

# WAGNER®



## Impulse

The WAGNER Group GmbH customer magazine

LEAD ARTICLE

# Free Cooling made completely safe

New concepts for green solutions

### TITANUS MULTI-SENS® RECOGNISES WHAT IS BURNING

Flour dust or a real fire?

### KLEES AND KANDINSKYS WELL-PROTECTED

The treasures of the Munich art museum are safe from fire

### EXPERT OPINION

Roland Broch, Association of the German Internet Industry on "Datacenter Star Audit"



4-5

**Lead Article**

**Free Cooling made completely safe**  
New concepts for green solutions

- 4-5 **Lead Article**  
Free Cooling made completely safe  
New concepts for green solutions
- 5 All good things come in threes  
WAGNER distinguished once again
- 6-7 Fire prevention for the new  
data centre of noris network AG  
KyotoCooling® challenge
- 9 Current events on the market  
New ZVEI chair  
Sustainability of ventilation systems  
German electronics sector takes a  
step back in 2013

**Klees and Kandinskys well-protected**

The treasures of the Munich art museum are safe from fire

- 9 Expert opinion  
Roland Broch, Association of the German  
Internet Industry on "Datacenter Star Audit"
- 10-11 Active protection for the  
ultimate high rack storage facility  
Maintaining delivery capability: A must for Hayat
- 11 WAGNER wins the 2014 GIT Award  
for OxyReduct® VPSA
- 12-13 Klees and Kandinskys well protected  
The treasures of the Munich art museum  
are safe from fire
- 14 The server room on the way to  
the data centre  
Eight times the expertise combined  
in "Complete Data Centre"
- 15-16 TITANUS *MULTI-SENS*® recognises  
what is burning  
Flour dust or a real fire?
- 16-17 In retrospect  
Fire and Ice: 17. ECSLA conference addresses  
fire prevention in deep freeze storage areas  
"Intelligent networking – mastering complexity"  
WAGNER draws conclusions after LogiMAT 2014  
WAGNER resumes Feuertrutz 2014
- 18 "Children, you don't play with fire"  
Future Day 2014
- 19 On a lighter note
- 19 Preview of issue 3/2014



Dear Business Friends and Readers,

We live in the information age. This means, among other things, than an unimaginably large volume of data travelling around the world at any given second must be available at all times. Finely tuned security technologies are required to ensure the smooth operation of this data circulation, to which modern fire prevention makes an important contribution.

A fire would have devastating consequences in a data centre and so an immediate power shut-down of the entire IT infrastructure is necessary to ensure extinguishing success.

With our protection schemes, we don't let it reach that point! Our OxyReduct® fire prevention is increasingly being recognised in this application as an innovative fire prevention solution, which is designed for sensitive areas – it also works in conjunction with new air conditioning systems such as Free Cooling provided by KyotoCooling®. In data centres in particular, the electrical supply for the cooling are a primary factor in energy costs, so Free Cooling can quickly have a positive impact on the bottom line.

In order to eliminate costs arising from fire detection system false alarms, WAGNER has introduced an innovative, patented detection process: Read about how our latest innovation, the TITANUS MULTI-SENS®, air sampling smoke detector, is revolutionising fire detection. It recognises what is burning.

You will also find further information about trade fairs, current market news and useful practical reports in this exciting issue.

Sincerely yours

Torsten Wagner

Werner Wagner

Managing Directors of the WAGNER Group GmbH



**All good things come in threes**  
WAGNER honoured once again as an expert in fire prevention for "Complete Data Centre"

**ABOUT US**

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# Free Cooling made completely safe

New concepts for green solutions

**An environmental and resource-saving use of information and communications technologies: This is what lies behind the thinking in "Green IT". In this process, the entire life cycle is from the production to the operation to the disposal. A concept with entirely individual requirements, even when it comes to fire prevention.**

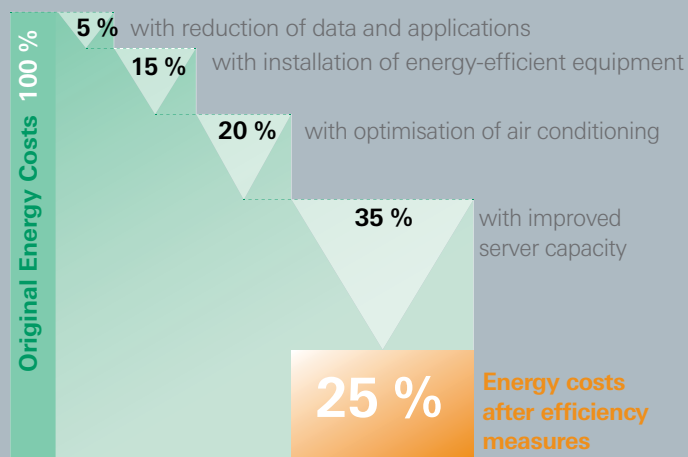
The basic idea of "Green IT" is the efficient use of energy and the limited use of resources, which offers numerous benefits. For instance, the concept contributes to considerable relief of environment stress, as well as enormous savings on energy costs for data centre operators. According to a study by the German Energy Agency from 2011, companies can reduce their energy costs for information technology by up to 75 % by implementing a Green IT strategy.

**Savings thanks to innovation**

More than half of the power consumption in data centres can usually be attributed to air conditioning, ventilation and power supply units. Innovative technology enables considerable savings in these, because IT components, for instance, can withstand considerably higher temperatures than they could a few years ago. Modern data centres with equipment from established manufacturers can therefore be operated in part with air supply temperatures of up

to 35 °C, which opens up numerous possibilities with respect to alternative cooling concepts, such as Free Cooling.

Energy efficiency in data centres: with an overall strategy of saving up to 75 %.



Source: Initiative EnergieEffizienz / dena

# All good things come in threes

## WAGNER receives the German data centre award once again.

In the framework of the "Complete Data Center" (CDC) collaboration, WAGNER demonstrated once again that the installation of data centres with fire prevention equipment is one of its core capabilities. After the company was distinguished in 2012 for the large fire prevention project in the noris network AG data centre and in 2013 for its TITANUS *MULTI-SENS*<sup>®</sup> very early smoke detection system with first place in the "Data centre security" category, WAGNER was awarded 2nd place together with the other companies participating in the CDC project.

