

GE
Security



Intelligent

Signature Series Analog Detection



imagination at work



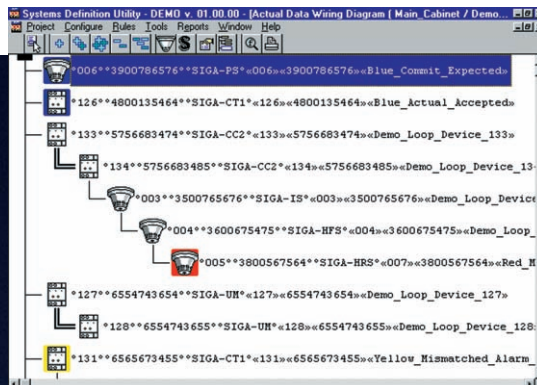
With *Signature Series* intelligence, you're covered by the most advanced detection technology from the world leader in life safety and security innovation. *Signature Series* achieves flawless detector reliability with sophisticated sensing and processing that actually thinks for itself.

When the unexpected strikes there are no second chances. Your safeguards against disaster have to work flawlessly, reliably – intelligently. That's why there's only one clear choice for life safety and security detection – *Signature Series* from GE Security...

Making the best of true multisensor capability, Signature detectors continually monitor the environment with their on-board sensors, each of which is finely tuned to detect a different characteristic of combustion. All this information is gathered and run through a sophisticated algorithm that compares the sensor readings over time to known signatures of fires. When the algorithm finds a match, an alarm condition results. If no match is found, no alarm is sounded.

The key to reliability here is that Signature detectors don't simply react to the conditions – they interpret information from several sources over time to arrive at a carefully "considered" conclusion. This means that a single multisensor detector can distinguish between a harmless puff of dust and a wisp of smoke; between hot, humid weather and a serious life safety condition.

▼ Morongo Casino, Resort & Spa, Palm Springs, CA



Signature Series intelligence features Automatic Device Mapping – a function of the powerful Signature Loop Controller, which maps where each device is installed relative to other devices on the circuit. This information can be accessed using the *System Definition Utility* program (above), which uses interactive menus and graphic support, and generates layouts or as-built drawings – complete with branch wiring (T-taps), device types and their addresses!

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Millions of Signature Series detectors are protecting people and property worldwide. Here's why...



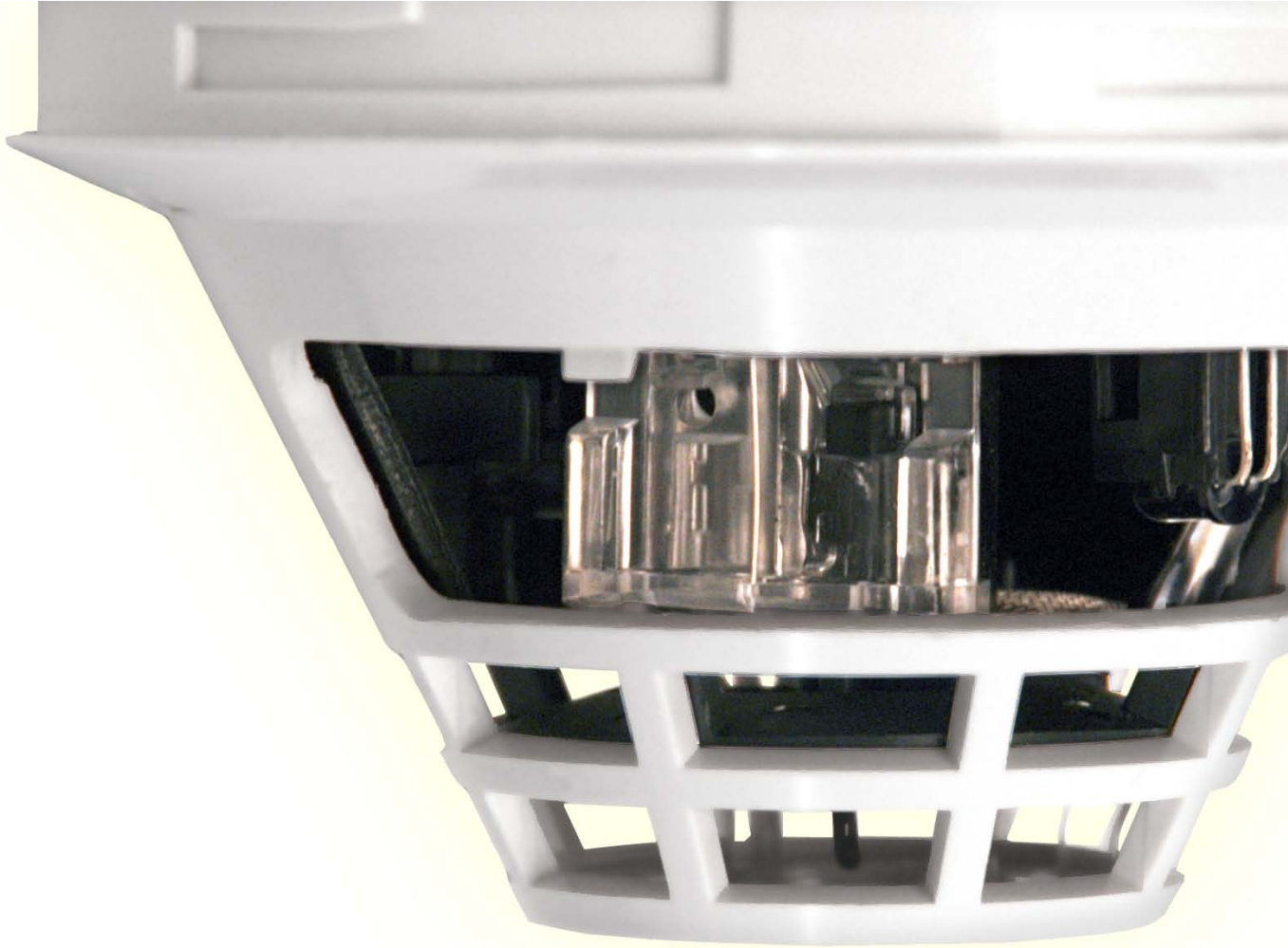
A total solution, a complete product line ...

