



THREE-CAR ELECTRIC RACK-AND-PINION ADHESION MULTIPLE UNIT

Berner Oberland-Bahnen AG, Switzerland

In June 2014, Berner Oberland-Bahnen BOB ordered six rack-and-pinion adhesion multiple units that were to form the basis of the new 2018 fleet concept. The 3-car multiple units have been travelling the route from Interlaken East to Lauterbrunnen and to Grindelwald since February 2017.

This connection provides access to Jungfrauoch, making it an important element of tourism in the Bernese Oberland. The multiple units offer seats in both first and second class (133 in total), as well as a luggage compartment. They offer passengers a high level of comfort with low-floor entrances, while staff are able to benefit from a modern operation concept.

The high-performance, 50 metre long trains can carry two non-driven three-part driving trailers on a maximum gradient of 120‰, and are designed for a maximum speed of 80 km/h.

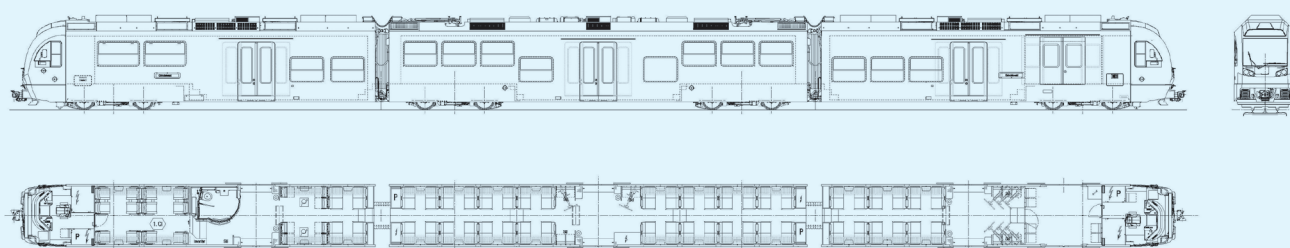
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Technical features

Technology

- Car body with integral aluminium construction
- Energy-absorbing front sections to offer protection in the event of a collision, in accordance with EN 15227
- High-performance traction equipment with four combined rack-and-pinion / adhesion motor bogies
- Rheostatic and regenerative brake, two mechanical emergency braking systems in accordance with Swiss regulations
- Multiple traction unit (both with vehicles of the same type as well as with existing, adapted vehicles)

Comfort

- Motor bogies with pneumatic suspension
- Bright passenger-friendly and continuous interiors with individual design options
- Three low-floor entrance areas with folding steps
- The vehicles comply with the requirements of the Federal Act on the Elimination of Discrimination against People with Disabilities (barrier-free toilet and wheelchair bays in the low-floor area)
- Ventilation system. Sliding windows in the passenger compartment enable passengers to take photographs
- Side wall tables with integrated power sockets

Personnel

- Air-conditioned driver's cabs
- Centrally positioned ergonomic driver's cabs for one-man driving in accordance with UIC 651

Reliability / Availability / Maintainability / Safety

- Vehicle with redundant design
- Vehicle control system with train bus and diagnosis
- Passenger information system including video recording

Vehicle data

Customer	Berner Oberland-Bahnen AG
Operated networks	Interlaken Ost–Lauterbrunnen/–Grindelwald
Track gauge	1000 mm
Designation	ABDeh 8/8 321–326
Operating voltage	1500V DC
Axle arrangement	Bo' Bo' Bo' Bo'
Number of vehicles	6
Commissioning	2016/2017
Seating	
First class	12
Second class	96
Special seats	7
Tip-up seats	18
Standing capacity	100
Floor height above TOR	
Low -floor	420 mm
High-floor	1100 mm
Entrance width	1300 mm
Axial thrust	800 kN (P-III)
Length over coupling	50000 mm
Vehicle width	2650 mm
Vehicle height	4024 mm
Bogie wheelbase	
Motor bogie	2540 mm
Driving wheel diameter, new	840 mm
Maximum output at wheel	3600 kW
Starting tractive effort	400 kN
Starting acceleration	1,2 m/s ²
Maximum speed	80 km/h