Eight companies participated in the collaborative CDC project, addressing IT security and data centres from various perspectives and bundling their expertise into a flexible and modern server room solution. The result is the Complete Data Centre. Read more about the CDC on page 14. ■



▲ Celebrating the prize for 2nd place in the German data centre award (from left to right): Carsten Heumann (Denios AG), Steffen Breiter (Socomec UPS GmbH), Roger Bellof (STULZ GmbH), Ulrich Terrahe (GF dc-ce RZ-Beratung, organiser of future thinking), Werner Reinke (German data centre prize moderator), Peter Clauss (WAGNER Group GmbH), Jessica Böhm (Denios AG), Kort-Hinrich Heumann (TÜV Rheinland Consulting), Hayo-Volker Hasenfus (Panduit Deutschland) and Gerd Kruse (Socomec UPS GmbH)



▲ On 20/04/2014 a fire broke out on the fourth floor of the Samsung data centre in the South Korean city of Gwacheon. The incident resulted in a breakdown of Samsung services. Smart phones, tablets, smart TVs with smart hub, credit card services and other devices around the world could not be used for hours



▲ The fire in the telecommunications exchange in Siegen on 21/01/2013 resulted in damage to the regional economy totalling in the double-digit millions. According to a survey Siegen CIC, 95 % of the 1,300 companies surveyed

### Fire prevention in the data centre

Gas extinguishing systems like WAGNER FirExting<sup>®</sup> are traditionally used as a fire prevention solution. In the event that a fire is detected, it triggers and – depending on the extinguishing gas – either extracts heat from the fire or suppresses the oxygen by feeding extinguishing gas into the protected areas, thus suffocating the fire. However, a tight seal of the room is essential for this type of fire prevention in order to be able to maintain the extinguishable gas concentration for a sufficient length of time and prevent re-ignition. The independent testing institute VdS Schadenverhütung GmbH requires an extinguishing hold time of ten minutes in EDP areas. With time-tested, closed cooling systems, this leak integrity is normally provided; however, this is not the case with modern systems such as Free Cooling, which continuously supplies fresh air from outside. These climate control systems require their own unique fire prevention solution.

### Solution for Free Cooling

A solution combining various fire prevention technologies is available for use in data centres with Free Cooling systems and high outward flow losses due to a building environment that is not fully enclosed. These outward flow losses can

be accommodated by using systems with nitrogen generation and the extinguishing hold time of the extinguishing gas can be assured after successful flooding. The OxyReduct<sup>®</sup> active fire prevention system from WAGNER is already known as a fire prevention solution for different areas like data centres, storage facilities, archives and museums. With a controlled nitrogen supply, the system permanently reduces the oxygen concentration in the protected areas, whereby a fire can no longer develop or spread. Combining it with the FirExting<sup>®</sup> gas extinguishing system provides a reliable and energy-efficient solution, which has demonstrated its value specifically in data centres with Free Cooling systems.

After a comprehensive risk analysis and the definition of the protection needs, WAGNER develops a unique fire prevention concept for each customer, which is specially tailored to their individual requirements. WAGNER developed an appropriate fire prevention solution for the first indirect free cooling that used the KyotoCooling<sup>®</sup> system in a German data centre. Read the project report on pages 6-8. ■



” OxyReduct® has won us over completely. We cannot afford any downtime whatsoever. ”

Ingo Kraupa, Chairman of noris network AG

## KyotoCooling® CHALLENGE



# Fire prevention for the new data centre of noris network AG

**Noris network AG, founded in 1993, is one of the German pioneers in the modern IT services sector. Their portfolio includes tailored information and communications technology solutions in the areas of IT outsourcing, cloud services, as well as network & security.**

With NBG6, Nuremberg-based noris network AG has established one of the most advanced data centres in Europe. The two-year design phase primarily consisted of finding the best appropriate technology – starting with the servers, the uninterruptible power supply, the climate control system all the way to the security and fire prevention technology. Maximum availability of computer output and data, as well as high energy efficiency was paramount. The latest redundant security systems,

would provide comprehensive physical protection.

### **New approaches to cooling**

To achieve the lowest possible operating costs, noris network chose indirect free cooling provided by the modular KyotoCooling® technology. The giant aluminium circulation heat exchanger, with a diameter of 6 metres, removes the heat energy from the IT room air and releases it outside. KyotoCooling® takes advantage of the fact that the outside air temperature is lower than the ambient air in the IT centre 95 % of the year. The only running costs are the drive energy of the heat exchanger impeller and the fans. Air-water heat exchangers can be switched on as a backup system and operated for the few hours of the year in which the outside air is too warm for cooling.

### **Fire risks and consequences**

The exhaust heat of IT racks, the high energy density of electrical systems and the associated defects are considered the greatest fire risk. Therefore, in the event of a fire, the power supply is disconnected as quickly as possible in order to withdraw the supporting energy from a fire. However, for the data centre the idea of an interruption to IT operation due to the power shut-down was a greater fear than fire damage – their customers have contracts that ensure very high levels of service availability. A power shut-down was therefore out of the question.

### **Individual engineering solutions**

When WAGNER was asked to submit a bid for the fire prevention in NBG6, the company had already gained extensive experience with the use of Kyoto-



▲ The necessary oxygen reduction inside the NBG6 is achieved by an OxyReduct® fire prevention system



▲ Noris network AG has established one of the most advanced data centres in Europe

Cooling® together with OxyReduct® in a two-year series of tests conducted in a testing centre of Dutch telecommunications company Royal KPN NV. Therefore, in this case it was already known that the conventional concepts of the gas extinguishing and/or fire prevention would not be sufficient on their own.

### Non-standard solution

The outward flow losses during operation of a circulation heat exchanger make the use of constant oxygen reduction inefficient. However, with the use of traditional gas extinguishing and the very high pressure differences during operation of their cooling system fans, an extinguishable O<sub>2</sub> concentration could

not be maintained over a sufficient time period. The potential admittance of contaminated outside air via the free cooling was also a major worry for the planners. A tailored and comprehensive solution was required to overcome these technical issues and concerns.

