

University of Reading

Fire alarm systems and design

Overview

Fire alarm systems and component products specified by Reading University have been carefully selected to be compatible with other critical life safety and security systems. It is therefore essential this guidance is adhered to when designing or proposing a new installation.

Design and overall compatibility

When designing a fire alarm system to be used on the university campus or in its buildings the designer/installer must be familiar with the current monitoring system, fire strategies and networking signalling arrangements employed at the university. This is to ensure full compatibility, ongoing maintenance and compliance with signalling and message handling protocols used at the final monitoring station.

The design of the fire system must be approved by Honeywell Gent not a system integrator.

A cause and effect document must be approved and signed off by the University Fire officer and the Chief Engineer /Head of Maintenance prior to installation and commissioning.

Product choice

It is essential all new systems should be designed using products from the Honeywell Gent Viglon Plus Analogue Addressable range. **The use of other manufactures systems is prohibited.**

Installation

Installation of cabling, panels, bases, interfaces, aspirated pipework and power supplies may be carried out by framework electrical contractors or electrical contractors appointed directly by a main contractor.

Adequate containment and cable management must be used to comply with BS 5839 and BS 7671.

Please also refer to the University of Reading Electrical Specification document for further information.

Sensor heads and sounders must only be installed by Honeywell Gent at the point of commissioning to avoid any contamination from dust. Any sensors that have been previously installed and or used during the construction stage must be replaced at the commission stage.

The design of the fire system must be approved by Honeywell Gent and the Fire alarm systems must be commissioned by Honeywell Gent.

If an integrator is used by the contractor to carry out the installation of the cabling, panels, bases, interfaces, aspirated pipework and power supplies it must be understood that this is the only element of the work they can undertake.

Commissioning

It is essential that consistency of programming and configuration is maintained across the university estate. All systems must be commissioned directly by Honeywell Gent to ensure this consistency and compatibility with other systems.

The electrical contractor installing the wiring and containment shall provide Honeywell Gent with all drawings showing detector positions, loop cable routings and cable lengths and loop loading calculations before the system can be commissioned.

Locations of interfaces and aspirated systems should also be provided at the commissioning stage.

Unless these fundamental points are observed the system cannot be accepted for operation on the university campus and monitoring network.

After each commissioning or recommissioning change the university commissioning tool configuration files must be updated by a Honeywell Engineer within 24 Hours of any changes.

Any system that has been commissioned by a system integrator will not be accepted and will need to be recommissioned by Honeywell Gent.

Aspirated detection

The use of Gent or VESDA Aspirated Detection Systems connected to or interfaced to the main addressable fire system is recommended to avoid difficult access in voids, lift shafts and restricted places.

Only Gent or genuine VESDA Aspirated Detection Systems may be used.

Access should be provided for the maintenance test points at the end of the pipework. Ideally these should drop below the ceiling level to provide easy identification. If this is not possible then an engraved Trafolyte label should be fitted just below the test point.

Wireless and battery detection systems

The use of wireless systems and battery detection is not recommended. Permission must be gained from the University Fire officer and the Chief Engineer /Head of Maintenance before installation of these devices and systems are used.

Silent tone sounders

The use of these sounders is restricted to use within specific locations where need dictates the normal sounder is not suitable. Permission must be gained from the University Fire officer and the Chief Engineer /Head of Maintenance before installation of these devices and systems are used.

Spare system and loop capacity

Each panel should have at least 1 spare loop card fitted to allow for further expansion of the system.

Each loop card should have spare capacity to add another 25 % of additional detection devices.

Each loop card should have spare capacity to add another 25 % of additional sounder devices.

If two panels are networked together to provide the required system capacity the loops should be connected to balance the loops across these two panels.

Software and firmware

All software and firmware must be up to date and current and of the same version in all new panels.

Loop cards should all be the same version when installed.

Batteries

All batteries should be dated with the date of installation.

Handover

At handover the commissioning certificate must be signed by Honeywell Gent.

The cause and effect must be demonstrated

The annual maintenance of the system will be by Honeywell Gent

Updated of the university commissioning tool

Warranty

Warranty for the product must be directly through Honeywell Gent not the system integrator.

