

VIRUS HAZARD AVERTED,  
FIRE HAZARD OVERLOOKED,  
DATA BURNED.



Fire protection  
solutions for  
computing and IT.

**WAGNER®** 



**ALWAYS AVAILABLE.  
AND YOUR FIRE PROTECTION?  
SADLY OVERDUE.**

Downtime of even a few seconds severely restricts the availability of an IT centre. If the downtime is a few minutes, the business's prosperity is called into question.

The failure of server systems does not however only lead to a short interruption in operations. The damage to the reputation of the company and the financial losses that can lead to the loss of market position or even of the entire business are far more drastic. The requirements made of an IT centre apply 365 days a year, 7 days a week. That is why the installation of comprehensive fire protection solution is becoming an increasingly key competitive factor among IT companies.



Availability is everything

The operational security of technical systems is a decisive factor for businesses. The availability requirement according to the highest availability class (VK) 4 of the Federal Office for Information Security (BSI) is up to 99.999 % which amounts to an annual downtime of approx. 5 minutes.

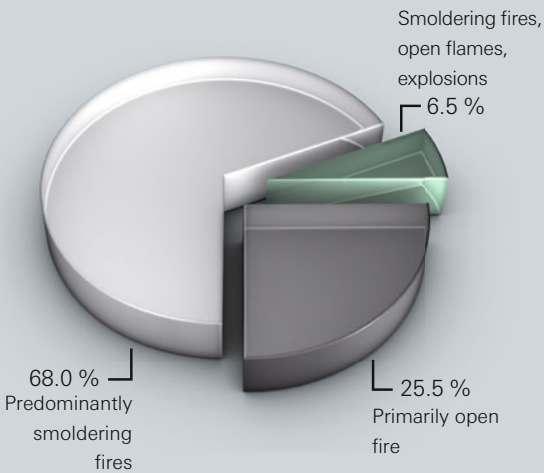
Increased fire loads

IT centres are subject to an especially high fire risk as a result of the high energy density of the electrical systems. The effects of a fire can be drastic. The technology can even be so badly damaged by

an almost unnoticeable smoldering fire that further operation becomes impossible and availability can no longer be guaranteed.

Technical defects

A highly complex IT infrastructure in server and switch cabinets is an integral part of all IT centres. Only a comprehensive fire protection solution tailored to the individual requirements can take the typical fire risks into account.



Cause of fire		Share
Defective electrical equipment and installations	25.5 %	primarily smoldering fires
Smoking	20.0 %	
Hot surfaces	8.0 %	
Welding and cutting	5.5 %	
Points of friction	4.5 %	
Autoignitions	3.5 %	
Radiant heat	1.0 %	
		68.0 %
Sparks and combustion	3.5 %	Smoldering fires, open flames, explosions
Chemical reactions	1.0 %	
Electrostatic discharge	1.0 %	
Mechanically generated sparks	1.0 %	
		6.5 %
Arson	17.0 %	primarily open flames
Open flames	6.5 %	
Molten substances	1.0 %	
Lightning strikes	1.0 %	
		25.5 %

Distribution of fire causes by application

IN THE EVENT OF FIRE: ELECTRICITY GONE.  
DATA GONE. KNOWLEDGE GONE. CUSTOMERS GONE.  
DON'T LET IT GET TO THAT.

Smoke and fire fundamentally restrict the availability of IT systems. Operational failure is then inevitable. With the right fire protection solution, you can combat that.



