

Industry Sector Building Technologies Division

Copenhagen (Denmark), June 10, 2010

Innovation safeguards Tradition

Integrated fire safety solutions from Siemens reliably protects irreplaceable values

On the occasion of a press conference in Copenhagen on June 10, 2010, the Siemens Building Technologies Division showcased its fire safety solutions designed for environments with stringent requirements. In the main focus were the extinguishing solutions from the Sinorix family, which are particularly well suited for libraries, archives and IT areas due to their special features and which lock back to a century-old history of success. During the press conference, Matthias Rebellius, CEO of the Fire Safety & Security Products business unit, examined the long-standing tradition of fire detection and extinguishing at Siemens, and provided an overview on current innovations and perspectives on trends.

“Copenhagen is an ideal location to demonstrate the interplay of tradition and innovation. Ultramodern buildings such as the ‘Black Diamond’ of the Danish Royal Library and the new headquarters of Saxo Bank are located here alongside venerable institutions such as the Tivoli or the Danish Royal Archive, all of which are protected against fire by the most modern solutions from the Building Technologies division of Siemens”, said Matthias Rebellius, CEO of the Fire Safety & Security Products business unit of the Division. “In 2010, we are celebrating the hundredth anniversary of fire protection using automated extinguishing systems, and with this we can look back on a long and successful tradition. At the same time, we have been awarded well-known industry prizes such as the ‘2010 European Fire Detection Equipment Market Product Line Award’ from Frost & Sullivan for our latest innovations in fire detection, as well as the ‘Security Innovation Award 2008’ in the category fire protection for the innovative gas/water-combined extinguishing system at the Security trade fair in Essen. This clearly shows the important position that Siemens occupies in fire safety with its comprehensive range of detection, evacuation and extinguishing systems.”

Tradition – 100 years of fire protection using automated extinguishing systems

As far back as 1910, Siemens & Halske AG offered an automated extinguishing system that was very advanced for its time that used carbon dioxide (CO₂) instead of water as the extinguishing agent in combination with reliable fire detection technology. The basic principle of such systems applies even today and has been constantly further developed since their introduction a hundred years ago. Present-day extinguishing systems work with chemical or natural extinguishing agents or also as gas/water-combined or water mist systems. In the area of natural extinguishing agents, carbon dioxide continues to be the agent of choice in special cases, with nitrogen (N₂) and argon (Ar) increasingly used as well. The extinguishing process using oxygen displacement (inerting) is still in use today, leaves no residues and has poor electric conductive properties. For this reason, natural extinguishing agents do not cause any damage to machines and systems and are used for the fire protection of sensitive areas such as data centers, switching rooms, libraries or archives. For example, Saxo Bank and the Tivoli in Copenhagen opted for Sinorix N₂, an extinguishing system with nitrogen, to protect their IT rooms, and the Danish Royal Archive protects its documents with Sinorix H₂O, a gas/water-combined extinguishing system with nitrogen and cooling water mist.

Innovation – a custom tailored solution for archives

As a rule, documents stored in archives are irreplaceable. As a result, archives need to be protected using the best possible fire protection measures. These measures include reliable fire detection at the earliest possible instance, so that the permanently installed extinguishing system is activated in good time, or valuable time is gained for the fire brigade to arrive if there is no extinguishing system. Analysis reports show that the interface between the fire detection, alarm handling, control and extinguishing systems is the weakest link in fire protection systems, since these different systems are not mutually compatible. The Building Technologies Division of Siemens therefore offers innovative and comprehensive fire safety solutions in a one-stop shop fashion covering everything from fire detection, evacuation to extinguishing.

In order to ensure the earliest possible fire detection, fire detectors of the Sinteso S-Line and/or aspirated smoke detectors (ASD) are typically used in archives and libraries. The optical detectors of the Sinteso S-Line use patented ASAtechnology (Advanced Signal Analysis), thanks to which detectors can reliably recognize hazardous situations even in environments with deceptive on-site phenomena. BT even offers a so-called “genuine alarm guarantee”, including financial compensation for false alarms.

Aspirated smoke detectors, by contrast, continually sample air at hazardous locations. If smoke particles are detected, a pre-alarm or an alarm is triggered depending on the smoke concentration. ASDs can detect even minute levels of smoke concentration during the early stages of a fire, provided they are configured for the appropriate sensitivity level.

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After the occurrence of an alarm (and its verification), the automated extinguishing system is activated by a detection and extinguishing control unit, such as the XC10, which is compatible with most extinguishing systems.

