

Special Rail Edition 2014

Rail News

WAGNER® 
Impulse

The WAGNER Bayern GmbH customer magazine
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LEAD ARTICLE

Aeroexpress Moscow

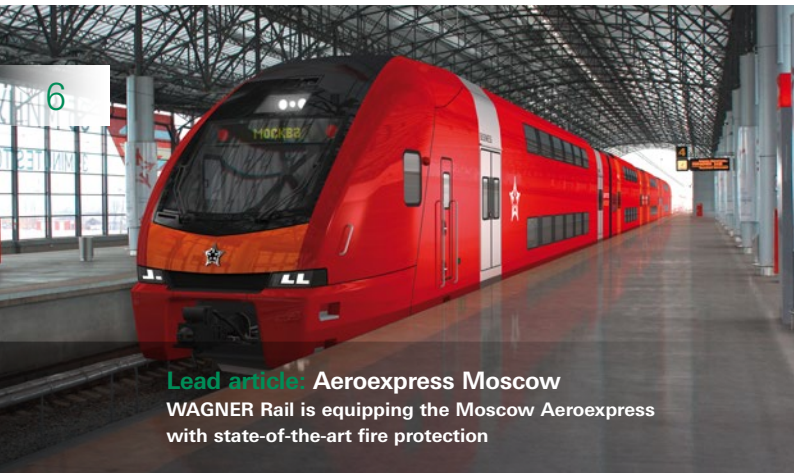
Equipped with state-of-the-art
fire protection technology

WAGNER'S RAIL ACTIVITIES

Intelligent systematic
fire protection solutions

IS THERE A FIRE OR IS IT JUST SOMEONE SMOKING?

Very early fire detection with
TITANUS *MULTI-SENS*®



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WAGNER Rail is equipping the Moscow Aeroexpress with state-of-the-art fire protection

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Dear Business Friends and Readers,

Trains: One of the most important locomotive and transportation methods in the world. Investment in long-distance, urban and underground rail transport systems is rising every year. The exponential growth and the ever growing number of passengers mean that demands for modern safety systems for rail vehicles are increasing. Fire protection systems have a key role to play here. Not forgetting new regulations and legislation, which generally call for active fire protection in rail vehicles.

Modern fire protection solutions from WAGNER offer the ideal conditions in this area to fully satisfy all future regulatory requirements. The modular system construction facilitates the design of individual solutions, which we can also offer locally to our customers in combination with services in their local language.

Since the last InnoTrans trade fair, our rail vehicle business has experienced exceptional growth. We are meeting these new challenges with our usual energy and resolve. For this purpose, we are currently implementing the necessary organisational measures. We have also been able to implement new solutions in collaboration with our customers on a number of international projects. Find out more about some of these projects in this edition of Rail News.

Kind regards, Dr Markus Müller
CEO, WAGNER Bayern GmbH

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Image Sources:
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Art.-Nr. 68-30-3406, Issued 09/14



WAGNER's Rail Activities

Intelligent systematic fire protection solutions

In recent years, WAGNER Bayern GmbH, a subsidiary of fire protection specialist WAGNER Group GmbH, has established itself as a leading supplier of fire protection solutions tailor-made to satisfy the specific requirements of any rail system.

WAGNER Bayern has already participated in many prestigious projects all around the world. ICx Deutsche Bahn, Munich Underground, Velaro Eurostar, Thameslink UK, ÖBB Railjet, Transrapid Shanghai, SBB Doppelstock, Velaro RUS, Desiro RUS, Aeroexpress Moscow, Metro Shenyang and the Monorail Bologna are all examples of customers in WAGNER's portfolio.

With its "Everything from one source" motto, the leading and certified manufacturer and installer offers not only fire protection solutions for rail transportation, but also has the know-how to take care of design, installation and

on-site service. A global network of branches and local partners all over the world means WAGNER Bayern is always close to its customers.

With its latest innovation in active very early fire detection, WAGNER is breaking new ground. TITANUS *MULTI-SENS*® detects not only a fire but at the same time it informs you of what is burning. This brand new approach is based on a new development – for the first time, the intelligent TITANUS® air sampling smoke detection system can learn customer-specific fire patterns in order to distinguish between a fire and a false alarm. Just like the other members of the successful TITANUS® family, the highly sensitive technology actively takes samples from the ambient air and checks them for pyrolysis particles. Thus the system detects fires in their incipient stage. *MULTI-SENS*® is an addition to the TITANUS® product range, well known amongst fire protection experts.