### Multi-level solution

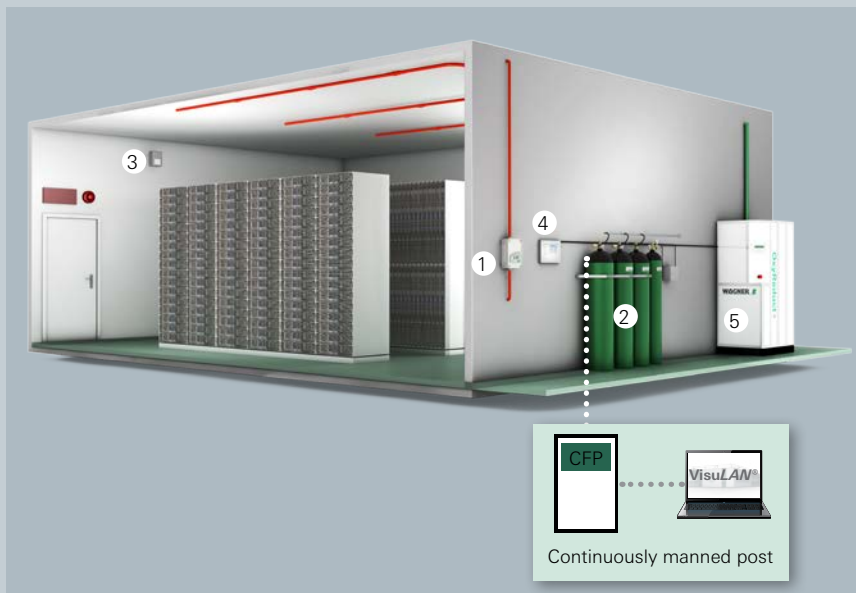
An important cornerstone for the protection of the two areas covering a total of 16,000 m<sup>3</sup> was the earliest possible fire detection. For this purpose, the TITANUS® air sampling smoke detection systems were used that have highly-sensitive two-detector dependency and can detect a fire at the earliest stage while preventing false alarms. These were also installed for the monitoring of the air

quality in the outside air circuit of the KyotoCooling® system.

Controlled procedures in case of alarm With the triggering of the very sensitive pre-alarm, the first fire control systems are already initiated (stopping of the Kyoto impeller, activation of seals, change-over to backup cooling and closing of fire doors).

The initial fire alarm triggers the first stage of the FirExting® extinguishing system and introduces nitrogen from 70 compressed gas canisters to the area for four minutes. The quick reduction from 20.9 vol% to 16.0 vol% O<sub>2</sub> results in significantly diminished fire behaviour, and the normal materials in an IT room no longer ignite. The connected OxyReduct® system continuously maintains the oxygen content at this level.

If a second air sampling smoke detection system recognises that the fire has not been entirely extinguished, a second fire alarm and the second stage of the



▲ Early fire detection is done by a TITANUS® air sampling smoke detection system 1. Once a fire is detected, an information will be sent out to the CFP. With a quick release of nitrogen out of pressurized bottles 2 the oxygen concentration is lowered to 16 vol%. The CFP is directly connected to the hazard management system VisuLAN®. If a second TITANUS® air sampling smoke detection system detects a not quite extinguished fire, the oxygen concentration is lowered once more to 13.5 vol%. With OXY-SENS® sensors 3 the oxygen concentration is constantly monitored. The data is transferred to the control centre 4. It controls the oxygen concentration of the fire prevention system OxyReduct® 5.

## REFERENCE REPORT

The brochure is available in German and English as a pdf file at [www.wagner.eu/downloads](http://www.wagner.eu/downloads) or can be ordered as a print copy from your WAGNER contact person.



extinguishing system are triggered. The O<sub>2</sub> level is then reduced to a concentration of 13.5 vol% within another four minutes - theoretically OxyReduct® can maintain this level indefinitely. This prevents re-ignition without having to switch off the power in the area.

**OxyReduct® assures that the room is sealed**

Only in a sealed room can the necessary gas concentration be maintained long enough that the extinguishing takes place effectively and safely in the event of a fire. Even if a sufficient seal has been verified at the time of commissioning, leaks arise over the course of time, e.g. due to hardware changes or movement of the building, which can dramatically endanger the fire prevention. With OxyReduct® the leak integrity of the area and thus the effectiveness of

the extinguishing system can be tested regularly. For this purpose, the system is switched over to the backup cooling and the oxygen content is reduced slightly from the normal level. Inferences about the current tightness of the area can be drawn from the time required to build up the predefined oxygen concentration – an additional feature not to be underestimated.

The solution for noris network gives the operator an optimum combination of energy-efficient cooling and effective fire prevention. WAGNER was awarded the 2012 German data centre prize for IT security for its fire prevention solutions. ■



▲ In September 2013 noris network AG received the Interconnected Site certification of the eco Association for both data centres NBG6 and NBG314

**INTERVIEW**



The WAGNER impulse editorial staff spoke with Florian Sippel, data centre project manager at noris network AG, about the specifics of the fire prevention solution for the new data centre.

**Mr Sippel, why was a well-planned fire prevention solution especially important for the construction of the new data centre for noris network AG?**

noris network AG serves numerous IT service providers. The customers rely on a reliable and powerful IT service. The fire prevention solution should be both secure and very energy-efficient with respect to Green IT.

**What were your exact requirements in the course of planning the fire protection?**

The new data centre required a reliable fire prevention solution, but should also retain unlimited access. In the event of an ignition, the fire should be detected early in order to take corrective measures as quickly as possible. The unlimited extinguishing hold time of the nitrogen concentration offers reliable protection from re-ignition and provides an appropriate time frame for troubleshooting.

**What is special about the solution from WAGNER?**

The TITANUS® air sampling smoke detectors already detect fires in the smouldering phase. As a result, extinguishing with nitrogen is triggered with a FirExting® gas extinguishing system.

The outward flow losses are compensated for by the OxyReduct® system, which generates additional nitrogen on-site. The system helps to compensate for the outward flow losses and

makes it possible to maintain the extinguishing gas concentration for any arbitrary length of time.

**What benefits do you see in the installed fire prevention solution?**

With the early intervention, damage caused by a fire can be reduced to a minimum. After the extinguishing and during the hold time for the extinguishing gas concentration, which can be maintained for any arbitrary length of time, the rooms are accessible for authorised personnel.

As a result, troubleshooting can commence immediately. The biggest advantage, however, is the fact that the system power does not have to be shut down in the event of a fire in order to prevent re-ignition. That way, the IT remains available.