Sinorix H₂O Gas is particularly appropriate as an extinguishing system in archives. Sinorix H₂O Gas combines the outstanding extinguishing properties of nitrogen as an extinguishing agent with water mist to cool heated surfaces. This double safety is especially suited for deep-seated fires and ensures fast extinguishing as well as lasting protection against reignition. The system needs very little water (typically around 0.5 – 0.8 liters/m³) and is also therefore suitable for areas containing sensitive valuable equipment since this water mist causes minimal damage to such assets.

Alternatively, Sinorix N₂ can be used in environments where even water mist is not suitable, where pure nitrogen as an extinguishing agent can be used. In buildings or interior rooms where large overpressure flaps are very difficult to realize due to structural circumstances, the Sinorix CDT N₂ extinguishing system offers decisive advantages. Constant Discharge Technology (CDT) greatly reduces pressure peaks, since the extinguishing agent is discharged into the flooding zone at constant pressure during flooding in the (precisely calculated) required quantity.

All fire detection and extinguishing systems can be integrated with other security technologies such as video surveillance or access control as well as intrusion detection systems in danger management systems such as MM8000 from Siemens. All safety and security systems can be uniformly operated over this station.

Innovation – Sinteso with new network functionality

The upcoming version of the multiple award-winning fire protection platform Sinteso will introduce an important new feature in the area of networks. The cluster backbone architecture with LAN technology allows central fire alarm systems, already networked over clusters, to be linked over a fiberglass backbone. The system is therefore suitable for large and complex applications found on university campuses, in hospitals or at airports.

The concept offers great flexibility in planning and operations, since every alarm station and every floor repeater terminal offers complete access to the entire network. In addition, remote access over existing networks is also possible. A single interface to the alarm and fault transmission system, the pager system and the danger management system is required on the entire network, which not only simplifies planning but also ensures the timely transmission of alarms.

With Sinteso, Siemens offers the only existing solution of its kind for IP networks in the area of fire protection that fully meets the requirements of the EN 54 standard for control, transmission of alarms, visibility and access.

Recognition – renowned awards for Sinteso and Sinorix H₂O Gas

In December 2009, the Sinteso fire detection platform was awarded the “2010 European Fire Detection Equipment Market Product Line Award” by the renowned market research firm Frost & Sullivan. The patented ASAtechnology that detects fires with a very high degree of reliability and allows Siemens to offer a genuine alarm guarantee was decisive in winning the award. Sinteso fire detectors with ASAtechnology are virtually completely immune to disturbances such as dust, steam or weld smoke. “The genuine alarm guarantee is more than merely proof that Siemens is confident of its product offering and engineering capabilities. It also shows its huge commitment to maintaining a high level of product quality and meeting the requirements of customers”, declared Hammam Ahmed, industry analyst for environment and building technology at Frost & Sullivan. CEO Matthias Rebellius appeared delighted with the award and stated that “The distinction conferred on us by Frost & Sullivan emphasizes the innovation potential of our fire protection system and spurs us on to continue to enhance Sinteso rigorously.”

Already in 2008, the innovative extinguishing system Sinorix H₂O Gas received the “Security Innovation Award 2008” at the Security trade fair in Essen in the category “fire protection”. The panel of experts, consisting of security and fire safety experts from industry as well as public authorities and representatives of the trade press, awarded the innovation quality, user-friendliness, cost-effectiveness and reliability of the system.

Future - speech-driven evacuation and intelligent response

A technology that has already been widely deployed in the US and gradually gaining traction in Europe is speech-driven public notification and evacuation systems such as Sygnal and E100 from Building Technologies. These integrate functionalities such as voice alarm, public address, fire extinguishing and emergency lighting. Supporting systems such as smoke exhaust facilities or lift and door controllers are also linked to them for optimal coordination between the separate protection and rescue measures.

Future intelligent response systems will process additional information from a variety of sources in order to save lives through rapid response and appropriate action. For example, they will analyze data from building automation systems, provide dynamic instructions for updates in online operations, recommend emergency measures for mitigating situations, and support evacuation and auxiliary personnel in their activities. Technical progress will facilitate innovative solutions: An example is 3-D modeling, which could make future emergency response and evacuation planning even more safe and dynamic.

You can learn more about the comprehensive portfolio of fire safety solutions from Siemens at www.siemens.com/firesafety.

Background: EN 54

The European standard EN 54 lays down requirements, test procedures and performance characteristics for fire detection and extinguishing systems in buildings. The standard is made up of 27 sections specifying detailed requirements for all individual components of a fire alarm system.

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