WAGNER's rail fire protection solutions have been tested under actual conditions in a real underground rail carriage – during travel, with open windows etc. – in accordance with the applicable ARGE Directive. The positive results were certified by TÜV SÜD Rail. Thanks to their many years of experience in designing fire protection solutions for rail vehicles, WAGNER takes part in national and international committees working to create new standards and rules. The actual fire protection systems fulfill all relevant standards and directives such as EN45545, SIL2, ARGE Directives, GOST Russia, Trenitalia, VdS, ISO 9001 and many more. The special train variant of TITANUS *MICRO-SENS*® was recently awarded SIL2 certification. ■



TITANUS MULTI-SENS® is the latest innovation from WAGNER. The air sampling smoke detection system not only detects that something is burning; it also identifies the material burning. ►

Is there a fire or is it just someone smoking?

Very early fire detection with TITANUS MULTI-SENS®
for maximum false alarm immunity

TITANUS MULTI-SENS® is the latest product from WAGNER, giving the company yet another valuable innovation. What makes MULTI-SENS® so special is that for the very first time, it is possible to teach the TITANUS® air sampling smoke detection system customer-specific fire and false alarm patterns.

The principle of MULTI-SENS® is basically the same as the other TITANUS® models used for very early fire detection. The highly sensitive air sampling smoke detector system takes continuous samples of the ambient air, enabling it to detect minute levels of smoke particles and detect fires in their incipient stage. Using High Power Light Source optical detection technology, all TITANUS® devices offer a sensitivity level up to 2,000 times greater than conventional point detectors.

The difference: The system can distinguish between and evaluate different types of fire and false alarms. This is ex-

tremely useful when applied to trains. "Our newly developed MULTI-SENS® technology is able to identify whether passengers are smoking illegally in a train carriage, for example", explains Dr Markus Müller, Managing Director of WAGNER Bayern GmbH. In the past, polluted ambient air or smoking passengers have frequently triggered false alarms and extinguishing systems. The new technology can prevent this in the future.

Passengers smoking in the toilet who cause an emergency stop as a result, or even trigger an extinguishing system, are a big problem for rail operators. Every year, major financial damage is incurred. The reason? For conventional fire detection systems, smoking is not a harmless false alarm, but a dangerous fire instead.

The TITANUS MULTI-SENS® system, however, can tell the difference. If a passenger smokes in the toilet, the intelligent system detects the smoke

aerosols of the cigarette, and instead of a fire alarm, sends an information message. A specially customized profile could also factor in a call to the train guard or conductor. So expensive and unnecessary false alarms can be prevented using these associated follow-up actions.

„This knowledge advantage allows us to introduce effective preventative measures in rail vehicles.“, explains Dr Müller. Like the other members of the TITANUS® family, the new MULTI-SENS® air sampling smoke detector system is easy to maintain and its concealed sampling orifices provide optimum protection against vandalism.

WAGNER has already been awarded the German Rechenzentrumpreis 2013 (German Data Center Prize) for TITANUS MULTI-SENS®. ■

WAGNER Capabilities: Everything from one source

Active fire protection systems in trains provide for and anticipate requirements and specifications in terms of personal safety, tunnel safety as well as protection of the rail vehicles themselves – according to the European Standards for Technical Specification Interoperability (TSI). An integrated fire protection system, which includes false alarm-proof detection and automatic fire fighting, is therefore essential.

In the rail transport industry, WAGNER offers systems for early fire detection, fire alarm and fire extinguishing and fire fighting.

Highly sensitive very early fire detection and effective fire fighting: this is the basis of the comprehensive fire protection solutions from system manufacturer WAGNER. The SIL2-certified active TITANUS® air sampling smoke detection systems – such as the Rail 138 and Rail 256 fire detection and alarm systems – are also part of the product portfolio. In the fire fighting field, WAGNER provides gas extinguishing technology, aerosol systems and low-pressure water mist.

Here, WAGNER components can be fitted as autonomous systems connected directly to the train bus system, or as integrated systems with a detec-

tion and alarm panel. In the latter case, the detection and alarm panel takes over communications with the train bus systems via volt-free contacts, or a CANopen or Ethernet interface. WAGNER can now offer complete system solutions with SIL1 or SIL2 certification.

