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224-kilometre battery range: Stadler sets world record for Guinness Book of Records with FLIRT Akku

Stadler has set the record to be officially entered in the Guinness Book of World Records for a battery train journey in battery-only mode. Travelling on the route from Berlin to Warnemünde in the company of independent technical consultants, the FLIRT Akku test carrier reached a range of exactly 224.00 kilometres at wintry temperatures around freezing point.

The three-unit FLIRT Akku used for the record journey has been developed by Stadler since 2016 as a local CO_2-neutral mobility solution for the climate-friendly operation of unelectrified railway routes. The vehicle was approved by the German Federal Railway Office and introduced to the public for the very first time in 2018. Ever since when the FLIRT Akku test carrier has travelled around 15,000 kilometres in battery-only operation, before setting the world record for a regional train journey in battery-only mode without additional charge now.

«We designed and calculated the vehicle for an operational range of 80 kilometres, depending on the route requirements of the respective network. But on various journeys testing the technology, we were able to realize significantly greater ranges, so that we even dared to attempt the world record at wintry temperatures. The vehicle had already had to cope with various scenarios like making up for unplanned delays on the track or operating under extremely hot or cold weather conditions in the testing after all», explains Evelyn Thiel, Technical Project Leader for the FLIRT Akku at Stadler.

«We are very proud to be the official holder of the world record for travelling the longest route in battery-only mode with a regional train now – having reached this result under weather conditions which are anything but ideal for batteries. Stadler has already worked in the area of battery technology for rail vehicles over 75 years ago. We consistently continued to pursue this approach for unusual technological solutions in the company, and developed a flexibly deployable train that also enables CO_2-neutral mobility on so-called diesel routes with the FLIRT Akku. As a market and technology leader in battery technologies for rail vehicles, the decision to undertake the record journey was a logical consequence», says Dr. Ansgar Brockmeyer, Executive Vice President Marketing & Sales and Deputy CEO of Stadler.

«We can confirm that the FLIRT Akku test carrier travelled exactly 224.00 kilometres in battery-only mode on the journey from Berlin-Gesundbrunnen to Warnemünde without charging its batteries from an overhead contact line or other external energy source», says Heiko Hüserich, TÜV Nord.

Climate-friendly bestseller FLIRT

The first «Fast Light Intercity and Regional Train» was developed in 2002 at the behest of the Swiss Federal Railways SBB for the Zug city railway. The four-unit series went into passenger use under the name of RABe 523 2004. Ever since when the FLIRT has turned into an international bestseller with over 2,000 vehicles sold. Today, vehicles of this type are being operated in 20 countries in virtually all climate zones, from the equator to the polar circle, 528 of them in Germany alone. The single-decker regional and intercity multiple unit convinces with its flexibility in the process. Two- to six-unit train compositions are realizable in normal and broad gauge designs for top speeds of 160 to 200 km/h. In doing so, the FLIRT can be customized to individual client requirements very flexibly in terms of its drive technology, number of seats, passenger flow and interior design. The lightweight aluminium design, maintenance-friendly construction and components that have been tried and tested a thousand times help to keep the operating, energy and maintenance costs low. Besides electric, diesel or bi-modal drives, the FLIRT is also available with climate-friendly battery and hydrogen propulsion.

With the FLIRT Akku, Stadler has developed a so-called BEMU (battery-electric multiple unit) that will run as both a classic EMU (electric multiple unit) under overhead contact cable or battery-operated on unelectrified routes. This makes it optimal for partly electrified routes that currently still need to be served with diesel trains. Stadler had already won the first green technology tender in Germany and sold 55 FLIRT Akkus to NAH.SH, the Schleswig-Holstein Local Transport Association in 2019. In November 2021, another order for 44 vehicles followed from Deutsche Bahn Regio. In addition to which Stadler is also building the first hydrogen-powered FLIRT for the San Bernardino County Transportation Authority (SBCTA) in the USA.

About Stadler

Stadler has been building trains for over 75 years. The provider of rail vehicle construction solutions has its headquarters in Bussnang in eastern Switzerland. It has a workforce of around 13,000 based in various production and engineering locations as well as more than 60 service locations. The company is conscious of its social responsibility for sustainable mobility and therefore stands for innovative, sustainable and durable quality products. The product range in the field of mainline railways and city transport includes high-speed trains, intercity trains, regional and suburban trains, metros, tramways and trams. Stadler also manufactures main-line locomotives, shunting locomotives and passenger carriages. It is the world's leading manufacturer in the rack-and-pinion rail vehicle industry.

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