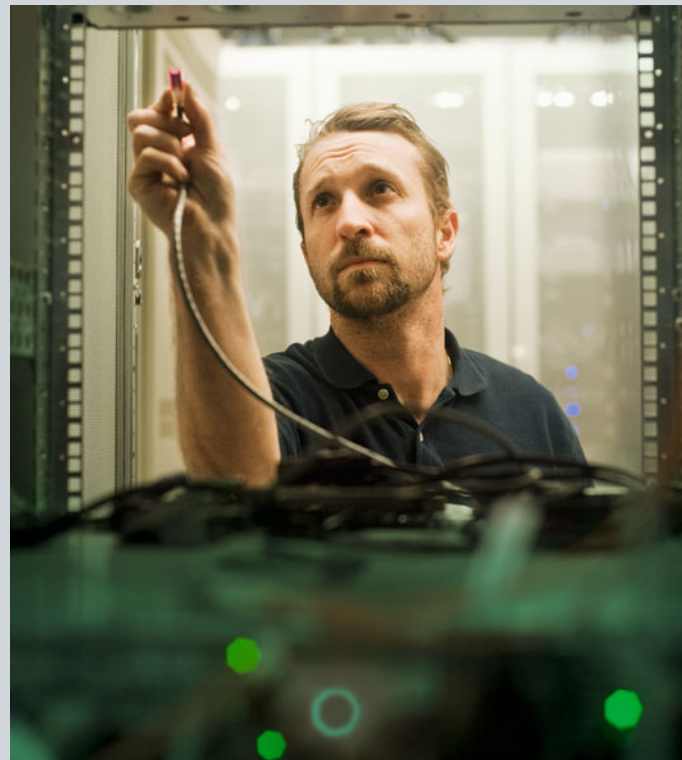
If a fire occurs in an IT centre, the electricity running the IT infrastructure and air conditioning systems usually has to be switched off. There is no way to meet the requirement for annual downtime of approx. 5 minutes according to the highest availability class (VK) 4 often requested by many IT centre operators; the availability is considerably restricted. With a comprehensive fire protection solution from WAGNER a power down, which is advised in the event of fire, can be avoided under certain circumstances.

### Competent solutions

There is a high risk of fire in IT centres. Electricity supply units, switch cabinets and computer systems are often located next to each other. Because IT centres and network hubs pose a latent hazard due to the high energy density, they are in the focus of fire protection systems. The continuous operation, the extensive cabling along and in the floors as well as the numerous cable terminals and contact resistances can quickly become the cause of a fire.

The following issues should therefore be of priority for IT professionals when drafting their fire protection requirements.

- What kind of protection am I aiming for?
- How can enough time be gained in order to react appropriately?
- How can flameless smoldering fires be identified in good time?
- How can fire and the spread of fire be avoided?
- How can re-ignition after the mandatory hold time of a stationary extinguisher system be reliably prevented?
- Can the fan cooling system be switched off for several minutes?
- How can an operational interruption caused by loss of power be avoided?



Answers to these and other questions can be found on the following pages.

### The right fire protection solution

The WAGNER fire protection solutions installed in hundreds of IT centres provide reliable rapid fire detection, fire extinguishing, fire prevention and hazard management. WAGNER offers a comprehensive fire protection solution from a single source: from planning and installation to servicing. The fire protection solutions from the technology leader are in operation in thousands of IT centres worldwide.







**CLEAR BENEFITS.  
RISKS ARE COVERED.  
THE SOLUTION IS IMPRESSIVE.**

As technological leaders, we set standards with our innovative fire protection solutions. After all, a fire protection system has to function so smoothly that you are safe in the knowledge that all risks are covered.



The reliance of the IT department for business-wide operation makes innovative fire protection technologies increasingly important. We supply you with them as a tailored package from a single source: from the TITANUS® rapid fire detection system, the FirExting® fire extinguishing system and the OxyReduct® fire prevention system to hazard management with VisuLAN®. Our expertise ranges from individual consultancy and application-specific development to the installation and maintenance of the systems.



### The perfect fire protection solution

For WAGNER, a streamlined complete solution means the right selection and networking of all necessary fire protection technologies. We provide your IT centre with a perfect fire protection solution that is tailored exactly to your needs. Our fire protection systems systematically ensure the highest level of security, because WAGNER is the current benchmark in fire protection.

### Risk analysis and protection targets

A risk analysis with a subsequent definition of your protection targets makes it possible for our

engineers to develop a perfect fire protection solution for you and integrate it in your IT centre. New air conditioning systems that can be installed in accordance with green IT criteria are also considered in the planning. With our extensive product portfolio we can offer the perfect fire protection solution for almost every application.

### Impressive benefits

WAGNER fire protection solutions are used around the world in thousands of centres. They effectively protect the most diverse IT centres from fire. Our customers particularly appreciate our high development and quality

standards that is guaranteed by numerous patents and certifications.

Naturally our fire protection solutions are VdS approved and are acknowledged by insurance companies. In Austria they conform with the TRVB guideline and the ÖNORM, and in Switzerland they adhere to the respective valid Swiss Standards (SN).



