Rhätische Bahn has ordered in June 2007 15 powerful dual-voltage multiple unit trains to run on the 1 kV direct current line over the Bernina Pass and on the main network, which is electrified with 11 kV of alternating current. These multiple unit trains also haul the renowned Bernina Express from Chur to Tirano and back again, on the highest rail route in the Alps. For this purpose they are fitted with comfortable air-conditioned first and second class compartments. The first class compartments offer a stunning view of the route from directly behind the driver’s cab at the head of the train. With the spacious low-floor area in the centre of the train, persons with reduced mobility can travel in comfort too.
Technical features

Technology

– Car body with an integral aluminum construction
– Motor bogies and trailer bogies with pneumatic suspension

Comfort

– Interior fittings adapted to the requirements of main-line services
– Spacious entrance door with a sliding step in the low-floor area
– Wheelchair spaces
– Barrier-free vacuum toilet system
– Air-conditioned passenger compartments and driver’s cabs
– Modern flat-screen passenger information system

Reliability / Availability / Maintainability / Safety

– Redundant 2-system propulsion equipment, consisting of 4 power trains with water-cooled IGBT power converters
– Redundant vehicle control system with train bus and diagnostics computer

Vehicle data

Customer | Rhätische Bahn (RhB), Switzerland
Region | Bernina route and main network
Track gauge | 1000 mm
Supply voltage | 11 kVAC, 16.7 Hz, 1 kVDC
Axle arrangement | Bo’Bo’ + 2’2’ + Bo’Bo’
Number of vehicles | 15
Commissioning | Spring 2010
Seating capacity 1st cl. | 24
Seating capacity 2nd cl. | 76
Tip-up seats | 14
Wheelchair spaces | 2
Floor height
Low floor at entrance door | 480 mm
High floor | 1050 mm
Access width | 850 mm, 1200 mm
Longitudinal force | 800 kN
Length with coupling | 49500 mm
Vehicle width | 2650 mm
Vehicle height | 3800 mm
Bogie wheelbase
Motor bogie | 2000 mm
Trailer bogie | 1800 mm
Diameter of driving wheel, new | 810 mm
Carrying wheel diameter, new | 685 mm
Max. power at wheel | AC 2600 kW, DC 2400 kW
Starting tractive effort | 260 kN
Maximum speed | 100 km/h
Hauled load at 70 % | 140 t
Hauled load at 35 % | 245 t