Fire protection for rolling stock

Dear Ladies and Gentlemen,

Standstill is a no-go for the train industry worldwide. Always on the move, however, is the motto. This also applies to further development of alternative drive technologies beyond diesel operation. In times of climate change and Fridays For Future demonstrations, the railway industry must also further develop in the direction of more climate friendliness and a positive CO_2 balance. This development is taking place, for example, in Stadler's "*Wales and Borders*" project, in which trains are partly equipped with three different drive technologies. The appropriate fire protection solution comes from Bavaria, from WAGNER Rail.

WAGNER Rail cannot only implement major projects but also create solutions for individual single railways. Discover the details and read about the exchange of the funiculars to the Austrian Wurzeralm, a skiing and hiking area, in our newsletter. The Swedish mining company LKAB does not worry about the protection of passengers. Powerful electric locomotives in double operation transport up to 7000 tonnes of iron ore in northern Sweden between the processing plant and the Norwegian port of Narvik. The modernisation process requires a strong fire protection solution.

Learn more about these exciting projects and which solutions WAGNER Rail hast to offer.

Have fun reading!

Markus Kock, Managing Director WAGNER Rail GmbH

ENERGY-EFFICIENT FLIRT TRAINS OPEN UP THE REGION AROUND CARDIFF

WAGNER Rail designs fire protection solution for alternative drive technology

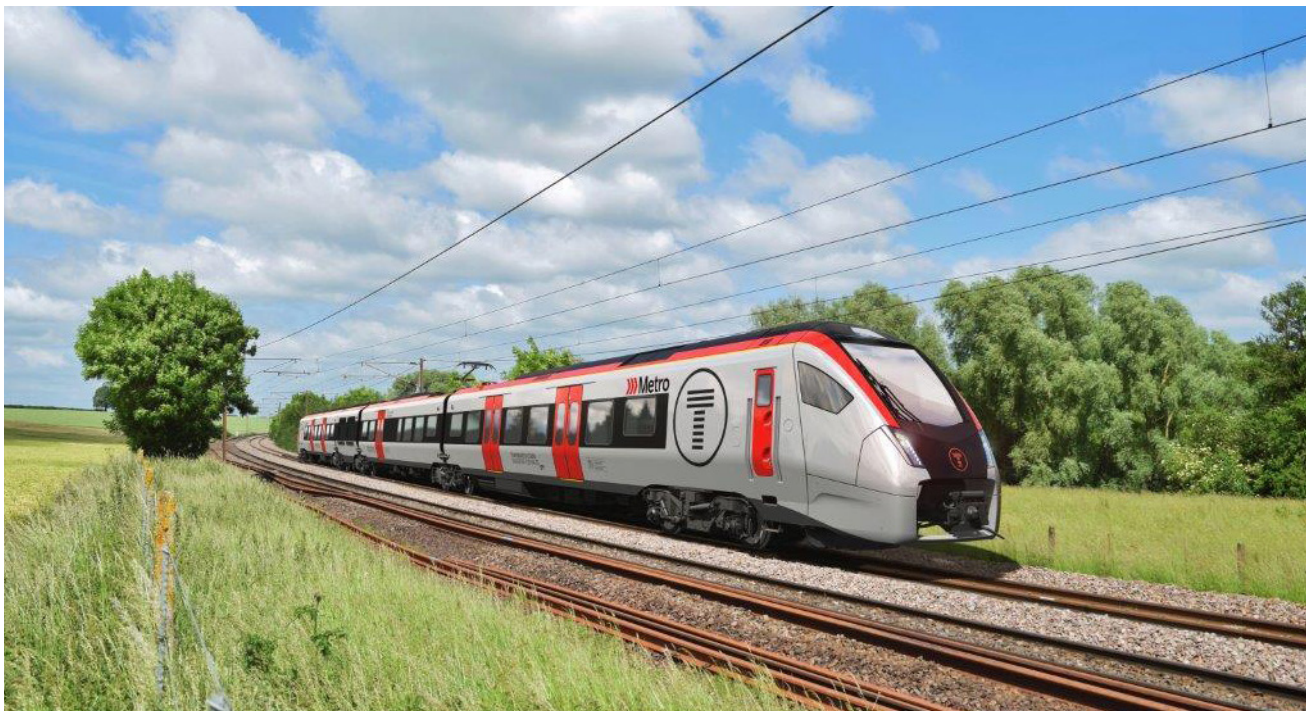
With the project name Wales and Borders, the Swiss train builder Stadler is now selling its FLIRT for the second time on the British Isles. Around the Welsh capital of Cardiff, the fleet will in future provide fast connections to the surrounding towns. WAGNER Rail is taking care of best protection of the modern, environmentally friendly drive technology.

The entire order from Stadler comprises 35 regional trains of the FLIRT type and 36 tram trains of the CITYLINK type. With the tram trains, Cardiff will receive its first tramway for the extension of its public transport system in around 70 years. For both types of train Stadler has focused on environmentally friendly drive technology with battery operation. WAGNER Rail was commissioned to design a fire protection solution for this alternative drive technology.

The FLIRT trains will be delivered in two variants: eleven diesel-electric (DMU) trains and 24 trimodal trains equipped with three drive technologies. The four-carriage DMU trains run on the South Wales Metro network between Maesteg and Cheltenham. The trimodal variants will be available as three- and four-car units and will serve the Vale of Camorgan, south of Cardiff. They will be powered by a mix of mainly electric, diesel-electric and battery-powered engines. Operators Wales and Borders and Stadler opted for this mix because they have to switch between electrified and non-electrified sections on the scheduled routes. The latter area includes 55 bridges that are not equipped with electrical overhead lines. Retrofitting them would have been very expensive.

