

GENT
by Honeywell



S-QUAD
PUT AN END TO FALSE ALARMS



Fire - never underestimate the danger

With extensively patented technology S-QUAD improves both the speed and integrity of fire detection whilst reducing false alarms. This advanced sensing technology is integrated in one device with certified voice enhanced alarm sounder and EN54-23 visual alarms making S-Quad a truly unique device.

Life Safety First

- Intelligent smoke, heat and CO gas sensing technology for early detection of fires
- Voice messaging ensures quicker and safer evacuation in the event of a fire
- Fully complies with the EN54-23 standard for Visual Alarm Devices (VADs)



Put an end to False Alarms

- Combined power of S-Quad and the Vigilon panel provides quick, intelligent decisions minimising false alarms
- The patented dual angle optical chamber within the S-Quad sensor clearly distinguishes between smoke, steam and dust particles
- Programmable sensor 'states' for different times during the day and night improves response to real fires and reduces instances of false alarms
- Combined CO gas, smoke and heat sensing further minimises false alarms



Save Time and Money

- Four functionalities all in ONE sensor
- Supported on the same two wires (loop) within the Vigilon system thereby reducing installation cost
- Increased loop alarm load capable of powering 200 sensor-sounders or 100 sensor-sounder VADs
- Fast and simple to install
- 'SAFE' (Soft Addressed Firmware Encoded) addressing and 'soft' addressing does not require manual setting of switches in either the head or base



Setting New Industry Standards

- Cutting edge technology building on the reliable analogue addressable Vigilon platform
- EN54-23 VADs conforms to the Equality Act 2010 with configurable intensity settings
- Aesthetically pleasing and suitable for any type of environment



S-Quad System Benefits

A combined Multi-sensor, Speech, Sounder and visual alarm in one intelligent, discreet device providing a safe and cost effective solution for most applications.

The S-Quad sensors inherit all the advantages of Vigilon's powered loop combined with extra features, making Vigilon and S-Quad an industry leading combination for fire detection and alarm signalling.



Life Safety First

- Sensor options detect combinations of smoke, heat and carbon monoxide
- Intelligent gas sensing technology monitors the concentration of carbon monoxide in the environment for early detection of a potential fire hazard
- The stored voice messages within the sensor allow specific instructions to be conveyed to ensure a safe, controlled evacuation

Put an End to False Alarms

- The combined power of the sensor and the Vigilon panel provides quick and intelligent decision making. S-Quad incorporates four separate sensing elements – heat, carbon monoxide, optical (forward and backward) scatter
- Patented, dual angle optical forward and backward scatter allows the system to distinguish between smoke, steam and dust
- Day and night timed sensor 'states' can be programmed to improve the response to real fires and reduce the number of false alarms. Any of the sensing can be set at different sensitivity levels, depending on the application

Optical Scatter

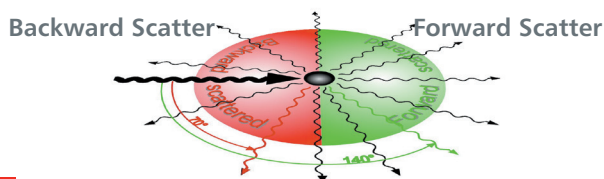
- An infra red beam is deflected by the particles in the chamber and results in rays scattered in many directions. The ratio of forward and backward scatter indicates the type of particles present

Carbon Monoxide Sensor

- This sensor is effective at detecting smouldering fires. This technology allows S-Quad to be immune to false alarms caused by dust, steam and insects

Save Time and Money

- Comprehensive range of analogue addressable fire sensors all within ONE device
- Supported and powered on the Vigilon Loop – only one set of terminations and one cable required for multi-sensor, sounder, speech and visual alarm functionality
- Increased loop alarm load capable of powering 200 sensor-sounders or 100 sensor-sounder VADs
- Built-in short circuit isolators in every device
- Monitored input facility – fire, fault, non-fire – reduces the installed cost of the system and reduces the need for separate interfaces
- Monitored repeat LED output
- Loop powered installation incorporating S-Quad requires no additional interfaces or extra monitored sounder circuits
- S-Quad's intelligent design ensures quick and simple installation with more wiring space within the base

