



## VARIOBAHN LOW-FLOOR LIGHT RAIL VEHICLE

Holding Graz Linien, Austria

In October 2007, Holding Linien 45 Variobahn light rail vehicles for service in the city area of Graz. The vehicles have been in service since 2010. The Variobahn have a 100% low-floor area with a floor level of 350 millimetres above TOR. A carriage width of 2.30 metres makes the bright passenger area appear particularly spacious. The one-directional vehicles also have two multifunctional zones for wheelchairs and prams. The Variobahn is a modern, modular tram system with clear interfaces and a high level of flexibility in terms of length, width, gauge and catenary voltage.

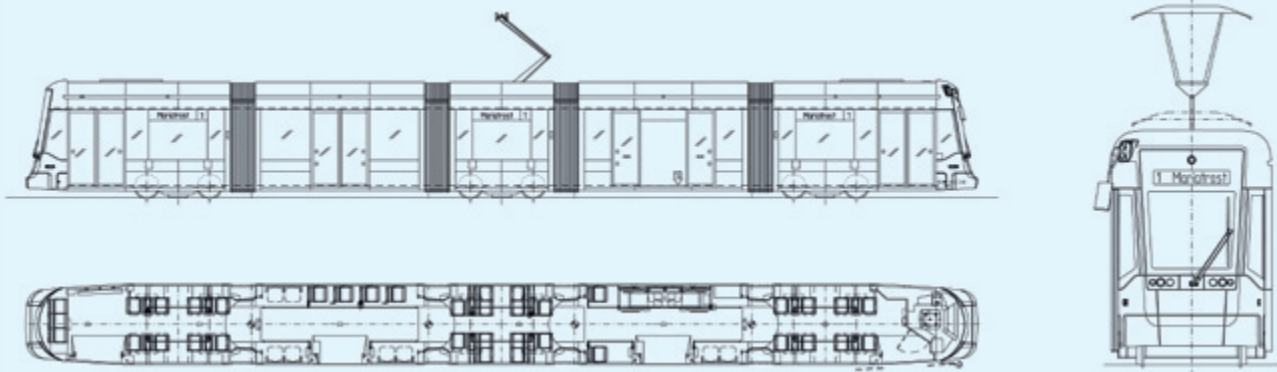
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## Technical features

### Technology

- Body shell made of stainless steel
- One-directional vehicle
- Modular design makes it easy to adapt the vehicle to local conditions
- Two carriage sections («module») without wheel cases, suspended between the bogie modules

### Comfort

- Gear-free drive technology with hub motors leave more space in the vehicle
- Focus on the needs of people with restricted mobility in the first passenger module, including a mechanical folding ramp in the entrance area
- Spacious design of second passenger module as a multifunctional compartment
- Four external sliding doors
- Air-conditioned passenger compartment and driver's cab
- Special features of the Graz Variobahn
  - Head shape, colour scheme, interior design
  - Spacious articulated gangway with fixed interior panelling

### Reliability / Availability / Maintainability / Safety

- Adhesive bonding for external panelling reduces repair costs after accidents

## Vehicle data

<b>Customer</b>	Holding Graz Linien
<b>Area serviced</b>	Graz city
<b>Number of vehicles</b>	45
<b>First delivery</b>	2009
<b>Vehicle length</b>	27468 mm
<b>Vehicle width</b>	2300 mm
<b>Height (over roof-mounted components)</b>	3400 mm
<b>Floor height (100% LF)</b>	350 mm
<b>Access height</b>	300 mm
<b>Gauge</b>	1435 mm
<b>External doors</b>	4
<b>Wheel diameter</b>	650/590 mm (new/worn)
<b>Driving wheels/carrying wheels</b>	8/4
<b>Catenary voltage</b>	600 V DC
<b>Drive system</b>	8 × 45 kW
<b>Max. speed</b>	70 km/h
<b>Seats</b>	47 (incl. tip-up seats)
<b>Standing capacity (4 pers./m<sup>2</sup>)</b>	98
<b>Min. curve radius</b>	17.25 m