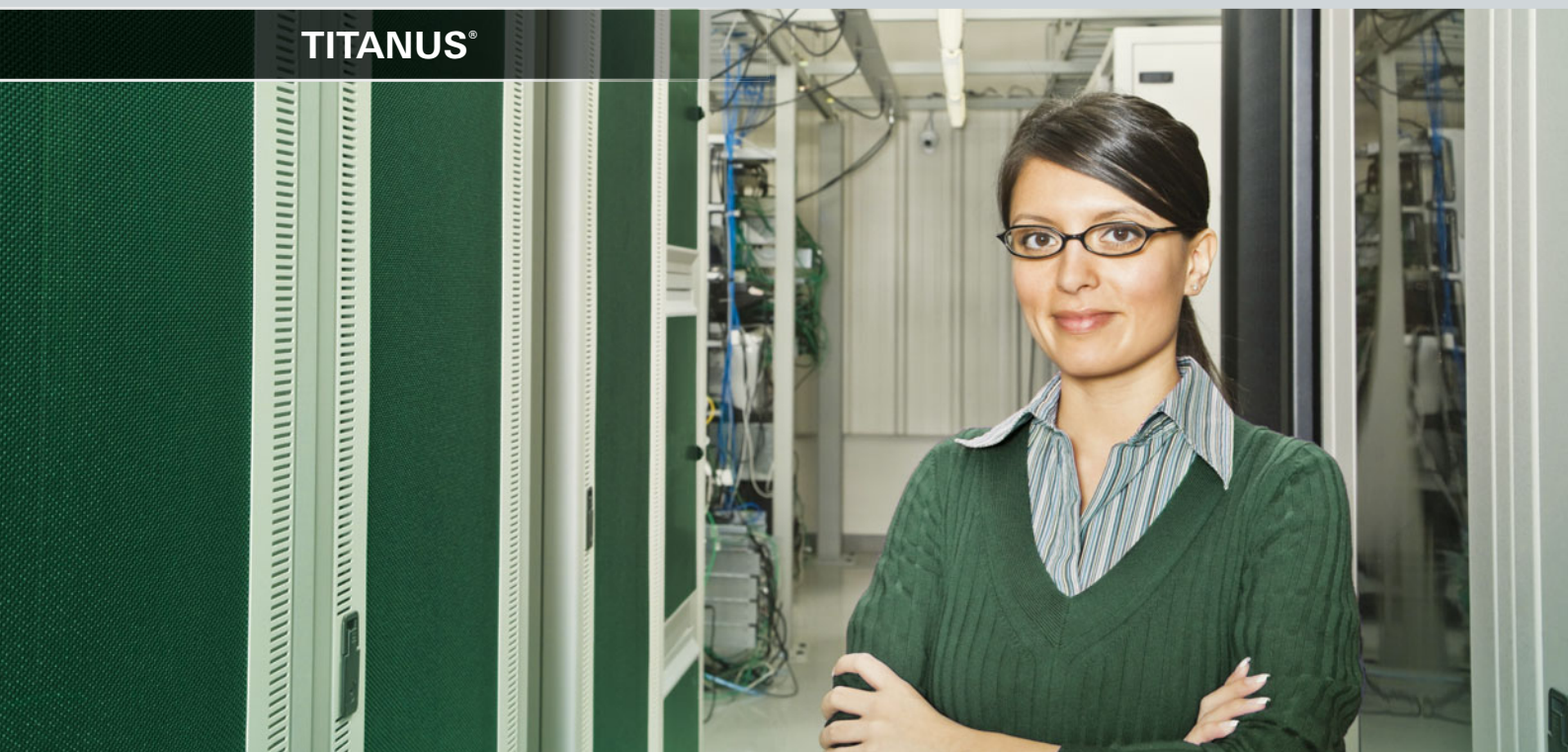
Inspected.  
Approved.  
Safe.

### References (Selection)

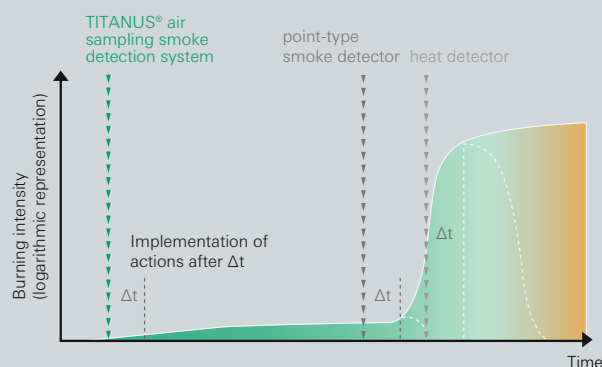


# TITANUS®: EARLIEST DETECTION. LONG BEFORE IT STARTS TO BURN.

Seconds can determine whether your IT centre stays available or cuts out. Our latest TITANUS® technology ensures that you can make the most of those seconds.