**Thank you for your time, Mr. Sippel.**





Roland Broch is the director of member development at eco, which is Europe's largest internet industry association with 750 member companies. The trained typesetter studied engineering from printing technology and has been at home in the IT world for more than 15 years. He has been working at eco for six years and runs, among other things, the development of the "Datacenter Star Audit"

## Objectively safe – with the eco Datacenter Star Audit

**Trust is the essential criteria when it comes to choosing the right data centre partner. Trust is based on assurance, from the initial intervention times of the personnel to the effective fire prevention, detection and extinguishing technology. In order to help customers in their decision, by providing an objective evaluation, eco Verband der deutschen Internetwirtschaft e.V. developed the independent "Datacenter Star Audit" seal.**

Data centres are classified in the eco "Data Star Audit" like hotels, with three, four or five stars. The current version 3.0 incorporates three modules in the certification: the redundancy scheme, the results of the four security categories and the submission of the required documents. The examination takes place according to specific criteria and evaluation matrices of at least two independent auditors. An additional "green star" can be issued for excellent energy efficiency and an orientation towards Green IT.

### Reviewed availability and security

The emphasis for the office is the areas of availability and security of the data centre infrastructure. The topic of security is divided into organisational, structural and technical security, as well as supply security. Processes such

as capacity or risk management are likewise scrutinised, as are the number and qualifications of personnel.

The location, construction and security solution are factored into the review of the structural security. The supply security, as with the redundancy scheme, is based primarily on the supply of the cooling and the data networks with power. What is the situation with the fire prevention? Which access systems are in use and how do controls take place? How is it arranged around the monitoring technology?

### Reach for the stars

When the evaluations are concluded, the auditors issue points for each aspect. If all required documents were submitted, at least 90 % of the possible points are awarded in each category and the redundancy lies between  $2n$  and  $2n+1$ , the data centre can expect to be an operator certified with five stars. In the process, each component is maintained and replaced without limitations on the availability. The star certification is appreciated by customers, financial auditors, banks and insurance companies alike for its objectivity.

For additional information about the eco Datacenter Star Audit, visit: [www.dcaudit.de](http://www.dcaudit.de). ■

### The new ZVEI chair is Michael Linek

Michael Linek is the new chair of the steering committee in the ZVEI association "Security", to which 90 leading companies in the security industry belong. The 42-year-old succeeds Erik Kahlert. As his primary job, Linek has been the head of German business at Siemens Building Technologies since last April.



### Sustainability of ventilation systems

The environmental footprint of smoke and heat extraction systems and natural ventilation systems is gaining increasing importance. For this reason, the smoke and heat extraction systems and natural ventilation expert group in Zentralverband Elektrotechnik- und Elektroindustrie (ZVEI) has drafted two sample environmental production declarations. These document the energy consumption, the greenhouse and ozone depletion potential from manufacture, use, recycling and recycling of the systems. After all, sustainability is also "becoming an increasingly important decision criteria in the construction industry for purchasers and users," explained Michael Fröhlike, Chair of the ad hoc work group EPD.

### German electronics sector takes a step back in 2013 with negative three per cent

The industry output of German electronics companies dropped by three per cent in 2013 in comparison with 2012. This was disclosed by chief economist Dr. Andreas Gontermann of Zentralverband Elektrotechnik- und Elektronikindustrie (ZVEI). The yields of German electronics companies in November 2013 remain about 2.2 per cent below the previous year. However: "The upward trend of incoming orders is progressing rapidly," added Gontermann with a positive outlook. "For 2014 we expect a real production increase of two per cent." ■

” With OxyReduct® we have found a fire prevention solution which satisfies all our requirements. ”

Teoman Duman, HAYAT Logistics Director

## MAINTAINING DELIVERY CAPABILITY: A MUST FOR HAYAT



# Active prevention for the ultimate high rack storage facility

**Thirteen years ago the Hayat Group, the largest Turkish producer of pharmaceuticals suffered immense damage from a large-scale fire in their warehouse. In the meantime, Hayat has recovered from the purely financial loss, as well as the damage to its image. Today the Turkish company owns one of the world's largest logistics centres. And it is now actively protected from fires by the OxyReduct® technology from WAGNER.**

The Hayat group, with headquarters in Izmit, is the Turkish market leader for household cleaning, baby care, feminine hygiene and body care products. The company was founded in 1937 and remains under single-family ownership, now exporting its goods to 70 countries around the world. "After a large fire in 2001, we had to invest a great deal more. It also took significant effort to win back the lost market share," explained Teoman Duman,

Hayat Logistics Director. With the OxyReduct® fire prevention system the company is now certain that the new warehouse is comprehensively protected.

**The ultimate high rack storage facility**  
Built by Hayat in the immediate vicinity of its production operation, the fully automated high rack storage facility impresses by the number of cubic metres alone: 500,200 m<sup>3</sup>. The company has been using the 44.5 m high building in so-called clad rack construction since it was completed 2013. The unique feature: The shelf elements form the supporting structure of the warehouse, where 165,000 pallet slots store cellulose items, household cleaning agents containing alcohol and body care products containing tenside.

Malfunctions and short circuits: The risk of ignition is always present in storage facilities. Body care products containing tenside and alcohols dissolved

in water are among the most flammable liquids. With products comprised of cellulose, such as tissues, there is also a great deal of flammable material in the high rack storage facility. The combination of these various materials with wide-ranging ignition thresholds, large fire scenarios, as well as the height of the storage facility and the requisite continuous operation of the logistic processes in the event of a fire, places great demands on the fire prevention system.

For Hayat a conventional sprinkler system was out of the question for a number of reasons. The large number of sprinkler outlets would have meant significant cost for installation and maintenance. The safety clearance between the sprinkler outlet and the stocked goods would have also meant a reduction in storage volume by 15%. In addition, the risk of extinguishing water causing additional damage would also arise in the event of a fire.

# WAGNER wins the GIT Award 2014 for OxyReduct® VPSA

## Readers and market participants chose WAGNER for the Award of GIT SICHERHEIT & MANAGEMENT 2014.

The award in the area of security technology recognises the OxyReduct® VPSA technology, introduced by WAGNER in 2011, for its innovation in the area of energy-efficient nitrogen generation, which offers energy savings potential of up to 80 %.

For Managing Director Torsten Wagner the award is an important recognition and, at the same time, a confirmation that his company is concentrating on the right technology. "We are very pleased about this award and that we were able to come in first place. For me this is a clear sign that we are focussing on the right product with OxyReduct® VPSA," said Torsten Wagner when the prize was awarded. Steffen Ebert, Editor in Chief of GIT SICHER-

HEIT & MANAGEMENT attended the awards ceremony together with his colleague Manfred Höring at the company headquarters in Langenhagen. In addition to a series of fire testing procedures with various materials, the visitors were able to get a first-hand look at the operation of the new WAGNER TITANUS MULTI-SENS® air sampling smoke detector. With innovative fire pattern recognition, the system can recognise what is burning and thus, for instance, identify the smoke of a cigarette. The individual evaluation of the smoke enables an appropriate reaction in the event of an alarm.

