

New extinguishing system for burning traction batteries in electric vehicles



- Safe deployment due to short deployment time on the burning vehicle and system activation with sufficient distance
- Efficient firefighting by cooling the modules and cells in the battery housing
- Lead users confirm the efficiency and ergonomics of the system

Rosenbauer launches a new extinguishing system for burning traction batteries in electric vehicles. The system can be used to safely and efficiently extinguish lithium-ion based high-voltage batteries. It enables direct cooling of the battery modules, or the cells within the modules, and thus a quick stop to the propagation of the thermal runaway of the cells.

The safety of the firefighter was the top priority during the development and is achieved by the fact that the firefighter only being in the vicinity of the burning vehicle for a very short time and the system is activated from a safe distance. The extinguishing system applies the water exactly where it is needed: to cool the cells and modules in the battery housing. Extinguishing thus takes place in a very resource-efficient way and reduces the spread of flue gases to a minimum.

Functional description

The system consists of two main components, an extinguishing unit and a control unit, which are connected to each other with hoses. The extinguishing unit is positioned on the battery and, if necessary, supported on the car body or other points. The preferred position is between the road and the vehicle when the vehicle is on all four wheels. It is also possible to use the system via the interior and luggage compartment, or from the top in the case of vehicles lying on their sides or on the roof.

The system is activated via the control unit at a sufficient distance from the vehicle (approx. 8 meters). The piercing nozzle is driven into the battery with a force of several tons and the water is discharged directly into the battery through the perforated nozzle. The water fills the battery housing completely and thus ensures efficient cooling. The water supply of a normal tank



firefighting vehicle/ firefighting and rescue vehicle is sufficient to ensure successful extinguishing. A normal pressure pump is sufficient for the supply of water.

After the battery has been cooled to the point where the cell temperature is in a safe range, the vehicle is ready for transport. The extinguishing unit can remain in the battery during transport (and at the quarantine site). This allows water to be quickly pumped into the battery housing at any time, regardless of whether the vehicle is being transported with a roll-off container dumper or on a tow truck with a fire blanket.

Technology confirmed

The system has been tested in numerous fire tests by Rosenbauer with a wide variety of battery designs (pouch, prismatic and round cells) in different vehicle platforms. In addition, industrial, professional, and volunteer fire departments across Europe have been testing the system for months with their operational tactics, operational technology and crews, demonstrating that it is compatible with existing resources and tactics.

"We were very pleased to be able to develop and test the extinguishing system together with Rosenbauer and to be involved in its improvement and further development. The extinguishing system is currently one of the best and most innovative of its kind to contain the spread of battery fires. Operation is very user-friendly and effective. From my point of view, the system is a must-have for every fire department. We are proud to have such a close working relationship with Rosenbauer and look forward to tackling new projects together in the future."

Patrick Looß, Head of the Securitas Fire & Safety site fire department c/o Porsche Leipzig

"The extinguishing of batteries is an important contribution to the safe use of electromobility, also in terms of society. This is why VDA/VDIK supports the topic and Opel, Volkswagen, BMW, Volvo, Tesla and Audi for instance, have provided battery packs of the latest generation and complete vehicles for the important and necessary fire tests over the past two years. The best way to avoid pollutants in the air and firefighting water is to extinguish quickly and efficiently. And that is what the Rosenbauer extinguishing system ensures in conjunction with an application that is as safe as possible for firefighters."

Jürgen Peitz, Head of the VDA & VDIK Working Group "Rescuing people from vehicles involved in an accident"

The new Rosenbauer battery extinguishing system can be ordered now and will be delivered at the beginning of next year.

The Rosenbauer Group

Rosenbauer is an international group and a reliable partner to fire services around the world. The company develops and produces vehicles, fire extinguishing systems, fire and safety equipment and digital solutions for professional, industrial, plant and volunteer fire services and systems for preventive firefighting. Rosenbauer is represented in approximately 120 countries by a sales and service network. With revenues of € 1,044.2 million and around 4,000 employees (as of December 31, 2020), the Group is the world's largest firefighting technology provider.

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