## Highly sensitive air sampling smoke detection systems in comparison with conventional smoke detectors



The restrictions of conventional smoke detectors is easy to explain: to detect a fire, a considerably increased concentration of visible smoke is needed, meaning that actions are often taken far too late. With the TITANUS® technology, which is protected against false alarms, we can detect the smallest smoke particles long before you would even suspect there is a fire. And it is up to 2,000 times more sensitive than normal point detectors.



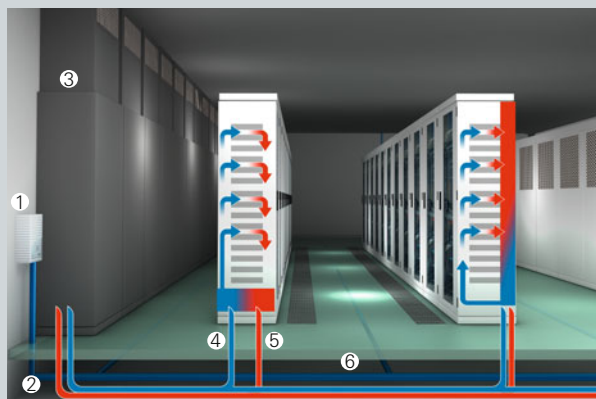
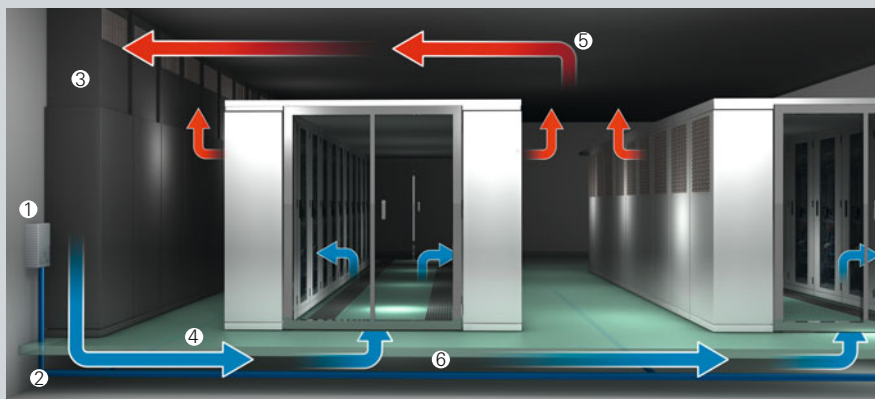
## Because every second counts

In order to avoid interruptions and guarantee availability, every second counts in IT sectors. With our individual solutions for room and facility surveillance, as technological leaders we guarantee reliable fire protection so that you do not have any downtime caused by fire. The patented and sophisticated TITANUS® rapid fire detection system gives you a priceless time advantage in protecting people, components and data. The system is protected against false alarms and detects fires with the patented LOGIC-SENS system as they start, when fire cannot even be seen, and is up to 2,000 times more

sensitive than conventional smoke alarms. That gives a decisive time advantage for taking action, which can also include triggering an automatic gas extinguisher.

## Flexible

TITANUS® air sampling smoke detection systems work by taking active air samples via a pipe system. The system can be simply and flexibly integrated in a new or existing IT centre. Furthermore, thanks to comprehensive networking, versatile and flexible fire detection evaluation options can also be implemented. Information for the analysis of alarms and faults is directly available whenever it is required.



- |  |                       |
|--|-----------------------|
| 1 TITANUS® air sampling smoke detection system | 4 Air conditioned air |
| 2 Air sampling pipe system                     | 5 Warmed waste air    |
| 3 Air conditioning                             | 6 Double floor        |

FirExting®:  
DISPLACES THE OXYGEN.  
AND GIVES THE FIRE NO CHANCE.

If oxygen in the air is displaced, the fire has no air to breathe. Then it cannot continue to burn.



