

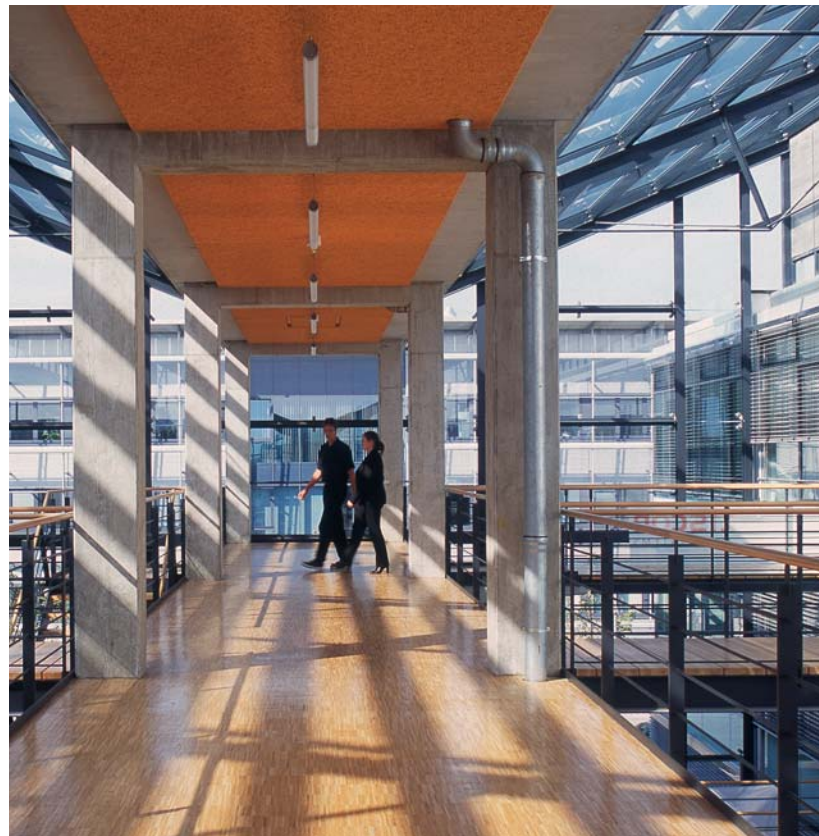


# Sinteso S-LINE – fire detectors for sophisticated applications



Answers for infrastructure.

**SIEMENS**



## Sinteso: innovation based on experience – from Siemens

Sinteso™ is a comprehensive system for fast, reliable fire detection, alarm signaling and control. It is designed to protect lives and assets and prevent production losses, thereby safeguarding your company's buildings and very survival. Sinteso not only defines the technological state of the art, but also offers almost unlimited scalability, network capability, and further development in harmony with existing products.

# The ideal solution for every requirement

## ■ Safe, precise, and reliable – from detection to monitoring

Reliable detection, fast notification, quick response – Sinteso sets the standard in all three areas. At the field level, for example, with everything from state-of-the-art fire detectors to immunity from false alarms thanks to **ASAtechnology™**. Fast, fault-tolerant network technology ensures maximum reliability in communication between FDnet devices and the control panel. And the control panels allow simple, intuitive operation, plain text displays and unambiguous instructions – and let security personnel concentrate on the event.

## ■ Scalable and versatile – to meet every need from “standard” to “special”

The Sinteso fire detection system was developed using decades of our experience in fire protection. In combination with the Sinteso fire detectors, the Sinteso control panels FC2020, FC2040 and the modular control panel FC2060 offer a comprehensive and homogeneous system.

The characteristic feature of the Sinteso family is its flexibility to meet any requirement. In a standard configuration, for example, two loops can be connected to a FC2020 control panel, and four loops to a FC2040, expandable to 4 or 8 loops while using same number of addresses. A comprehensive range of FDnet devices is available for every task.

The result is a comprehensive fire detection system on a shared technology platform with provision for simple, open-ended expansion in the future.

## ■ Homogeneous and expandable – for greater efficiency throughout the entire life cycle

Economic efficiency is a key factor in the installation phase. For example, the FDnet-powered devices require no additional cabling for power feeding or data transport or for connection to the control panel.

Moreover, Sinteso can be expanded or modernized at any time: Additional devices and lines can be simply connected to the system network (FDnet, FCnet) when a building is expanded. The FCnet is expandable by connecting additional panels via Ethernet.