Additional information

Please refer to additional design notes detailing specific items such as **Red and Blue key switches and interfaces for plant shutdown, Gas isolation, BMS, Lift recall, Security and Access control.**

C A Smith - Chief Engineer

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Honeywell
GENT



Vigilon



The Vigilon System

The Vigilon System

Our Vigilon Plus system is the most comprehensive life safety system available in the market today. The combination of the powerful software in the control panel and the intelligent loop powered devices delivers a flexible, easy to use system for all types and size of buildings.

Vigilon's modular concept makes systems simple to design for any building. Panels can be installed as standalone units or as multi panel networks of 200 panels/nodes.

Compact Plus is ideal for smaller systems needing upto 2 loops, while Vigilon Plus can manage up to 6 loops allowing easy and flexible panel selection.

Vigilon Plus panels are available with 24 and 72 hour standby power supply options.

Both panels can be installed in the same network.



Responds quickly to real fires without the risk of false alarms

- Vigilon's advanced sensing technology and powerful software processing in the control panel quickly identifies real fires
- Powerful software algorithms are used to match the pattern of activity in the sensor with data from test fires stored in the panel memory. False inputs that do not match a real fire pattern are ignored or flagged as faults
- The latest Vigilon range of S-Quad multi-sensors incorporates four separate technologies in the same sensor that combine to create a range of sensing states appropriate for different environments
- Unique programming options allow these different sensitivity states to be used to reduce the likelihood of known risks triggering a fire, thus avoiding unnecessary evacuation while maintaining the ability to give a fast response to a real event



Cost effective to install

- The Vigilon loop manages the largest number and variety of devices, with up to 200 sensors, sounders and interfaces connected to the same 2 core loop circuit
- Vigilon loop has a high capacity field alarm devices with sounders, VADs and interfaces are loop powered so there is no need for auxiliary power supplies
- Every loop device includes an integral short circuit isolator reducing installation costs at the same time increasing system integrity
- Multi-function devices combining sensor, sounder, speech and EN54-23 visual alarm reduce the number of individual devices that need to be installed
- Every S-Quad sensor has a configurable, monitored input. This can be used instead of an interface saving on installation and product costs

Flexible and simple to use

- The Vigilon control panels have a simple user interface with LCD screen providing accurate information in an emergency
- Every Vigilon loop device has a unique address assigned in software. Text labels, of up to 64 characters, can be assigned to each address. This allows fires to be located quickly and assists troubleshooting in commissioning and maintenance
- PC Based commissioning tools release powerful programming options that allow complex fire plans to be configured without extra equipment

- Flexible programming options are available at the panel so minor changes can be made without the need for PC tools
- Multi-panel networks can be programmed seamlessly as one system. This allows for flexible design and system management
- Vigilon Systems can be easily extended or changed. Additional loops and extra panels can be added without affecting the operation of the existing installation