With FirExting® fire extinguishers, WAGNER provides a further effective option for protecting IT centres. The efficient and environmentally friendly gas extinguisher technology has been considered a safe and effective fire protection solution in IT centres for many years. The aim of all fire extinguishing is to minimize damage to persons and property. Therefore, fast detection and starting the extinguishing process as fast as possible are important.





### The right combination

With an extensive product portfolio, WAGNER has been offering the perfect fire protection solution for almost every application for many years now. The FirExting® gas extinguisher technology is a very sensible alternative fire protection solution for IT centres where water would cause severe damage.

### Prompt extinguishing

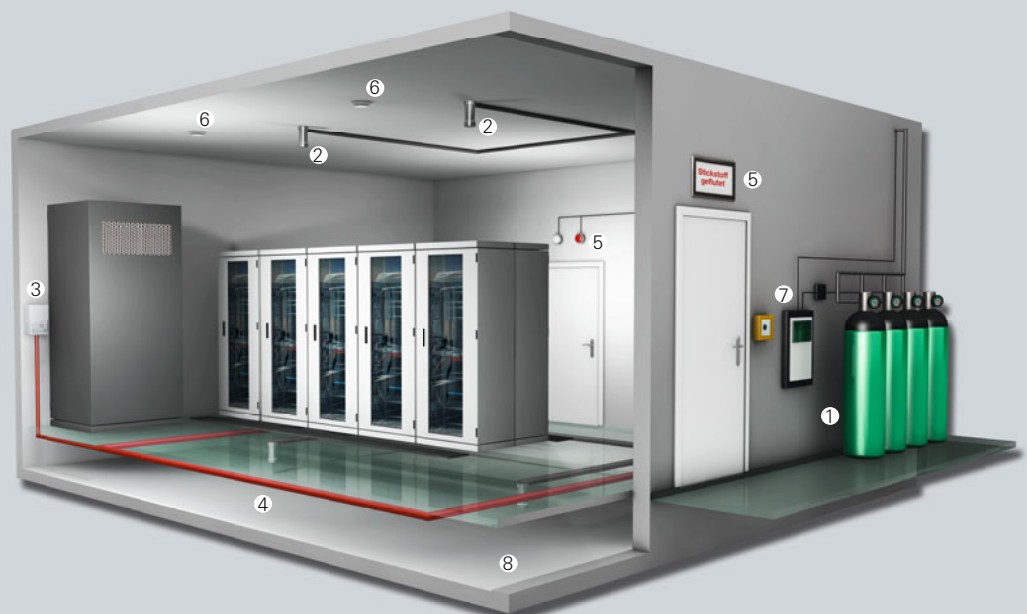
With FirExting®, WAGNER uses the proven inert gases nitrogen (N<sub>2</sub>), argon (Ar) and carbon dioxide (CO<sub>2</sub>) as well as the chemical extinguisher gas Novec™ 1230 for special applications. In case of fire, the correct concentration of extinguishing gas is prepared in good time and the extinguishing agent is evenly distributed via jets installed in the room. The combination of fire detection and extinguisher technologies is of considerable importance. An extinguisher system can only extinguish when it receives the

command to do so. That command is given by a smoke detector for instance, that sends a signal to the fire detection control centre which then triggers the extinguisher system. Prompt triggering of the extinguisher system is key to successful extinguishing.

### Proven for many years

Thanks to their high flexibility, thousands of FirExting® gas extinguisher systems are used successfully in IT centres around the world.

- 1 Extinguisher bottles
- 2 Gas extinguisher jets with silencers
- 3 TITANUS® air sampling smoke detection system
- 4 Air sampling pipe system
- 5 Alarm equipment
- 6 Smoke detector
- 7 Fire detection and extinguisher control centre
- 8 Double floor



OxyReduct®:  
REDUCING OXYGEN -  
IMPROVING SECURITY.

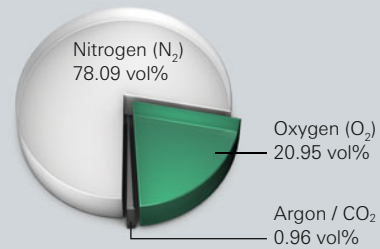
If the oxygen content of the air is reduced, a fire can no longer breathe. OxyReduct® ensures that those conditions are continuously guaranteed.