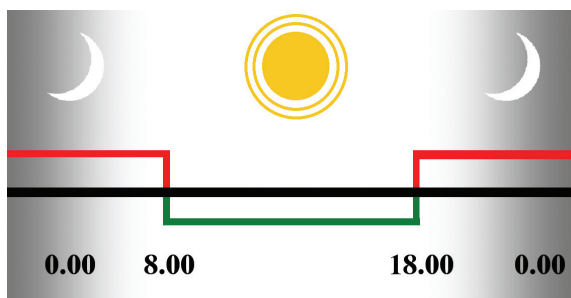


Setting New Industry Standards

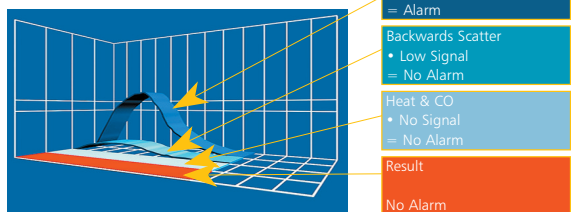
- Our high intensity EN54-23 Compliant Visual Alarm Device (VAD) conforms to the Equality Act 2010 requirement of providing visual alarms in high noise areas and for those with hearing difficulties
- Low profile sensor range with semi-flush mounting option for enhanced, discreet appearance



Flexible sensitivity throughout the day



O²HCO Performance Examples
Steam



Why a Dual Optical Heat Co Multisensor?

Combining the CO technology into the O²H sensor gives this multisensor the benefits of both high false alarm rejection and fast detection of a wide range of fire types.

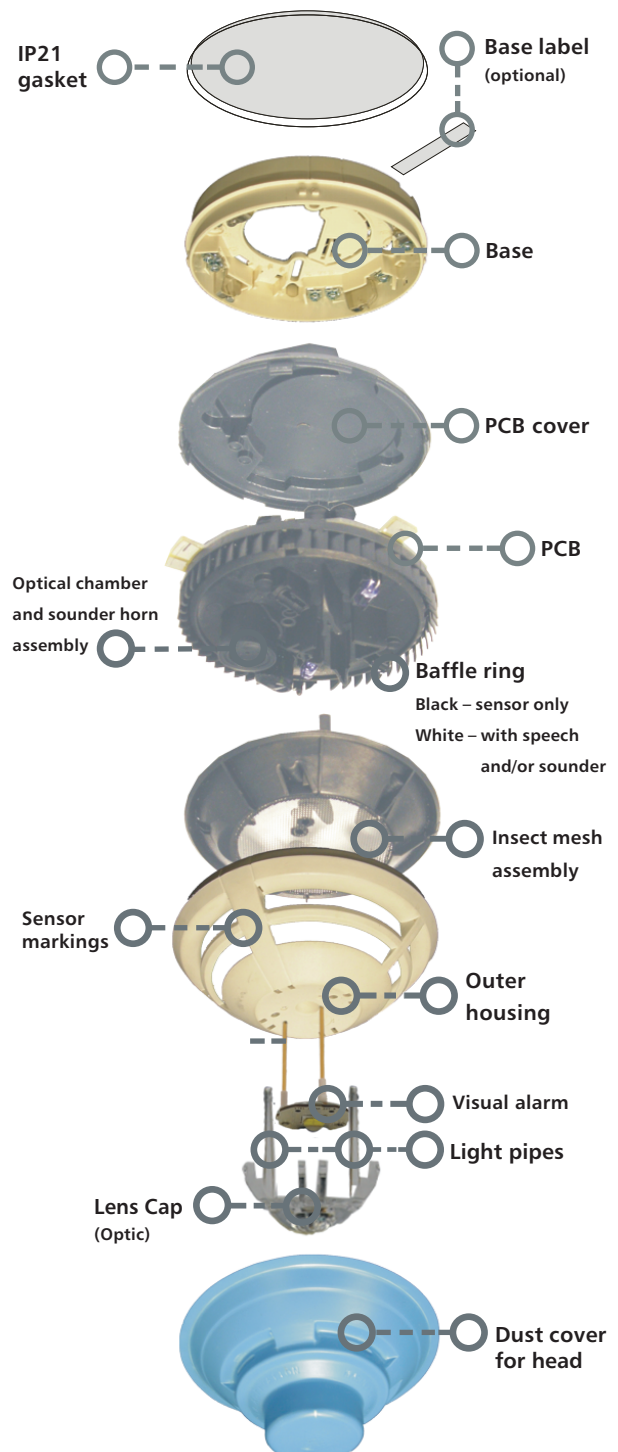
Many combinations of the different sensors are used in the multisensor to enable fast and above all, reliable fire detection. The following two cases are an example of this.