Typical applications for fire protection systems in rail vehicles are the passenger areas, technical areas and the inlets and outlets for air-conditioning systems. Intelligent signal analysis enables the detection and exclusion of deceptive elements such as cigarette smoke or dust, even in difficult conditions. ■

WAGNER RU OOO

Greater safety on Russia's railways



▲ Team WAGNER Russia

The WAGNER Group GmbH had been selling fire protection solutions to Russia for over ten years before the company decided to set up its own subsidiary there.

On 11th June 2013, Werner Wagner, Engineer and Managing Director of the WAGNER Group GmbH, signed the agreements which would allow

this to go ahead and open the new business areas in the „German Centre for Industry and Trade“ in Moscow. The General Director is Vladimir Afanasiev. WAGNER has already been very successful in Russia. The company has been involved in projects such as Velaro, Desiro and the Sochi sleeping car for the Russian State Railway (RZD).

This work will continue with the establishment of the subsidiary. The fire protection business for the rail sector in the Russian market will not be the only business to be managed and driven forward from the Moscow location. Responsibilities extend to all CIS countries, where employees can access a network of partners and support systems. The local team possesses all the necessary skills and expertise required to build and commission the technical fire protection systems. Service and maintenance are also provided by WAGNER RU OOO, as the subsidiary is called.

WAGNER employees also train the customer's own technicians, including those of Siemens and Ural Locomotives, bringing them up to speed with the latest technical know-how for commissioning and maintaining the systems.

WAGNER Russia is in a position to manufacture most of the products locally. This is generally a requirement for project tenders and is therefore a key competitive advantage. It shortens the production process, thereby reducing logistics costs. A company-owned warehouse also facilitates the storage of finished system parts and spare parts. With the GOST certificate, which is documentation covering the production of goods in compliance with the standards, WAGNER Russia also satisfies all the necessary documentary requirements for goods which are either manufactured in or imported into Russia. Thus WAGNER has representation in Russia with all-round, established expertise. ■



Aeroexpress Moscow

WAGNER Rail is equipping the Aeroexpress Moscow with state-of-the-art fire protection technology

With Aeroexpress Moscow 2013, the Swiss train manufacturer Stadler has a truly prestigious project in its portfolio. By 2016, 25 of the Swiss company's double-decker trains will commute between Moscow and its three surrounding international airports. The trains will be fitted out with the latest technology and offer maximum comfort. WAGNER Rail is supplying the related fire protection.

From mid 2015, the Aeroexpress Moscow will connect the metropolis of Moscow, with over eleven million inhabitants, to the three surrounding airports of Sheremetyevo, Vnukovo and Domodedovo. This will make it possible for flight passengers to access central Moscow quickly and directly without driving through the capital's chaotic traffic. With the acquisition of 25 new trains, the Moscow rail company is providing the solution to the rising demand in this sector. The trains will be supplied by Stadler, the Swiss train building expert, who won the bid in 2013 as part of an international tender for the con-

struction of modern double-decker trains. In mid April, the company had already presented the first completed train parts to the public. In the future – and depending on the train length – there will be seats for between 396 and 700 passengers, with 84 of these reserved for Business Class. The 16 four-carriage trains and 9 six-carriage trains are equipped with the latest technology and the materials are specially adapted to handle the Russian climate – which means temperatures ranging from -50 °C to +40 °C.

To provide the best protection for passengers, WAGNER is providing the appropriate fire protection solution. The WAGNER Rail 138 fire detection technology monitors the driver's cabin, the WC, the service compartments and the passenger areas. Each train is fitted with a detection and alarm panel, which communicates alarms, faults and status messages to the train bus system. Optical multi-criteria detectors are also installed, capable of detecting both smoke and heat. The technical areas, on the other hand, are monitored by

optical smoke detectors and linear heat detectors. The advantage of the optical detectors is that they can be configured to perfectly match the environmental conditions. Individual technical areas are also fitted with a nitrogen gas extinguishing system. An extinguishing system with aerosols is not possible for safety reasons, as some technical areas are integrated within passenger areas. The WAGNER technology employed fulfills the requirements of all certification (GOST) for Russia and also operates quickly and reliably at extreme temperatures as low as -50 °C.