The appropriate fire protection solution from WAGNER Rail is as follows: Linear heat detectors and an aerosol extinguishing system for the diesel units are installed in the DMU trains. The toilets, the driver's cab and the technical areas will each be fitted with smoke detectors. In the trimodal models, the linear heat detectors monitor the battery packs in addition to the diesel aggregate. The extinguishing of the diesel aggregates as well as the fire detection in the areas of the toilets, the driver's cabs and the technical areas are identical to the DMU.

WAGNER Rail will start with the implementation at the end of 2020/21, and from 2023 the new trains will then run on the tracks in Wales as planned – environmentally friendly and optimally protected.



WURZERALMBAHN GETS NEW DESIGN – AND MODERN FIRE PROTECTION FROM WAGNER RAIL

TITANUS® air sampling smoke detectors monitor passenger area

One of the most modern funicular railways in Europe is getting a new look: the Wurzeralmbahn runs in the Upper Austrian holiday region Pyhrn-Priel and brings skiers and hikers safely to their destination: to the alpine pasture of the same name at an altitude of 1,400 metres. **Now the funicular is getting a new look – and suitable fire protection from WAGNER Rail!**

The builder of the car body Carvatech GmbH is the designer and builder of the new funicular. The line has been in operation since 1978 and since 1996 has been one of the fastest and most modern in Europe – until today. This predicate should also be maintained with the new types of railway. Up to 140 people and a car attendant can be accommodated in each of the trains.

In the course of the modernisation not only the design will be adapted – from colourful to matt black with red lettering – but also a modern fire protection solution from WAGNER Rail will be installed. So in future the passenger area will be protected with active early fire detection. The TITANUS *MICRO.SENS*® aspirating smoke detectors detect the finest pyrolysis particles at an early stage, so that in case of emergency appropriate countermeasures can be initiated very quickly. Linear heat detectors and point detectors are used in the technical areas. Point detectors are also installed in the car attendant stands. An additional aerosol extinguishing system protects the installed vehicle technology.

The Wurzeralmbahn gets a modern look and the appropriate fire protection system.

"WAGNER Rail has a good reputation in the industry. We have already worked together on a previous project", explains Michael Leithinger, Technical Cabin Construction Systems Engineering at Carvatech, the decision for the fire protection solution from WAGNER Rail. Hikers and skiers will be able to travel to the Wurzeralm with the new cableways from June 2020.

EXPERT SYMPOSIUM: RAILWAY FIRE PROTECTION

WAGNER Rail gives lectures

The 8th international symposium "*FIRE SAFETY 2020*" about railway fire protection will take place in Munich on 11th and 12th March 2020. The event is organised by ifv Bahntechnik e.V. As part of this WAGNER Rail will give two lectures and host the professional excursion.

ifv Bahntechnik

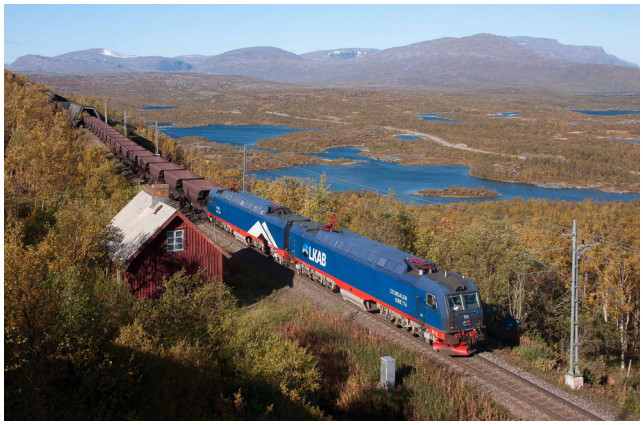
The international FIRE SAFETY for rolling stock takes place for the 8th time.

MINING CONTRACTOR LKAB MODERNIZES IORE LOCOMOTIVES – ALSO IN THE AREA OF FIRE PROTECTION

Fire detection provides protection for the high-performance Bombardier trains

The Swedish mining company LKAB will modernize their IORE locomotives from Bombardier in the next few years. The 20 powerful electric locomotives in double operation belong to the group-owned railway company LKAB Malmtrafik AB and transport iron ore between the mine, the plant and the port. As part of the modernization WAGNER Rail is adapting the fire protection solutions installed two decades ago to the latest standards.

The figures are massive: the trains are up to 750 metres long, have up to twelve axles and can carry more than 7000 tonnes of iron ore. It is therefore not surprising that the IORE double locomotives have an exceptionally high performance: With two times 5400 kW, which is twice around 7340 hp, they are among the most powerful electric locomotives in the world. They operate between the iron ore mine in Kiruna in northern Sweden and the plant in Malmberget, heading south to Luleå (on the Gulf of Bothnia). They travel north to the Norwegian port of Narvik, where Europe's northernmost standard gauge railway station is located. When finding a replacement for the installed fire protection technology, it was important to ensure that in the event of fire the technology of the powerful electric locomotives would not be damaged. In addition, the company has delivery obligations which must be met even in case of emergency, if somehow possible.



The double locomotives shuttle back and forth between the iron ore mine and the plant in northern Sweden and the port of Narvik in Norway.

The following solution is the result: The driver's cab and the battery pack are monitored by Bosch point detectors that are connected to a Rail 138 fire detection control panel. The two power converters are monitored via AOA detectors, which are also integrated into the Rail 138 by means of a coupler. New TITANUS *MICRO·SENS*® devices are also installed on the locomotive itself. These replace the old TITANUS *PRO·SENS*® devices. With this solution, WAGNER Rail has created maximum monitoring of the individual locomotive areas. In an emergency, appropriate countermeasures can be initiated quickly and efficiently.