CASE 1: SMOULDERING FIRES With smouldering fires, either the CO levels will be sufficient to detect a fire early, or the presence of CO with smoke will enhance the sensitivity of the dual optical and hence the speed of detection. Note that this process is very immune to common false alarm signals, due to the discrimination of the CO cell used in combination with the dual optical sensor.

CASE 2: FLAMING FIRES With flaming fires the dual optical sensor becomes more sensitive. Furthermore if a rise in temperature is detected by the heat sensor, a further increase in optical sensitivity occurs, enabling fast and reliable detection of flaming fires.

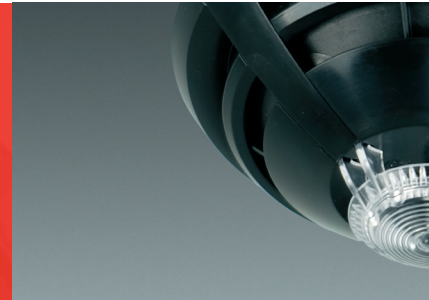
Once again this process has good immunity to false alarms, due to the discrimination of the heat sensor used in combination with the dual optical sensor.

S-Quad features



S-Quad 4 Functions in ONE Sensor

SENSOR – A truly intelligent analogue sensor incorporating exceptional computing power in the sensor as well as the panel to achieve an extremely fast response to a real fire whilst minimising the risk of false alarms.



Sensor

- The patented dual angle optical scatter technology allows identification of the particle source filtering potential false alarms due to steam and dust
- The gas sensing element within the chamber monitors the build up of Carbon Monoxide in smouldering fires allowing early detection where standard smoke detectors would not operate
- Combined CO gas sensing with dual angle optical and heat allows a higher level of false alarm immunity whilst still improving the detection speed of certain types of fire
- Each sensor element has sensitivity settings which can be adjusted to suit the environment / application and can be programmed for different time periods during the day or night
- Optional intermittent flash to confirm operation and output for remote indicator as standard on each sensor

Effectiveness in reducing False Alarms

Time comparison analogue sensors tested with...	Detector types and multi-sensor options						
	H	I	O	CO	OH	O ² H	O ² HCO
Dust	Green	Blue	Red	Green	Red	Blue	Green
Aerosol	Green	Red	Blue	Blue	Blue	Green	Green
Steam	Blue	Blue	Red	Green	Red	Blue	Green
Insects	Blue	Red	Blue	Green	Red	Blue	Green
Cigarette smoke	Green	Blue	Blue	Blue	Blue	Blue	Green
Cooking fumes	Blue	Red	Red	Blue	Red	Red	Blue
Other Gas leakages	Green	Blue	Green	Red	Green	Green	Blue
	Probable Alarm	Possible Alarm	Unlikely Alarm				

Effectiveness of Sensors to Detect Test Fires

Analogue sensors during standard test fires	Detector types and multi-sensor options						
	H	I	O	CO	OH	O ² H	O ² HCO
TF1 Open wood fire	Blue	Blue	Orange	Blue	Blue	Blue	Green
TF2 Smouldering wood fire	Red	Orange	Green	Blue	Green	Green	Green
TF3 Smouldering cotton fire	Red	Orange	Green	Green	Green	Green	Green
TF4 Open plastics (PU) fire	Blue	Blue	Green	Orange	Blue	Blue	Green
TF5 Liquid fire (n-heptane)	Blue	Green	Orange	Red	Blue	Green	Green
TF6 Liquid fire (spirit)	Green	Green	Red	Red	Green	Green	Green
	No response	Poor response	Acceptable response	Good response			



Speech

SPEECH – Sensor sounder functionality capable of delivering synchronised messages throughout the building

- Voice messages stored on a memory chip in the sensor can be triggered to give clearly understood messages leading to quicker and safer evacuation in an emergency
- Up to four different messages stored in each device allow different messages to be played in each area for phased evacuation
- Custom message option to cater for the specific needs of a building
- Up to 20 seconds of message can be stored in place of standard messages
- Voice messages are synchronised across loops to ensure clear instructions throughout the building
- Complex sounds such as a bell tone can be reproduced to deliver alternative sound signals
- Sound levels can be set for each device and a special turbo mode is available boosting sounder level in difficult areas

RESEARCH* SHOWS ONLY 13% OF PEOPLE REACT TO BELLS, WHILST 70% REACT TO A VOICE MESSAGE.

