

SIEMENS



Desigo[®] Fire Safety – intelligent detectors for complete safety

Providing coverage from standard to sophisticated applications

www.usa.siemens.com/desigo-fire-safety



Desigo® Fire Safety: innovation based on trusted experience from Siemens

Desigo® Fire Safety is a comprehensive fire safety system for fast, reliable fire detection, as well as alarm signaling and control. It is designed to protect lives and assets and to prevent production losses, thereby safeguarding your company's buildings and survival. Desigo Fire Safety not only defines the technological state of the art, but also offers a high level of flexibility and scalability, as well as compatibility with existing and future products.

From detectors to panels – complete protection

A complete fire protection solution from one source

Safety is a deep-rooted, fundamental need. That's why solutions that reliably protect people, assets, and processes against fire, smoke, and carbon monoxide play such a crucial role. Desigo Fire Safety comprises everything needed for comprehensive fire protection:

- Fire detectors with excellent reliability prevent false alarms and meet the requirements of the fire safety and carbon monoxide codes NFPA 72 and NFPA 720.
- Control panels, fire terminals, remote terminals, and displays provide full system view and are easy to operate, even in the case of an event.
- Complete range of peripherals, ranging from notification devices to manual alarm stations.

Safe, precise, and reliable

Reliable detection, fast notification, quick response – Desigo Fire Safety sets the standard in all three areas, including:

- Redundant sensors that increase the reliability of the fire detectors.
- Forward and backward light scattering technology that ensures enhanced sensitivity to actual fires and practically eliminates false alarms.
- All detectors with **ASAt**technology™ come with a No False Alarm Guarantee.

A special carbon monoxide (CO) detector detects CO, whether generated by or independent from fire. Fast, fault-tolerant communication between FDnet devices and the control panels increases system reliability. The control panels allow simple, intuitive operation, plain text displays, and clear instructions, which allow security personnel to focus on the event.

Meeting every need from “standard” to “special”

Desigo Fire Safety is a homogeneous family of fire detectors and control panels whose models are all compatible. From standard to special situations, it's easy to realize the benefits of this comprehensive system:

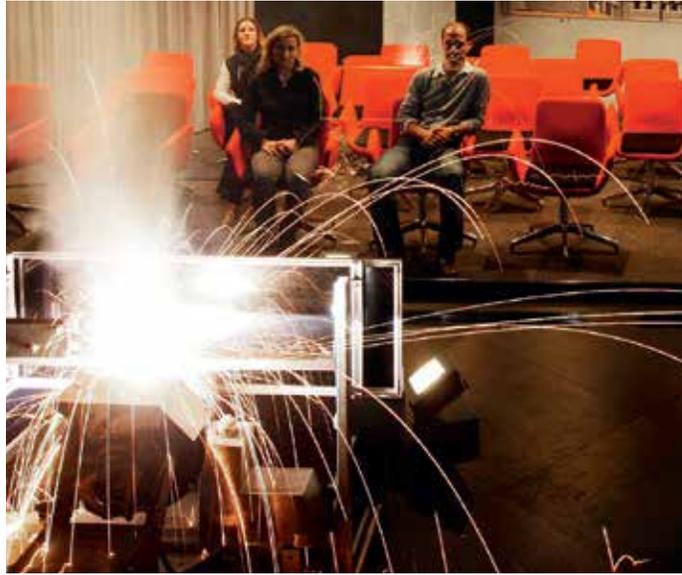
- **ASAt**technology™ detectors from the S-LINE range are excellent for sophisticated applications with deceptive phenomena. They offer more than 20 detection profiles for different environments including data centers, power generation, utility rooms, warehouses, manufacturing, parking garages, and ducts. This means you can cover all applications with one detector.
- The C-LINE detector portfolio is a cost-effective option for standard applications.
- The different control panels increase flexibility in system planning and keep your system scalable for the future.

Highlights

- Quick, reliable detection of fire, smoke, and carbon monoxide
- Simple panel operation with easy access to all functions
- Systems custom built according to your safety and budget needs
- Reliable detection confirmed by the S-LINE detector's No False Alarm Guarantee



Siemens owns one of the largest fire test laboratories in the world. We conduct live fire behavior tests in eight test labs. Our database contains more than 5,000 tests. We factor all of this information into the development of our Desigo fire detectors.