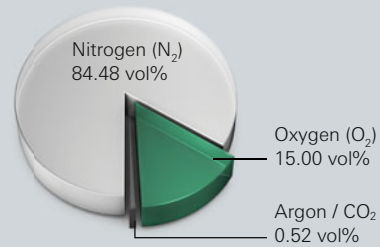
With the innovative fire prevention system OxyReduct® we have developed a fire protection solution that makes power disconnection as recommended by conventional systems completely superfluous. It is enabled by the controlled addition of nitrogen, which continuously reduces the oxygen content of the air. A fire can therefore not develop and spread. OxyReduct® was designed to fulfill the highest security requirements and is therefore the current yardstick in the IT fire protection sector.



## Natural atmosphere



## Reduced oxygen atmosphere (here 15 vol%)



### At best, nothing burns at all

In order to prevent the potentially very drastic consequences of a technical defect, WAGNER developed the fire prevention system. In accordance with the respective environmental conditions, the oxygen concentration is reduced in a controlled manner. Fire can therefore no longer spread. Rooms can however still be entered.

### No power disconnection

With OxyReduct®, it is no longer necessary to use power disconnection like in conventional fire protection systems, because there is no danger of a re-ignition.

That not only secures the retention of data but also the availability.

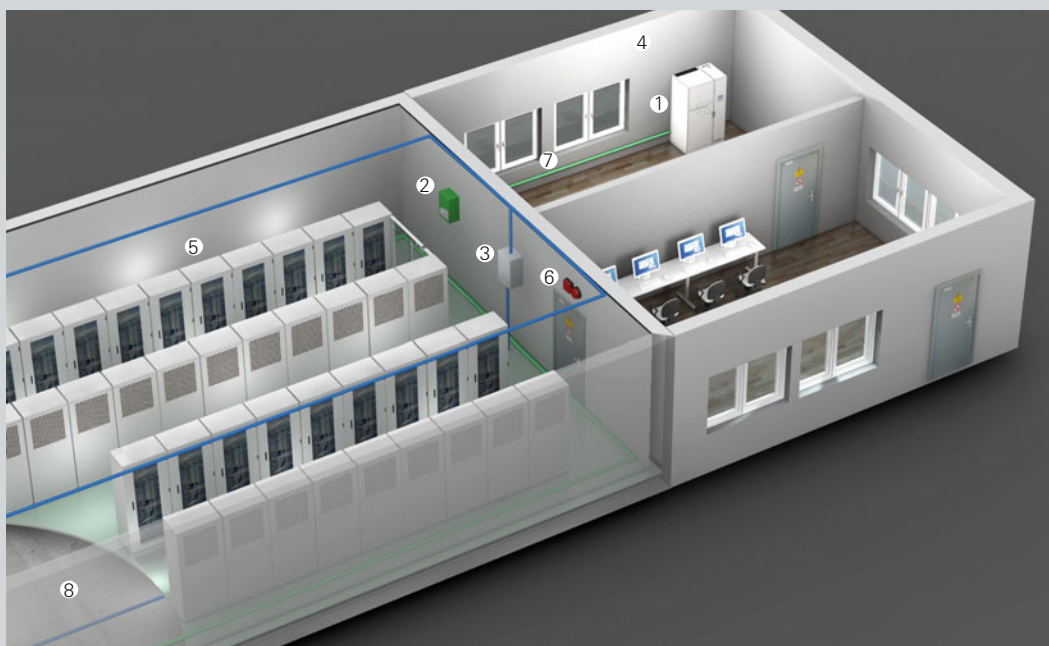
### Prevent room leakages

The system can be very easily adjusted to changes in use of the areas to be protected, thus offering a very high level of flexibility. A patented WAGNER procedure can detect changes in the airtightness of rooms.

### Hundreds trust OxyReduct®

OxyReduct® is implemented in 350 IT centres making it the most frequently used oxygen reduction fire prevention technology in the world. The high acceptance of the OxyReduct® fire prevention