A winner again: GIT Award voter Monika Tegtmeier, graduate engineer and qualified expert for preventative structural fire protection, was pleased by the visit from Michael Kind, head of the WAGNER branch offices in Hanover and Hamburg, who brought her the iPad raffle prize in person. ■

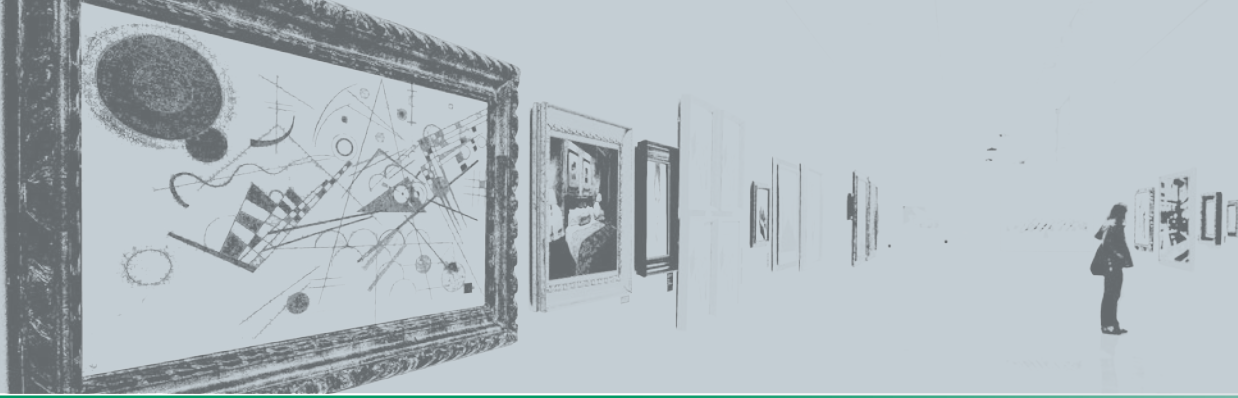
## Effective protection with OxyReduct®

The OxyReduct® fire prevention system reduces the oxygen concentration in the warehouse so that fire can no longer develop or spread in the atmosphere created. OxyReduct® reduces the oxygen level to approx. 14.0 vol% by means of supplying nitrogen. The fire prevention system extracts the nitrogen from the air in the room in an especially energy-efficient manner by using Vacuum Pressure Swing Adsorption Technology (VPSA).

Teoman Duman, Director Hayat Logistics, is certain: "The most important benefit for us is that our supply chain is never interrupted." ■



▲ Steffen Ebert (Editor in Chief of GIT, far left) travelled to Langenhagen to hand over the GIT Award 2014 to Managing Director Torsten Wagner (centre). Also pictures (from left to right): Katrin Strübe (Editor), Astrid Sassen (Marketing Manager) and Lars Schröder (Team Leader Marketing/Communications) from the WAGNER Group GmbH



## KLEES AND KANDINSKYS WELL PROTECTED



As part of a comprehensive refurbishment, the Lenbachhaus museum of art in Munich has been modernised and expanded



The city of Munich purchased the Tuscan-style villa in 1924 from the widow of the painter Franz von Lenbach

# The treasures of the Munich art museum are safe from fire

**The Lenbach palace in Munich: At the end of the 19th century it was the residence of painter Franz von Lenbach. Today the Tuscan-style villa is the home of artwork by artists such as Wassily Kandinsky, Paul Klee, Andy Warhol and Joseph Beuys. In order to ensure that the valuable art collection is preserved for coming generations, the museum relies on a comprehensive fire prevention solution from WAGNER.**

The cornerstone for the municipal gallery was already put in place in 1924 by the widow of artist Franz von Lenbach, who had already been dead for 20 years. She sold her husband's estate to the city of Munich and simultaneously handed over many of the collected works of von Lenbach. The municipal art gallery officially moved into the Königsplatz quarters only five

years later. Much of the house was destroyed during World War II, and was rebuilt in a rudimentary fashion during the early years of the post-war era. The poor structure of the building ultimately made a comprehensive renovation necessary. In the process, the developers chose a comprehensive fire prevention solution from WAGNER, consisting of the OxyReduct® fire prevention system, very early smoke detection with TITANUS® air sampling smoke detectors and the VisuLAN® risk management system.

### Valuable artwork actively protected

It cost € 59.4 million to renovate the old villa from the ground up and construct a modern new building. The exhibit areas have grown to 2,800 m<sup>2</sup> and new service facilities such as a lecture hall, a museum shop, a café and a restaurant have been added. However,

what remains concealed from visitors are the four storage areas on the basement floor of the art gallery. Art treasures are stored in the smallest space of around 500 m<sup>3</sup>. The "heart" of the museum is protected by WAGNER's complete fire prevention solution. In the museum even small fires can result in extensive material and artistic losses. Exhibits made of cardboard, paper, wood or textiles burn especially well and therefore easily destroyed by fire. The close quarters in a storage area add to the rapid spread of a fire. And the already low quantities of smoke can damage or destroy sensitive and irreplaceable exhibits.

### One-stop comprehensive protection scheme

The protection scheme is based on various components. The OxyReduct® fire prevention system reduces the

oxygen content in the protected area to a constant level of 17 vol%. OxyReduct® achieves this by introducing nitrogen into the protected area. The result is a protective atmosphere in which a fire cannot develop or spread. The rooms remain accessible for personnel. In order to ensure that the protection level can be permanently maintained, the oxygen concentration can be monitored from the central control panel of the OxyReduct® system.

In order to be able to already detect a fire in its incipient phase, the TITANUS PRO-SENS® air sampling smoke detectors are installed in the archive and technology rooms. Air samples are continuously drawn through a pipe system installed in the ceiling area. Even the smallest pyrolysis particles are discovered. TITANUS® therefore enables a decisive time advantage in fire detection. The system only requires two grammes of material undergoing pyrolysis in order to detect a fire. That means TITANUS® reacts up to 2,000 times faster than conventional smoke detectors and is especially resistant to false alarms.

