



WAGNER Group – A Family Company

- Fire protection system builder since more than 45 years
- Focusing on special fire protection applications
- World leading manufacturer of air sampling smoke detection systems which have been also adopted for rolling stock
- World leading manufacturer of active fire prevention systems
- Approx. 700 headcount, approx. 130 MEUR in FY 2023/24

Wagner Rail GmbH – A Wagner Group Company Focusing on Rolling Stock Fire Protection System Solutions

- HQ in Haar close to Munich
- Headcount: 35
- High portion of own development and manufacturing
- Complete system portfolio
- Huge number of references worldwide



Dr. Markus Müller



Dr. Peter Stahl



Bernhard Weindl

** Replacing Markus Kock by April 1st 2024*

Since more than **30** years
global acting manufacturer of
fire protection for railways

Fire Protection Portfolio – Meets all Requirements for Rail Vehicles

Fire Detection



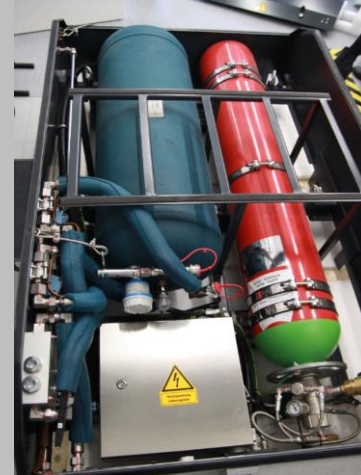
- Multi-sensor detector
- Fire control unit
- Linear heat detector
- Air sampling smoke detector

Fire Extinguishing



- Nitrogen
- Aerosol

Fire Fighting



- Two-phase flow water mist technology

Wagner Competences - From One Single Source

- Research & development
- Production
- Planning & engineering
- Execution
- Commissioning
- Installation support
- Service and maintenance
- Retrofit
- Certification & approvals
- Services on site
- Consulting
- Type testing according to ARGE or UNI

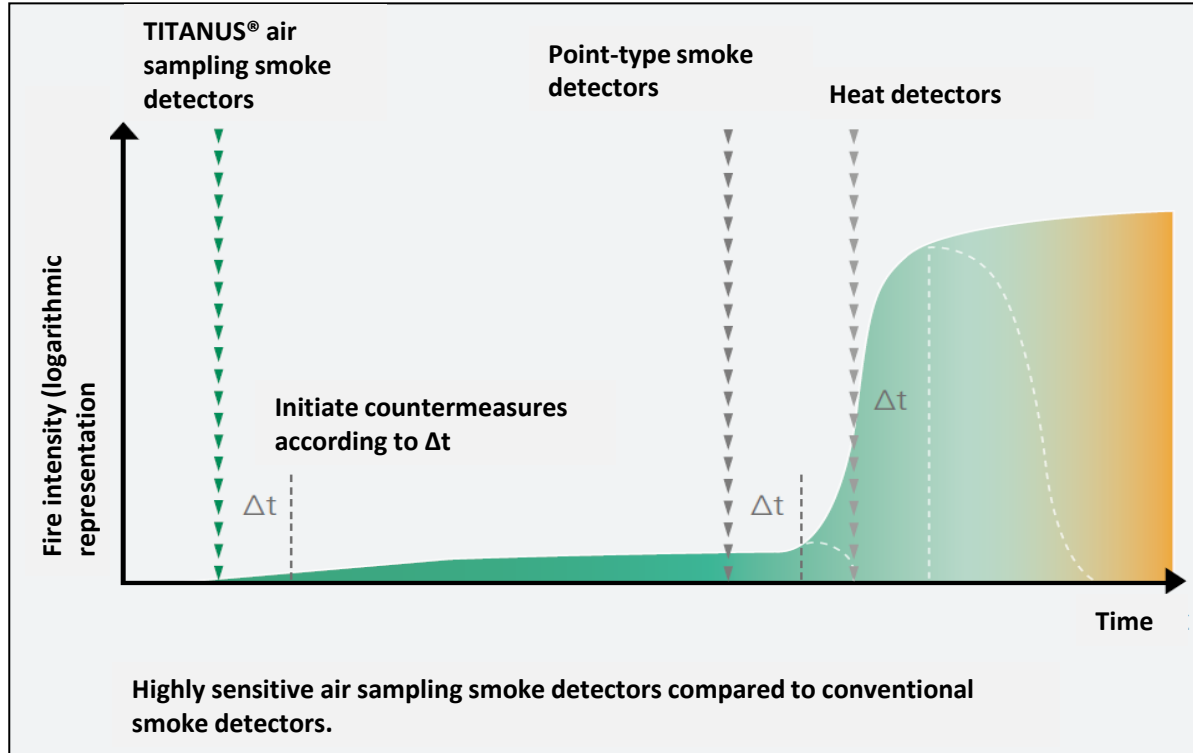


Fire Detection Key System Components

- Point-type detectors
 - Normally multi-criteria (heat and smoke), or thermal or smoke only (technical areas)
 - Optical measurement of smoke particles
 - Key issue: smoke must get into the detector chamber
- Air sampling smoke detection systems (ASD)
 - One detector per area instead of several point detectors
 - Optical measurement of smoke particles
 - Active system: smoke will be sucked into the detection chamber
 - Key difference to point-type detectors: larger detection chamber
- Linear heat detectors
 - Different alarm temperatures can be realized
 - New available: EN 45545 certified LHD



Fire Development and Detection Times: Time to get an Alarm



- ASD system detects faster than point detectors
 - Active aspiration
 - Larger detector chamber
- Point detectors detect faster than heat detectors

Getting an alarm as early as needed and as late as possible.

Unwanted alarms on trains are leading to unwanted consequences.

Fire Protection Systems for Rail Vehicles: Typical System Architectures

Standalone - Solution

Direct connection to the TCMS

- Smoke switch
- TITANUS® MicroSens (Smoke aspiration systems)
- Linear heat detector

- Solution for projects with lower complexity



Solution with fire alarm control panel

- Connection to a fire alarm control panel
 - Communication of the control center with the TCMS via
 - Relais contacts
 - Software Interface
 - CAN open
 - Ethernet (e.g. TRDP)
 - MVB
- Solution for more complex projects



Trend towards standalone solutions: more and more standalone projects are realized

Every Day, our References Attracting Millions of Travelers, Commuters and Tourists



Magnetic levitation
train



Metro
Glasgow



Velaro Eurostar



Stadtbahn Dortmund



Mireo Rheintal



Flirt Vaudois



Desiro ML



Desiro City
Moorgate



Metro
Helsinki



Desiro HC
RRX



Desiro UK
Thameslink



RhB



Velaro Türkei



ICE-4



RHB Indien



HGV Saudi Arabien



Prima H4 Dual



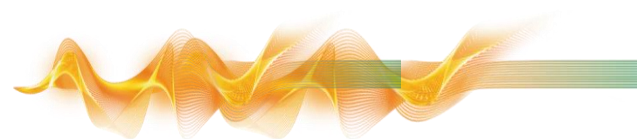
Voralpenexpress SOB

WAGNER®

Resulting Key Advantages of ASD Systems for Rolling Stock Applications

- Fast and reliable fire detection
- Invisible installation
- No vandalism
- Smokers are not creating an alarm
- Adjustable to internal design and air flows
- No impact from HVAC system





THANK YOU FOR YOUR ATTENTION

www.wagner rail.wagnergroup.com

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