Intelligent technology for enhanced detection

One family to cover virtually any application

Desigo fire detectors answer virtually any application need, from standard to sophisticated and from clean to dirty. The C-LINE detectors are an economical, reliable solution for standard applications. The S-LINE detectors are the best choice for more demanding applications with deceptive phenomena, when extremely fast response time and the highest level of prevention of false alarms is needed. Detectors from both lines can be used together in a single network. In short, Desigo allows you to manage diverse detection requirements with one detector family and one system.

Unique sensor technology

In multiple environmental conditions, Desigo detectors reliably detect any sign of fire as early as possible. Their unique sensor system utilizes state-of-the-art forward and backward light scattering technology. This technology provides advanced optical analysis of light and dark smoke particles. As a result, it improves the detection capabilities of the detectors

and makes them virtually immune to false alarms. Desigo detectors comply with NFPA 76 (Telecommunication Standard) and are classified as Very Early Warning Fire Detectors (VEWFD). This means that they are extremely sensitive and provide very early detection.

A smart choice for the environment

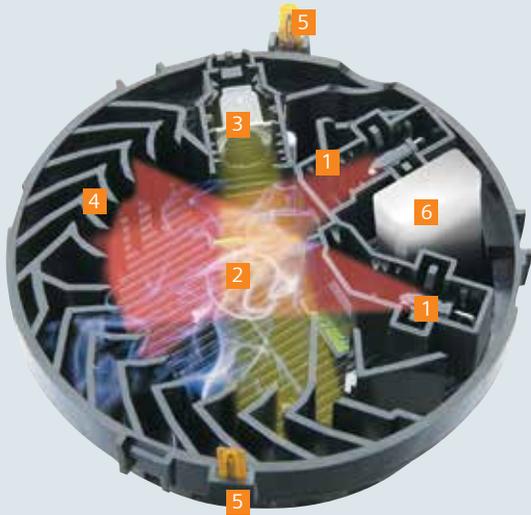
The detectors are RoHS compliant, meeting the standards regarding the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment. S-LINE detectors also provide enhanced detection capability equivalent to ionization detectors due to their forward and backward light scattering technology. This makes them a great “green” solution.

Redundant sensors increase reliability

S-LINE detectors have two thermal and two optical sensors. This redundancy heightens their immunity to deceptive phenomena and increases their detection capability and reliability. Should one sensor fail, the detectors will still provide fail-safe operation.

Highlights

- One detector portfolio to cover most application areas, from clean to dirty
- Reliable detection that eliminates false alarms due to unique forward and backward light scattering technology
- Compliant with NFPA 76 (Telecommunication Standard) and classified as a VEWFD
- RoHS compliant, with detection capability equivalent to ionization detectors due to forward and backward light scattering technology
- Increased reliability and fail-safe operation thanks to redundant sensors



Legend

- 1 Two IR light sources
- 2 The rays of the two IR light sources are scattered by smoke particles in the sampling chamber and strike the light receiver.
- 3 IR receiver: the special position of the two IR light sources helps to distinguish between light and dark smoke particles due to forward and backward light dispersion.
- 4 The patented labyrinth absorbs light emitted by the light sources, thus preventing random reflection. It also captures small fibers and dust particles so that they do not enter the sampling chamber.
- 5 Redundant temperature sensors (two) measure the temperature.
- 6 The monitored CO sensor measures the CO concentration.

S-LINE – setting new standards with *ASAtechnology*[™]

Unsurpassed reliability

Preventing downtime and costs caused by false alarms are central considerations for any company. *ASAtechnology*[™] (Advanced Signal Analysis) offers extreme detection reliability with the immunity to deceptive phenomena. Therefore, we offer a No False Alarm Guarantee with this detector.

Sophisticated applications require exceptional technology

S-LINE detectors feature our unique *ASAtechnology*[™]. This makes them highly reliable in preventing false alarms caused by deceptive on-site phenomena, such as machine exhaust gases, dust, or steam. This provides excellent protection and extremely reliable detection in critical applications, ranging from very clean environments like data centers and telecommunications centers to dirty industrial applications like warehouse facilities.

Highest life safety

The multi-criteria fire/CO detector FDOOTC441 combines *ASAtechnology*[™]

with carbon monoxide (CO) detection for maximum life safety. It responds very quickly and reliably to fire or the presence of CO. With two optical and two thermal sensors and one additional electrochemical CO sensor, FDOOTC441 analyzes fire criteria: smoke, heat, and CO. The additional CO sensor ensures earliest detection of CO-generating fires and detects CO independently from fire. FDOOTC441 complies with the requirements of the fire safety and carbon monoxide codes and standards UL 2075 and NFPA 720.