Signature Series is an entire family of intelligent fire alarm and security devices, as well as detectors and accessories, multiple-function input and output modules, pull stations, fire suppression components, and user-friendly maintenance and service tools. The Signature line provides flexibility that makes it a perfect fit for any application. It is uniquely well-suited for fire-only or mixed fire and security applications with the powerful EST3 control platform, which is designed to meet the needs of any medium to large application. EST2 life safety control brings Signature intelligence and audio capabilities to medium-sized applications, while QuickStart control panels deliver the benefits of *Signature Series* technology to small- and medium-sized applications. Whatever the need, there are easy-to-implement, cost-effective *Signature Series* solutions for your application.



So reliable that NFPA-mandated sensitivity testing is not required...

Signature Series detectors are engineered to prevent nuisance alarms by anticipating normal changes in the environment and by adapting to suit them. With *Signature Series* intelligence, the detector monitors conditions over time and actually adjusts its own sensitivity to compensate for conditions that would easily send other detectors into alarm. When dirt buildup threatens the reliability of a *Signature Series* detector it sends out a signal indicating that it's time for a cleaning. This feature is so reliable that Underwriters Laboratories has singled out *Signature Series* detectors by exempting them from individual calibration sensitivity testing normally required to comply with the benchmark NFPA 72 fire alarm standard. Instead, a simple report generated by the control panel is sufficient to satisfy what otherwise could be an arduous and costly annual task.



So stable that existing wiring can be used for retrofits...

With *Signature Series* intelligence, alarm decisions are made right at the device, thus conserving precious processing power at the control panel for other functions. This strategy, known as Distributed Intelligence, means that high communication speeds are unnecessary because data reaches the control panel already processed. Lower communications speed means that expensive shielded wiring is not necessary. In fact, with *Signature Series* intelligence most retrofit applications can use existing wiring and still deliver superior response times. With the added benefits of electronic addressing and automatic device mapping, these devices are not only the most reliable of their kind, they're also simple to install. That's why millions of Signature detectors can be found protecting buildings all over the planet.



Security devices share wiring with fire alarm components...

The SIGA-MD Motion Detector and the SIGA-SEC2 Security Module bring all the features and performance benefits of *Signature Series* intelligence to security functions. The SIGA-MD is a passive infra-red motion detector that employs advanced adaptive signal processing technology, while the SIGA-SEC2 is an intelligent dual-input module suitable for monitoring doors, windows and other locally powered security components. Both devices share the same wiring and loop controller as *Signature Series* fire alarm devices, and do so without the need for extra risers, associated wiring, or additional power. The SIGA-MD and the SIGA-SEC2 are fully listed to fire alarm *and* security standards. In fact, *Signature Series* is the only line of products in the world that offers this kind of total coexistence among fire and security functions!



Intelligent user-configured modules of every description...

Signature Series intelligent input/output modules are extremely flexible and powerful devices that gather information from detectors and other devices and convert it into digital signals. They are available in models that mount in standard one- or two-gang electrical boxes, as well as time and wire-saving versions that easily plug into two- or six-module motherboards. The specific function of each module is determined by its installer-selected "personality" code. Because they are intelligent devices, all decisions are made at the module. This allows lower communication speed but very fast control panel response time and less sensitivity to line noise. As a result, twisted or shielded wire is not required, making them – like all Signature devices – ideal for retrofit applications.