*Sources: Brian Piggott (The Fire Research Station) and David Canter (Surrey University)

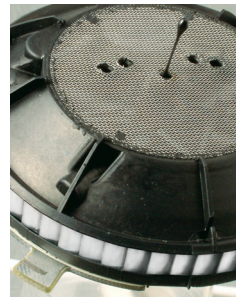


SOUNDER – Combined sensor sounder technology provides a cost effective solution for alarm signalling saving on installation costs as there is no need for additional power supplies. Synchronised messages are transmitted through the same sensor that detects the fire.



Sounder

- The sensor sounder device allows an even distribution of sound with only one device to install
- Sounder tones can be programmed to avoid confusion with other alarm tones in a building
- Low current consumption allows up to 200 sensor sounder devices per loop
- Sound patterns are synchronised across the loop to avoid risk of confusion where two or more sounders are heard
- Sound levels are adjustable for each device and the soft start option avoids the unnecessary creation of panic in an emergency
- Patented design delivers 85dBA @ 1m
- Rich harmonic sound output using patented techniques
- Volume control allows optimum sound pressure levels
- Turbo option delivers enhanced sound pressure (88dBA @ 1m)



Strobe

STROBE – The S-Quad Multi-sensor is a fully integrated Visual Alarm Device (VAD). The only practical solution meeting the demands of detection and the performance needed to meet the EN54-23 standard

- Sensor and alarm in one device reduces installation time and cost. Built-in high intensity flashing strobe helps alert occupants in noisy environments as well as the hard of hearing
- Meets all the requirements of the Equality Act 2010
- Compatible with the S-Cubed wall mounted VAD
- State of the art LED visual alarm technology
- Advanced power management that ensures the loop will always operate even in a fault condition
- Range of devices and power settings to suit widest range of building applications
- Light output that allows devices to be sited at standard smoke and heat detector spacings
- Synchronised flash rate across the whole control panel avoiding risk of induced seizures
- Strobe can operate independently of the sounder if required





S-Quad Technical Specification

SYSTEM COMPATIBILITY

Uniquely in the UK's fire detection and alarm industry, Gent by Honeywell continues to offer backward compatibility assurance on its third generation of Vigilon's range of sensors through the appropriate system upgrade.

PART NUMBERS AND LOOP LOADING

PART NUMBER	DESCRIPTION	SYMBOL	MAX QUANTITY PER LOOP
S4-700 S4BK-700	Sensor base (White) Sensor base (Black)	–	N/A
S4-701 S4-705 S4BK-705	IP 21 Sensor Base for S-Quad IP 21 Sensor Base for S-Quad (White pack of 5) IP 21 Sensor Base for S-Quad (Black pack of 5)	–	N/A
S4-720	Heat Sensor	H	200
S4-780-S	Heat Sensor Sounder	HS	200
S4-715	Optical Sensor	O	200
S4-710	Optical Heat Sensor	OH	200
S4-770-S	Optical Heat Sensor Sounder	OHS	200
S4-711 S4BK-711	Dual Angle Optical Heat Sensor (White) Dual Angle Optical Heat Sensor (Black)	O ² H	200
S4-771-S	Dual Angle Optical Heat Sensor Sounder	O ² HS	200
S4-711-V S4BK-711-V	Dual Angle Optical Heat Sensor + Speech (White) Dual Angle Optical Heat Sensor + Speech (Black)	O ² HSp	200
S4-901	Dual Angle Optical Heat & CO Sensor + Speech + Strobe	O ² HCO	200

Loop Capacities are strictly for guide purposes only

STANDARD PERFORMANCE WHITE AND RED		
S4-711-V-VAD-LPR	O ² H Sensor – White VAD	C-3-10
S4-711-V-VAD-LPW	O ² H Voice Sensor Sounder – White VAD	

HIGH PERFORMANCE WHITE VISUAL ALARMS				
S4-711-VAD-HPW	O ² H Sensor – White VAD	High intensity C-6-16	Medium intensity C-3-14 (Open Category C-5-14)	Low intensity C-3-10.8 (Open category C-4-10.8)
S4-711-V-VAD-HPW	O ² H Voice Sensor Sounder – White VAD			
S4-720-V-VAD-HPW	Heat Voice Sensor Sounder – White VAD			
S4-911-V-VAD-HPW	O ² HCO Voice Sensor Sounder – White VAD			