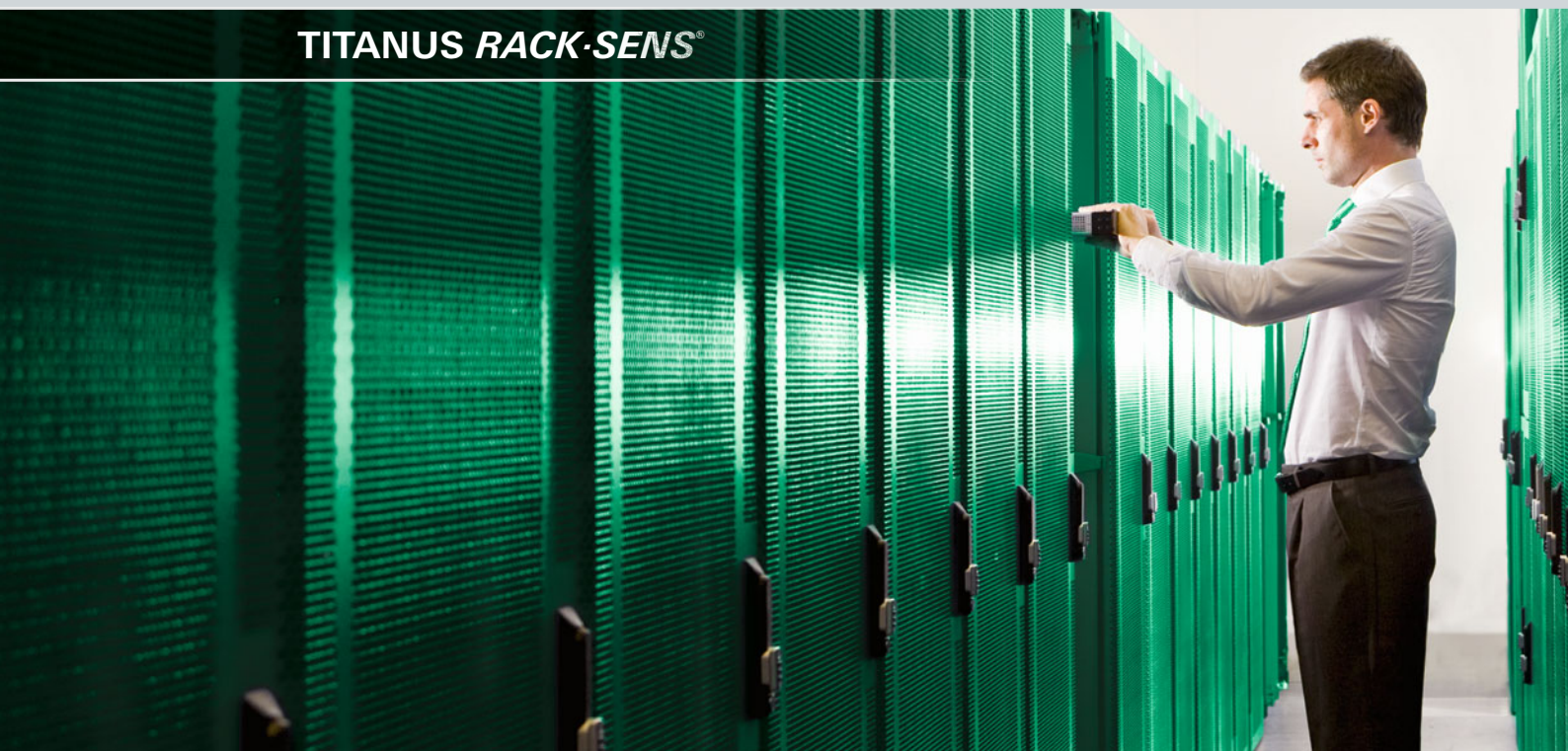
system shows that it is a solution with an extremely high level of security that at the same time has low energy costs. The innovative and sophisticated technology completely prevents fire from even starting.



- 1 OxyReduct® Compact
- 2 OXY-SENS® oxygen sensor
- 3 TITANUS® air sampling smoke detection system
- 4 Service room
- 5 Protected area
- 6 Alarm equipment
- 7 Nitrogen input pipe
- 8 Double floor

TITANUS *RACK·SENS*®:  
COMPACT FIRE PROTECTION.  
FOR CABINET SURVEILLANCE.

Space-saving early fire detection with optional extinguisher for cabinet surveillance: only available from WAGNER.



Network, server and switch cabinets in IT centres are often located remotely and perform their functions almost unsupervised. Therefore, fires can lead to potentially fatal consequences for the operator. With TITANUS *RACK·SENS*® WAGNER provides specialist cabinet surveillance that can detect and even extinguish a fire as early as possible.