Photoelectric and ionization detectors see smoke, but not all fires produce it. Heat detectors spot temperature changes, but these aren't always an indicator of fire. Only *Signature Series* intelligence provides the answer...

Signature Series technology overcomes the detector conundrum by collecting data on several different environmental parameters simultaneously and then weighing the result over time to determine whether or not an alarm should be sent to the control panel. This is a revolutionary concept that represents a radical departure from the way fires used to be detected.

Without *Signature Series* intelligence, detectors need to be tuned to perform reasonably well under an acceptable range of conditions. This compromise results in a device that operates reasonably well, but not optimally.

The trade-off comes at the expense of reliability: nuisance alarms are frequently an expected inconvenience of single sensor detectors. The problem stems from the fact that detectors sensitive to smoke are also sensitive to dust; those sensitive to heat can also be affected by normal fluctuations in ambient temperature.

Patented *Signature Series* intelligence overcomes this problem with sliding alarm thresholds based on a sophisticated algorithm that defines the signatures of combustion, from slow smoldering fires to fast-burning "invisible" flames.

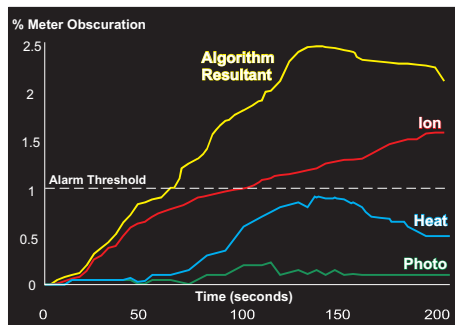
Signature Series detectors continuously monitor their own sensitivity and "understand" their environment. If dust or humidity levels increase the chance of a nuisance alarm, the device itself is able to compensate automatically by raising its own alarm threshold. There is no danger that the threshold will be pushed so far as to compromise the device's ability to detect fire:

before that point is reached the detector sends out a message indicating that it's time for a cleaning.

Signature Series intelligence provides the means of addressing another concern: the nagging problem of choosing the best type of detector for a particular application. *Signature Series* multisensor detectors incorporate photo, ion and heat

sensors in a single unit.

Independently, these different types of sensors can sometimes come to conflicting conclusions concerning the same environmental conditions. But, when combined in a single smart detector, they can be monitored over time, thus reducing the chance of the device reacting to the wrong set of circumstances. The net result: uncompromised performance; unparalleled reliability.



The example above demonstrates how the combined output from three sensors (resultant) reaches the alarm threshold earlier than any of the single sensors.

True multisensor technology means that a single device can perform optimally under a wider range of conditions than any single-sensor detector.

Fire Type vs. Detector Suitability

| | SIGA-IS Ionization Detector | SIGA-PS Photoelectric Detector | SIGA-HRS/HFS Rate-of-Rise/ Fixed Temp. Heat Detectors | SIGA-PHS Multisensor Photoelectric & Heat Detector | SIGA-IPHS Multisensor Ionization, Photoelectric & Heat Detector |
|-----------------------|-----------------------------------|--------------------------------------|--|---|---|
| Open Wood | optimum | unsuitable | optimum | very suitable | optimum |
| Wood Pyrolysis | suitable | optimum | unsuitable | optimum | optimum |
| Smoldering Cotton | very suitable | optimum | unsuitable | optimum | optimum |
| Polyurethane Foam | very suitable | very suitable | suitable | very suitable | optimum |
| n Heptane | optimum | very suitable | suitable | optimum | optimum |
| Liquid Fire, no smoke | unsuitable | unsuitable | optimum | very suitable | optimum |

Signature Series:

Much more than outstanding detectors and modules...



Accessories

Signature Series is supported by a full range of accessories, including detector bases, duct detectors, pull stations, multi-function modules, remote LEDs mounting plates, trim skirts, amplifiers, and power supplies.



Maintenance & Service Tools

The SIGA-PRO programming and maintenance tool retrieves valuable diagnostic information stored in the non-volatile memory of any Signature Series detector, pull station, or module. Under the Signature Series refurbishment program, soiled devices can be replaced at a substantial cost saving.



Intelligent Fire Suppression

The SIGA-REL is an intelligent module that controls sprinkler, pre-action and deluge systems, and may also be used to release extinguishing agents such as CO₂, Halon, or foam. Installed as an integral part of the life safety system, the SIGA-REL takes full advantage of Signature Series processing, communications power, and intelligence.



Intelligent Duct Smoke Detection

SuperDuct detectors feature a unique design that speeds installation and simplifies maintenance. Removable dust filters, conformally coated circuit boards, and optional water-resistant gaskets keep contaminants away from components, ensuring years of trouble-free service. And at less than two-inches deep, these detectors are ideal for ductwork, where space is tight.

For more information, call
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www.gesecurity.com, or contact the GE
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