Efficiency is also ensured whenever you upgrade – because new generations of devices and software versions are “members of the family”. And if you ever want to use rooms for new functions, newly developed parameter sets can be downloaded.

## ■ Increased fire safety – thanks to communication with other security systems

For comprehensive safety, Sinteso can be quickly and easily integrated into a Siemens Danger Management System via BACnet. The benefit: Security personnel can operate the fire detection system centrally – together with other systems such as video surveillance or access control. This offers increased security because a danger area can be easily monitored with video cameras. The recorded film footage can also be used later to help analyze the cause of an event. With access control, escape routes can be monitored and doors opened or closed quickly.

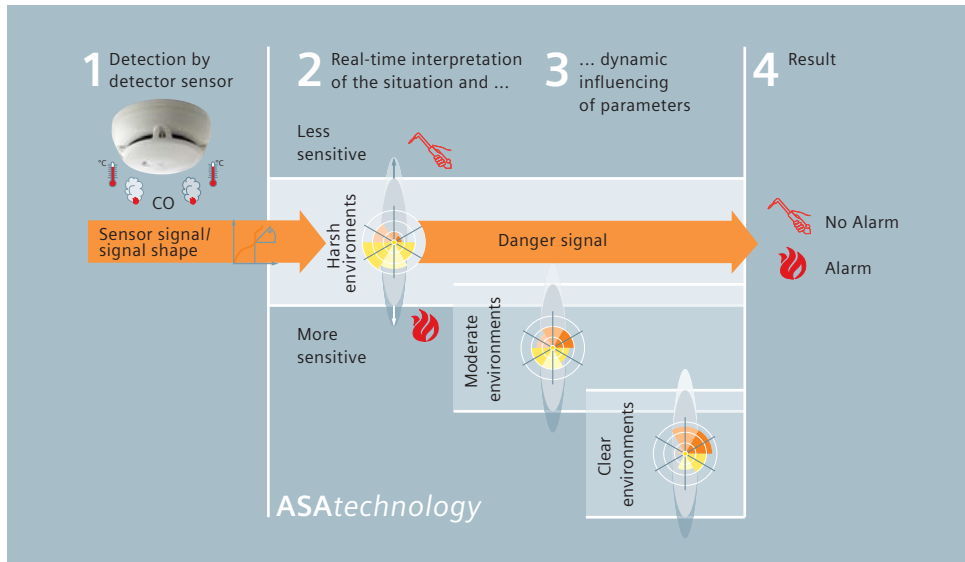
## ■ All-around safety – due to reliable detection, high availability, and transparent operation

Innovative functions, such as degrade mode and standby functionality with the control panels, further optimize safety. For example, the video fire controller allows visual verification of an event. Redundant sensors increase the availability of the detectors – and turbo isolators as well as loop installation increase the availability of the floor repeater terminals even in case of an open or short circuit.

### Highlights

- Genuine Alarm Guarantee possible
- Comprehensive fire safety system
- Usability for systems of any size or complexity
- Flexible, efficient system networks (FCnet and FDnet)
- High system flexibility and expandability
- Networking across all building services via BACnet/IP
- Easy integration into a Siemens Danger Management System
- Networking of FCnet panels also via Ethernet





# ASAtchnology – an innovation that sets new standards

Sophisticated applications require exceptional technology – and that includes the field of fire detection. The special signal analysis process employed by S-LINE fire detectors is very reliable in preventing false alarms caused by deceptive on-site phenomena, such as machine exhaust gases, industrial dust or steam.

## Extremely reliable fire detection, thanks to ASAtchnology and real-time interpretation

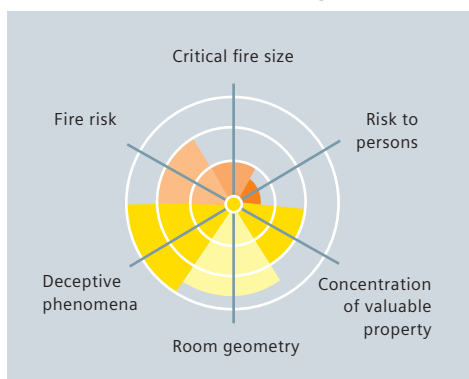
Sinteso S-LINE fire detectors feature ASAtchnology (ASA = Advanced Signal Analysis). The signals (1) recorded by the sensor are converted into mathematical components using algorithms and compared with preprogrammed values. With the selection of an ASA parameter set, the algorithms can be influenced –

and the fire detector can be set to the expected local environmental influences and individual risks. The optimal parameter set is selected taking the individual risks and the existing environment into account.