### More security with rapid reduction

In the event of detection by the TITANUS® air sampling smoke detector, a rapid reduction is initiated immediately by the control centre. The oxygen concentration is lowered from 17 vol% to only 9 vol%, the so-called full-protection level. With this early intervention, a fire can no longer expand from the incipient phase and damage is reduced to a minimum.

OxyReduct® can maintain the full protection level, after the quick release, for any arbitrary length of time. WAGNER has conducted special fire testing with VdS using quick release to document the reliability of its systems. This led VdS to test the system installed in the Lenbachhaus and approve it. The combination of fire prevention, early fire detection and a rapid reduction enables comprehensive protection for the artistic treasures in Lenbachhaus in Munich. ■



▲ The OxyReduct® fire prevention technology (pictured to the right) ensures that the oxygen content within the protected rooms is permanently reduced to a low level. Nitrogen, which is stored in cylinders in Lenbachhaus, can also be released into the protected room within seconds in the event of a fire. With this quick release, a detected fire is prevented from spreading

► The city art gallery includes, among others, the light object 'Whirlwind' (photo right) by Danish artist Ólafur Eliasson





Complete-Data-Center

EIGHT TIMES THE EXPERTISE COMBINED IN COMPLETE DATA CENTRE



Mobile, flexible and completely equipped: the Complete Data Centre



The CDC plant room contains all security systems - including the OxyReduct® fire prevention system from WAGNER



For further information on the CDC collaborative project, visit [www.wagner.eu/cdc](http://www.wagner.eu/cdc)

## The server room on the way to the data centre

**Many IT landscapes have grown historically - often quickly. Efficient security precautions against external influences have not been able to keep up with this dynamic growth. A completely operational, efficient and secure data centre includes a variety of components which contribute to protecting and maintaining security.**

Eight companies participated in a collaborative project, addressing IT security and data centres from various per-

spectives and bundling their expertise into a flexible and modern server room solution. The result is the Complete Data Centre (CDC), which ideally replaces or expands upon every data centre or server room which has reached its limitations. An additional area of use is the mirroring of data in redundant servers. After all, one thing is certain: The loss of the IT infrastructure over an extended period of time - not to mention total data loss - would have serious consequences which could threaten the existence of many companies.

The CDC is a mobile, flexible server room contained in a container completely protected against fire and vandalism. User-specific IT components are housed on a surface area of roughly 30 m<sup>2</sup>, while the adjacent and separate plant room contains all security systems – from fire prevention to redundant air conditioning to video monitoring and access control, as well as an uninterrupted power supply.

The CDC provides all turnkey systems finely tuned to each other and ready for connection to the operator's network and power. The CDC is a complete system based on the principles of the TÜV Rheinland Consulting criteria catalogue and is CAT 2 suitable. There is also the possibility of RC4 classification according to DIN EN 1630 for the container envelope. The entire security solution can be designed specifically for each customer. With a focus on the customer, a package adapted to their requirements is provided: space-optimised, energy-efficient and ready for operation. And it all comes from one place – from the planning to the after sales service. ■

### Premier at the Data Centre Experience on 20/03/2014 in Hamburg

On 20/03/2014 a prototype of the CDC was presented for the first time to an audience of industry experts at the Data Centre Experience. The host of this event was STULZ GmbH in Hamburg. Additional presentations of the CDC took place on 10/04/2014 with WAGNER Group GmbH in Langenhagen and on 26/06/2014 at Denios AG

in Bad Oeynhausen. The innovative force of the CDC concept asserts itself. The IT container has already been honoured with a second place in the 'data centre security' category of the 2014 German computer centre awards and is a finalist for the GIT Sicherheit Award 2015.



## TITANUS *MULTI-SENS*® recognises what is burning

**TITANUS *MULTI-SENS*® is the latest product from WAGNER and is yet another innovation from the company. The principle of the new air sampling smoke detector is the same as with other TITANUS® models for early fire detection: The highly**

**sensitive technology continuously draws samples from the air in the room, thereby already recognising low quantities of smoke particles and thus detecting fires in their incipient stage.**

With the help of the High Power Light Source optical detection technology, all TITANUS® devices offer sensitivity that is up to 2,000 higher than conventional point-type detectors. The special feature of *MULTI-SENS*® however, is that it can filter out and analyse various deceptive phenomena from the extracted air samples. Therefore, it recognises what is burning or whether the air is only contaminated.

"Our newly developed *MULTI-SENS*® technology is based on our solution approach 'We tell you what is burning and what isn't', said Torsten Wagner, managing director of WAGNER Group GmbH, who is also responsible for research and development. For the first time, customer-specific fire patterns of materials can be learned and the TITANUS *MULTI-SENS*® then recognises and differentiates. For instance, the system can differentiate between cigarette smoke and burning chips of beech wood, PVC or cardboard. The system is even so sensitive, that it can differentiate the smoke of different brands of cigarettes, on the condition that it has been appropriately taught ahead of time. The use of



▲ TITANUS *MULTI-SENS*® wall in the WAGNER World is used to demonstrate which different smoke types the air sampling smoke detector recognises and what reactions are triggered

TITANUS *MULTI-SENS*® is especially advantageous in rooms where there is a great deal of dust from different materials, such as large bakeries.

The technology recognises whether only flour dust is burning in the oven or if an actual fire has broken out. Theatres and discotheques, which work with fog and in which smoking may take place, pose great challenges for conventional fire detection systems due to their wide-ranging interference factors. The use of TITANUS *MULTI-SENS*® is also advantageous in this case, because it can differentiate between mist and smoke and the fumes of an actual fire and then only triggers a fire sup-

pression system or an emergency call in the event of a real fire. Expensive and unnecessary false alarms can be prevented in this manner.

