BOMBARDIER

InnoTrans 2010 Number
The Zefiro Family Grows
Talgo Electro-Diesel Trains
2nd Russian Freight Conference
The New Vossloh Locomotive Family
560 mm a sliding step 300 mm above rail top can be installed. The windows, fitted with safety glass, are supplied by Smac of Salzgitter in Germany. DB Interlaken, while Bodie & the manufacturer of the electrically operated sliding-door entrance doors. The EMD's latest safety requirements stipulate that door closing must be monitored by optical sensors acting in two dimensions, as the doors are fitted with highly sensitive rubber edge strips incorporating Messei electronic sensors. The wheelchair-accessible WC cubicle is made in Bathestrasse, while its interior fittings come from Dietzmann.

LiChtrains supplied the air conditioning systems. While the units on the intermediate cars are rated at 33 kW for heating, those on the end cars are rated at 31 kW. For cooling, all the units are rated at 27 kW. Warm air is fed into the saloons from below, cold air from the air outlets in the roof. The roofs have separate air conditioning units, rated at 5.4 kW for heating and 4.5 kW for cooling.

Electrical Equipment

Although the DB Talent 2 EMUs will operate at 15 kV 16.7 Hz, the train can also be built for other types of electrification system (15 kV 16.7 Hz and 3 kV 15 Hz). A single pantograph (produced by Steffens) feeds the electrical equipment, which was designed by Bombardier Västsle. The traction equipment is mounted on the roof with the exception of the ABB traction transformers, and the 110 V, 100 Ah batteries, which are suspended from the undersides of the end cars. Two types of traction transformers were specified - a four-traction winding and a six-traction winding, instead of a single six-traction winding, for improved weight distribution. They are combined in three ways:

- two or three-car EMUs have one large transformer with an output of 1,712 kW;
- four and five-car EMUs have one large transformer and one smaller one, with a total output of 2,250 kW (i.e. 1,712 + 538 kW);
- six-car EMUs have two large transformers with a combined output of 3,424 kW.

This meant that ABB had to design two new traction transformers with the same electrical characteristics in order to allow the easy replacement of both small and large units without requiring any modification of the traction converters. Moreover, since the Talent 2 must conform to Bombardier's ECO4 policy, these transformers have been designed to operate at an energy efficiency level of 95.5%, rather than the standard 90% for a train operating off 15 kV AC.

Electric motors power bogies of the Flex-Compact family, like those on the AGC and Speckman. The primary suspension system comprises rubber bushes and steel springs with a vertical shock absorber on its outer side.

Photo: Bombardier

The Talent 2 runs on bogies from the Flex-Compact family, like those on the AGC and Speckman. The primary suspension system comprises rubber bushes and steel springs with a vertical shock absorber on its outer side.

Photo: Bombardier

The traction transformer was designed to operate at an energy efficiency level of 95.5%, rather than the standard 90% for a train operating off 15 kV AC.

As each powered bogie has its own traction inverter, two of which include auxiliary inverters, while a separate 500 kW inverter feeds the 24 V DC circuit. A KROKA DC ELECTRIC synchronous, four-pole, flanged-ventilation traction motor powers the wheels of the two and bogies of the central accommodation bogie. The power is supplied by a 560 kV and a continuous rating of 360 kW, are fully-up-spread, and transmission is via a toothed coupling and a set of single-reduction Walther gearboxes, which are supported from the undersides of the end cars, and rest on the axle. Two-stage relays are provided for the powered central articulation bogie because of the limited space available there.

Each end bogie is equipped with electrohydraulic rail brakes, while every electromechanical disc brakes act on the wheels, and there are also spring-pladed parking brakes. The low-car EMUs are fitted with three magnetic rail brakes. Both bogies have Delrin flange lubrication equipment.

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