HIGH PERFORMANCE RED VISUAL ALARMS				
S4-711-VAD-HPR	O ² H Sensor – Red VAD	High intensity C-3-14 Also Open Class C-4.5-14	Medium intensity C-3-13 Also Open Class C-4-13	Low intensity C-3-10
S4-711-V-VAD-HPR	O ² H Voice Sensor Sounder - Red VAD (White)			
S4BK-711-V-VAD-HPR	O ² H Voice Sensor Sounder - Red VAD (Black)			
S4-720-V-VAD-HPR	Heat Voice Sensor Sounder - Red VAD			
S4-911-V-VAD-HPR	O ² HCO Voice Sensor Sounder – Red VAD			

NB: Up to 100 sensor-sounder VADs can be installed on each Vigilon loop depending on the intensity setting. Refer to our design tools for verify individual designs.

SPECIFICATION

DESCRIPTION	DETAILS
Weight	110g (170g with base)
Dimensions	Diameter=117mm: height=49.6mm (height increases to 63.8mm with base)
Insert IP rating for VADs	Ingress Protection with standard base: IP30 S4-701:IP21 with gasket 805573:IP43 with gasket
Enclosure Materials	ABS
Colour	RAL 9010
Storage temperature	-20°C to 70°C (CO is -20°C to 50°C)
Ambient operating temperature	-10°C to 50°C
Relative Humidity	95% non condensing (25°C to 45°C)
Sounder Frequency	Low 730Hz - High 970Hz

LPCB Approved	Heat	EN54 : pt 5
	Optical Smoke all variants	EN54: pt 7
	Optical Heat with CO	EN54 : pt 5 & 7
	Short circuit isolators and I/O interfaces	EN54-17 & 18
	Sounder	EN54 : pt 3
	Speech Sounder	EN54 : pt 3
	Visual Alarm	EN54 : pt 23

VOICE MESSAGES

The speech function is provided by stored messages on a non-volatile flash memory component. This audible output from the flash memory can hold up to 20 seconds of speech. There is also the capability to provide complex tones, such as bell and DIN tones. Each sensor includes four standard messages with the component, which are as follows:

- Alert Message: (Female Voice)
“An incident has been reported in the building, please await further instructions”
- Alarm Message 1: (Female Voice)
“Attention please, this is an emergency please leave the building by the nearest available exit”
- Alarm Message 2: (Male Voice)
“This is a Fire Alarm! Please leave the building immediately by the nearest available exit”
- Test Message: (Female Voice)
“This is a test message, no action is required”

10 Reasons to specify S-Quad



LPCB Approved

The S-Quad sensors are EN54 compliant and LPCB approved to meet all requirements of the Construction Products Directive.



Advanced Sensing Technology

Coupled with integral sounder, speech capability and visual alarm in one intelligent device provides the UK's most innovative solution to the detection and signaling of fires.



Rapid Fire Detection

Four separate sensing elements including CO can be set with individual sensitivity levels and sensor 'states' can be programmed for different time periods to suit all applications and environments.



Minimal False Alarms

The combined power of S-Quad and Vigilon panel provides quick, intelligible decision making. The S-Quad dual angle optical sensor recognises a clear distinction between smoke and steam.



Saves Lives

The S-Quad range incorporates intelligent heat and gas sensing technology to allow the early detection of fires, which are known to be particularly hazardous to building occupants.



6

Safe Evacuation

Voice messaging capability through the sounder functionality ensures quick and safe evacuation in the event of a fire.

7

Cost Savings

S-Quad provides four functionalities within one device supported by 2-wire loop Vigilon system, with built-in isolators in every device.

8

Compliance with the Equality Act 2010

Built-in high intensity EN54-23 VAD warns those with hearing difficulties of a potential fire hazard – now a legal requirement in all public buildings.

9

Monitored Line Input / Output Option

Output can be used for a remote LED. Input can have a separate identity to the sensor although they share the same electronic address.

10

Peace of Mind

All Gent fire products are designed to be compatible with the same successful Vigilon platform and supported by a UK wide network of Approved System Integrators.

GENT

by Honeywell

Gent by Honeywell 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.

GENT BY HONEYWELL IN THE 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.



GENT BY HONEYWELL 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.



Download the new S-Quad App



Download the new Gent VAD Tool