The WAGNER subsidiary is responsible for on-site service in Russia. And as Stadler will also have a future base in Minsk via its factory, any questions or queries can be answered quickly and easily. And that's not all: even training, support during commissioning and spare part procurement is covered by the local site. The express trains are still under construction. From mid 2015 onwards, the first of these trains will be on the move on Russia's rail system – fast and safe. With the best fire protection from the German market leader. ■

WAGNER Bayern GmbH cooperates with ANNAX



▲ Direct connection of the fire protection and passenger information systems

ANNAX and WAGNER Bayern GmbH are agreeing on a strategic partnership in the field of information and fire protection technology for rail vehicles.

Both companies wish to jointly exploit the synergies between the information and fire protection technology systems and to thereby generate added value for rail vehicle manufacturers. By combining the fire protection system with a passenger information system, opera-

tional states, alarms and faults in the fire protection system can be located with precision in the future and forwarded to the train personnel and/or to a fire alarm panel via the train network.

ANNAX und WAGNER aim to actively promote these synergies together for new projects and within new markets and to make good use of the strengths of the respective distributors to do so. Both companies have a presence at the InnoTrans trade fair, where they are exhibiting their joint system solutions. ■

Shenyang Metro: New trains



The underground rail system in the Chinese city of Shenyang, with over a million inhabitants, is growing fast. The metro system, which went into operation in 2010, will receive a total of 21 new trains for both lines 1 and 2, and will be built by Dalian Locomotives and Qingdao Sifang.

The first trains should be in operation in early 2015. WAGNER Bayern GmbH is supplying the related fire protection solution, which will be implemented together with a partner in China. The fire protection system is based on

the concept that was designed by WAGNER for the Munich underground. This system monitors the personnel and technical areas via a modern detection and alarm panel. The passenger areas are also protected by a water mist fire fighting system. This system uses the innovative WAGNER low-pressure technology.

Monitoring of the passenger areas is carried out by TITANUS® air sampling smoke detectors, providing reliable detection and identifies the burning material and excluding false alarms caused by vandalism. ■

Better protection for the Re 460



▲ Lok 2000 gets a new fire protection system from WAGNER

The red type Re 460 locomotive – also known as Lok 2000 – has been the backbone of the SBB long-distance fleet for 20 years. The Swiss National Railways company (SBB) is now modernizing its Re 460 fleet.

119 locomotives of this type will be fitted with a new fire protection system from WAGNER. The reason for this is the new tunnel, which these trains will travel through in the future: the Gotthard Base Tunnel.

The tunnel, which will be 56 km long, will connect the cities of Lucerne and Lugano from the end of 2016 and will be the longest underground connection in the world. As special fire protection conditions apply in this tunnel, the locomotives must be retrofitted with the latest fire protection technology.

In October, WAGNER will install its innovative technology in the prototype and SBB will then take over operation again. The entire fleet will then be converted gradually over the subsequent years. ■



Saudi Arabia purchases ultra-modern trains

Talgo is supplying 36 high-speed trains for the Mecca-Medina route as well as an additional VIP train.

The 36 Talgo multiple unit trains, which will consist of two 2 end cars and 13 centre coaches, to be built in Spain, will be fitted with the latest fire

protection solutions from the technology leader WAGNER Bayern GmbH. An autonomous system solution with direct connection of the smoke detectors to the train bus system is planned. However, if a fire does break out, the fire suppression system will respond using aerosol technology. ■

Kuala Lumpur Metro System: Redundant fire protection for fully automated metro rail systems

Siemens is building the Metro Klang Valley Mass Rapide Transit for the Kuala Lumpur metro system.

The project for the city metro includes 58 trains. The special feature: All trains will be fully automated and therefore driverless, as is the case on selected underground rail routes in Paris and Nuremberg. Consequently the fire protection system had to have a redundant design, as intervention by personnel in the event of a fire is not possible.

The fire protection solution from WAGNER Bayern GmbH, which is SIL2 certified, is based on the Rail 256 fire alarm panel, smoke detectors, TITANUS® air sampling smoke detectors and linear heat detectors. The various detectors are used in the passenger and technical areas. The linear heat detectors are installed specifically in the technical equipment cabinets. Monitoring of the outside air via a



smoke sampling system is also planned, and will be protected by a special filter for contaminants and condensate. This makes it possible to prevent an alarm from occurring when smoke is present in the ambient air. The data

collected is forwarded to the fire alarm panel via an Ethernet interface.

The trains will be in service by the end of this year or the start of 2015. ■

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