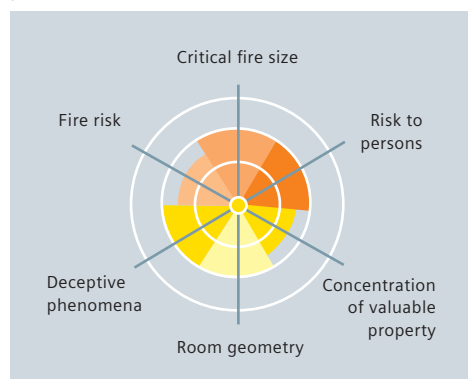
Interpretation of the situation (2) in real time results in the selected ASA parameter set being dynamically adapted (3). This automatically shifts the opti-

imum application range of the detector. Consequently the detector reacts more sensitively in the event of a fire – and more forcefully in response to deceptive phenomena. The result is unique fire detection with unprecedented reliability against deception (4).

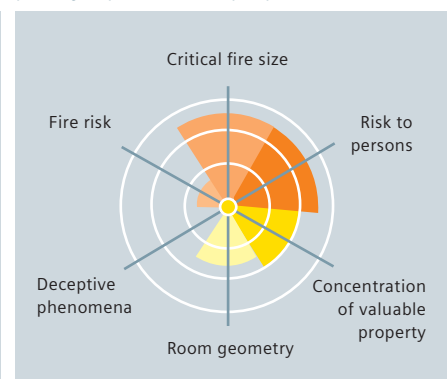
Harsh environments – for example in industry, with frequent deceptive environmental phenomena such as dust, steam or welding fumes ...

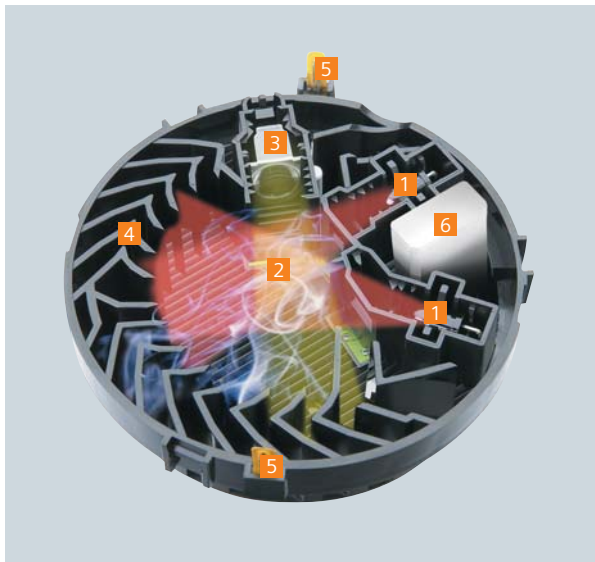


Moderate environments – such as office buildings and shopping centers, with average risk to people and occasional deceptive environmental phenomena ...



Clean environments – such as server rooms or patient rooms, where the top priority is protection of people and data ...





- 1 Two IR light sources
- 2 The rays of the two IR light sources are scattered by the smoke particles in the sampling chamber and hit the light receiver.
- 3 The special position of the two IR light sources helps to distinguish between light and dark smoke particles due to the forward and backward scattering of the light.
- 4 The patented labyrinth absorbs the light emitted by the light sources, thus preventing accidental reflections. It can also capture small fibers and dust particles so that they do not enter the sampling chamber.
- 5 Two redundant temperature sensors measure the temperature.
- 6 The monitored CO sensor measures the CO concentration.

■ **Unsurpassed reliability – thanks to ASAt echnology**

Preventing downtimes and costs caused by false alarms are a central consideration for any company. *ASAt echnology* offers unsurpassed detection reliability with high immunity to deception. Therefore, a Genuine Alarm Guarantee can be offered.