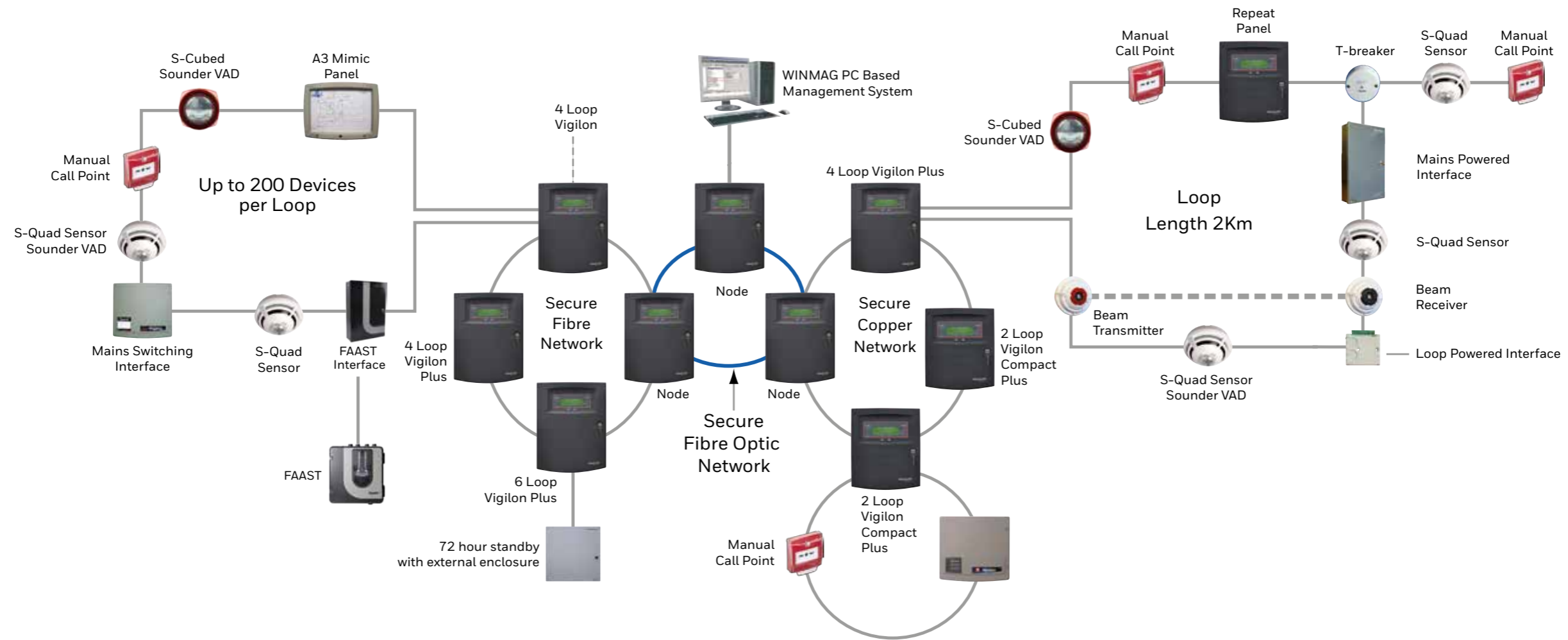
Provides peace of mind

- The Vigilon panel, S-Quad sensors and S-Cubed sounders are certified by LPCB to EN 54 (the European standard for fire detection systems)
- Loop architecture combined with short circuit isolators in every device ensures maximum tolerance to cable faults
- S-Quad sensors can be locked into their base protecting them from unauthorised removal
- Advanced loop and network communications protocols ensure a rapid response to fire triggers achieving response in under 3 seconds even across networks
- Gent ensures that every system is designed, installed, commissioned and serviced by highly trained Gent approved System Integrators



System Architecture

A multi-domain Vigilon Network has the capacity to support up to 200 panels per system



- All products in the Vigilon system are manufactured by Gent which ensures experienced, consistent workmanship throughout your entire life safety system
- The Vigilon system has fully integrated solutions with voice alarm and public address systems. In addition, its wide interface range allows inputs and outputs to other building management and life safety systems