### The solution for server cabinets

In addition to the electrical components of an IT centre, enclosed, air-conditioned server cabinets also pose an increased fire hazard. With TITANUS RACK·SENS®, WAGNER has developed a fire protection solution specially for server cabinets. Thanks to the modular 482.6 mm construction (19"), the system fits neatly into existing or new server, switch and telecommunication cabinets. Thanks to the fastest possible fire detection using the proven TITANUS® technology, the system enables prompt actions which not only include the "gentle" shutdown of server systems but

also data relocation or selective shutdown.

### Also with extinguishing

With the integrated extinguisher version at 88.9 mm height (2 HE), TITANUS RACK·SENS® also provides targeted extinguishing. It can either be integrated in the device or connected externally to gas extinguishers. Both inert as well as chemical extinguishing gases that are specially approved for use in the IT sector and preferred worldwide are used. Extinguishing can then be performed directly in the server cabinet.



TITANUS RACK·SENS®, here in 44.45 mm height (1 HE), was specially developed for cabinet surveillance



- 1 TITANUS RACK·SENS® with integrated extinguisher
- 2 Air sampling pipe
- 3 Extinguisher pipe
- 4 Closed server cabinet

VisuLAN®:  
PERFECTLY ORGANIZED.  
WITH EVERYTHING IN VIEW.

In an emergency, fast and precise action is needed. With a user-friendly hazard management system, the correct steps can be taken.



Due to the fact that response to incidents are often not coordinated with each other, new potential hazards can arise. In the event of an alarm, the reliable operation of all available security systems are essential and the incident response must be implemented immediately in accordance with the situation. Our VisuLAN® hazard management system provides you with exactly that. It enables the structured and clear display of event-related measures, all combined in one place.

### **Combined information**

With the network-based VisuLAN® hazard management system, WAGNER provides a solution to display event-related measures in a clearly structured way. Only with individual measures that are precisely adapted to each other can the correct actions be taken in the event of an alarm. All available security systems have to function reliably and incident response must be implemented immediately in accordance with the situation.

### **Flexible interface design**

VisuLAN® spans system borders. The flexible interface design also ensures the complete integration of all security technology systems. The advantage: bundled information from individual systems can be

provided at any place in the network. Highly sensitive TITANUS® air sampling smoke detection systems, video surveillance systems, fire detection systems, extinguisher systems and fire prevention systems such as OxyReduct® integrated in IT centres can then be visualized in the respective building plans.

### **Prevent false reactions**

Among the impressive functions of the system are for example the effective alarm management through the provision of clear instructions and documentation and archiving of event processes. The intuitive interface and clear display of status and event alarms are further benefits that make VisuLAN® an ideal solution for improving incident response in the protection of IT centres in emergencies.





UNDERSTAND FIRE.  
DEVELOP SOLUTIONS.  
THIS IS THE WORLD OF WAGNER.

Experience innovative fire protection solutions  
live at WAGNER WORLD.

**WAGNER**



What dangers lurk in your IT centre? How can you ensure the  
greatest reliability of your IT infrastructure? WAGNER WORLD brings  
fire safety to life and makes it easy to understand. Here you can  
experience today the technology which sets tomorrow's standards  
and get competent answers to your questions.

### Experience state-of-the-art technology

Intelligent, forward-looking fire protection is a complicated subject, which is why we opened WAGNER WORLD at our headquarters in Langenhagen, Germany, to clear up unresolved questions and provide answers.

### Realistic fire tests

Realistic fire tests are performed in the new laboratories to demonstrate the different combustion behaviours of different materials, for example. In the WAGNER WORLD auditorium, our experts

host regular workshops and seminars informing our customers, fire protection professionals, insurance experts, fire brigades and public authority representatives of current, general and trade-specific fire protection problems.

### Technology put to the test

In addition, you the visitor can put our TITANUS® earliest fire detection system to the test in a permanent exhibition and experience OxyReduct® live in action.

### WAGNER – Innovative fire protection since 1976

At WAGNER, we have been developing integrated, personalised fire protection solutions for our customers since 1976. With our innovative systems, we are now a trend-setter in the market and as a complete service provider we are in a position to deliver you everything from one source: from support in the design, planning and installation of your fire protection solution up to service and support throughout its entire service life, across the world and wherever your need us.





WAGNER sets standards for innovative and comprehensive solutions in fire protection: with very early fire detection systems, TITANUS® for aspirating smoke detection, FirExting® for fire-extinguishing, OxyReduct® to actively prevent fires from breaking out and VisuLAN® for hazard management. [www.wagner.eu](http://www.wagner.eu)

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