■ **Safe, intelligent detection – the new ASA neural fire detector**

The ASA neural fire detector has been developed to ensure a fast reaction to CO generating fires, such as mattress fires in nursing homes. It combines the unique *ASAt echnology* with CO detection for maximal safety: with two optical sensors, two heat sensors, and one additional electrochemical carbon monoxide sensor. Thanks to the intelligent analysis of the three most important fire criteria – smoke, heat, and carbon monoxide – it responds very quickly to all fires that generate carbon monoxide. Moreover,

Thanks to *ASAt echnology*, the CO signal has direct, active influence on the analysis of the other sensors. The integrated CO sensor is constantly monitored.

the FDOOTC provides very quick and reliable detection in harsh environments with deceptive phenomena.

■ **Event-controlled detection – through parameter switching**

Different ASA parameter sets can be used in the S-LINE fire detectors, and can be switched over as a function of time or to accommodate processes. This guarantees permanent, reliable and early fire detection even under frequently changing environmental conditions, such as “manned and unmanned times” in production plants or assembly rooms.

■ **Modernization – fast, efficient and economic**

The ASA neural fire detector FDOOT241-9 allows step-by-step modernization. It can communicate with a control panel via FDnet as well as via a limit value detection system. This provides a bridge to existing older fire detection installations – and older fire control panels can make full use of the *ASAt echnology* of the FDOOT241-9 today. In a second step, installation of the new Sinteso control panel is all that is needed to bring the system up to the latest state of the art.











**Highlights**

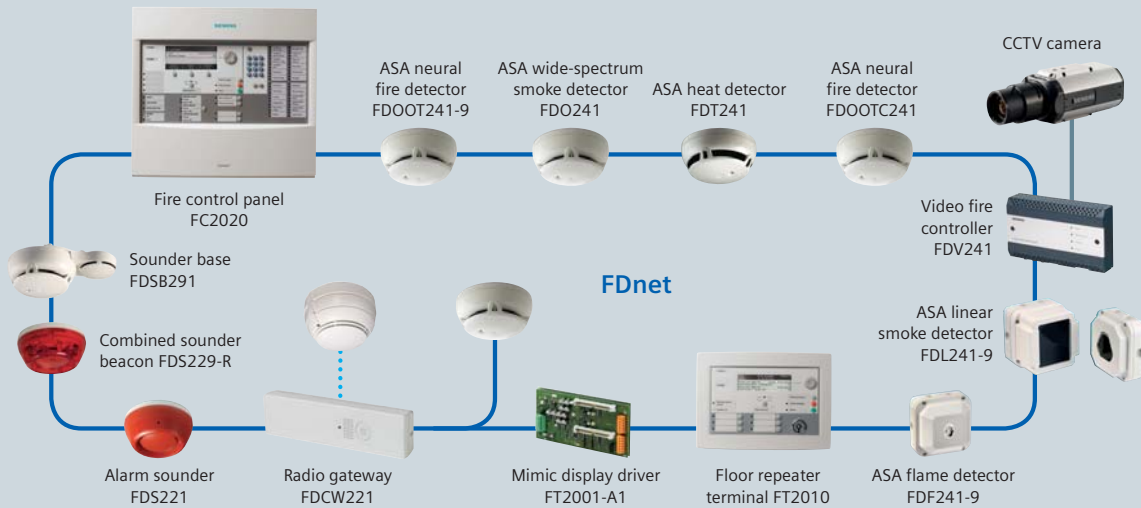
- Unique detection reliability and protection against false alarms thanks to *ASAt echnology*
- Genuine Alarm Guarantee possible
- Adaptation to process- and time-dependent ambient influences
- Fast and reliable detection thanks to a multisensor fire detector for smoke, heat, and carbon monoxide
- Fast and efficient modernization solutions possible



# Fire detectors and accessories for sophisticated applications

Sinteso S-LINE fire detectors are suitable for the most demanding applications and offer maximum protection against false alarms.