"The knowledge gained makes it possible to initiate the appropriate and effective response directly," explained Torsten Wagner. *MULTI-SENS*® offers customers the accustomed high level of false alarm assurance, for which the TITANUS® family has been known for years. WAGNER was already honoured for TITANUS *MULTI-SENS*® in 2013 with the German computer centre prize. ■



▲ The TITANUS® family air sampling smoke detectors enable the earliest possible fire detection in a wide range of applications

IN RETROSPECT

## Fire and ice: 17. ECSLA conference addresses fire prevention in deep freeze storage areas

**"Fire and Ice" was this year's motto for the 17th European Cold Chain Logistics Conference & Trade Show in Maastricht. The European Cold Storage and Logistics Association, abbreviated as ECSLA, sent out invitations to companies across Europe in February.**

The central theme this year was the important topic of fire prevention in deep freeze storage areas and refrigerated buildings, a subject on which WAGNER also lectured as a specialist. Michel de Boer, head of the Dutch subsidiary of WAGNER, explained the principle of fire prevention by means of active oxygen reduction. The presentation of the OxyReduct® solution showed how effective fire prevention in large deep freeze storage areas can be implemented, whilst allowing the protected area to remain accessible. With approximately 130 industry decision-makers, the conference had a similar popularity to recent years and offered the accustomed high quality presentations and discus-



**Michel de Boer**  
The head of the Dutch subsidiary of WAGNER lectured on the topic of fire prevention by means of active oxygen reduction during the ECSLA conference



sions. Representatives from the USA and Canada also made the trip to the Netherlands. The conference was not just a success for the organisers. WAGNER also had positive results.

"The ECSLA conference was a successful event for us," said Michel de Boer. "We have been able to connect with a number of new international contacts." ■



## "Intelligent networking – mastering complexity" WAGNER draws positive conclusion

**The twelfth LogiMAT, the intralogistics trade fair for central Europe, in Stuttgart enjoyed steady exhibitor numbers and a growth in visitors of more than 10 %. A success for WAGNER as well.**

With the motto "Intelligent networking – mastering complexity", 1004 exhibitors covered an area of nearly 75,000 m<sup>2</sup> during LogiMAT. Twenty-six nations were represented on the trade fair grounds at the Stuttgart airport from February 25 to 27 2014. In the process, the trade fair established itself as an internationally recognised industry platform. In addition, LogiMAT managed a new record with 32,800 visitors (+ 11.3 %). The fire prevention expert WAGNER presented at the intralogistics trade fair for the third time in a row. The central focus was the

OxyReduct® fire prevention technology. As a highlight, visitors were given the opportunity to experience the oxygen-reducing atmosphere live within a glass cabin. WAGNER also built an OxyReduct® system on a stand to demonstrate the energy-saving OxyReduct® VPSA (Vacuum Pressure Swing Adsorption) technology.

WAGNER was particularly impressed by the high quality of the trade visitors, than their increased numbers. "We have held many interesting discussions, including with super-regional customers," said Stephan Otto-Keinke, head of the WAGNER branch office in Stuttgart. New projects arose as a result. Markus Kock, head of system construction in Germany reported a similar experience. Both the conversations and the specific projects which

resulted were a testament to the quality of the show. "Next year we will definitely be back." ■



## WAGNER is very pleased with FeuerTRUTZ 2014

**The organisers were able to draw positive conclusions from this year's FeuerTRUTZ trade fair, which took place on February 19 and 20, 2014 at the Nuremberg trade fair grounds. More than 5,000 interested trade visitors came to Nuremberg, which is an increase of 44%. The number of exhibitors this year also increased to 186, making it 13% more than the previous year.**

The organisers were not the only ones to show positive results; WAGNER enjoyed similar success. "FeuerTRUTZ has been an important meeting place for us in recent years for the exchange of new trends and technologies established in fire protection. The great interest in fire prevention was demonstrated in both the accompanying convention and the variety of in-

teresting and high-quality discussions on our stand," explained Wolfgang Korsten, head of the WAGNER Group GmbH branch office in Mülheim/Ruhr.

WAGNER presented its long-established fire prevention solutions as well as a glance at state of the art developments and presented a world-first. The new and unique TITANUS MULTI-SENS® air sampling smoke detector represents a new level of fire detection. Whilst it was previously only possible to recognise that something was burning, the new technology now tells you what is burning. The system was tested live at the WAGNER trade fair stand using various fire tests. TITANUS MULTI-SENS® will be ready for its market introduction this year and thereby establish an additional milestone in fire detection. ■



# "Children, you don't play with fire" – except at Future Day in the WAGNER headquarters



▲ 21 pupils utilised Future Day to visit WAGNER in Langenhagen

◀ Developmental engineer Jan-René Stöver explained to the pupils how an air sampling smoke detector works on a demonstration wall in WAGNER World

▶ Are poor marks a reason to burn a school report? They are on Future Day. Antonia von Berg's marks on her school report were "not so great"



**Every child knows: You don't play with fire. You burn yourself in the best case scenario. During Future Day in Lower Saxony at the end of March, when boys and girls were given the opportunity to learn about professions which they had not actually considered for themselves, WAGNER had also opened its doors. Twenty-one pupils from grades 5 to 9 walked into the company and were allowed to play with fire.**

Then the 11 to 15 year-olds discovered the technical professions at WAGNER. The group's day began with a visit to the WAGNER World. "Do you know what we do here?" asked developmental engineer Jan-René Stöver. "Fire prevention and security," answered eleven year-old Indra. But Jan-René Stöver first had to show a few examples of how exactly that worked in the exhibit rooms of the WAGNER world.

As to how TITANUS® detects a fire and why it is so important to localise the fire specifically within a room, the first thing he explained was: "Evacuating people to a secure location has the highest priority." Therefore a fire must be extinguished as quickly as possible. Unlike the fire brigade, WAGNER does not work with water. But, with what? With nitrogen, answered one of the boys correctly.

After a trip through the WAGNER World, the pupils were mostly well-versed in fire prevention and fire detection. They learned about the practical realisation of OxyReduct® during the fire testing. The greatly enlarged school report of 14 year-old Antonia von Berg served as the test object in the twin cabins. Her father, WAGNER network technician Michael von Berg, provided it for the fire testing after receiving his daughter's consent. She said it was "uh, not so great". Reason

enough to light it up. In normal air in the room the paper was set ablaze in a matter of seconds.

In the oxygen-reduced cabin, technical editor Niklas Möller had enough time to draw Antonia's name on the school report in fire. In the process, the report did not go up in smoke. After the demonstration the older and younger pupils were divided up into groups. In these groups they built an air hockey game on a transport crate, developed a measuring device and practiced soldering. Soldering attempts, origami and a game with air pressure, which reminded some of the game "Angry Birds", were on the afternoon programme. The informative and fun day at WAGNER concluded with video playback. ■

# Preview of Issue 3/2014

## Fire prevention for warehouses and logistics

### Deliverable even in case of fire

Specifically in the logistics sector, where a prompt delivery has the highest priority, the effects of a fire are severe. In the next issue of WAGNER Impulse you can read about how working processes and delivery capability can be protected and operating costs can be saved with active fire prevention.