Meeting changing needs

S-LINE fire detectors offer more than 20 application-specific detection profiles that let you adjust the detectors to the expected environmental condition. Should the conditions change, you simply modify the detector by adjusting the detection profile. This provides for reliable and early fire detection even under changing environmental conditions.

Highlights

- Unique detection reliability and No False Alarm Guarantee provided by *ASAtechnology*[™]
- Fast, reliable detection of smoke, heat, and carbon monoxide
- Earliest detection of CO-generating fumes, also independently from fire, with the CO detector
- Enhanced life safety provided by selectable fire detection profiles
- Adjustable detection profiles guarantee quick, cost-efficient adaptation to environmental conditions



C-LINE – for standard applications

Reliable in operation

Backed by many years of field experience and proven under numerous operating conditions, the Desigo C-LINE fire detectors provide comprehensive safety. This makes C-LINE detectors a great choice in standard environmental conditions where only occasional deceptive phenomena occur, in typical commercial applications such as:

- Retail stores
- Restaurants
- Offices

Modern, cost-effective technology for investment protection

The addressable technology in the line network FDnet (Field Device network) permits fast, fault-tolerant communication between fire detectors and the control panel. All existing wiring can continue to be used. The C-LINE detectors' integrated algorithms can easily be adjusted if the room or building usage changes in the future. This makes C-LINE detectors a cost-efficient solution and long-term investment.

All-around safety

The installation of the detectors on the FDnet circuit increases safety. In the event of malfunction, alarms are simply redirected the other way to the control panel.

Highlights

- State-of-the-art detection algorithms
- Continued use of existing wiring
- Reliable and efficient fire detection
- Protection of your investment thanks to the system's flexibility and the ability to respond to changing needs
- Cost-effective range of detectors for standard applications

Detectors at a glance

S-LINE			
Multi-criteria fire detector FDOOT441		Multi-criteria fire/CO detector FDOOTC441	
	<ul style="list-style-type: none"> – Multi-criteria addressable detector – Dual optics (forward/ backward light scattering) and dual thermal sensors – Utilizes ASAtechnology™ for excellent early detection and rejection of deceptive phenomena – 20+ selectable detection profiles – UL-listed as a high sensitivity pre-alarm – Meets NFPA 76 requirement (Telecommunication Standard) as a VEWFD (Very Early Warning Fire Detector) – 8 selectable temperature settings, ranging from 135°F (57°C) to 175°F (79°C) – Offers programmable options for fixed temperature, rate-of-rise, and a selectable “Low Temperature” warning should the temperature drop below 40°F (4°C) 		<ul style="list-style-type: none"> – Identical features to the FDOOT441, plus an additional CO sensor – Selectable as a multi-criteria addressable detector, smoke detector, heat detector or independent CO detector – Detects CO-generating fires as well as CO independent from fire – Only one detector is needed for fire and CO (instead of two) to comply with life safety standards – UL 2075 listed as a CO Life Safety detector and meets NFPA 720 requirements – Provides field programmable, customizable supervisory signals for temperature or CO levels
C-LINE			
Multi-criteria fire detector FDOT421		Optical (photoelectric) smoke detector FDO421	
	<ul style="list-style-type: none"> – Multi-criteria addressable detector – Single optical (photoelectric) and thermal (heat) sensor – Utilizes detection algorithms for early detection of a wide range of fire signatures – Selectable sensitivity levels 		<ul style="list-style-type: none"> – Photoelectric, light-scattering, addressable detector – An economical solution suitable for normal commercial applications – Operating temperature range of 32°F (0°C) to 120°F (49°C) – UL listed for direct in-duct plenum usage (without duct housing)
Thermal (heat) detector FDT421		Input/output module FDCIO422	
	<ul style="list-style-type: none"> – Intelligent themistor-based heat detector – 8 selectable temperature settings, ranging from 135°F (57°C) to 175°F (79°C) – Offers programmable options for fixed temperature, rate-of-rise, and a selectable “Low Temperature” warning should the temperature drop below 40°F (4°C) 		<ul style="list-style-type: none"> – Provides addressable control inputs and outputs simultaneously – 4 inputs and 4 outputs that can be used independently – Both class A and B monitoring of inputs are available

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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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