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## Desiro RUS Sochi

Russian Railways (RZD)

Siemens delivered 54 regional trains to Russian Railways (RZD); these trains entered into service in autumn 2013. Orders were placed for 38 of the 54 trains in December 2009. A contract for the remaining 16 units was signed in September 2010.

For use on trans-regional lines, nine of these trains feature a modified "Premium" variant, which offers passengers increased comfort through their modified seating arrangement and additional service facilities in the passenger compartment. In terms of technology, the Desiro® RUS for Sochi is based on the reliable Desiro ML vehicle platform. The vehicles have been further developed to meet the needs of the Russian market: they have been designed to withstand temperatures as low as  $-40^{\circ}\text{C}$  and have been given a car body which is 3,480 wide, a floor 1,400 mm high, and a bogie with a track gauge of 1,520 mm.

The Desiro RUS provides a solution for Russian mass transit systems, regional lines and trans-regional lines. Thanks to the flexibility of the interior partitioning adopted from the Desiro ML, the train was able to meet the special demands that were placed on it during service for the Olympic Games in 2014. When serving Sochi on the Black Sea, the trains had to be able to handle gradients of 4% to reach the Winter Olympics venues up in the mountains.

### Technical Data

Wheel arrangement	Bo'Bo'+2'2'+2'2'+2'2'+Bo'Bo' (5-car)
Power supply	DC 3 kV and AC 25 kV / 50 Hz
Top speed	160 km/h
Traction power rating	2,550 kW
Track gauge	1,520 mm
Vehicle length	126,462 mm
Width	3,480 mm
Floor height	1,400 mm
Mass	264 t
Seats	443 ("Premium": 332)
Temperature range	$-40^{\circ}\text{C}$ ... $+40^{\circ}\text{C}$
Crash requirements	Based on EN 15227



### Technology and aesthetics

The new Desiro RUS trainsets are characterized by their modern and attractive design and uniform architecture. Modern technology and sheer elegance are combined with technological aesthetics. With its all-round visibility and light colors, the interior design offers comfortable surroundings for passengers, personnel, and especially for persons with restricted mobility.

The efficient and reliable heating and ventilation system ensures pleasant ambient conditions and allows fast temperature control. A modern passenger information system provides useful information in Russian and other languages.

The trains have multifunctional areas with sufficient space for wheelchairs as well as two modern, disabled-friendly restrooms and space for bulky baggage. A ramp ensures accessible boarding. The premium-class trains are equipped with luxury seats, tables, cloakrooms, catering facilities, an expanded passenger information system, additional restrooms, and more.

The Russian BLOK train control system has been integrated into the train's own system.

### Flexibility

The 2-system design – 3 kV DC and 25 kV AC – means that uninterrupted journeys are possible on routes with mixed power systems (e.g., Adler – Alpika service). The interior has been designed with flexibility in mind. The capacity can be increased thanks to the train's double-running capability. Thanks to this high level of flexibility, the Desiro RUS can be adapted to different requirements, such as for airport services or for regional and trans-regional lines.

### Safety

The car bodies are made of extruded aluminum profiles and feature air suspension, providing a high level of comfort at any speed. Energy absorbing and crash elements protect passengers and personnel in the unlikely event of an unforeseen incident.

### Energy efficiency

The lightweight construction of the car bodies helps reduce power consumption. This is further supported by an auto-pilot system as well as an intelligent vehicle and traction control system, which feeds braking energy from the regenerative braking system back into the power grid.

### High performance

Traction power of 2,550 kW is sufficient to ensure fast acceleration. The bogies with a track gauge of 1,520 mm were developed especially for the Russian market and originate from the proven SF 6000 family. They have a second air spring for added passenger comfort.

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The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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