as possible.

In most installations, sounders are a standard component. If the premises have a noisy environment, such as factories, warehouses or retail environments, then consideration should be given to having beacons as well as sounders.

INTERFACES

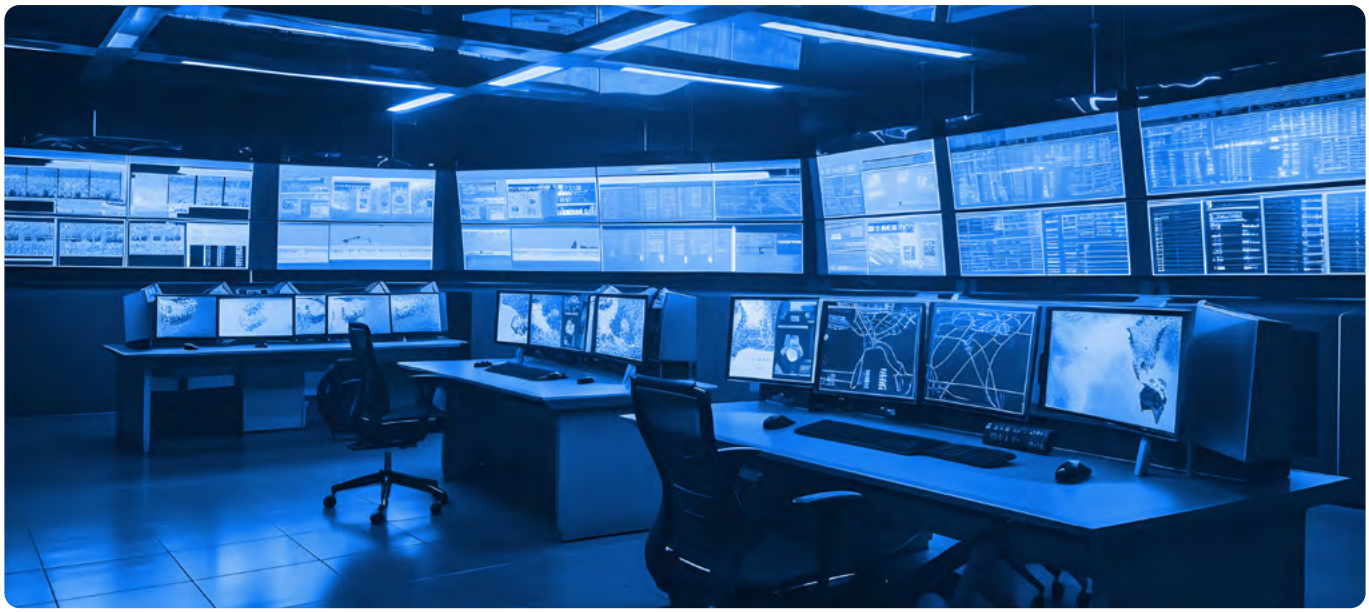
- **FIRE ALARM INTERFACE**

It is important to remember than any building that operates an access control system should ensure it is fully integrated with a fire alarm system so that in the event of a fire alarm activation all doors are released enabling free movement to a place of safety. Your system should also be capable of being integrated with all other key areas of your building management systems as recommended in your fire risk assessment, these could include sprinkler systems, emergency lighting and power source management. Commercially sensitive areas or high security risk areas can be exempt from these restrictions, your installer will be able to make the appropriate recommendations for these scenarios when specifying your installation.

8. Monitoring

Fire alarm monitoring ensures that any premise is fully safeguarded and protected, 24 hours a day, 7 days a week.

Your appointed Alarm Receiving Centre (ARC) should adhere to a predefined procedure upon receiving an alert. This involves notifying the appropriate response services and keyholders. Systems can be set up to automatically communicate with the relevant contacts via email, ensuring multiple parties are promptly informed so the issue can be addressed immediately.



9. Cost

When looking at quotes comparatively, it is very common for costs to vary.

Whilst reviewing a fire alarm system quote, it is often good to review them with the following cost checks in mind:

- **Types of devices** – The costs will vary dependent upon quality and features such as the panel, detector, warning device types and so on.
- **Understand your power source** – There are significant cost differences between wired and wireless systems. The cost of the fire system components also vary dependent upon the power source, wireless detectors are notably more expensive for example. With regards to any power work required, it is important that you check whether your installer is accredited for electrical works, if this is not the case, there will be an additional cost required for an electrical contractor.
- **Service charges** – Some providers may or may not include costs such as monitoring, maintenance and repairs. As a minimum, servicing costs must be included – any fire alarm system is a critical part of the buildings infrastructure and it is a legal requirement that it should be maintained as such.

10. System Installation and Training

Once you have approved a quote you should expect a project delivery manager to be assigned to your installation. The purpose of the project delivery manager will be to verify the initial recommendations, undertake the appropriate level of testing to support the process, carry out the relevant risk assessments, issue a method statement and plan the installation.

A good project delivery manager will work hand in hand with the relevant contacts on your site to develop the infrastructure for an effective deployment. Identifying the work areas and schedules, a successful installation will ensure there is little or no disruption to your day-to-day operations.

11. Commissioning and Handover

Once it's in place, it's time to test the system. Your installer should run through a thorough set of tests to ensure the solution is as required/quoted to confirm an "as fitted" specification. Your installer should offer guidance on testing the system and provide a logbook.

If you're working with an BAFE accredited company, they should supply detailed documentation, including installation and commissioning certificates. An approved BAFE quote should clearly outline the expected system, which can then be compared to the actual installation, ensuring consistency and protection for both the customer and the installer. At the end of the handover, the customer will be required to sign a Completion Certificate, confirming acceptance of the installation.

TRAINING

Once your new fire alarm system is in place, you should expect to receive full instruction on how to use the system and undertake full training in its use.

Your installer should be able to provide full operating instructions alongside short onsite training sessions, run in small groups, covering everything from basic daily operation to specific scenarios they are likely to face. A train the trainer approach works best as you then have onsite ownership that champions the solution. Once new working practices are rolled out, it's also a good idea to add fire security and any other updated processes to staff handbooks and policy documents.

12. Service Support and Maintenance

When looking for a supplier, it is worth looking for a well-established supplier that has a good network of local engineers to provide the best and most reliable support for your installation.

Fire alarm systems require regular maintenance to ensure they are operating efficiently, are in good working order, and well-maintained. It is important to be aware of what support your supplier can offer and whether these align with your needs, e.g what are their response times and whether they offer out of hours etc.

13. Conclusion

We hope you have found this guide useful. If you need any further information or guidance, talk to our team of experts who will be able to advise you on any element of a fire alarm system installation.

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touchstar

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