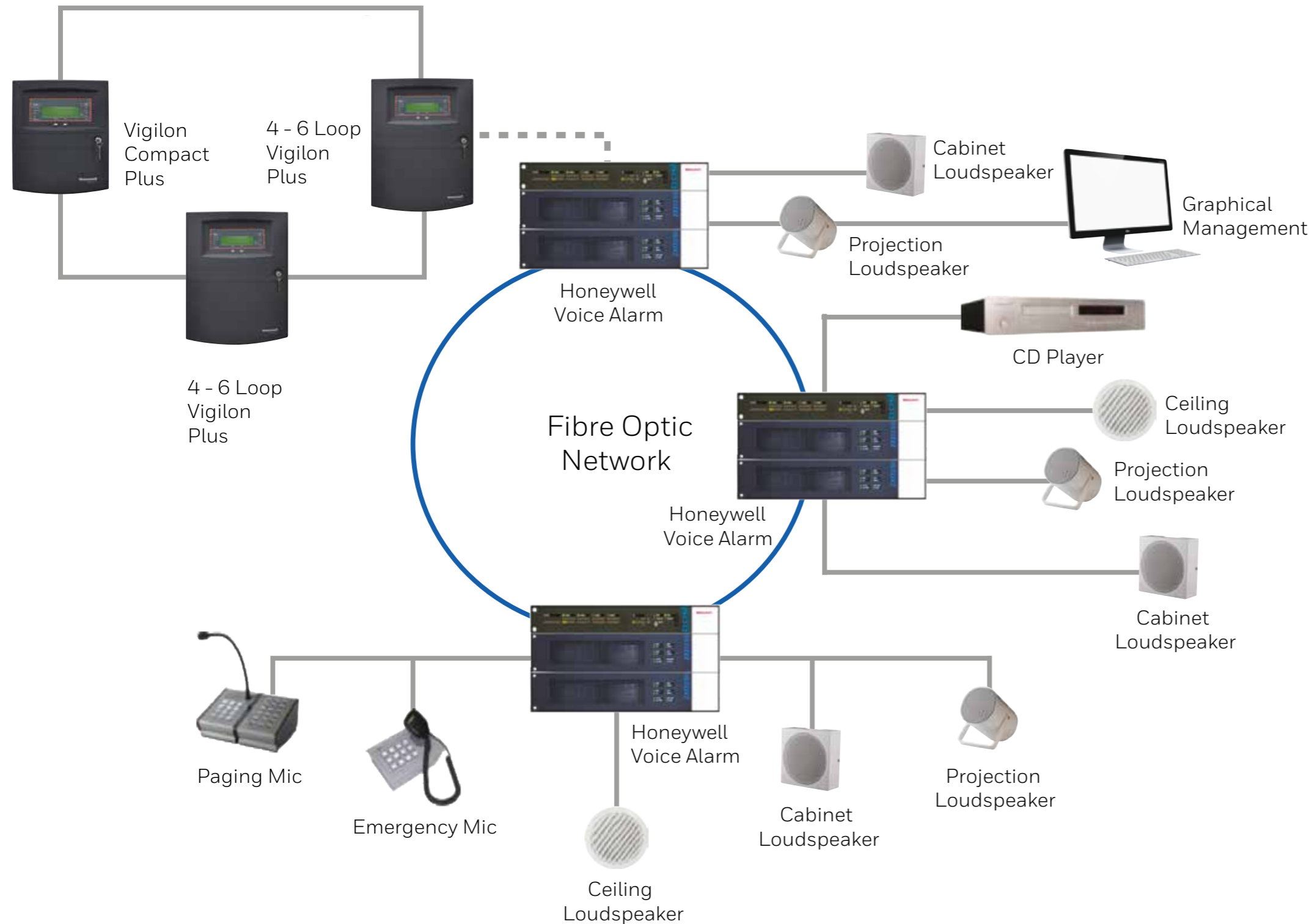
- Vigilon's powerful software gives you the ultimate flexibility to pre-configure detection states based on the time of day, building use or any other customer driven parameter
- SOFT or SAFE addressing across the system eliminates duplicate addresses, allows the building user to switch device type without affecting the address and allows additions to the system without affecting site drawings

- The Vigilon system is fully compliant with all relevant industry standards. The products that make up the Gent system are LPCB approved to EN54, complying with BS 5839-1:2013
- In order to ensure your Vigilon system is not compromised by poor design, installation, commissioning or maintenance, Gent has selected, trained and approved 90 System Integrators to support Vigilon to its optimum performance



Voice Alarm and Public Address

Our advanced and flexible range of Voice Alarm and Public Address systems are integrated with Vigilon to suit a wide range of sites and applications.



Digital Output Module (DOM)

2 variants of DOM - the heart of the system managing 4 audio channels to either 8 or 24 loudspeaker zones:

- Audio quality and graphic equalisation
- Monitoring of the audio signal from source to loudspeaker
- Configuration of emergency evacuation
- Routing of paging and entertainment



Advanced Class D Amplifiers

- 4 x 125W, 2 x 250W, 2 x 400W or 2 x 500W versions
- High frequency range to suit all applications
- Full power performance in battery standby



Paging Microphones

- Emergency microphones in accordance with EN54 part 16
- Range of paging microphones with up to 128 configurable control buttons
- Connection of data and power over standard structured cable



Ancillary Control Units

- SCU for advanced management of battery
- UIM - Universal Interface Module for control and audio inputs
- Serial link to Vigilon panel using dedicated protocol



S-Quad Multi-Sensor Detection

The patented technology in the LPCB approved S-Quad sensors for Vigilon minimises the risk of false alarms whilst increasing the integrity of the fire decision. Uniquely the S-Quad sensor range has a series of states that make it especially effective at significantly reducing unwanted alarms.