|  |  |
|--|--|
| <b>ASA neural fire detector FDOOT241-9</b>   | <b>ASA flame detector FDF241-9</b>   |
|     | <p>Early detection of flaming fires involving solid and liquid materials and of smoldering fires. The simultaneous analysis of smoke density and temperature in combination with intelligent <i>ASAtechnology</i> signal evaluation greatly increases the protection against deceptive phenomena such as dust and steam.</p>   |
|     | <p>Detection of smokeless liquid and gas fires as well as smoke-forming open fires indoors and outdoors. The flame detector is equipped with three infrared sensors. In combination with <i>ASAtechnology</i>, this enables foolproof detection regardless of sunlight or light from spurious sources.</p>   |
| <b>ASA neural fire detector FDOOTC241</b>  | <b>Radio gateway FDCW221</b>   |
|    | <p>Provides the same reliability of detection as the FDOOT241-9, and even with faster response. This is achieved using an additional CO sensor in addition to the intelligent fire detection with two optical sensors (forward and backward scattering) and two heat sensors. In combination with <i>ASAtechnology</i>, the analysis of the five signals enables most reliable and fastest possible detection.</p>                 |
|   | <p>Bidirectional coupling of up to 30 wireless detectors to the FDnet. The SRD band, a frequency range reserved exclusively for security systems (868 to 870 MHz), is used for this.</p>   |
| <b>ASA heat detector FDT241</b>  | <b>ASA linear smoke detector FDL241-9</b>  |
|   | <p>Detection of open flames and fires accompanied by a rapid rise in temperature. The FDT241 measures the ambient temperature and the temperature inside the detector housing, so that it can instantly detect an increase in temperature. The heat detector can be used either as a differential heat detector or as a maximum heat detector.</p>   |
|  | <p>Early detection of smoke-forming flaming fires in large warehouses and production halls, as well as in rooms with complex ceiling constructions. The beam detector sends infrared light to a reflector that sends it back. False alarms are effectively prevented with an additional distance measurement that detects foreign bodies in the light beam, for example if a fork lift truck accidentally interrupts the beam.</p> |
| <b>ASA wide-spectrum smoke detector FDO241</b>                                       | <b>Manual call point FDM221</b>  |
|   | <p>Early detection of smoke-forming smoldering and flaming fires. Operating according to the scattered light principle, the wide-spectrum smoke detector with <i>ASAtechnology</i> has a sensor for optical forward scatter. Like the FDOOT241-9, its opto-electronic sampling chamber keeps out extraneous light while optimally recognizing smoke particles.</p>   |
|   | <p>Persons in the danger area can directly trigger a fire alarm manually. The alarm must be activated by depressing the glass cover. Accidental activation can be prevented by means of a supplementary protective case.</p>   |
| <b>Alarming devices</b>  | <b>Video fire controller</b>   |
|   | <p>There are two alarm sounders for acoustic alarm signaling, the FDS221 and the FDSB291 which is integrated in the fire detector. The combined alarm sounder with beacon FDS229 provides acoustic and optical alarm signaling.</p>  |
|   | <p>In case of an alarm, the video fire controller enables direct assessment of the situation on the basis of live images from a connected surveillance camera – and supports a later analysis of the event with recorded film footage with pre- and post-alarm sequences.</p>  |



With its scalability and network capability, Sintesio is designed to accommodate all of your future requirements, regardless of whether you plan to expand a building or change the function of a room.

■ **Comprehensive safety – including fast, reliable fume detection**

Maximum security and reliability with Sintesio S-LINE also includes redundant sensors that ensure highest detector availability. Multisensor detectors reliably detect more fire criteria and thus different kinds of fire. **ASA** technology offers the world's highest level of immunity against deceptive phenomena in signal

analysis. A wide range of detectors covers every requirement. And S-LINE detectors provide for optimally tailored detection reliability thanks to free programmability, automatic parameter change when switching the operating mode, and compatibility with future innovations. All this is backed by many years of field experience, proven in a wide range of operating conditions.

Thus, Sintesio S-LINE offers the highest detection security and readiness with most kinds of fire and in all application areas – with a unique immunity against false alarms, preventing business interruptions.

# Welcome to the world of innovative thinking

■ **Innovation**

Siemens invests a great deal in both manpower and research and development. This results in a steady stream of new insights, technologies and inventions that enable us to improve the reliability of our products, systems and solutions for the protection of people and assets.

Relying on the highest standard of automatic production processes contributes a great deal to the environment protection. Siemens is at the leading edge of progress in this field and continues to redefine both current and future technologies.

■ **Reliability**

With Siemens, you are in the very best of hands: Backed by a history of over a hundred years, Siemens is an established and reliable partner. System expansions, migrations and upgrades can be continuously made over a period of years, which ensures your investment for the future.

■ **Safety**

Innovative products, systems, intelligent solutions and value-added services from Siemens offer you complete fire protection – for everything that is valuable to you, no matter which type of building or how high the risks. Today, tomorrow and for decades to come. That's why countless customers around the world place their trust in Siemens.



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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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