## British Library

The British Library is one of the world's largest libraries. More than 150 million copies in around 400 languages are archived between the two locations in London and West Yorkshire. Among the greatest treasures are the Magna Carta, Leonardo da Vinci's notebook and manuscripts of the Beatles. In order to ensure that these valuable texts do not fall victim to fire, an advanced protection scheme is needed.

## Vacuum Pressure Swing Adsorption

Vacuum Pressure Swing Adsorption, short form VPSA: With the help of this technology WAGNER manages to produce high amounts of nitrogen for active fire prevention in large spaces. How this technique works is explained to you in the next issue of WAGNER Impulse.

## BOOK TIP

### Legal practice for fire protection planners

#### Secure design of contracts and avoidance of liability traps

author: Dr. Till Fischer, 228 pages

The guidelines and requirements for fire prevention in building management systems are very high – as are the demands on fire prevention designers. Basic legal knowledge is beneficial in avoiding liability cases, etc. The new technical book from Dr. Till Fischer offers guidelines for contracts, output limitation, occupational safety, judgements and case examples with useful tips taken from practice.

Particularly value: A sample contract with contract modules integrated in the book provides additional assistance.



Appearing at Feuertrutz Verlag  
Cologne, [www.feuertrutz.de](http://www.feuertrutz.de)  
ISBN 978-3-939138-92-1

# On a Lighter Note

**Peter Clauss, head of association work at WAGNER, can report from personal experience how quickly you can be responsible for the lockdown of an entire airport terminal.**

It has now been a good ten years, not all that long after 9/11, that Peter Clauss travelled with two colleagues on business on a flight from Düsseldorf to Leipzig. There was a problem with his suitcase, announced the flight attendant. Completely taken aback by this information and without an adequate answer, his only choice was a direct visit to the airport security on the ground in Leipzig to find out what the problem could be with his suitcase.

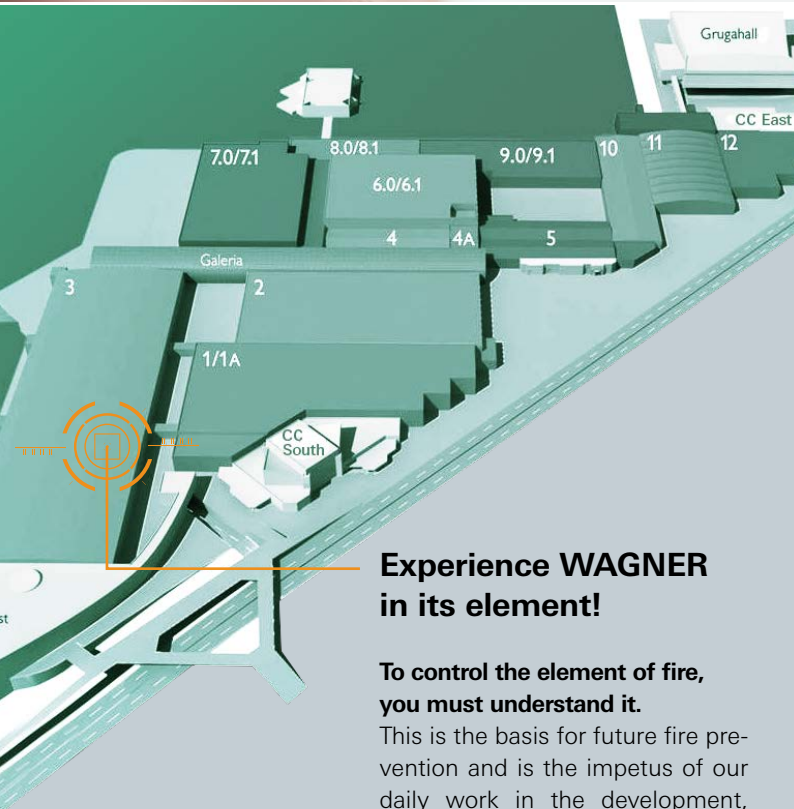
After he arrived there, the Leipzig officials informed him that the problem was discovered in Düsseldorf and the entire Terminal A was locked down. The automatic X-ray machine did not give any clear identification of a suspicious object. The solution to the problem was to blow up the suitcase with a controlled explosion - you can just imagine Peter Clauss' facial expression.

No less surprising was the fact that the suitcase in question was in good condition and rolled past on the baggage conveyor and it was instead a colleague's suitcases that was missing. All the suitcases had been checked in ahead of time in Peter's name with a group check-in. Ultimately it was nothing more than an electric toothbrush that had turned on in the suitcase and caused the suspicious vibrating noises. The X-ray machine could not identify it because it was positioned too close to a special extinguishing nozzle transported in the suitcase. The colleague had no choice but to accept a new suitcase. And since then, Peter Clauss always casts a careful glance in his baggage. ■





FIRE SPARKS  
OUR PASSION.



### Experience WAGNER in its element!

**To control the element of fire,  
you must understand it.**

This is the basis for future fire prevention and is the impetus of our daily work in the development, planning and construction of systems. See for yourself at this year's world-leading trade fair, security 2014 and see with your own eyes where fire has taken us.

A comprehensive overview of our product range and exciting live product presentations from the technological leader in fire detection and fire prevention await you.

See you there!



**23.09. - 26.09.2014**  
HALL 3.0, STAND 408

# Exhibitions, Roadshows & Events

**23/09/2014 - 26/09/2014**  
InnoTrans, Berlin

**23/09/2014 - 26/09/2014**  
security, Essen

**22/10/2014 - 24/10/2014**  
German Logistics Congress, Berlin

**03/11/2014 - 04/11/2014**  
International VdS Conference „Risk Management & Fire Safety”,  
Istanbul (Turkey)

**24/11/2014 - 25/11/2014**  
EIPOS Fire Prevention Expert Workshop, Dresden

**25/11/2014 - 26/11/2014**  
Stuttgarter Fire Prevention Workshop, Stuttgart

**09/12/2014 - 10/12/2014**  
VdS Fire Prevention Workshop, Cologne



For further appointments and  
direct contact with a WAGNER  
contact person in your area,  
please visit [www.wagner.eu](http://www.wagner.eu)

BETTER SOLUTIONS IN FIRE PROTECTION