A ground breaker in fire sensing expertise, the LPCB approved S-Quad incorporates sensor, sounder, speech and EN54 visual alarm functionalities in one single housing.



Detects real fires quickly

- The combined power of S-Quad and Vigilon provides quick, intelligent fire decisions
- The ability to programme sensor states for different times of the day and night improves S-Quad's response to real fires and minimises false alarms
- S-Quad incorporates four separate sensing elements – heat, forward optical, backward optical and carbon monoxide that combine to detect real fires quickly

Puts an end to false alarms

- S-Quad's unique combination of sensing elements eliminates a higher number of false alarms
- S-Quad's patented dual optical sensor allows it to accurately distinguish between smoke and white dust or steam

- S-Quad is capable of switching between different sensor states to suit changes in the environment

Cost effective to install

- S-Quad incorporates sensor, sounder, speech and visual alarm functionalities all in one single loop powered device
- S-Quad is powered by the Vigilon loop so it requires just one pair of cables to provide its multi-sensor, sounder, speech and strobe functionalities
- S-Quad offers market leading loop capacity with 200 sensors, 125 sensor sounders or 100 sensor strobes
- S-Quad's VADs are all certified to EN54 part 23 with up to 100 devcies supported by the Vigilon loop

Ensures peace of mind

The capability and function of the Vigilon with S-Quad ensures that the system complies to the requirements of:

- The Regulatory Reform (Fire Safety) Order 2005
- The Equality Act 2010
- The Building Regulations Approved Documents B & M
- The British Standard BS 5839-1:2013

All S-Quad VAD signals, voice messages and sounders are fully synchronised across the system, as well as being synchronised with S-Cubed devices

Vigilon Beam Detection

Vigilon's beam sensors are connected to the same circuit as all the other devices. Unique in the industry the Vigilon beam sensors are loop powered with their gain settings set at the control panel. Vigilon beams do not require any additional power supplies or interfaces, making them the most economical solution for beam detection.



Vigilon Audio Visual Alarms

Gent's patented S-Cubed Sounder and VAD devices are fully loop powered and do not require any separate sounder circuits.

S-Cubed Range for Vigilon

The S-Cubed range of alarm sounders incorporates sound speech and visual alarm effects all in one range of alarm devices.

The S-Cubed range offers a choice of two body colours, red or white, in housings and an EP range up to IP65.

The integrated visual alarm makes S-Cubed ideal to meet all requirements of the BS5839 part 1 :2013 as well as the Equality Act 2010 which requires all persons regardless of any disability to be made aware of a fire or an emergency in any public building. Industry leading technology means that up to 100 sounder VADs can be installed on each Vigilon Loop.

As an aid to commissioning there is the option to use the HandiLink Infrared remote control to adjust the volume at the device itself without the need to be at the panel. This means that physical access is not required to make this adjustment. The integrity of the system is maintained by requiring the system to be in test mode avoiding the risk of unauthorised changes.

Key Features

- Very low power consumption means that the Vigilon system offers more sounders on the loop than any other manufacturer; each loop can support up to 200 voice sounders and 100 sounder VADs
- Visual Alarm devices are configurable to three intensity levels to optimise the loop loadings while allowing sounder spacings to be matched
- Voice enhanced sounders have 4 voice messages and a bell tone as standard and are certified to EN54-3 Annex O
- Sounder and Visual Alarm are actively monitored daily as a background task
- Voice and Tone modes can be freely mixed within the same sounder
- S-Cubed can be programmed to store customised messages
- S-Cubed is fully compatible with the S-Quad range and seamlessly complements the S-Quad sensor with voice messages and complex sound signals



HandiLink Infrared remote control to adjust the volume remotely

Vigilon Interfaces

Our comprehensive range of interfaces to solve all your interfacing requirements which are demanded by today's systems. A keyswitch version can be used for manual plant control.

The new comprehensive range of Vigilon interfaces has a neat compact design casing to give maximum installation flexibility. The range includes low voltage and mains switching variants to meet all application needs. All variants can be installed as either DIN rail mounted or housed in a Vigilon style enclosure. All interfaces are compliant with EN 54 part 18.



