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PRESS RELEASE

InnoTrans 2014 - Solaris Tramino Braunschweig

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World premiere of Solaris Tramino Braunschweig. See the tram on outdoor display FB/16. Solaris delivered first three vehicles to Braunschweig. It is the second contract conducted by Solaris in Germany.

Within last 2 months three Solaris Tramino were delivered to Braunschweig. Vehicle presented on InnoTrans 2014 exhibition is 4th of 18 ordered trams. The delivery of all vehicles will be completed in the first half of 2015.

With the handover of the first Tramino to Braunschweig, Solaris began delivering a total of 18 low-floor trams ordered by Braunschweiger Verkehrs-GmbH in May 2012. Braunschweig is the second German city to have ordered Solaris trams. In 2013, Solaris delivered its five Tramino to Jena, the first Polish low-floored modern trams on the German market.

The Solaris Tramino for Braunschweiger Verkehrs-GmbH are uni-directional lowfloor vehicles, consisting of four body sections at an overall length of 35.7 metres. They are 2.3 metre wide. Each vehicle section has its own bogie for Braunschweig track gauge of 1,100 mm, not very popular size. Every section rests on one centrally-mounted bogie. Consequently, the weight of the tram is evenly distributed. The vehicle is more stable and the forces transmitted through the articulations are much smaller. The Tramino Braunschweig uses advanced technology, nonetheless based on well-proven and tested solutions.

To improve ride quality, conventional wheel sets were dropped in favour of transversely linked cardan wheel sets. Depending on placement, the bogies have one or two pairs of motorised wheels. The cardanshafts are connected to the bogie frame by a connector and a rubbermetal guide piece. The resulting bogie is characterised by exceptionally smooth ride characteristics.

The Tramino Braunschweig is equipped with five 90 kW asynchronous traction motors. They are mounted in the body next to the bogies, with power transmitted by shaft and "master" and "slave" hollow shafts to the wheels. This design allows a low floor height to be maintained throughout the entire tram and reduces the tare weight of the bogies, but nevertheless enables the use of wheels with a new diameter of 662 mm.

The new trams have an anti-knick system designed to straighten the vehicle and its body modules when running on straight lines as well as when entering, turning and leaving curves. The system is composed of two dampers per bogie. They are mounted on one side in nests on the bogie frame, and on the other are connected to the body shell. The positive effect on ride quality prevents yawing motions when running through curves.

What is more to make the Tramino Braunschweig particularly energy-efficient, kinetic energy is recuperated during braking and stored on board in supercapacitors, ready to be routed back to the motors during the next phase of acceleration.

Buttons and switches have been replaced with innovative touchscreen panels, which are intuitive and easy to use. They also offer flexibility in programming to adapt the display of functions to changing

requirements. Instead of conventional rear-view mirrors, cameras feed a live view to monitors mounted ergonomically within the driver's cab. They give a good view of everything happening to the sides and rear of the tram.

Each tram is fitted with air-condition in passenger compartment and separate system in driver's cabin. Tram for Braunschweig has a capacity of 211 passengers, including 87 seated. There are six sets of double doors, each 1,300 mm wide. One of them is located right behind the driver's cab, where there is also the wheelchair space. The space for prams is located by the fourth and sixth doors. The trams have special exterior lights, mounted above the doors, which change color from green when opening the doors to red when closing them. Red sign means a driver deactivated the function. It also supposed to discourage passengers from trying to force their way onto a tram that is ready to depart. It significantly improves passengers' safety.

First part of the order, 15 Solaris Tramino will be delivered to Braunschweig till the end of the year, last three pieces in the first half of 2015. On the InnoTrans 2014 exhibition the Tramino Braunschweig celebrates its world premiere. From September 23rd to 26th the vehicle will be displayed in outdoor display on the stand number FB/16. Solaris Bus & Coach company will have its stand in the Hall A (number 301).

Also Solaris' buses are quite often picture on Braunschweig streets where over 20 vehicles have been delivered so far, including Urbino 12 electric. Four articulated Urbino 18 electric equipped with induction charging system PRIMOVE have been provided to Germany as well. Great chance to see first fully electric articulated Solaris bus offers InnoTrans exhibition mentioned before. Solaris vehicle will be located on outdoor display number FB/10 (next to the South Entrance).

Additional information:

Solaris Bus & Coach is a major European producer of city, intercity and special-purpose buses as well as low-floor trams. Since the start of production in 1996, over 11 000 vehicles have already left the factory in Bolechowo near Poznań. They are running in 28 countries. Despite its young age, Solaris has become one of the trendsetting companies in its industry. For many years it has been the indisputable leader among the suppliers of city buses in Poland as well as one of the largest suppliers of city buses in Germany.

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About our company

Solaris Bus & Coach sp. z o.o. is a leading producer of city and intercity buses in Europe. It focuses on the development of low-emission and zero-emission vehicles, i. e. electric and hydrogen buses as well as trolleybuses. Over 25,000 Solaris vehicles have been delivered so far and they ply the streets in 850 towns and cities across 33 countries located throughout Europe as well as beyond it. Solaris is part of the Spanish CAF Group (Construcciones y Auxiliar de Ferrocarriles) S.A. From conception, to the design and manufacturing phases, all Solaris buses are produced in Poland. All activities undertaken by the company are in line with its mission, which is reflected in the brand's promise: to change the image of public transport. Solaris also actively partners with public transport operators and provides them with comprehensive support in their transition to zero-emission mobility. Solaris products have been repeatedly awarded for quality and innovation. The Urbino 18 hydrogen bus has won the prestigious 'Bus of the Year 2025' title.