Get a five-star life safety solution with wireless smoke detection

Application Guide of Wireless Detection Systems in Hotels

NOTIFIER®
by Honeywell

Get a five-star life safety solution with wireless smoke detection

Despite sometimes being considered a recent innovation, the first wireless smoke detection systems were introduced over 20 years ago. The adoption of this technology continues to grow and it has proven to be particularly suitable for hotels, where reliability, safety, flexibility and business continuity are vital.

Guests often stay in hotels for short periods of time and have little opportunity to familiarise themselves with evacuation routes and fire safety regimes. Therefore, a smoke detection system plays a vital role in keeping people safe in the event of an incident. Choosing the right life safety system is vital and wireless smoke detection is not only as effective as its wired counterpart, but offers some distinct advantages in terms of reliability, ease of use, flexibility and cost effectiveness – attributes that make it an ideal solution for hotels.

SOMETHING IN THE AIR

In its early days, wireless smoke detection was derided for its unreliability, but these issues have long since been addressed. Modern systems such as Notifier's Agile offer unmatched levels of communication reliability and installation flexibility, providing a robust and efficient method of delivering an integrated fire detection solution, with greater simplicity and scalability.

One of the most significant advantages of using wireless technology in hotels is the ease in which it can be installed – with no drilling, digging and associated mess. Aesthetics are equally important and wireless systems avoid unsightly cabling, trunking and associated cable management, and can even be used in buildings undergoing refurbishment or where temporary protection is required. In circumstances where an existing life safety infrastructure is being extended and/or modified, it is always advantageous to use a wireless smoke detection system, such as Agile, which is backwards compatible with fire alarm control panels that are already in-situ. This has many benefits including the simplification of the installation, engineering and commissioning processes.

For those involved in the renovation of heritage buildings, the challenges posed by life safety system provision can be difficult to overcome and in these circumstances wireless smoke detection is the only realistic option.

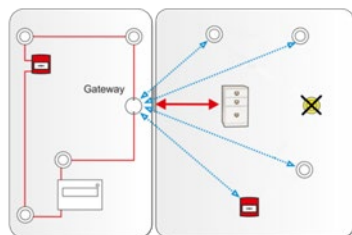Agile Wireless Smoke Detection

ON A NEED TO KNOW BASIS

One of the most important elements of any wireless smoke detection installation system is a radio site survey. This process must be thorough and comprehensive, as much of the subsequent configuration will depend on the results. It's always preferable to do this physically by visiting the site, however, Agile offers unique software tools that allow the user to design and simulate the quality of the wireless network from a remote location, as well as assisting with design, commissioning and maintenance.

All results at the survey stage should be recorded for future reference. This data should include signal levels relating to all the radio devices and the background noise level, and confirmation that these signal levels are in compliance with manufacturer recommendations. In the case of a networked system, this should also include the signal levels for the radio links between panels.

ALWAYS ON

Wireless smoke detection systems must comply with EN 54-25, which is now the common standard across Europe. This standard was established to ensure that wireless smoke detection systems provide the same level of protection as hardwired equivalents. EN 54-25 specifies the requirements for how wireless systems operate, such as bidirectional communication, redundancy through dual battery back-up, minimum battery life, improved fault monitoring and a defined product testing procedures.
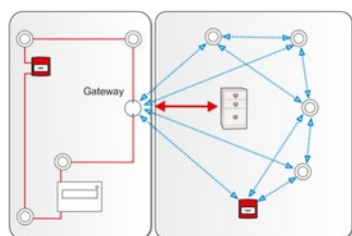
Not all wireless smoke detection systems are the same though and in stark contrast to a star network, where wireless devices are in direct communication with either a central wireless gateway or a repeater and can be blocked, mesh technology offers multiple communication paths to minimise interference, maximise system robustness and allow continuous, bidirectional communication. If a connection path is broken, the mesh network automatically re-routes the signal, providing a secure and uninterrupted network. Each device acts as an independent router, allowing for multiple communication paths and if one link is broken, all of the devices continue to communicate with each other without any loss of coverage.

Star Network

Mesh Network

THREE OF A KIND

To comply with EN54-25 wireless systems must conform in three specific areas – site attenuation, alarm signal integrity and interference immunity. Multichannel frequency diversity ensures that this requirement is met, providing maximum levels of protection. For example, Agile's ability to switch between as many as 18 radio channels and two antennas per device, along with an extended communication range, provides greater tolerance to interference.

On a practical level, when a hotel room is reconfigured with a new layout the system will continue to work as originally intended. For example, in a false ceiling with plates, it would only be necessary to move the plate where the Agile device is installed. A further additional benefit is that no tools of any kind are necessary to successfully carry out this task.

DO NOT DISTURB

Those unfortunate enough to have had to evacuate a hotel in the middle of the night due to a false or unwanted alarm will understand the negative impact of such an event. In addition to the unnecessary intervention of personnel and the high costs of having the fire and rescue services attend, the impact of lost revenue, wasted food in restaurants, reduced customer satisfaction and reputational damage should not be underestimated.

Regular maintenance can help identify issues in advance. The software tools that are provided with Agile have a diagnostic function that provides a real time picture of the network status and can identify any faults without compromising the operation of the system. Furthermore, monitoring technology accurately predicts battery status, eliminating the need to replace batteries on every inspection.

NO STRINGS ATTACHED

Wireless smoke detection has entered a new era and gone are the days when it could be considered an inferior alternative to wired technology. Factors such as ease of installation and low total cost of ownership make wireless smoke detection a flexible, cost effective and reliable solution that is perfect for hotels and other hospitality based environments.

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