Loop powered 4 channel interface

Loop Powered 4 Channel Interface

The loop powered 4 channel interface range has individually sectored outputs where channel 1 can be set as a loop powered zone module.

- Each channel can be configured as an input or output independent of each other and in accordance with the fire plan
- All interface devices can be housed in their own neat enclosures, DIN rail mounted or housed in a Vigilon style box
- Interfaces with output channels do not require additional relays – the panel monitors cable faults and can raise an alarm if a fault occurs
- All interfaces are seen by the panel as one address although each input/output can have a separate label displayed at the panel



Loop powered key switch operated interface

Mains Powered Interface

The Vigilon Mains Powered Interface allows you to connect to ancillary units which can not be integrated directly onto the Vigilon loop.

- 4 Channels Input or Output
- 24V dc Supply
- 24 hour battery standby
- Fully compliant with BS7273-4



Mains powered interface

Loop Powered Single Channel Interface

The Vigilon system can accommodate a high number of single channel interfaces on the loop, exceeding typical site requirements.

- VA high capacity of single channel interfaces is available on the loop
- Versions are available to provide inputs and outputs to and from the system
- Basic building control can be achieved through inputs from other life safety systems such as sprinklers and conventional fire systems
- Non fire inputs can prove current status of systems and fault signals can be made known through alarm outputs
- Key-operated variant for secure management of the system

Loop Powered Mains Switching Interface

- The mains switching Interfaces can switch up a resistive load up to 16amps at 240V AC
- 4 and single channel variants with combined inputs and outputs make these interfaces ideal for connecting to control plant

Vigilon Manual Call Point

The Vigilon manual call point is available as a break glass variant or it can be supplied with a resettable element – ideal where glass could prove to be a safety hazard.

- The Manual Call Point is available with a resettable element especially useful in schools, colleges and public areas where the incidence of rogue activation may be higher than normal
- Surface or flush mounted variants are available
- Flushes with standard installation back box
- An anti-vandal protective cover is available
- The glass fronted variant has a simple glass replacement process
- An LED gives confirmation of operation
- The Manual Call Point is EN 54 part II compliant
- The Manual Call Point can be supplied as an IP55 rated unit



Loop Powered Mains Switching Interface



Vigilon Manual Call Point

Life safety products

Honeywell Gent now offers a range of life safety products to complement the Vigilon System.

Air Sampling Detection

Air Sampling Detection, also known as Aspirating Smoke Detection (ASD) systems can detect fires at a very early stage, often before visible smouldering takes place, before an open fire occurs and before intense smoke develops.

This early detection is vital to mission critical and high-risk applications. The earliest possible fire detection brings significant time benefits, enabling a fast response to the first signs of smoke. ASD can detect fires significantly faster than point or beam smoke detectors.

Vigilon ASD Interface integrates the Honeywell FFAST ASD with combined power supply and loop interface.

Paging

The Response Paging System offers the latest innovations in wireless paging and monitoring. It's a cost effective and flexible paging system

that offers the ability to quickly respond to activated alarms.

The solution consists of a wall mounted transmitter and antennae that can send customised messages to designated pagers and are powerful enough to cover large areas.

Disabled Refuge

An EVCS (emergency voice communication system) or Disabled Refuge System is designed for use in buildings that contain refuge areas.

This type of intercom system allows emergency services to be in constant contact with the people in the refuge areas who seek assistance. The Equality Act (formerly The Disability Discrimination Act) made it the responsibility of all companies, nationwide, to ensure that access to buildings and services is available to everyone – there must be no discrimination.



Air Sampling Detection



Paging



Disabled Refuge

The Vigilon System

Honeywell Gent is synonymous with quality and innovation in the fire detection and alarm industry. Gent technology meets rigorous British and European standards for all projects ranging from small installations to complex, multi-site networks.

UK

Gent works in partnership with the Gent 24 Network of Approved System Integrators who supply Gent equipment and carry out design, installation, commissioning and maintenance operations to the highest standards of workmanship.



International

Across the world, Gent works in partnership with approved distributors who supply Gent equipment and carry out design, installation, commissioning, and maintenance operations to the highest standards of workmanship.



For more information

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